

Thesis  
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*Understanding Psychological Distress and Suicidality: The Predictive  
Utility of Perfectionism and Autobiographical Memory*

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Susan Anette Rasmussen composed this thesis. It has not been accepted in any previous application for a degree. Susan Anette Rasmussen has carried out the work within. All quotations have been distinguished by quotation marks and the sources of information specifically acknowledged.

Susan Rasmussen                      21/2 · 2006  
Signature                                      Date

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## Dissemination of Research During My PhD

### Conference Presentations

**Rasmussen, S.A. & O'Connor, R.C. (2002).** Autobiographical memory and psychological distress: the role of perfectionism and stress. Poster presented at the 9th European Symposium on Suicide and Suicidal behaviour. 14-17<sup>th</sup> September, Warwick.

**Rasmussen, S.A. & O'Connor, R.C. (2003).** Hopelessness and memory: the role of mood regulation expectancies. Poster presented at the XXII World Congress of the International Association for Suicide Prevention (IASP). 10-14<sup>th</sup> September 2003, Stockholm, Sweden.

**Rasmussen, S.A. & O'Connor, R.C. (2004).** Social perfectionism, suicidality and autobiographical memory. Oral presentation given at the 10th European Symposium on Suicidal Behaviour. 25-28<sup>th</sup> August, Copenhagen, Denmark.

**Rasmussen, S.A. & O'Connor, R.C. (2004).** Perfectionism cognitions and psychological distress. Poster presented at the 10<sup>th</sup> European Symposium on Suicidal Behaviour. 25-28<sup>th</sup> August, Copenhagen, Denmark.

### Publications

Rasmussen, S.A. (2004). The Imperfection of Perfectionism. *The Psychologist*, 17, 398-400.

### Award

2004. Winner of the post-graduate section of the student writer competition in the *Psychologist*.

## Abstract

Objective. Previous research has implicated personality and cognitive factors in the experience of suicidal thoughts and behaviours. On the basis of two psychological models of suicide (Escape from Self; Baumeister, 1990; Cry of Pain, Williams, 1997), this thesis investigated an integrative model involving the relationship between perfectionism, motivation, and autobiographical memory recall to predict psychological distress (hopelessness, depression/anxiety, suicide ideation).

Methodology. Four inter-related, but independent, prospective studies were conducted to address a number of research questions in both university students (Studies 1, 2 & 3) and parasuicide patients (Study 4).

Results. The main findings of this thesis are that slow or over-general recall of negative and positive memories moderates the relationship between perfectionism and psychological distress. Furthermore, it was found that perfectionism serves as a mediator in the relationship between behavioural inhibition motivation (BIS) and psychological distress. Overall, the results suggest that much knowledge can be gained from investigating the psychological processes underlying suicidal behaviour, and we highlight the utility of employing integrative psychological models. The results are discussed in terms of their therapeutic implications, as well as their implications for future research.

# Chapter 1: Suicide and Suicidal Behaviour

## 1.1 General Overview of Suicide

### 1.1.1 Why Study Suicide?

*“In the year 2000 approximately one million people died by suicide and between 10 and 20 times that number attempted suicide. At least five or six people are affected by an individual’s suicidal behaviour and therefore at least one hundred million people worldwide have direct contact with suicidal behaviour each year” (Goldney, 2002)*

During the past decade, in response to rising trends in suicide and attempted suicide in Europe, the World Health Organisation (WHO, 1998) has included as one of its targets the need to reduce suicide. It has been estimated that during the past 45 years some countries have experienced a 60% rise in suicide rates, and this means that suicide is now one of the three leading causes of death among young people (Bertolote, Fleischmann, De Leo & Wasserman, 2003). On the whole, suicide (and undetermined deaths) represents 8.5% (males) and 3.8% (females) of years lost before the age of 65 in the UK, and therefore, it is responsible for substantial suffering and cost both at an individual, family and societal level. Consequently, suicide prevention has been made a health priority.

### 1.1.2 National Suicide Statistics

In the United Kingdom, suicide has been highlighted as a significant public health problem (Stark, Hopkins, Gibbs, Rapson, Belbin & Hay, 2004), and in the last couple of years, national strategies and action plans to address this issue, have been

launched (Department of Health, 2002; Scottish Executive, 2002). Within these strategies it is acknowledged that over 600 people in Scotland, and around 5000 individuals in England and Wales, commit suicide each year, and that 13% of the general population report suicidal thoughts, and as such suicide must be acknowledged as affecting all aspects of our society. In England and Wales, the annual suicide rate is 10.0 per 100.000, whilst it is 17.3 in Scotland (Appleby et al., 2001).

Epidemiological research interested in the frequency of attempted suicide and parasuicide or deliberate self-harm (DSH; see Section 1.2.1) has demonstrated a dramatic increase in Accident and Emergency attendance due to DSH over the last two decades (Repper, 1999). In addition, Williams and Morgan (1994) found that DSH is the most common reason for admission to medical wards for women (the second highest for men), whilst others have indicated that suicide is now the most common cause of death for young men (Williams, 1997). As a result, the report for Scotland draws attention to the fact that the suicide rate for Scotland is not only much higher than the rate for the United Kingdom as a whole, but is also one of the highest in Europe (Scottish Executive Health Department, 2003).

Equally worrying are the statistics for deliberate self-harm. Diekstra and Gulbinat (1993) pointed out that for every completed suicide, at least 10 individuals will engage in some form of self-harming behaviour. Furthermore, deliberate self-harm is often repeated, thereby increasing the risk of further self-harm: It is estimated that between 15-25% of individuals who self-harm, re-present to hospital with further self-harm within one year (Wilkinson & Smeeton, 1987; Hawton, Fagg, Simkin, Bale & Bond, 1997; Owens, Horrocks & House, 2002; Zahl & Hawton, 2004). In

addition, the risk of completed suicide is increased (Hawton & Fagg, 1988). Indeed, it has been suggested that of the patients presenting to hospitals following an episode of deliberate self-harm, at least 1% will complete suicide within one year, whilst 3-5% will complete suicide within 3-5 years.

## **1.2 Issues of definition**

One of the challenges in suicidology concerns agreeing on definitions of suicidal behaviours, and the definitions and classification systems for suicide remain diverse and subject to ongoing discussion (Bouch & Marshall, 2003). This lack of consensus is reflected in the historic, as well as cultural, handling of suicide which has ranged from it being viewed as an altruistic self-sacrifice to an act of cowardice. Furthermore, suicide is conceptualised differently depending on the function of the definition; that is, the medical definition of suicide is not the same as the legal definition.

De Leo, Burgis, Bertolote, Kerkhof and Bille-Brahe (2004) argued that the conceptual difficulties which are apparent in suicidology, to this day, result in problems in areas of (i) public health, (ii) clinical practice, and (iii) research. Crucial to public health statistics is the need to distinguish suicidal behaviours from homicidal and accidental deaths, and this distinction is made difficult by at least two issues: (i) the locus of origin (i.e. is death self-inflicted?), and (ii) intention (i.e. was the aim of the behaviour death?).

However, these factors are often considered post hoc and are, therefore, far from clear cut (O'Carroll, Berman, Maris, Moscicki, Tanney & Silverman, 1998), and any classification of a death is thus, to a degree, based on assumptions. In terms of

clinical practice, definitional clarity is necessary for a number of reasons: Accurate assessment is necessary for choosing an efficacious treatment protocol and risk assessment (Rudd, 1997), as a patient may have been diagnosed on the basis of one set of criteria which is inconsistent with the criterion used in the development of the chosen treatment protocol, and as such this treatment may not be beneficial. In addition, Silverman and Maris (1995) contend that a successful intervention can only result from a solid definitional foundation from which the extent of the problem, the target group, and the treatment protocol can be developed. This same definitional foundation must also exist for suicide research to progress and for our understanding of suicide to advance. This problem is illustrated in review articles which suggest that there has been a tendency for suicide studies to make use of idiosyncratic definitions of suicide (Ivanoff, 1989) which means that comparisons between studies are not possible (Linehan, 1997).

In a recent consultation on research in suicidology (Lenaars, De Leo, Diekstra, Goldney, Kelleher, Lester & Nordstrom, 1997), it was argued that intent could possibly be the most important issue to be considered in the development of useful suicide definitions. That is, not only is it necessary to distinguish between medical lethality and suicidal intent, but it is also crucial to acknowledge a differentiation between intent to die as opposed to knowledge that death will follow from the behaviour.

The history of suicidology is riddled with definitions which have been offered across the decades and which illustrate the changing relevance of key issues such as “the outcome of the behaviour, the agency of the act, the intention to die or stop living in order to achieve a different status, the consciousness/awareness of the

outcomes” (De Leo et al., 2004; see Table 1.1). As can be seen from Table 1.1, theories of suicide, historically, have provided the basis for understanding the behaviour, but more recently, it has been suggested that by its very nature a definition of suicide should be descriptive rather than explanatory and as such should be theory neutral and free of value judgement (Maris, Berman & Silverman, 2000).

Table 1.1 Frequently reported definitions of suicide (adapted from De Leo et al., 2004)

“All cases of death resulting directly or indirectly from a positive or negative act of the victim himself, which he knows will produce this result” (Durkheim, 1897/1951)

“All behaviour that seeks and finds the solution to an existential problem by making an attempt on the life of the subject” (Baechler, 1980)

“Suicide is a conscious act of self-induced annihilation, best understood as a multidimensional malaise in a needful, individual who defines an issue for which suicide is perceived as the best solution” (Shneidman, 1985)

“Death arising from an act inflicted upon oneself with the intention to kill oneself” (Rosenberg, Davidson, Smith, Berman, Buzbee, Gartner, Gay, Moore-Lewis, Mills, Murray, O’Carroll & Jobes, 1988)

“Self-initiated, intentional death” (Ivanoff, 1989)

“The definition of suicide has four elements: 1) a suicide has taken place if death occurs; 2) it must be of one’s own doing; 3) the agency of suicide can be active or passive; 4) it implies intentionally ending one’s own life” (Mayo, 1992)

“Suicide is, by definition, not a disease, but a death that is caused by a self-inflicted intentional action or behaviour” (Silverman & Maris, 1995)

“The act of killing oneself is deliberately initiated and performed by the person concerned in the full knowledge or expectation of it’s fatal outcome” (WHO, 1998)

The task of providing a definition of suicide is, thus, hampered by the semantics involved in providing conceptual clarity. In 1997, an attempt was made at developing guidelines to capture more efficient and effective data through an appropriate classification of suicidality (i.e. attempted suicide). It was proposed that an improved and more valid identification and documentation of suicide can only be achieved through consistency of nomenclature and classification. The outcome of this effort was the Operational Criteria for the Determination of Suicide (OCDS;

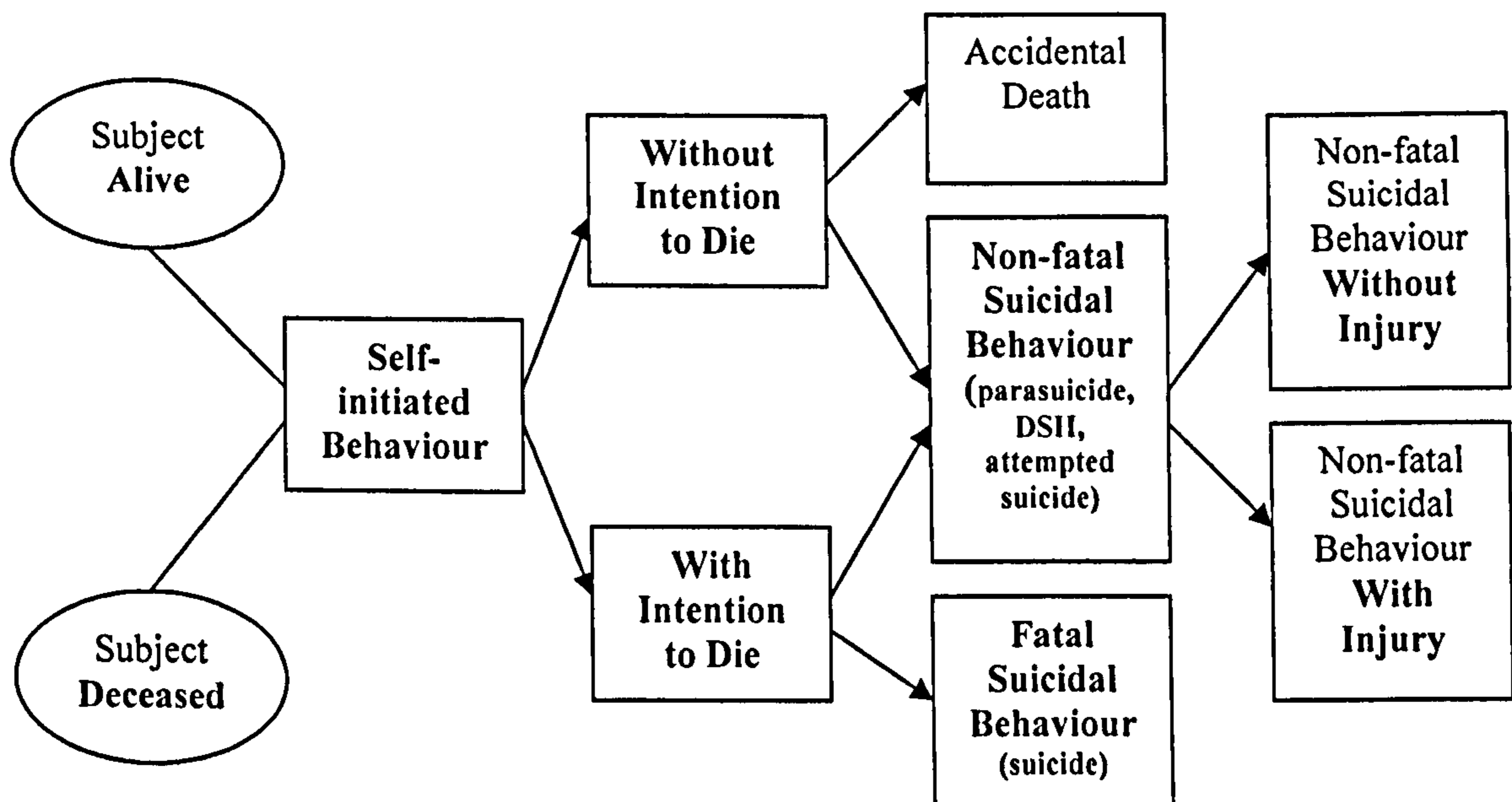


Rosenberg et al., 1988) which consequently formed the basis for a nomenclature for suicide and self-injurious thoughts and behaviours.

The OCDS proposes three central components to understanding suicidal behaviours: outcome, self-infliction and intent to kill oneself and defines suicide as “death from injury, poisoning, or suffocation where there is evidence (either explicit or implicit) that the injury was self-inflicted and that the decedent intended to kill themselves (Rosenberg et al., 1988). It is worth noting that in the discussion of attempted suicide, the terms parasuicide and deliberate self-harm are still used universally, and despite the general acceptance of the use of parasuicide and deliberate self-harm, De Leo et al. (2004) recently advocated a partial rephrasing of the definition of parasuicide to better capture the mental state of the suicidal individual (see section 1.2.1). That is, they believe that the original definition which uses the words “desired changes” is inappropriate in that death is not always a wilful and desired outcome (Baechler, 1980), but rather it is the “best solution” to a dilemma as suggested by Shneidman (1985).

Furthermore, De Leo et al. (2004) attempted to combine definition and terminology into one working nomenclature, which acknowledges the ambivalence of suicidal behaviours, in an effort to promote not only our understanding of suicide but also the aftercare process (see Figure 1.1). According to this nomenclature, there are three broad outcomes: (i) fatal suicidal behaviour, (ii) non-fatal suicidal behaviour with injuries, and (iii) non-fatal suicidal behaviour without injuries. In this way, the category of non-fatal suicidal behaviours (with or without injury) can be seen to encompass research which has, so far, made use of definitions such as parasuicide, deliberate self-harm, and attempted suicide.

Figure 1.1 Flow chart of fatal and non-fatal behaviour: a suggested nomenclature (De Leo et al., 2004)



It is evident that a major challenge to suicide research is the continued issue of definition and terminology. Through reviewing the literature it becomes apparent that research is based on an array of definitions and idiosyncratic terminology, and does not rely on one unifying nomenclature. However, it is plain that progress in the area of suicide is contingent upon the development of a universal language.

Without a doubt, finding appropriate definitions of suicidal behaviours is hampered by the fact that suicide is a complex phenomenon which combines environmental, genetic and psychological factors; and the lack of specificity of these factors in relation to suicidal outcomes can be seen to compound the problem of prediction. Consequently, it has been suggested that suicidal behaviours should be viewed on a continuum with risk-taking behaviours and suicidal thinking at one end and suicide attempts and completed suicide at the other end (Jamieson, 1999; Van Heeringen,

Hawton & Williams, 2000). Below are presented simple definitions for suicide vs. attempted suicide/parasuicide.

### *1.2.1 Suicide vs. Attempted Suicide/Parasuicide*

Currently the World Health Organisation simply defines suicide as “a suicidal act with a fatal outcome” and a suicidal act as “self-injury with varying degrees of lethal intent”. In this way, suicide is simply defined in terms of its outcome, i.e. a suicidal behaviour resulting in death.

In contrast, attempted suicide is, therefore, suicidal behaviour with a non-fatal outcome. In order to overcome the issue of intent, there has been a move towards adopting the term parasuicide (Kreitman, 1969, 1977), or deliberate self-harm (DSH), to describe non-lethal but deliberate self-injurious behaviours:

*“An act with non-fatal outcome, in which an individual deliberately initiates a non-habitual behaviour that, without intervention from others, will cause self-harm, or deliberately ingests a substance in excess of the prescribed or generally recognised therapeutic dosage, and which is aimed at the realising change which the subject desired via the actual or expected physical consequences”.* (p. 7)

Attempted suicide, parasuicide, or deliberate self-harm, are, thus, umbrella terms which cover a magnitude of behaviours including deliberate self-injury and deliberate self-poisoning (Hawton et al., 1997). For the most part, research uses these terms synonymously (Kerkhof, 2000), and consequently, this will also be the case for the purpose of this thesis. Furthermore, consistent with Van Heeringen et

al. (2002) the term suicidality will be used to explain cognitive characteristics which may later manifest themselves into suicidal ideation or suicidal behaviour.

## **1.3 Suicide Demographics: Facts and Figures**

### *1.3.1 Gender and Age*

In recent years, research and government statistics have demonstrated a complex relationship between age and gender in both European and UK suicide rates (Schmidtke & Löhr, 2004; Department of Health, 2002; Scottish Executive, 2002). Hawton (2000) drew attention to the fact that there are noticeable gender differences not only in relation to suicidal behaviour, per se, but also in relation to risk, prevention, and treatment.

Overall, the suicide rates in the UK, as well as the rest of Europe, are higher for men than for women. This difference between men and women has been exacerbated recently as there has been a noticeable decline in female suicide, whereas the suicide rate for men has increased (e.g. Kelly & Bunting, 1998). However, with regard to deliberate self-harm, the pattern is slightly different, as the rate of deliberate self-harm is typically higher in females than in males (Zahl & Hawton, 2004), although there has, more recently, been a trend for the male rates to increase, in particular among young men (Hawton et al., 1997).

Similarly, the age distribution for attempted suicide and completed suicide also varies. In the UK, suicide accounts for 17% of all deaths in young males aged between 25 and 34 years, and it is considered the second most common form of death for young males aged 15-34 years (Williams, 1997). These findings are supported by a study by O'Connor and Sheehy (1997) which concluded that males

accounted for 73.9% of all suicides, and that of this proportion, the majority was young males. In contrast, it was found that, for women, it was the middle-aged category which held the highest risk.

### *1.3.2 Method*

Although methods of suicide are abundant, the choice of method is, in actual fact, relatively restricted, suggesting that both physical availability and socio-cultural acceptability are important determinants (Cantor & Baume, 1998; Townsend, Hawton, Harriss, Bale & Bond, 2001; Gunnell, Middleton, Whitley, Dorling & Frankel, 2003).

#### Physical Availability

It has long been acknowledged that suicide rates are greatly affected by changes in availability of commonly used methods of suicide. For example, in the 1960s, when domestic gas poisoning was the most commonly used method of suicide, a change from coal gas to natural gas, saw a reduction in suicides using this method (Kreitman, 1976). Similarly, the changes in the composition of drugs in the 1980's, saw a decrease in suicide as a result of overdose (Christophersen, Rooney & Kelly, 1998). More recently, the introduction of catalytic converters in cars have caused a decreased in suicide by car exhaust emission in some countries (Amos, Appleby & Kierhan, 2001; Stark et al., 2004).

Gender differences are also evident in the choice of methods used for suicide. Male suicides are primarily caused by hanging and car exhaust poisoning, whereas the most common method of suicide for females is drug overdose involving analgesics and antidepressants (Ruddell & Curwen, 2002). There has been some suggestion

that the apparent gender difference in choice of method is an indication of the nature of the suicidal act: Female suicidal acts are more often initiated to express their own distress, or alter the behaviour and reactions of others (i.e. non-suicidal motivation), whilst male suicidal acts are more often associated with suicidal intent. This difference in suicide intent is confirmed by the stronger association between self-harm and completed suicide in men (Hawton & Fagg, 1988; Hawton, 2000).

### Socio-cultural Acceptability

There is evidence to suggest that choice of method is greatly influenced by the norms and traditions of specific cultures. In this way, the use of poisoning through agricultural chemicals, and suicide by burning, are commonly used methods in developing countries (e.g. Adityanjee, 1986). However, although these methods are also readily available in developed countries, they are much more infrequent. Instead, self-poisoning by drugs, hanging, jumping, car exhaust emissions, and cutting, are preferred (Cantor & Baume, 1998).

### *1.3.3 Other Factors Affecting Suicide Rates*

#### Socio-economic Status

Since the seminal work of Emile Durkheim, social risk factors for suicide have been the source of much research. Given the divergence in age and gender specific suicide trends, it has been suggested that the societal processes which underlie them may differ according to socio-demographic groups (Gunnell, Middleton, Whitley, Dorling & Frankel, 2003; see Table 1.2 for a summary). Hawton, Harriss, Hodder, Simkin and Gunnell (2001) argued that this particular line of research is of great importance to suicide prevention as it can impact on social policy development, but

also helps the identification of geographic areas which may be specifically targeted for intervention strategies.

Durkheim's (1897/1951) assertion that poverty is a protective factor against suicide has not received much empirical support. Indeed, studies suggest that higher than average suicide rates prevail among individuals with low income. Sainsbury (1955) argued that it is a sudden change in one's social or economic situation, as brought about by, for example losing a job, which is central to increasing the risk of suicide. More recently, research by Blakely, Collings and Atkins (2003) has suggested three possible explanations for the link between suicide and unemployment: (i) unemployment may confer a vulnerability through the impact of stressful life events, (ii) unemployment may be an indirect causal factor by increasing risk factors (e.g. financial difficulties) that precipitate suicide, and (iii) the association between suicide and unemployment may be confounded by factors which predict both unemployment and suicide, and the relationship is therefore non-causal.

That said, Platt (1984), in a comprehensive review of studies investigating the link between suicide and unemployment, concluded that: "...a definitive choice between the competing self-selection and causal models remain highly problematic. We can confidently state that there is an association between unemployment and suicide but we cannot specify with the same degree of confidence the nature of this association". Unemployment as such may not be a sufficient cause of suicidal behaviour but may instead act as a contributing factor in a multifactorial web of circumstances.

## Marital Status

Investigations of suicide statistics reveal important gender differences, and these are also apparent in the consideration of protective factors. Research (e.g. Gunnell et al., 2003) has indicated that the biggest protective factor against suicide for young men is marriage (this is also the case for older women). A potential mechanism for explaining the protective role of marital status and the family is found in the observation that the propensity to suicide varies according to the degree of involvement in interpersonal relationships: marriage leads to greater access to social support networks, and also promotes healthier living and reduced exposure to stress (Goldman & Hu, 1993). Similarly, rises in divorce and income inequality are associated with increased suicide, although this is not the case for young women where increased divorce rates constitute a protective factor. In contrast to men, it is not marital status per se which offers some protective value for women. Rather, research suggests that the primary protective factor for women is pregnancy and caring for a young child (Appleby, 1996; Qin, Agerbo, Westergård-Nielsen, Eriksson & Mortensen, 2000).



Table 1.2 Social, economic and environmental factors associated with an individual's risk of suicide (from prospective person-based studies) and population trends in suicide (from time-series analysis) (Gunnell et al., 2003).

Factor	Estimated association with suicide in individual	Association with time trends in suicide in populations
Unemployment	2-3 fold increased risk (males and females) (Lewis & Sloggett, 1998; Platt, Micciolo & Tansella, 1992)	Rises in unemployment are generally associated with increases in suicide, but the evidence is inconsistent (Platt & Hawthorn, 2000; Pritchard, 1988; Gunnell, Lopatzidis & Dorling, 1999; Lester & Yang, 1991; Crawford & Prince, 1999)
Divorce	2-5 fold increased risk (risk generally greater in males than in females) (Kreitman, 1988; Bulusu & Alderson, 1984; Charlton, Kelly & Dunnell, 1993)	Rises in divorce rates are generally associated with increases in suicide but the evidence is inconsistent (Lester, Curran & Yang, 1991; Lester & Yang, 1991; Stack, 1990)
Low socio-economic position/ poverty	4 fold increased risk in social class V compared to I (Drever, Whitehead & Roden, 1996)	Increases in socio-economic deprivation generally associated with increases in suicide (McLoone, 1996; Whitley, Gunnell & Dorling, 1999; Weyerer & Wiedenmann, 1995)
Motherhood	2-5 fold lower risk in first postnatal year (women) (Gissler, Hemminki & Lönnqvist, 1996; Appleby, 1991)	No consistent associations have been found with birth rates (Lester et al., 1991)
Social fragmentation	Associations have not been investigated	Increases in marker of social fragmentation generally associated with increases in suicide (Whitley et al., 1999; Sainsbury, Jenkins & Levey, 1979; Makinen, 1997)
Female participation in the labour market	A marker for changes in the role of men in society so not examined from an individual perspective	Inconsistent evidence, theoretical arguments suggest it may be associated with increased risk of suicide in males (Platt & Hawton, 2000)
Alcohol misuse	5 fold increased risk (Harris & Barraclough, 1998)	Inconsistent evidence – studies generally suggest increased levels of alcohol consumption are associated with increases in suicide (Caces & Harford, 1998; Norstrom, 1995; Wasserman & Varnik, 1998; Skog, 1993)
Drug abuse	10 fold increased risk (Harris & Barraclough, 1998)	Associations have not been investigated
Levels of religious beliefs/ church attendance	One study reports religious beliefs inversely associated with acceptability of suicide (Neeleman, Halpern & Leon, 1997)	Some evidence that higher levels of religious beliefs are associated with lower suicide rates (Lester, 1997; Breault, 1986; Neeleman, 1998)
Levels of detection and treatment of mental illness as indicated by trends in antidepressant prescribing	Clinical trials generally underpowered to detect effect of antidepressant prescribing on suicide (Khan, Warner & Brown, 2000)	Some evidence that trends in antidepressant prescribing are associated with reductions in suicide (Isacsson, 2000; Rihmer, Belso & Kalmar, 2001; Rutz, von Knorring & Walinder, 1992)
Changes in availability/ lethality of favoured methods of suicide	Presence of a firearm in the household associated with 5 fold increased risk of suicide in one study (Kellermann, Rivara & Summers, 1992)	For commonly used methods – barbiturates, car exhaust gas and domestic gas changes reduced availability leads to a reduction in suicide (method specific and overall) (Kreitman, 1976; Gunnell, Middleton & Frankel, 2000)

## **1.4 Repetition of Suicide and Suicidal Behaviours**

Repeated suicide attempts are a common problem. Maris (1992) simply suggested that “in order to kill yourself, you must first make an attempt” (p. 362), and data collected from psychological autopsy studies suggest that repetition is a key characteristic of suicidal behaviour (Ovenstone & Kreitman, 1974; Clark & Horton-Deutsch, 1992; Maris, 1992; Isometsä & Lönnquist, 1998). Indeed, some research suggests that previous suicide attempts represent the single strongest risk factor for suicide (Harris & Baraclough, 1997), as it has been estimated that more than 50% of suicide attempters make more than one attempt (e.g. Aldridge, 1992). Furthermore, suicide attempters are also at a high risk of completing suicide as research suggests that between 10% and 15% ultimately die of suicide (Maris, 1992), and it is believed that the risk of repeated behaviours is at its highest during the first year following a suicidal episode (e.g. Hawton & Fagg, 1988).

## **1.5 The Prevention of Suicide**

As is the case for most health behaviours, early intervention is of the utmost importance to the prevention of suicide and suicidal behaviours. However, such prevention can only follow from increased understanding of the behaviour. During the past decade, the prevention of suicide has received unprecedented attention following the publication of both international guidelines as well as UK national targets, and as a result, there have been a number of studies which have specifically evaluated interventions to reduce parasuicide and ultimately the probability of suicide (e.g. Salkovskis, Atha & Storer, 1990; Linehan, Armstrong, Suarez, Allmon & Heard, 1991).

In recent years a number of reviews of the suicide prevention literature have concluded that although suicide prevention strategies are of benefit, there is not sufficient evidence to determine which psychosocial and pharmacological interventions are most useful in dealing with self-harm (e.g. Hawton, Arensman, Townsend, Bremner, Feldman, Goldney, Gunnell, Hazell, Van Heeringen, House, Owens, Sakinofsky & Träskman-Bendz, 1998); however, there is some evidence to suggest that problem-solving interventions may be beneficial to some patient groups (Repper, 1999). For example, research has suggested that suicidal individuals experience cognitive constriction which results in decrements in information processing which consequently affect problem-solving (Hawton & Kirk, 1980; O'Connor & Sheehy, 2000; Sheehy & O'Connor, 2002). Thus, it is possible that by focusing therapeutic efforts on the development of cognitive thinking skills, it is possible to increase the individual's ability to deal with life stresses and thereby decrease the likelihood of suicidal behaviour.

## **1.6 What Does It All Mean?**

The data presented in the above sections testify to the complexity of suicide. The on-going debate over the definition of suicide is a symptom of the multifarious nature of suicide as a whole. Williams (2001) argued that the various factors pertaining to suicide, for example age and gender issues, can potentially be brought about by the same underlying set of causes: "If suicidal behaviour is best seen as a cry of pain – a response to feeling trapped by uncontrollable external circumstances and uncontrollable internal anguish – then different types of people, older or younger, male or female, take action on these feelings at different points in the sequence of events as the trap is perceived to close. Internal or external stresses give

rise to differences in perceived escape potential (i.e. their ability to see a way out). This, in turn, gives rise to stronger or weaker wishes to die” (p. 219).

Similarly, if we view suicidal behaviours in terms of a motivation to escape, rather than focus on issues of intent to die, then completed suicide and non-lethal acts of deliberate self-harm (behaviours which are often perceived to be qualitatively different), can actually be seen to represent different responses to a personal sense of entrapment. Suicidal behaviours are, thus, a ‘cry of pain’ in response to a feeling of entrapment resulting from uncontrollable stresses (e.g. unemployment or relationship problems), or an inability to deal with the emotional distress following such stresses. The aim of the next chapter is, therefore, to describe in detail the different perspectives on suicide, with particular emphasis on psychological models.

## **1.7 Chapter Summary**

The improvement of our understanding of suicide has become a primary target across Britain and in Europe as a whole, and this has led to the development of specific government strategies. Understanding, however, is hampered by the fact that the causes of suicide are complex and multifactorial and, therefore, they vary greatly in their aetiology, pathogenesis and method of expression. Suicide trends are influenced by social factors and patterns of health and healthcare, as well as intra- and interpersonal vulnerability and protective factors. Furthermore, difficulties arise from the inconsistent use of terminology which makes cross-study comparisons difficult, whilst also proving a complication to the practical application of prevention strategies within the community. However, the application of a psychological model of understanding may provide a framework for moving beyond

these factors, by simply conceptualising suicidal behaviour as a 'cry of pain' in response to environmental and psychological stresses.

## **Chapter 2: Theoretical Perspectives and Models of Suicide**

### **2.0 Overview**

O'Connor and Sheehy (2000) argued that our understanding of suicide follows from the acceptance of the biases and limitations arising from the manner in which we approach the subject. This chapter presents suicide in terms of the various theoretical approaches to the subject. Research observations based on sociological, psychiatric and psychological findings are summarised, with particular emphasis on the emergence of integrative biopsychosocial models of suicide. Finally, some of the most influential psychological models are explained and attention is drawn to the utility of understanding suicide in terms of a cry of pain.

### **2.1 Theoretical Perspectives on Suicide**

Theoretical perspectives on suicide are not static, but rather, they change with the development of society and, consequently, suicide has always presented a moral as well as a theoretical problem (Douglas, 1967). Thus, similar to science, suicide is also influenced by non-scientific assumptions which are embedded in changing cultures (Mäkinen, Beskow, Jansson & Oden, 2002). Whether viewed through the eyes of a scientific theory or a cultural entity, we often tend to see our immediate perception of the world as the only possible one. This is also the case for individuals, and suicidal people feel trapped in a hopeless situation created by their own particular set of circumstances.

More than 20 years ago, suicide was characterised as "the most unremittingly studied human behaviour" (Baechler, 1975); however, despite this unrelenting

interest in the study of suicide, there is, as yet, no universally accepted theory of suicide. O'Connor (2003) argued that our understanding of suicide has been hampered by a number of factors including an atheoretical approach to the subject. However, above all, the progress of suicide research has been handicapped by the tendency to view suicide within a biomedical framework whereby "the (suicidal) act defines the illness and the illness defines the act" (p. 2). In recent years there has, therefore, been a call for a move away from viewing suicide within the restricted confines of sociology, psychiatry or biology, and to instead employ a more all encompassing interactional approach (O'Connor, 2003). The object of this chapter is, therefore, to describe the different approaches to suicide as they have varied over time. In particular, focus will be aimed at psychological approaches to suicide.

## **2.2 Observations from Sociology**

The sociological approach to suicide maintains that any attempt to understand suicidal behaviour purely through the investigation of biological, genetic or psychological risk factors is insufficient as these factors will always be influenced by societal forces. Indeed, according to this school of thought any examination of human behaviour cannot simply be investigated through individual drives as it is the outcome of a two-sided process of social interactions between the individual and its surrounding environment (Bille-Brahe, 2002). It is, therefore, important to consider the cultural and social contexts of suicide and in doing so it seems mandatory to describe the work of Emile Durkheim. The relationship between socio-economic factors and suicide has been the subject of much discussion since Durkheim's theory was put forward in the 1890's, and it is still of interest today through its implications for social policy.

### *2.2.1 Emile Durkheim: The Theory of Suicide*

Durkheim (1897) proposed an “integration” theory of suicide in which social integration (i.e. an individual’s acceptance of shared social beliefs and purposes) and social regulation form the basis of a social equilibrium, which, if disrupted, may lead to suicide. Durkheim argued that for each social group in society there exists a specific tendency to suicide which is the result of a collective phenomenon of social causes, and which, therefore, cannot be explained by biological, psychiatric or environmental factors. That is, although suicide is the outcome of individual circumstances, the frequency of suicide within a society can exclusively be explicated through the psychological and moral environment within this society: A human is primarily a social being who is affected by the specific codes of conduct for dealing with problems and pain as specified by the society.

Suicide is thus a social phenomenon which is determined by the moral constitution of a society based on the use of integration and regulation within this society. Causes of suicide should therefore be considered within the context of social environments (e.g. occupational groups). Durkheim maintained that each individual has a certain personality (egoism) which should be sacrificed if required by the community (altruism), and that the individual is sensitive to ideas of social progress (anomie). In general, these currents (egoism, altruism & anomie) coexist in a state of equilibrium which serves as a protector against suicide. However, when this equilibrium is upset and one current exceeds the others, suicide is the end result. In other words, suicide rates are influenced by the extent to which an individual feels part of a larger group (i.e. social integration), and suicide is, therefore, more likely



when an individual's social structure changes or is disrupted as would be the outcome of for example unemployment or divorce.

The forte of a sociological approach to suicide lies in the power of statistical data. Its limitations, on the other hand, arise from the lack of explanatory power; that is, it does not explain why one person might kill him or herself, while another person, in similar circumstances, might not.

### **2.3 Observations from Psychiatry**

The psychiatric approach to suicide rose to prominence at the end of the 19<sup>th</sup> century and the beginning of the 20<sup>th</sup> century, and since then, the association between suicide and a psychiatric diagnosis has been widely investigated. Psychological autopsy studies have demonstrated that a psychiatric illness is present in more than 90% of individuals who commit suicide (e.g. Conwell, Duberstein, Cox, Herrmann, Forbes & Caine, 1996; Foster, Gillespie & McLelland, 1997; Cavanaugh, Owen & Johnstone, 1999; Vijayakumar & Rajkumar, 1999), and as a result, the prevention and treatment of psychiatric disorders is considered to be a vital component of suicide prevention strategies. Table 2.1 summarises the clinical characteristics most often found to be associated with suicidal behaviour.

**Table 2.1 Table of clinical characteristics of suicide (adapted from O'Connor & Sheehy, 2000).**

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<b>Clinical characteristics of suicidal behaviour</b>
Depression
Alcoholism
Substance abuse
Anti-social behaviour
Schizophrenia
Personality disorder
Suicidal ideation
Child Abuse
Previous suicidal attempt

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### *2.3.1 Depression*

It is well-established that psychopathology in general, and depression in specific, increases the risk of suicide. Historically, depression has been highlighted as a significant suicide risk factor, and Maris (1991) reported that a depressive illness is present in as much as two thirds of all suicides. Similarly depression also appears to be an important risk factor for parasuicide.

This emphasis on depression can, to a large degree, be attributed to the 1970 study by Guze and Robins which concluded that 15% of patients presenting with a depressive illness will commit suicide, and a 1990 update by Goodwin and Jamison which suggested that 18.9% of depressed patients would die from suicide. Since then these figures have exploded. Baraclough, Bunch, Nelson and Sainsbury (1974) reviewed a large number of suicides in the UK and concluded that 70% of these suicides had a principal diagnosis of a depressive illness. Similarly, a recent study by Haw, Hawton, Houston & Townsend (2001) found depression to be the most common psychiatric diagnosis (70.7%) in a sample of deliberate self-harm patients; this suggests a comparable psychiatric profile as found in other UK studies of completed suicide (e.g. Foster, Gillespie & McLelland, 1997).

Although research confirms the importance of clinical risk factors in suicide risk, it is now recognised that a psychiatric diagnosis is not a sufficient condition for suicide. Indeed, to identify suicide risk factors it is necessary to look beyond the presence of a major psychiatric diagnosis. Research has thus suggested that the severity of depression, and hence the degree of suicidality, may be driven by specific factors which occur concurrently with the depressive illness. In particular, it

has been suggested that psychological factors such as hopelessness may contribute greatly to the unbearable psychache which is believed to be pervasive in suicidal states (Bostwick, & Pankratz, 2000).

## **2.4 Observations from Psychology**

### *2.4.1 Models of Suicide*

Traditionally models of suicide have been developed within a clinical or sociological framework. However, Shneidman (1996) argued that the suicidal mind can only be understood through the identification of the psychological pain, or psychache, which precipitates suicidal thinking. Shneidman proposed that this unbearable psychache is intensified by unmet psychological needs, and as such there is no single type of suicidal person. As a result Shneidman concluded that suicide cannot be prevented through an understanding of social demographics, brain processes, or mental disorders. Rather it is necessary to identify, and address, the psychological variables relevant to each individual as only through these is it possible to reduce psychache.

According to Shneidman there are 10 common psychological denominators present in no less than 95% of all suicides (see Table 2.2). Central to these psychological factors is the role of cognitions.

Table 2.2 The 10 common psychological denominators of suicide as proposed by Shneidman (1996).

1. The common *purpose* in suicide is to seek a solution
  2. The common *goal* of suicide is cessation of consciousness
  3. The common *stimulus* of suicide is unbearable psychological pain
  4. The common *stressor* in suicide is frustrated psychological needs
  5. The common *emotion* in suicide is hopelessness-helplessness
  6. The common *cognitive state* in suicide is ambivalence
  7. The common *perceptual state* in suicide is constriction
  8. The common *action* in suicide is escape
  9. The common *interpersonal act* in suicide is communication of intention
  10. The common *pattern* in suicide is consistency of lifelong styles
- 

#### 2.4.2 Suicide as a Cry for Help

The notion that attempted suicide is the outcome of a communicative motive i.e. that it is a cry for help, was emphasised in early psychological theories. For example, Stengel (1964) argued that suicide attempters and suicide completers refer to two distinctive populations, and suicidal behaviour serves as a communicative alarm system. Similarly, Shneidman (1996) put forward the argument that the intended outcome of suicidal behaviour is self-preservation rather than self-destruction. Both of these views are comparable to Beck's notion of suicidal behaviour being motivated by either a need for escape or a need for communication.

Maris (1981) incorporated this view into a theory of suicidal behaviour which he termed the "suicidal career". Following on from Kreitman's (1977) postulation that the key functions of suicidal behaviour are communication and manipulation, Maris argued that such suicidal behaviour originates in childhood traumas which are repeated throughout adolescence and adulthood. Accordingly, the suicidal career is a process-oriented theory which specifies that repeated stresses and failures result in

a wish to change personal circumstances (rather than a wish to die). The progress of the suicidal career is consequently determined by the reaction of significant others, and whether a problem is solved permanently or temporarily.

Subsequent research, however, has suggested that most suicide attempts are the result of a need to escape an unbearable psychological state of mind or situation (e.g. Bancroft, Skrimshire & Simkin, 1976). Indeed, more recently, a WHO/EURO multi-centre study on suicidal behaviour, which included data from 14 European Countries (N=1910), suggested that 73% of the respondents felt that their suicidal behaviour was motivated by their situation being unbearable to the extent that alternatives did not seem available, and 66% argued that their thoughts resulted in unbearable psychological pain. Finally, communicative motives, such as asking for help or demonstrating love or despair, were only present in less than a third of these individuals. As a result it has been deemed of more value to conceptualise suicidal behaviour as a 'cry of pain'; that is, a painful situation or state of mind results in a feeling of entrapment which the individual does not feel able to cope with.

#### *2.4.3 Suicide as a Cry of Pain*

Two of the most prominent contemporary psychological models of suicide (Escape from Self Theory, Baumeister, 1990; Cry of Pain Model, Williams, 2001) take as their starting point that suicidal behaviour should be conceptualised as an attempt to escape from negative self-awareness. This idea was first proposed by Baechler (1975) who viewed suicide as a rational process of problem solving. The following sections summarise some of these models.

## 2.5 Psychological Models of Suicide

### 2.5.1 *Escape from Self Theory*

Baumeister (1990) put forward the Escape from Self Theory of suicide in extension to Baechler's suggestion that suicide is a problem solving strategy, with one significant change in that suicidal behaviour is not viewed as the outcome of a rational process of dealing with events. This theory also draws heavily on Self-Awareness Theory which highlights the importance of comparisons made between the self and salient standards (Carver, 1979) According to the Escape from Self Theory suicide is made up of 6 main steps:

**Step 1: Falling short of standards.** Psychological upset is experienced as a result of problematic life circumstances or a belief that expectations of oneself have not been met. In this way, stressful life events lead the individual to believe he/she has fallen short of self- or other-imposed standards; thus, individuals who do hold high standards are not likely to become suicidal in the face of stressful events. The link between stress and suicide is robust: Paykel, Prusoff and Myers (1975) showed that suicidal individuals, when compared to non-suicidal individuals, reported four times as many traumatic life events within a similar timeframe (see also Schotte & Clum, 1982; Motto, Heilbron & Juster, 1985). Furthermore, Rich and Bonner (1987) showed that individuals who were concerned with achieving unrealistically high expectations, reported suicidal behaviour to be a probable future outcome, whilst Ellis and Ratliff (1986) found that suicide patients had slightly higher self-directed expectations than did non suicidal patients. Research on perfectionism has also found that individuals who are concerned with the attainment of unrealistically high standards, and who also report high levels of life stress, were significantly more

depressed prospectively (Hewitt & Dyck, 1986; Flett, Hewitt, Blankstein & Mosher, 1995).

**Step 2: Attributions to the self.** The feeling of falling below standards is exacerbated by negative internal attributions which blame the event on the self. This self-blame has negative implications such as low self-esteem, feelings of worthlessness, as well as rejection. In support of this step, Priester and Clum (1992) found that individuals report significantly more hopelessness, depression and suicide ideation when they attribute negative life events to their own internal, stable level of incompetence.

**Step 3: High self-awareness.** The self is compared to relevant standards and is found to be inadequate leading to high self-awareness of negative traits such as incompetence, unattractiveness and inadequacy. Research in support of this step of the Escape Model comes from analysis of suicide notes which show evidence of a great deal of first-person pronouns and multiple self-references (Henken, 1976). Again, research on perfectionism and self-regulation also corroborate this step: Perfectionism is directly related to suicidality (Blatt, 1995; Adkins & Parker, 1996). Individuals, who are concerned with achieving their own unrealistic standards as well as the perceived standards of others, engage in frequent self-monitoring in order to determine whether there is a discrepancy between their behaviour and the perceived expectations (Hewitt, Flett & Turbull-Donovan, 1992). This form of self-focused attention is sustained as long as the discrepancy is found to be unacceptable (Frost, Marten, Lahart & Rosenblat, 1990).

**Step 4: Negative affect.** This negative self-awareness and comparison results in negative affect, in particular, depression. Evidence for a link between suicide and depression is long-standing. For example, Beck, Brown and Beck (1993) found that suicide ideators reported significantly higher levels of depression and anxiety than did non-ideators (see also Section 2.3.1 of this chapter).

**Step 5: Cognitive deconstruction.** An attempt is made to escape this negative affect through the process of cognitive deconstruction which is a shift in self-awareness from meaningful and integrative thoughts to less meaningful and non-integrative thoughts. This process has itself three components: (i) a time perspective which is focused primarily on the present, (ii) actions are guided by short-term goals and do not take account of long-term goals, and (iii) focus is directed at immediate specific sensations and not on more general emotions (Baumeister, 1990). Dean and Range (1999) argued that hopelessness represents this process of deconstruction as it is characterised by a lack of positive future thinking in response to negative expectations (Baumeister, 1990; Beck, Kovacks & Weissman, 1975). Indeed, hopelessness is now believed to be the primary predictor of suicidal behaviour (see Section 3.3 of Chapter 3). However, deconstruction does not result in escape and, there is, therefore, a perceived need for increasingly more powerful escape means.

**Step 6: Consequences of deconstruction.** Cognitive deconstruction results in inhibition reduction, behaviour passivity, absence of emotions, and irrational cognitions, whereby suicide is more willingly accepted. Suicide is, thus, the result of a process whereby the wish to die follows from a desire to escape self-awareness of self-inadequacies. The consequences of deconstruction are supported by a variety



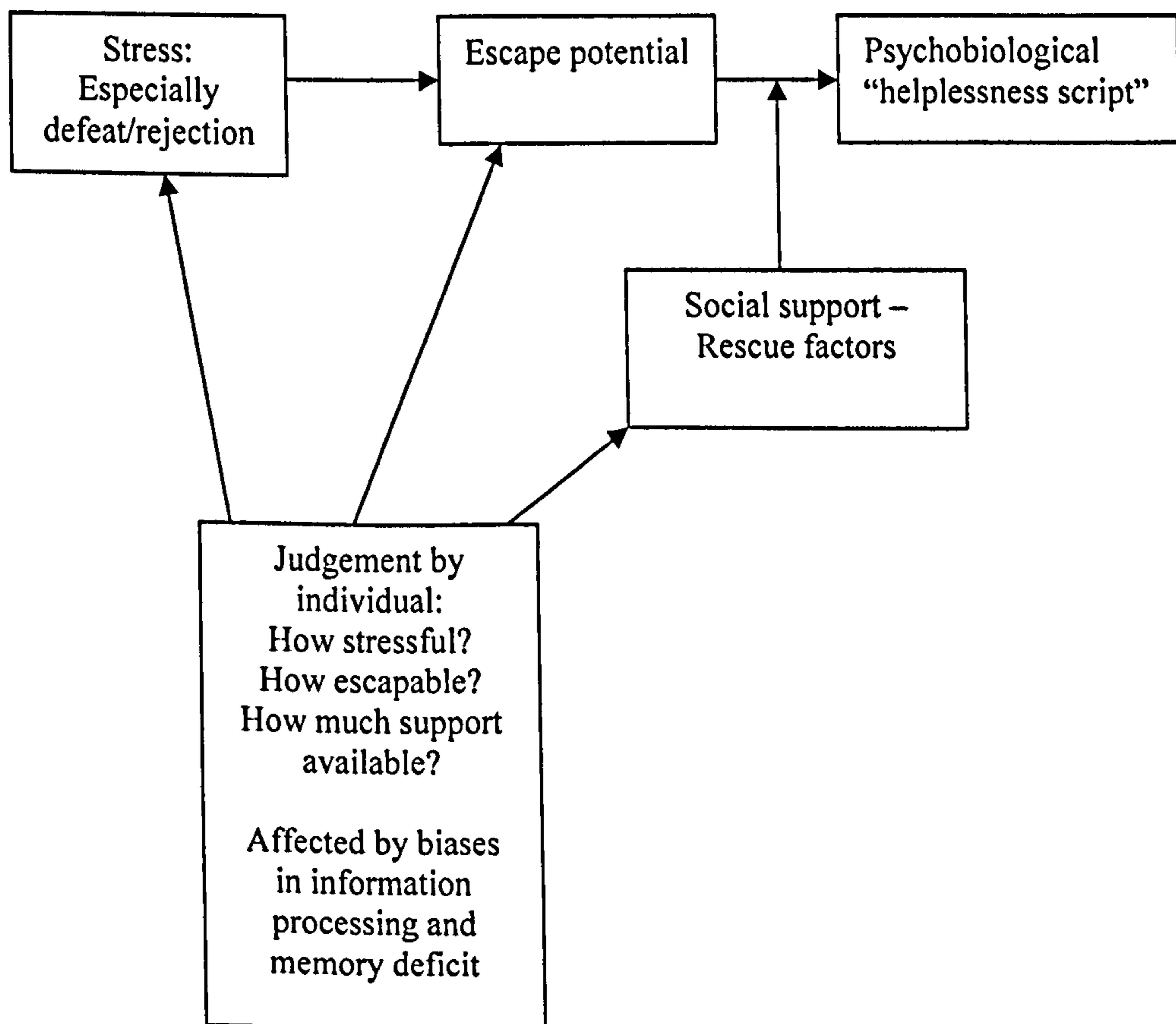
of research. Firstly, research on reasons for living has demonstrated that suicidal individuals report few reasons for living compared to controls, and thus, normal restraints against suicide are weakened (i.e. inhibition reduction; Linehan, Goodstein, Nielsen & Chiles, 1983; Bonner & Rich, 1987, 1988). Secondly, suicidal individuals are more likely to perceive their own role in the behaviour as a passive victim (Counts, 1987). Third, irrational cognitions such as dysfunctional attitudes and cognitive rigidity are often found to be present in suicidal individuals (Bonner & Rich, 1987, 1988). That is, normal means of reasoning are suspended resulting in a reluctance to engage in meaningful thought, a state from which critical evaluation of problems are rendered less effective (Heatherton & Baumeister, 1996) The issue of absence of emotions constitutes the only component which has not received any empirical support; indeed, it is more generally found that suicide is associated with increased affectivity (Dean & Range, 1999).

Thus, according to this model suicidal behaviour is the end stage of a chain of events and decisions which is initiated by the individual's perceptions of failure to meet rigid self-strivings. These negative self-perceptions can lead to painful self-awareness and might give rise to a state of cognitive deconstruction in an attempt to escape the painful cognitions. The state of cognitive deconstruction, which is manifested in constricted temporal focus, cognitive rigidity and rejection of meaning, might instigate irrational thinking leading to a disinhibition of self-destructive tendencies.

### 2.5.2 Cry of Pain Model

The Cry of Pain Model, which was put forward by Williams (1997), suggests that suicidal behaviour (i.e. a cry of pain behaviour) is the result of a combination of circumstances which leads the individual to feel defeated or closed in, with no possibility of escape (see Figure 2.1). These circumstances can either have an external source (e.g. unemployment, relationship problems) or can be internally generated and the resulting response (whether it be non-lethal self-harm or completed suicide) is determined by the degree of defeat experienced as well as the availability of escape possibilities and lack of rescue factors.

Figure 2.1 Model of the activation of the helplessness script (Williams & Pollock, 2001).



Thus, some circumstances may only result in the escape potential being threatened, thereby resulting in a protest reaction (e.g. high levels of activity or anger) rather

than actual suicidal behaviours. Williams and Pollock (2002) argue that this protest behaviour acts as a means of re-establishing escape potentials, whereas more lethal serious attempts or completed suicide represent the cry of pain from a person who feels completely defeated with no evident escape potential. As a result, suicidal behaviours should be thought of as 'reactive' rather than 'communicative' behaviours, and it has been argued that the 'cry for help' component of suicide, which in the past has been a common assumption, should be deemphasised (Williams, 1997).

O'Connor (2003) tested the Cry of Pain model in a sample of suicide patients and matched hospital controls and found support for the role of arrested flight (i.e. defeat and entrapment), as well as the absence of rescue factors (emotional/informational support and positive social interaction), to be of significant importance to the suicidal process. Such research findings highlight the relevance of developing intervention strategies which are directly aimed at modifying individual perceptions of defeat, no escape and no rescue.

### *2.5.3 Diathesis-Stress Models*

Diathesis stress models take as their starting point that a psychological or physical disorder arises from an interaction between a diathesis, which is a predisposition towards an illness, and some form of precipitating environmental stress factor. In other words, diathesis-stress models posit that certain styles of thinking and information processing correspond to a diathesis which in the presence, but not absence, of negative life stress augments the vulnerability to the development of psychological distress such as depression. These models are of particular interest for

suicidology in light of the well-established association between suicidal behaviour and stressful life events (see also Section 3.4.6).

Psychological models of depression presume a very important role for stressful life events (Beck, 1972; Abramson, Seligman & Teasdale, 1978; Abramson, Metalsky & Alloy, 1989): Dysfunctional cognitions are a causal factor in depression and interact with the occurrence of stressful life events to increase negative affectivity. Furthermore, dysfunctional cognitions are implicated in reducing the individual's ability to cope with stressful life events. The hopelessness model of depression also emphasises the interaction between negative life events and attributing negative life events to stable and global causes, and positive events to unstable and specific causes (e.g. Alloy, Reilly Harrington, Fresco, Whitehouse & Zechmeister, 1999; O'Connor, Connery & Cheyne, 2000; Spence, Sheffield & Donovan, 2002).

Similarly, diathesis-stress models of suicidal behaviour propose that cognitive rigidity, or limited divergent thinking, when combined with high levels of stress will result in reduced ability to generate effective solutions which are necessary for successful adaptive coping (Schotte & Clum, 1982). In other words, deficits in interpersonal problem solving skills could predispose the development of hopelessness, depression and suicidal behaviour.

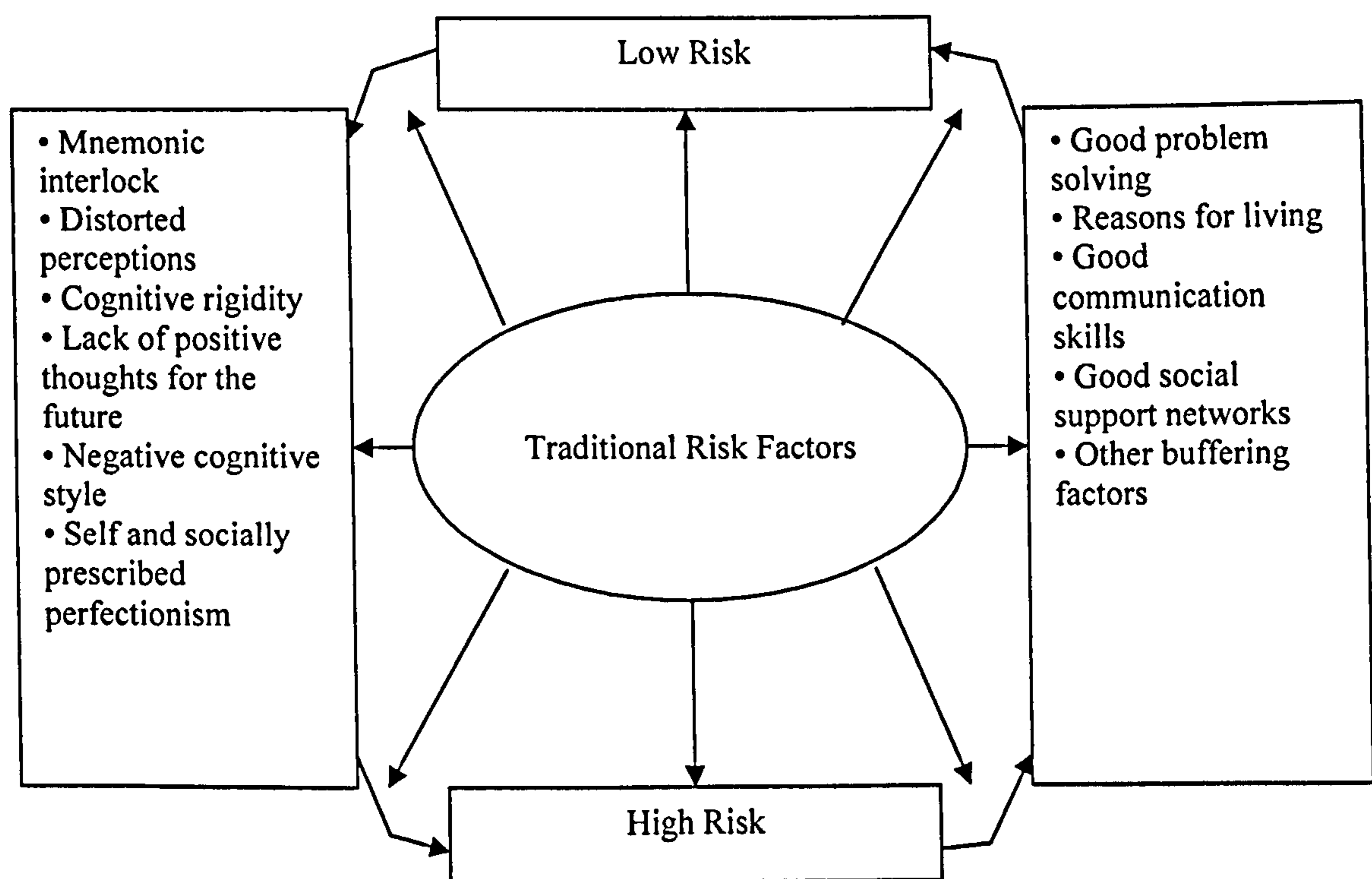
#### *2.5.4 A Psychological Model of Suicide*

Suicide has a complex history in most, if not all, societies. While the majority of people react to problems and stressful situations with the absence of self-destructive behaviours, a small, but significant, group of people do seek solutions to these

problems and stressful events through suicide. As described previously, different disciplines have, over the years, attributed suicide to various factors. In particular, depression has been highlighted as a significant suicide proneness factor. Yet it appears that only a small proportion of individuals suffering from depression resort to suicide. That is, “suicide is not an epiphenomenon of depression” (Maltzberger, 1997) but is an individual act and as such, some of the characteristics and attributes of the person concerned may play a significant precipitating role.

O’Connor and Sheehy (2000) concluded that although the traditional risk factors may be prevalent in suicidal individuals, such factors are not particularly helpful in identifying why some specific individuals may kill themselves while others won’t. Accordingly, it is necessary to consider suicide within a framework which takes into account psychological risk and protection factors (see Figure 2.2). That is, efforts should be directed at investigating the variables which may affect an individual’s ability to deal with stressful life events through their effect on the individual’s cognitions and perceptions, as these are pertinent to the understanding of suicide risk. Above all, psychological research highlights the fact that suicide is not an illness, but should rather be viewed as an action, and consequently, there is value in attempt to identify the chain of causal and triggering variables which renders an individual vulnerable to suicide.

Figure 2.2 A psychological model of suicide behaviour (O'Connor & Sheehy, 2000).



## 2.6 Chapter Summary

From the outset the study of suicide has been confounded by its complicated nature, and there is as yet no universally accepted theory of suicide. Research has traditionally focussed on psychiatric and sociological risk factors; however, more recently psychological research has highlighted the utility of examining psychological risk and protective factors in furthering our understanding of suicide. Although there are a number of psychological models, there appears to be some common ground emerging from these differing frameworks. In particular, psychology has drawn attention to the personal ramifications of stressful life events, e.g. constriction in thinking which results in a sense of entrapment. However, above all, psychological research has highlighted the fact that suicide is not an illness, but should rather be viewed as an action; and consequently, there is value in attempt to identify the chain of causal and triggering variables which renders an individual vulnerable to suicide.

## **Chapter 3: A Psychological Approach to Suicidal Behaviour and Psychological Distress**

### **3.0 Overview**

Despite the prevalence of suicide, relatively little is known about the characteristics of suicidal thoughts. Psychological research on suicidal thinking and behaviour emphasises the role of psychological variables in increasing maladaptive responses to stressful events. By examining cognitive and personality aspects of suicide, it is hoped that we can elucidate the psychological mechanisms which underlie suicidal behaviour, and by such means we can aid the development of treatment protocols.

### **3.1 The Suicidal Mind**

Much research effort has been aimed at identifying individuals who are at risk of suicide; however, much of this research is weakened by a lack of theoretical underpinning (O'Connor, 2003). The previous chapter provided a summary of some of the theoretical perspectives on suicide, as well as some influential psychological models of suicide. The Escape from Self Theory (Baumeister, 1990) and Cry of Pain model (Williams, 1997), two influential psychological models, both regard suicidal behaviour as a 'reactive' behaviour primarily, rather than a 'communicative' behaviour. On the basis of these psychological models, this chapter will review the research on a variety of the psychological mechanisms which, according to these models, may contribute to suicidal behaviour. Thus, there is an emphasis on "triggering" factors which set the condition for suicidal acts, rather than the consequences of these acts.

### **3.2 The Biomedical Model vs. the Biopsychosocial Model of Suicide**

Traditionally, suicide has been considered within a biomedical framework whereby causal risk factors and variable markers for suicide included psychiatric diagnoses such as schizophrenia and depression (Caldwell & Gottesman, 1990). Thus, this model is built upon the premise that suicide is caused by biological factors (i.e. individuals have a biological predisposition for schizophrenia and depression), and therefore, does not acknowledge a link between mind and body, i.e. it is an exclusively reductionist approach to understanding human behaviour.

However, more recently, psychological research has emphasised that “only a small proportion of individuals with major psychopathology take their own lives” (Conner, Duberstein, Conwell, Seidlitz & Caine, 2001). Indeed, O’Connor, Sheehy and O’Connor (1999) concluded that less than 15% of completed suicides met the category of ‘psychiatric’ suicide. That is, although psychiatric diagnosis very often precedes suicide, this factor on its own does not explain or clarify very much, and it has, therefore, been argued that the application of a biomedical framework to the understanding of suicidal behaviour leads to “a restriction of focus” (O’Connor, 2003, p. 298). As a result, any progress within the area of suicide research, be it prevention or treatment, will only develop from the identification of additional risk factors as included in the biopsychosocial framework, whilst keeping in mind that psychiatric illness and psychological vulnerabilities are not necessarily mutually exclusive.

Psychological research (e.g. Townsend, Hawton, Altman, Arensman, Gunnell, Hazell, House & van Heeringen, 2001) prioritises the development of successful



prevention strategies, and, as a result, effort has been directed at discovering why people are at risk from taking their own lives. Such research is based on the idea that if the prediction of suicide is difficult, then it follows that prevention is even more problematic, and therefore, the identification of risk factors must be the primary aim (Eagles, Klein, Gray, Dewar & Alexander, 2001). However, suicide is a complex act of human behaviour which is multifactorial (See Section 1.6).

Engel (1980) in his paper “The Clinical Application of the Biopsychosocial Model” argued that the biomedical model does not make provision for the human being as a whole and therefore does not allow for psychological or social factors. With the introduction of a more encompassing biopsychosocial framework for understanding human behaviour, there has been a change in focus away from psychiatric factors and on to more psychological or individual differences variables, which has led to the identification of a number of factors which can be seen to account for additional variance in suicide ideation beyond clinical factors. Of these, research has focused on hopelessness (e.g. Cole, 1988) and depression (e.g. Ranieri, Steer, Lawrence, Rissmiller, Piper & Beck, 1987), although a number of other psychological factors have also been put forward. A summary table outlining psychological factors of relevance to suicidal behaviour is shown in Table 3.1.

Table 3.1 Summary table outlining psychological variables of relevance to suicide risk.

Variable	Reference
Anxiety	e.g. Weisman, Klerman, Markowitz & Quelette (1989)
Behaviour inhibition/activation (Motivation)	e.g. O'Connor & Forgan (2004)
Cognitive rigidity	e.g. Schotte & Clum (1982)
Coping strategies	e.g. Carver, Scheier & Weintraub (1989)
Lack of positive future thinking	e.g. MacLeod, Rose & Williams (1993)
Negative life stress	e.g. Paykel (1976)
Over-general memory biases	e.g. Williams & Broadbent (1986)
Perfectionistic tendencies	e.g. Hewitt & Flett (1996)
Problem solving appraisal	e.g. Sadowski & Kelley (1993)
Social support	e.g. D'Attilio, Campbell, Lubold, Jacobson & Richard (1992)

Although there is no single overarching psychological predictor, several factors have commonly been associated with suicidal behaviour. This chapter reviews the research on these factors and divides them into two categories: cognitive vulnerabilities and personality factors. This distinction is made on the premise that it is possible for personality traits to have a cognitive component; however, cognitive vulnerabilities are not necessarily personality variables. Although psychological research has highlighted a number of cognitive vulnerability factors, the emphasis of this thesis is on testing an integrative psychological model of suicidality and psychological distress, with particular emphasis on the relationship between perfectionism (personality trait) and autobiographical memory recall (cognitive vulnerability). Although we acknowledge that there are a large number of personality and cognitive factors which are important to suicide and psychological distress, below follows a summary of the variables included in our research only.

### 3.3 Cognitive Vulnerabilities

There is much theoretical support for the link between cognitive functioning, i.e. the way an individual perceives, interprets and reacts to their environment, and suicidal thoughts and behaviour across the life span. One of the most influential theories,

which has laid the foundation for subsequent cognitive research, is Beck's Cognitive Theory of Depression (Beck, 1967). According to this theory negative automatic thoughts, which are the outcome of dysfunctional beliefs, play a causal role in the prediction of depression.

Although there is wide support for the role of depression in suicidal behaviour, current research is now emphasising the role of particular "suicidogenic" aspects of depression, rather than depression per se. This shift to more specific "suicidogenic" elements of depression stems from the fact that a majority of depressed individuals do not engage in suicidal behaviour, nor do all suicide ideators and attempters have a depressive disorder (Neimeyer, 1983; Shneidman, 1985; Leenaars, 1996). In particular, recent studies have highlighted the feeling of hopelessness, which is often associated with depression, as a significant indicator of both current suicide intent and future suicide behaviour (Dixon, Rumford, Heppner & Lips, 1992; Hunter & O'Connor, 2003). Beck, Steer, Kovacs and Garrison (1985) demonstrated a strong relationship between hopelessness and suicidal intent, and more importantly, also found that a high score on the hopelessness scale predicted 91% of eventual suicides. Furthermore, in another prospective study, Blumenthal (1990), assessed suicide attempters and non-attempters at two intervals 10 years apart, he found that not only was hopelessness higher in suicide attempters at time 1, but 91% of suicidal thinking reported at the follow-up study was predicted by the degree of hopelessness and pessimism reported. Thus, it would appear that hopelessness is an important mediator between depression and suicide.

### *3.3.1 Definition of Hopelessness*

Hopelessness is defined as a lowered expectation of achieving certain goals and a reduced belief in the likelihood of success (Melges & Bowlby, 1969), which can be accompanied by feelings of personal futility, loss of motivation, and the belief that the future will result in continued failure and negative personal consequences (Beck, Weissman, Lester & Trexler, 1974). Hopelessness, can therefore, be described in terms of a system of cognitive schemata which share the common element of negative expectations regarding the world, the self, and the future. That is, the hopeless individual displays a lack of expectation that good things will occur in the future, whilst also believing that nothing can be done to change this.

The hopelessness theory of depression, which was proposed by Abramson, Metalsky and Alloy (1989), is a cognitive diathesis-stress theory which posits that a depressogenic attributional style, when combined with a negative stressor, can result in depression. More specifically, this model posits that such inferential styles, or habitual ways of thinking about causes and meanings of events, relate to the self, and they have consequences and causes: (i) the individual will infer negative characteristics about oneself from the occurrence of negative life events, (ii) the individual will assume that negative consequences will always follow the occurrence of negative life events, and (iii) the individual will attribute negative events to stable and global causes. However, depression is viewed along a continuum of severity, and the level of depression experienced is determined by the acuteness of the stressor and the ensuing hopelessness.

Hope has been emphasised as a protective factor against suicide, and therefore, its absence may lead to the view that suicide is an acceptable escape; a finding which is applicable to both adolescents and adults (Berman & Jobes, 1994; Stoelb & Chiriboga, 1998). Consequently, if it is accepted that hope is central to life then it can be assumed that an individual who is experiencing a state of constant hopelessness would be under threat of suicide.

### *3.3.2 Hopelessness and Problem Solving*

The role of problem-solving in psychological distress has been investigated since the 1960's. For example, Neuringer (1961, 1967, 1968) carried out research into the cognitive style of dichotomous thinking (i.e. the tendency of thinking in all-or-nothing terms), and found that suicide attempters are more dichotomous in their thinking than psychosomatic patients and normal patients. Moreover, these studies reported that suicidal individuals are also more rigid and extreme in their way of thinking. This finding has been repeatedly endorsed by other research which has suggested that suicidal individuals are not only more rigid and inflexible when compared to controls, but they are also less able to modify their problem-solving strategies as a consequence of this rigidity (Levenson & Neuringer, 1971; Patsiokas, Clum & Luscumb, 1979).

The pioneering work on the cognitive organisation of suicidal individuals carried out by Shneidman, Neuringer and Beck, has led to further clinical research focusing on the role of cognitive deficits in the impediment of active problem solving. Schneider (1985) elaborated on this research by his suggestion that individuals who feel hopeless experience difficulty in being concrete or specific in their formulation

of plans as well as in their generation of alternative problem-solving methods. In keeping with this research, it has also been found that suicidal individuals also display more passive and dependent problem-solving approaches, which result in less versatile and less relevant solutions (Linehan, Camper, Chiles, Strosahl & Shearin, 1987; Orbach, Bar-Joseph & Dror, 1990; Rotherum-Borus, Trautman, Dopkins & Shrout, 1990; Marx, Williams & Claridge, 1992). In other words, suicide is viewed as a solution rather than a problem.

### *3.3.3 Autobiographical Memory*

The suicide literature has long acknowledged the role of poor problem-solving skills in increasing suicide risk (e.g. Schotte & Clum, 1982; Pollock & Williams, 2004). In particular, through the development of the “cry of pain” model of suicide, it has been suggested that problem-solving difficulties have their effect through the accompanying feeling of ‘no escape’ from either the individual’s circumstances or their own thoughts and feelings (Williams, 1997).

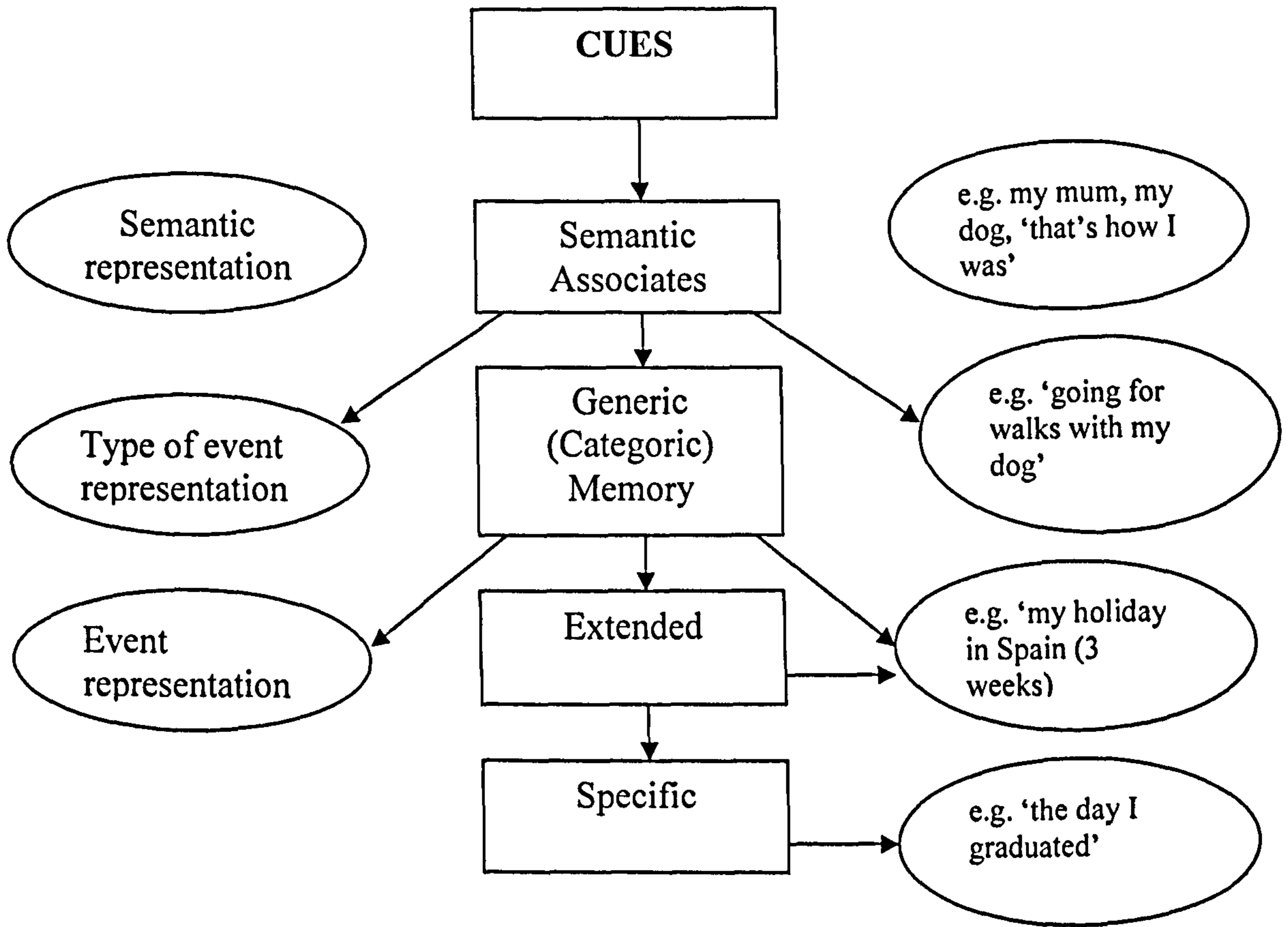
Over the past two decades considerable research effort has been aimed at understanding the impact of emotions on cognitions, with particular emphasis on the role of memory. Within this area, a body of research has been accumulated which suggests that mood and memory may affect a number of behaviours and judgement processes including decision-making and coping. The clinical and theoretical relevance of developing our understanding of the role of memories in psychological distress has been made exceptionally potent by research carried out on autobiographical memories, and in particular by the seminal work by Williams and Broadbent (1986).

### *3.3.4 Defining Autobiographical Memory*

In simple terms autobiographical memories are memories which pertain to personal experiences; however, there are a wide variety of terms and definitions used in the literature. Rubin (1996) defined autobiographical memories as recollections of personal events which incorporate mental imagery, verbal description and emotional valence, whilst Park, Goodyer & Teasdale (2002) defined autobiographical memories as “episodic, event memories of personal salience, which are not part of generic script or generic memory for personal facts, but which form an individual’s autobiography, their personal narrative”. Within this definition it is possible to identify 3 levels of knowledge specificity: (i) lifetime periods, (ii) general events, and (iii) event-specific knowledge (Conway, 1996; Conway & Pleydell-Pearce, 2000; Haque & Conway, 2001). Lifetime periods represent knowledge about extended periods of time and contain information about general goals, individuals common to that period, as well as frequent activities and locations. General events refer to knowledge which is related to specific experiences and extended or repeated experiences. Finally, event-specific knowledge can be conceived of as summary sensory-perceptual knowledge of a single specific event (Haque & Conway, 2001).

This differentiation is similar to one made by Williams & Dritschel (1992, see Figure 3.1), in which a distinction is made between generic, extended, and specific memories. They described the difference in terms of general memories being either categoric, in that they describe multiple occurrences of an event, or extended, in terms of extended time lines. In contrast, a specific memory represents a highly detailed reconstruction of an experience which takes place within the space of one day.

Figure 3.1 The distinction between generic, extended, and specific memory recall (Williams & Dritschel, 1992)

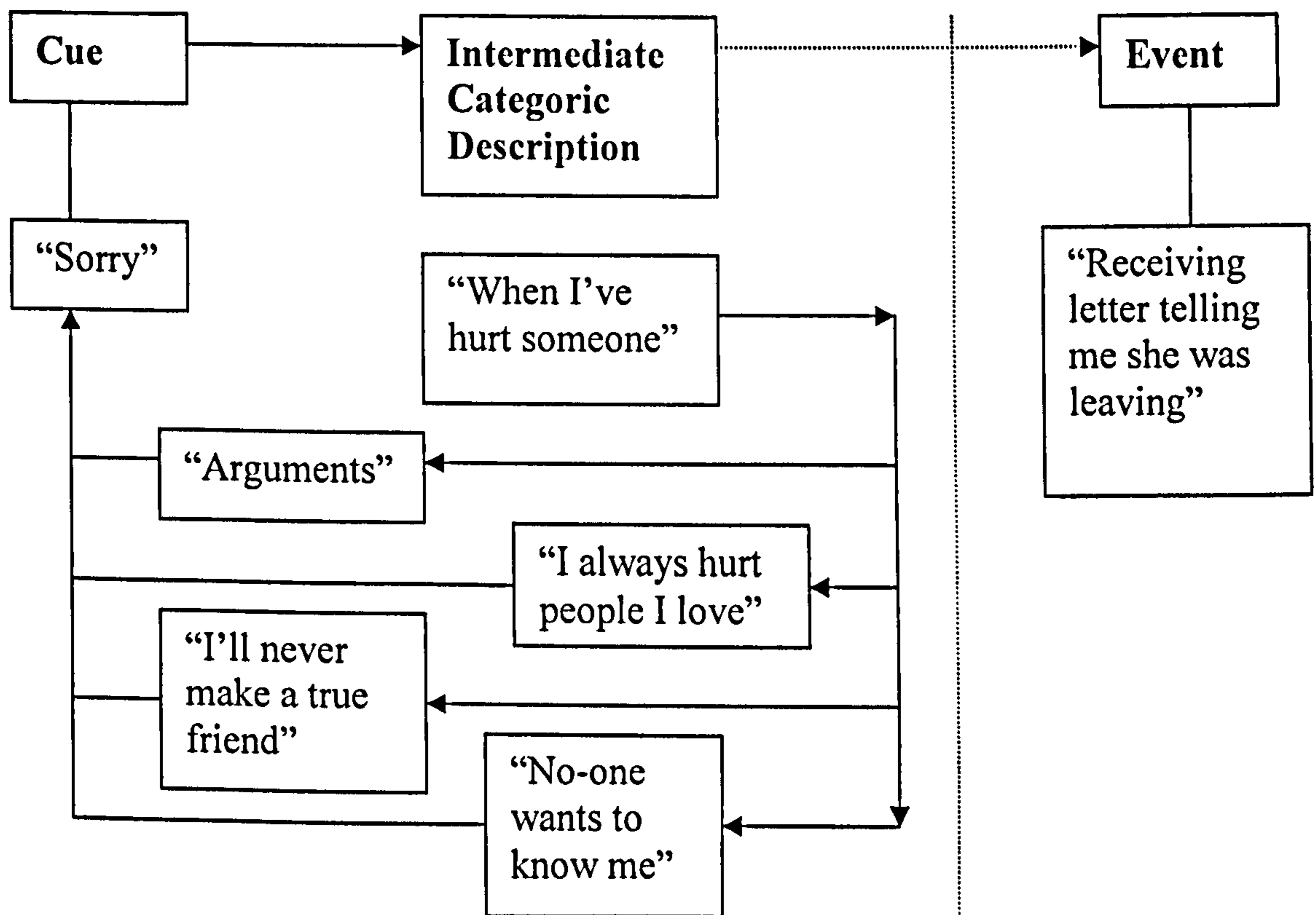


Williams (1996) put forward the Hierarchical Memory Theory, which proposes that access to a specific memory depends on (a) adequate encoding of the material, and (b) retrieval not being aborted before a specific memory is accessed. In this way, Williams suggests that since mood disturbance is characterised by preoccupation or rumination concerning negative events, extra cognitive capacity is invested in such ruminative thought. As a result, memory searches become curtailed in general memory hierarchies as the supervisory attention ability is suppressed, and the individual is unable to access specific memories and is “caught” in retrieving general memories, a process which has been termed the “mnemonic interlock” (Figure 3.2). This concept can be related to recent theories of depression which



highlight the individual's perpetual self-focused attention on negative emotional states (Goddard, Dritschel & Burton, 1996).

Figure 3.2 The mnemonic interlock (Williams, 1996).



Over-general memory is, therefore, the result of an incomplete search whereby intermediate mnemonic descriptions begin to cue other intermediate descriptions rather than more specific events. Consequently, in order to achieve successful retrieval of specific memories, it is necessary to inhibit the descriptive process and allow more contextual (time and place) information to be introduced (Williams, 1996). Thus, a descriptions framework takes as its starting point that the individual is able to influence the amount of specificity of a memory to be retrieved.

### *3.3.5 The Role of Autobiographical Memories in Psychological Distress*

The importance of studying autobiographical memories has been highlighted for a number of reasons: (i) it has been established that an inability to retrieve specific autobiographical memories from the past is an important factor in a number of emotional disorders (See Table 3.2; e.g. Dalgleish et al., 2001), (ii) assessment of coping strategies rely on conscious recollection of past events (e.g. Harvey et al., 1998), and finally (iii) research into the successful treatment of psychological disorders has shown that planning of behaviour change is informed by knowledge of cognitive characteristics (e.g. Salkovskis, Atha, Storer, 1990).

Research involving various clinical and non-clinical populations has demonstrated that mood may influence cognitions in that individuals appear to have mood-determined biases in autobiographical memory recall. In other words, there is a tendency to stop the retrieval of autobiographical memories at an early stage of general processing before retrieving specific instances. Psychological research indicates that impairment in the ability to recall specific autobiographical memories is a clinically significant phenomenon (Henderson, Hargreaves, Gregory & Williams, 2002). Such research has demonstrated that over-general memory is associated with less adequate functioning, social problem solving deficits, persistence of mental health problems, as well as increased hopelessness and difficulties in specific future directed thinking. Indeed, this problem may also result in reduced effectiveness of e.g. cognitive therapy, as this process requires a patient to generate specific memories about themselves.

Whilst conducting research on mood-congruent memory, Williams and colleagues noticed that depressed individuals exhibited difficulties in retrieving specific personal memories, and consequently Williams & Broadbent (1986) developed a cue-word paradigm to investigate any biasing which occurs in the retrieval of personal memories for suicidal individuals. Based on earlier research by Robinson (1976) and Bekerian (1985), 10 negative and positive emotional words were selected to cue appropriately valent memories. The results revealed that suicide attempters were (i) more emotionally disturbed, (ii) more hopeless, and (iii) showed a bias in the speed of retrieval of positive memories, than were controls. What is more, they found that despite these patients having more negative events in their life in the recent past than controls, they were not quicker than controls at retrieving memories in response to negative words as might have been expected; rather they were slower at retrieving memories in response to positive cue words. Thus, the memory biasing effect was solely attributable to a delay in the retrieval of positive autobiographical memories. Subsequent studies have found that such a difficulty in responding with specific memories is a reliable phenomenon, which cannot just be attributed to lower intelligence or poor task motivation (Williams & Dritschel, 1988).

### *3.3.6 Autobiographical Memory and Depression*

This over-general memory phenomenon has subsequently been replicated many times, and within a number of different subgroups (see Table 3.2 for a summary of participant groups).

Table 3.2 Summary table of psychiatric disorders linked to over-general memory recall.

Psychiatric Disorder	Author
Eating Disorder	e.g. Dalgleish, Tchnturia, Serpell, Hems, Yiend, de Silva & Treasure (2001)
Borderline Personality Disorder	e.g. Jones, Heard, Startup, Swales, Williams & Jones (1999)
Acute Stress Disorder	e.g. Harvey, Bryant & Dang (1998)
Paranoid Delusions	e.g. Kaney, Bowen-Jones & Bentall (1999)
Post-traumatic Stress Disorder	e.g. MacLeod, Williams & Linehan (1992)
Obsessive-Compulsive Disorder	e.g. Wilhelm, McNally, Baer & Florin (1997)
Seasonal Affective Disorder	e.g. Dalgleish, Spinks, Yiend & Kuyken (2001)

However, whilst it would appear that the autobiographical memory phenomenon is present in many types of psychiatric disorders, there is evidence to suggest that these links may be explained via the comorbidity of an underlying depressive disorder (De Decker, Hermans, Raes & Eelen, 2003). Consequently, much research in this area has been carried out using depressed individuals, and this provides strong support for the notion that depressed individuals have difficulties moving fluently through the memory hierarchy (as described in Figure 3.2), which would allow them to utilise the appropriate level of specificity necessary for a given situation.

A plethora of studies show that depressed individuals retrieve more general (and therefore less specific) memories in response to emotional cue words, than do matched controls (e.g. Williams & Dritschel, 1988; Williams & Scott, 1988; Moore, Watts & Williams, 1988; Puffet, Jehin-Marchot, Timsit-Berthier & Timsit, 1991; Kuyken & Dalgleish, 1995). Indeed, it has been suggested that over-general memory is a key contributor to the persistence of depression through its link to

deficits in interpersonal problem-solving (Brittlebank, Scott, Williams & Ferrier, 1993) and problems imagining the future in a specific manner (Williams, Ellis, Tyers, Healy, Rose & MacLeod, 1996).

Marx, Williams and Claridge (1992) argued that over-general memory results in impaired problem-solving as the individual is unable to recall previous successful problem solutions, and consequently, recovery from depression is delayed. However, autobiographical memory deficits not only affect problem-solving through the accessibility to previous problem solutions, but also affect the process of establishing positive future thoughts. It has been suggested that this similarity is due to the same intermediate descriptions being used to generate images of the future, as are used for past memories (Williams, Ellis, Tyers, Healy, Rose and MacLeod, 1996). In other words, the construction of specific images of the future requires access to specific event representations from memory.

### *3.3.7 Positive or Negative Memories?*

One aspect of the autobiographical memory literature which remains open to debate is the issue of word cue valence. That is, it is clear that there is a relationship between over-generality of memory recall and psychological distress/suicidality; however, what is not clear is the extent to which it is negative or positive memories which cause this effect.

Initially research suggested that the memory deficits were most pronounced in response to positive cue words (e.g. Williams & Broadbent, 1986; Williams & Scott, 1988; McNally et al., 1994); however, evidence from later studies has been

somewhat contradictory. For example, Jones et al. (1999) and Mackinger et al. (2000) observed that participants produced less specific memories in response to negative cue words than positive and neutral cue words. Finally, another series of studies has found that the cue word valence has no effect on the level of specificity (McNally et al., 1995; Goddard et al., 1996). These inconsistencies are also evidenced in studies which have investigated response latency: some studies have found that patients take longer to respond to positive cue words than negative cue words (e.g. Williams & Scott, 1988), whereas other studies have found there to be no noticeable difference in latency in response to negative and positive cue words (Kuyken & Dalgleish, 1995; Scott, Stanton, Garland & Ferrier, 2000). It can therefore be concluded that the deficit is general rather than mood-congruent (Barnhofer, Kuehn & Jong-Meyer, 2005). That said, although the emotional valence for autobiographical memory recall appears to be mixed across studies with different patient groups, research interested in suicidal patients, specifically, tends to suggest a problem with positive rather than negative emotions (e.g. Williams & Broadbent, 1986).

Van Vreeswijk & de Wilde (2004), in a meta-analysis of the autobiographical memory literature, argued that one should not consider the outcome of these studies without considering the possibility that the varying results may be the outcome of procedural differences (e.g. different cues, different cue word presentation, and different methods of memory response recording). Furthermore, findings are limited in as far as they do not take into account emotionality during the time of testing.

### *3.3.8 The Origins of the Autobiographical Memory Phenomenon*

Research targeted at determining the source of the mnemonic interlock thus suggests that emotionally disturbed individuals abort more specific searches due to the search process being too laborious compared to the more simple working memory function. Alternatively, it is possible that the individual avoids more specific memories as they only cause more emotional upset (Williams & Dritschel, 1992). On the basis of this idea, Williams (1996) proposed the affect-regulation hypothesis which states that over-general memory recall is a coping mechanism for dealing with negative childhood events: in an effort to avoid negative affect, which results from these painful childhood memories, the individual produces over-general (i.e. non-specific) memories as part of a cognitive avoidance strategy (Hermans & De Decker, 2001). In this way, over-general memory retrieval, which initially starts off as passive avoidance, encourages a ruminative self-focus.

Williams, Stiles and Shapiro (1999) elaborated on the idea that over-general memory is a cognitive avoidance strategy by placing it within the assimilation model of emotional processing. According to this model, over-general memory is adopted as a defensive mechanism against memories from the past; however, this strategy is detrimental to successful assimilation of the memory. As a result, this unprocessed material, which has yet to be assimilated into existing schemata, results in intrusive memories. In other words, because an event has not been completely encoded as a “situational” memory (Brewin, 1989), and, therefore, is not a verbally based schemata, it is not possible to recall the memory with verbally based mnemonics. Consequently, retrieval attempts will result in either complete failure, or partial recall based on behavioural or physiological reactions to the event.

However, irrespective of whether the memory isn't recalled at all or just partially, fragments of the event will occur and "unassimilated events act as uncompleted intentions, and the adoptive "reminding" function of prospective memory becomes a maladaptive "intrusion"" (Williams et al., 1999, p. 295).

### *3.3.9 Over-general Memory: State or Trait?*

Early studies based on the findings of psychotherapy suggest that the specificity of recall affects the rate of progress in overcoming emotional problems. For example, Traux & Carkhuff (1967) found that in a sample of hospitalised individuals, the better the patients were at describing their current feelings and life situation in a concrete and specific manner, the more likely the person was to make progress in therapy. The importance of understanding the effect of autobiographical memories has, thus, been long recognised on the basis that an autobiographical memory deficit can result in reduced effectiveness of, for example, cognitive therapy, as the ability to produce specific memories about oneself is central to the therapeutic process.

By considering autobiographical memory within the assimilation framework, it is possible to challenge the assumption that autobiographical memory is a stable trait. Past research has tended to support the notion that over-general memory is a relatively stable process which is not influenced by changes in mood or pharmacological interventions (Watkins, Williams & Teasdale, 2000a). That is, the tendency to be over-general might be the outcome of a premorbid failure to encode memories at a specific level. Such conclusions are the outcome of research from, for example, Williams and Dritschel (1988), who found that suicidal behaviour was associated with reduced recall of specific autobiographical memories; however, this



lack of specificity persisted after recovery from emotional disturbance. Brittlebank, Scott, Williams & Ferrier (1993) studied autobiographical memory recall in depressed individuals over a 7 month period. They found that over-general memory recall at time 1 accounted for 33% of the variance in depression as experienced seven months later. This result led them to conclude that over-generality is a trait marker which can be viewed as a stable indication of a specific cognitive style which is potentially irreversible. Similarly, as mentioned in Section 3.3.8, there has been some suggestion that this over-general memory phenomenon is the outcome of a developmental process starting in childhood which renders the individual vulnerable to later psychological distress, thereby, resulting in a relatively stable cognitive style which is resistant to change.

However, recently, two studies have questioned this assumption. Watkins, Teasdale & Williams (2000) found that over-general memory responses could be eliminated by brief targeted treatment interventions. They found that autobiographical memory deficits are not constant, but are open to cognitive manipulations. Furthermore, Williams, Teasdale, Segal & Soulsby (2000) investigated the effect of mindfulness-based cognitive therapy on autobiographical memory recall. This therapy addresses the avoidant cognitive style which results in the memory search being aborted too early, by encouraging the individual to allow more specific memories to be both encoded and retrieved. It was found that through training it is possible to reduce the over-generality of memories. Although the data generated in this study is preliminary, the possibility that it is feasible to change autobiographical memory retrieval has immense clinical importance. That is, if over-general memory recall is a causal factor in e.g. inter-personal problem solving difficulties, then it is possible

to modify these problem-solving strategies by training the individual to encode and retrieve more specifically.

Consequently, if it is accepted that autobiographical memory is relevant to both problem-solving skills and persistence of depression, then research suggesting that it is possible to modify these memories could have important consequences for clinical practice through the inclusion of an intervention component aimed at reducing such over-general memory.

### **3.4 Personality Factors**

Although a majority of completed suicides occur within the context of a psychiatric disorder, most individuals with a psychiatric disorder are not suicidal (e.g. Barraclough, Bunch, Nelson & Sainsbury, 1974; Foster, Gillespie & McClelland, 1997). Similarly, a large proportion of individuals who report experiencing suicide ideation, do not meet the criteria for a psychiatric disorder (Ahrens, Linden, Zaske & Berzewski, 2000). As a result, it is necessary to investigate additional factors which may elucidate which individuals are at risk. One particular focus of interest has been the role of dispositional personality factors (Levenson & Neuringer, 1971; Goldney, 1982; Rich & Bonner, 1987; Goldsmith, Fyer & Francis, 1990. This line of research is important as treatment approaches which are developed specifically to treat suicidal individuals can benefit from the identification of specific personality characteristics which may render an individual vulnerable to suicide (Chioqueta & Stiles, 2005).

A continuing theme in psychological research is the identification and clarification of the role played by personality factors in rendering individuals vulnerable to various psychological and health problems including suicide (Grucza, Przybeck & Cloninger, 2005), and it is now generally accepted that personality is an important determinant of both health and psychological well-being and distress (Contrada, Leventhal & O'Leary, 1990). On this basis, theoretical and empirical interest in the personality construct of perfectionism has proliferated with the realisation that it plays an important role not only in the aetiology, but also in the maintenance, of a variety of psychological and health problems.

In particular, there has been an ever-growing interest in the debilitating nature of perfectionism which highlights the importance of the concept. Research on perfectionism is important because it, not only, has been shown to have clinical relevance to psychological disorders such as depression and anxiety (Hewitt & Flett, 2002), but it can also have a detrimental impact on the clinical assessment process (Habke, 1997), as well as the application of psychological treatments (Blatt, 1995; Hewitt, Flynn, Mikail & Flett, 2001). Therefore, the aim of the remainder of this chapter is to describe some of the personality characteristics which have been emphasised as important in the understanding of suicide, with particular emphasis on the role of perfectionism.

#### *3.4.1 The History of Perfectionism*

Although the scientific investigation of perfectionism did not commence until the 1980's, perfectionism as a psychological phenomenon is long established. Early perfectionism research was very much anecdotal in its nature as it was based almost

exclusively on the thinking of theorists, as well as clinicians, who viewed the construct as, at the very least, problematic, and most possibly also pathological (e.g. Horney, 1950; Adler, 1956; Hollender, 1965; Hamachek, 1978). The idea that perfectionism may have serious psychological consequences was first highlighted by Horney (1950) who described perfectionism as “the tyranny of the shoulds”. Similarly, Pacht’s (1984) later description of perfectionism as insidious, cemented the traditional view of perfectionism as inherently negative. Currently, however, research supports a multidimensional model of perfectionism and suggests that the high standards associated with perfectionism are not necessarily excessive or pathological (e.g. Slaney, Ashby & Trippi, 1995; Terry-Short, Owens, Slade & Dewey, 1995; Slade & Owens, 1998).

### *3.4.2 Defining Perfectionism*

Although contemporary research on perfectionism highlights the multifaceted nature of the construct, there has always been, and still is, disagreement concerning the characterisation of the relevant components. Indeed, despite the realisation that perfectionism is a debilitating problem which is linked to a wide variety of psychological and physical disorders, and therefore is an important construct which merits considerable psychological interest, research has been hampered by the lack of a clear and agreed upon definition and method of measurement.

Most definitions take as their starting point “the imposition of excessively high personal standards of performance” (Hart, Gilner, Handal & Gfeller, 1998). However, such a definition has been found to be too simplistic and does not account

for the divergent outcomes of perfectionists in terms of the presence or absence of pathology. Thus, central to such a definition is the assumption that the setting and striving for high standards is in itself pathological, and therefore, does not allow for the possibility that perfectionism may have some positive or buffering properties as suggested by O'Connor and colleagues (O'Connor & O'Connor, 2003; Hunter & O'Connor, 2003).

Consequently, research on perfectionism has evolved from an initial proposal of it being a one-dimensional construct (Weisman & Beck, 1978; Burns, 1980; Garner, Olmstead & Polivy, 1983). Such a unidimensional definition emphasised the negative and self-defeating aspects of the construct by primarily concentrating on excessively high standards of performance (Hollender, 1965; Pacht, 1984). In this way the perfectionist was viewed as cognitively dysfunctional (Beck, 1976) and as appraising their own performance by way of an "all-or-none" style of thinking and over-generalisation (Kutlesa & Arthur, 2001), and thus, an underlying assumption of such a definition was that these excessively high standards could never be satisfactorily met. In this way, perfectionism was only perceived to include self-definitional issues and did not take account of interpersonal issues.

As a result, doubt was cast upon this definition on the basis that clinical descriptions of perfectionistic individuals suggested that they were not only concerned with their own mistakes and quality of performance, but they also placed great emphasis on the expectations of others such as parents or spouses (Frost, Marten, Lahart & Rosenblatt, 1990). That is to say, perfectionism was no longer conceptualised as exclusively focused on self-directed cognitions, but was also believed to have a

social component. This finding is consistent with suggestions that any classification or aetiological consideration of psychiatric disorders must include both intra-individual and inter-individual personality components (Kiesler, 1982; Hewitt & Flett, 1991).

Research in this area is ongoing and it is now widely accepted that perfectionism should be considered within a multidimensional framework whereby both intra-personal and interpersonal factors should be included (e.g. Hewitt & Flett, 1991). This expansion has led to an ongoing debate about the relative risk of psychopathology of each perfectionism dimension. To date there are a multitude of perfectionism scales (see Table 3.3); however, of these there are two multidimensional scales, both entitled the Multidimensional Perfectionism Scale (MPS-F; Frost, Marten, Lahart, & Rosenblate, 1990; MPS-H; Hewitt & Flett, 1991), which have most cumulative psychometric support. Although both scales take as their starting point the need to distinguish between social and personal facets of perfectionism, and therefore share some conceptual overlap, they each propose unique factors for measurement.

Table 3.3 Summary of perfectionism scales.

Name of Scale	Year	Authors	Number of Dimensions
Burns Perfectionism Scale (BPS)	1980	Burns	1
Multidimensional Perfectionism Scale (MPS-H)	1991	Hewitt & Flett	3
Multidimensional Perfectionism Scale (MPS-F)	1990	Frost, Marten, Lahart & Rosenblatt	6
Setting Conditions for Anorexia Nervosa Scale (SCANS-P)	1986	Slade & Dewey	1
Positive and Negative Perfectionism Scale	1995	Terry-Short, Owens, Slade & Dewey	2
Eating Disorder Inventory	1983	Garner, Olmstead & Polivy	1
Almost Perfect Scale (APS)	1995	Slaney, Ashby & Trippi	4

### 3.4.3 Multidimensional Perfectionism Scale (MPS-F; Frost, Marten, Lahart & Rosenblate, 1990)

Frost et al. (1990) argued that the main features of perfectionism are a tendency to critically evaluate personal performance and failures and to emphasise the value of parental expectations. According to this framework, which is based loosely on Hamachek's (1978) distinction between normal and neurotic perfectionism, perfectionism should be categorised into 6 dimensions: (1) organisation, (2) concern over mistakes, (3) parental expectations, (4) parental criticism, (5) personal standards, and (6) doubts about actions.

Since the development of this scale, it has been regularly applied to a variety of patient groups, and has been found to be associated with a number of psychopathologies including obsessive compulsive disorder (Frost, Steketee, Cohn

& Griess, 1994; Frost & Steketee, 1997), depression (Frost, Heimberg, Holt, Mattia & Neubauer, 1993), and social anxiety (Juster, Heimberg, Frost, Holt, Mattia & Faccenda, 1996). However, although these studies provide evidence for the validity and usefulness of the MPS-F, there has been no demonstration of the predictive utility in prospective designs, of this scale (Enns & Cox, 2002).

#### *3.4.4 Multidimensional Perfectionism Scale (MPS-H; Hewitt & Flett, 1991)*

Hewitt and Flett (1991) suggested that perfectionism should be seen to encompass three distinct dimensions: (i) self-oriented perfectionism, (ii) other-oriented perfectionism, and (iii) socially prescribed perfectionism. These dimensions are not differentiated in terms of the individual's behaviour pattern per se, but rather in terms of (a) the object to whom the perfectionistic standard is directed (self vs. others), and (b) to whom the perfectionistic standard is attributed (self vs. others).

Self-oriented perfectionism relates to self-standards for motivation and expectations that we have for ourselves, and thus, this dimension can be described as achievement based (e.g. "one of my goals is to be perfect in everything I do"). The self-oriented perfectionist is motivated by the need to set and hold very high and often unrealistic self-standards, has a tendency to doubt their own actions, and therefore, can be seen to focus on flaws and past failures. This dimension represents the component which most closely resembles the definition given to perfectionism as a whole (e.g. Blatt, 1995; Shafran & Mansell, 2001).

Other-oriented perfectionism refers to the tendency to set unrealistically high standards for others. Hill, McIntyre & Bacharach (1997) reported that other-oriented



perfectionism is predominantly maladaptive in comparison with self-oriented perfectionism which has been found to possess certain adaptive qualities (e.g. a strong positive association with conscientiousness and striving for achievement). It has also been suggested that other-oriented perfectionists have difficulties developing intimacies and maintaining successful inter-personal relationships, whilst Hewitt and Flett (1991) concluded that other-oriented perfectionism is related to feelings of anger and hostility towards others, as well as other-directed blame when encountering failure.

However, despite these findings, others have argued that this type of perfectionism, notwithstanding its many negative interpersonal characteristics, is associated with less interpersonal stress than both self-oriented and social prescribed perfectionism (Hill, Zrull & Turlington, 1997). Indeed, other-oriented perfectionism should be unrelated to depression and suicide as it involves an external focus on other peoples' shortcomings rather than the shortcomings of the self. It is also worth noting that investigations of the internal reliability of the items included in this dimension have led to the realisation that it represents the weakest of the three dimensions. As a result it is possible that this measure is too vague and can be seen to tap into a number of facets of perfectionism.

Finally, socially prescribed perfectionism is the belief that others maintain unrealistic and exaggerated expectations of the individual which must be met in order to gain acceptance and approval, despite these standards being impossible to meet. In contrast to self-oriented perfectionism the standards experienced by the socially prescribed perfectionist are perceived to have external origin, and are

therefore, experienced as being outwith the control of the individual. This dimension is also associated with a number of achievement related problems such as procrastination and self-handicapping (i.e. the tendency to spend time finding excuses for poor performance, rather than preparing for the performance).

Hewitt and Flett (1991) proposed that, like self-oriented perfectionists, socially prescribed perfectionists also experience a sensation of worthlessness and severe self-criticism when encountering a failure to meet the perceived expectations of others. This negative emotional state is further exacerbated by the accompanying feeling of a lack of control experienced when the individual is unable to attain the imposed standards of others. This finding can be related to the literature on learned helplessness and, in particular, hopelessness. The overlap occurs because both the concept of hopelessness and the concept of socially prescribed perfectionism place a strong emphasis on beliefs about the inability to stop aversive events. As a result it has been speculated that this particular facet of perfectionism may represent a form of hopelessness (Lynd-Stevenson & Hearne, 1999), which has important implications for the problem-solving process.

It is believed that the perfectionistic individual tends to equate self-worth with performance and as a result interruptions in meeting these standards are likely to be interpreted as failure (Hewitt, Flett, Turnbull-Donovan & Mikail, 1991). It is therefore possible that the emotional distress experienced by the perfectionist can be magnified by distorted thinking (Beck, Rush, Shaw & Emery, 1979), by ruminations involving perfectionistic themes (Flett, Hewitt & Blankstein, 1991; Flett, Madorsky, Hewitt & Heisel, 2002), as well as active processing of

information about the ideal self (Hewitt & Genest, 1990). Hence, several studies have begun to address the link between perfectionism and suicidal behaviours, and research interested in this link suggests that a multi-dimensional measurement of perfectionism is a useful starting point. In particular, socially prescribed perfectionism and self-oriented perfectionism have been highlighted as two important indicators of suicidal behaviours and thoughts, in that “these two dimensions may be particularly relevant to suicide behaviour because both dimensions are involved in the generation of ego-involving stressors that are interpreted as very significant failures” (Hewitt, Norton, Flett, Callander & Cowan, 1998).

#### *3.4.5 Perfectionism: State or Trait?*

An important concern within the debate over the relative utility of personality vulnerabilities as predictors of psychological distress, concerns the issue of affective state dependency versus stable traits (Cox & Enns, 2003). That is, is a personality characteristic such as perfectionism a stable diathesis or merely a concomitant of state levels of depressive mood? (Coyne & Gotlib, 1983). Those who are critical of the efficacy of psychological models that include such personality variables would argue that only variables that are stable can be considered to be viable predisposing factors, and therefore, any attempts to test a model of psychological distress which includes personality variables must address the trait-state issue.

Cox and Enns (2003), therefore, set out to test the relative stability of the perfectionism dimensions proposed by the two multidimensional perfectionism scales (MPS-H & MPS-F). In a sample of 105 adult outpatients who met diagnostic

criteria for a major depressive episode at Time 1, but who did not meet this criteria at follow up one year later, they found that both the maladaptive perfectionism dimensions (MPS-H: socially-prescribed perfectionism; MPS-F: concern over mistakes) and the adaptive perfectionism dimension (MPS-H: self-oriented perfectionism) could be described as state-trait vulnerabilities. That is, these dimensions denote stable personality variables which are exacerbated by the presence of an acute depressive episode, and should therefore not be dismissed as potential psychological vulnerabilities for psychopathology.

The findings from Cox and Enns (2003) are consistent with the state-trait vulnerability model which contends that certain modes (Beck, 1996) or cognitive-affective schemas (Blatt, Auerbach & Levy, 1997) such as personality vulnerabilities are stored within the brain irrespective of an individual's clinical state. What does change, though, is the accessibility of this mode or schema as a function of a number of variables including mood, social context or certain biological processes. Thus, the vulnerability can remain inaccessible until the presentation of a particular psychological, social or biological activating factor.

Zuroff, Blatt, Sanislow, Bondi & Pilkonis (1999) tested the relationship between perfectionism and need for approval (as measured by the Dysfunctional Attitude Scale; Weissman & Beck, 1978) and found support for the conceptualisation of perfectionism as a state-trait phenomenon. They examined perfectionism, need for approval and overall dysfunctional attitudes in patients undergoing 16 weeks of treatment for depression and found that these variables were significantly predicted by their initial level prior to treatment, as well as level of depression on completion

of treatment. In other words, patients who had initially exhibited high levels of perfectionism still exhibited relatively high levels of dysfunctional attitudes after treatment even when depression had decreased. Furthermore, they found that patients who experienced an increase in depression following treatment also demonstrated an activation of dysfunctional attitudes, and it is suggested that it is this activation which may have resulted in the increase in depression. As a result, they concluded that any treatment of psychological distress must address not only overt symptoms of distress but also any underlying personality vulnerability such as perfectionism.

#### *3.4.6 Perfectionism as a Predictor of Psychopathology*

Since the development of the MPS-F and MPS-H in 1991, they have been used extensively within a wide range of clinical groups, and have been demonstrated to be good predictors of a multiplicity of psychopathological symptoms including eating disorders (e.g. Hewitt, Flett & Ediger, 1995), anxiety (e.g. Blankstein, Flett, Hewitt & Eng, 1993), alcoholism (Hewitt, Norton, Flett, Callander & Cowan, 1998), obsessive compulsive disorders (Frost & Steketee, 1997), and personality disorders (Hewitt, Flett & Turnbull, 1992). In particular, research has yielded much support for the role of perfectionism in the formation, maintenance and exacerbation of depression and suicidal thinking (e.g. Blatt & Zuroff, 1992; Flett, Hewitt, Endler & Bagby, 1995). It is, therefore, the intention of this section to document evidence of the role of perfectionism in understanding suicide, depression and hopelessness.

Hewitt, Flett and Donovan (1992) examined the link between perfectionism and suicide within an adult psychiatric population and found that socially prescribed perfectionism was significantly correlated with suicidal intent and threat.

Regression analysis revealed that this perfectionism dimension could be seen to account for a significant degree of unique variance in both suicide intent and threat, even after controlling for any variance due to levels of hopelessness and depression. However, in contrast to other research (e.g. Hewitt, Flett & Weber, 1994) no relationship was found between self-oriented perfectionism and suicide threat. Flett et al. (1992) proposed the possibility that self-oriented perfectionism must be accompanied by other mediating factors in order for it to be related to suicide threat. However, it is also possible that the lack of a relationship between perfectionistic self-standards and suicidal behaviours could be the result of the psychometric measures utilised in the study. For example, the suicide threat scale (Minnesota Multiphasic Personality Inventory or MMPI) used in the study has been criticised as being invalid (e.g. Waters, Sendbuehler, Kincel, Boodoosingh & Manchenko, 1982), whilst hopelessness was conceived as a 4-point rating of pessimism rather than a standard measure.

A later study by Hewitt, Flett and Weber (1994), which investigated the relationship between perfectionism and suicide ideation in an adult psychiatric population, showed elevated levels of socially prescribed perfectionism in high and moderate suicide ideation groups (even when controlling for levels of hopelessness and depression). These findings were found to be similar in both an adolescent clinical population (Hewitt, Newton, Flett & Callander, 1996), and a non-clinical student population (Hewitt, Flett & Weber, 1994). Hamilton and Schweitzer (2000) investigated the role of perfectionism in predicting suicide ideation in a non-clinical student population. They found that suicide ideation was associated with

significantly increased scores on a global measure of psychological distress and perfectionism.

Research has indicated that the perfectionism dimensions can act as vulnerability factors to depression by increasing the levels of aversiveness experienced in stressful situations; however, each dimension plays a different role in predicting depression, and in particular social perfectionism appears to be strongly associated with depression (e.g. Flett, Hewitt, Blankstein & O'Brien, 1991; Hewitt & Flett, 1991; Blatt, 1995; Hill, McIntyre & Bacharach, 1997).

Hewitt and Flett (1991) found that social perfectionism was associated with external locus of control, need for approval, and fear of negative evaluation from others. In addition, research suggests that social perfectionists perceive standards as being externally imposed, and this tendency is positively linked to depression (Benassi, Sweeney & Dufour, 1988). Similarly, other studies indicate that control may moderate the relationship between perfectionism and depression. Mor, Day, Flett and Hewitt (1995) noticed that although social perfectionism did not independently predict anxiety and goal satisfaction, it did interact with low levels of personal control to predict low levels of goal satisfaction, and Martin, Flett, Hewitt, Krames and Szanto (1996) found that social perfectionism interacted with low self efficacy to predict depression and psychosomatic symptoms. Such findings appear to support the notion that perfectionism may serve a functional purpose as long as standards are met; however, changes which are deemed to be outwith a person's control may interact with socially prescribed perfectionism to increase feelings of failure and negative affect (Shafran & Mansell, 2001).

Self-oriented perfectionism has been consistently linked to depression in clinical patient groups (e.g. Hewitt & Flett, 1991; Hewitt et al., 1996). However, the relationship has been less consistent in non-clinical samples. For example, Flett et al. (1991) and Wyatt and Gilbert (1998), did not find a significant association between self-oriented perfectionism and depression in non-clinical populations.

Hewitt & Flett (1993) found that self-oriented perfectionism consistently interacted with achievement stress to predict increased depression in both clinical and non-clinical populations. This finding has been found to be constant both concurrently (Flett & Hewitt, 1993) and over time (Hewitt, Flett & Ediger, 1996), as well as in children between the ages of 10 to 15 years (Hewitt, Caelian, Flett, Sherry, Collins & Flynn, 2002).

Similarly, Hewitt et al. (1994) found that both self-oriented and socially prescribed perfectionism were associated with suicide intent. What is more, they noted that both social perfectionism, and in particular, self-oriented perfectionism interacts with stress to predict depression and suicide ideation. Thus, these studies yield evidence to support a role for perfectionism in moderating the relationship between life stress and suicide ideation. Such findings are consistent with the view that perfectionists not only can be seen to increase the number and impact of perceived stressors in their life, but also view any stress as failures.

Research on perfectionism (e.g. Hewitt, Flett & Weber, 1994) can easily be related to Baumeister's (1990) theory of suicide as a central tenet in this model is that



failure to attain unrealistic standards, derived either from the self or others, is a major factor in initiating suicide attempts. It is possible that the importance of self-oriented perfectionism in the generation of suicidal behaviours lies in the suggestion that self-oriented perfectionists, through their stringent criteria for success, as well as a self-evaluative style which only allows for absolute success or complete failure, experience more stressful events, i.e. they are driven by the need for success (Hewitt & Flett, 1993). Likewise, socially prescribed perfectionists also experience increased levels of stress which can result in a social form of hopelessness (i.e. a fear of failure) through a self-imposed anticipation that they are unable to fit in with social expectations, thus, resulting in a sense of alienation (Hewitt & Flett, 1997). Furthermore, perfectionistic self-representations can be seen to result in problems such as hesitation to seek appropriate help for difficulties, or not benefiting fully from treatment due to a reluctance to disclose personal information.

Hunter & O'Connor (2003) argue that what is important about social perfectionists in particular, is that this form of perfectionism is negatively correlated with positive future thinking, thus, suggesting that these individuals are less likely to encode and retrieve positive future events. This finding ties in with the argument that social perfectionists are driven by a fear of failure (Deci & Ryan, 1985), and that it is this fear which predisposes the individual to avoid positive future thinking in an effort to reduce the likelihood of disappointing others.

#### *3.4.7 Perfectionism: The Mechanism of Effect*

Despite the plethora of studies that demonstrate an important link between perfectionism and a variety of pathological outcomes, little is known about the

mechanism which mediates this relationship. Recent efforts have been directed towards examining the extent to which personality vulnerabilities interact with stress to produce increased risk of various psychological symptoms and suicide (Bonner & Rich, 1988; Chang, 1997; O'Connor & O'Connor, 2003; O'Connor & Forgan, in press). Hewitt, Flett and Ediger (1996) proposed a diathesis-stress model on the basis of their finding that perfectionism is predictive over time only when stressful conditions prevail.

Research interested in the utility of a perfectionism  $\times$  stress interaction in predicting psychological distress, has yielded evidence to support a significant interaction between self-oriented perfectionism and stress in the prediction of depressive symptoms in both clinical (Hewitt & Flett, 1993; Hewitt et al., 1996) and non-clinical populations (Flett et al., 1995). However, Chang and Rand (2000) argued that the findings of these studies are limited in as far as they make use of stressful life events lists or hassles lists, and therefore, may be weakened by “an insensitivity to chronic stress from ongoing life circumstances, stress from events occurring in the lives of close friends and family, expectations concerning future events, and events not listed on the scale” (Chang & Rand, 2000; based on research by Cohen, Kamarck & Mermelstein, 1983). In other words, the findings of such diathesis stress models may not reflect the influence of stress itself, but rather unwanted influences inherent in such specific stress lists.

Consequently, Chang and Rand (2000) set out to investigate whether perfectionism is predictive of psychological symptoms and hopelessness over time, and whether stress adds validity to such findings. They found that only high levels of socially

prescribed perfectionism are predictive of psychological symptoms one month later. In addition, it was found that high levels of socially prescribed perfectionism were also associated with greater feelings of hopelessness. This finding is consistent with the argument that the generation of stress as well as the aversiveness and duration of stress is influenced by perfectionism because ego-involving failure results in more intense experiences of stress for the perfectionist than the non-perfectionist (Walsh & Ugumba-Agwunobi, 2002). Pacht (1984) suggested that this distress can be explained in terms of the perfectionists equating self-worth with perfect performance on the basis of a tendency to over-generalise failure which leads to negative self-rumination.

It is, thus, possible to map research on perfectionism onto a framework which views personality factors as playing a complex mediating and moderating role in the production and maintenance of psychopathology through its interaction with stress (Bolger & Zuckerman, 1995). Hewitt and Flett (2002) expanded on this framework, based on the argument that perfectionists not only experience high levels of stress exposure but also react to these stressors in a maladaptive manner, and suggested that perfectionism interacts or influences stress in four particular ways. Firstly, through stress generation: the perfectionist will by his/her very nature pursue unrealistic goals and this behaviour will increase stress. Secondly, through stress anticipation: the perfectionist displays a future orientation focused on potential stressors or problems (i.e. a fear of failure). Thirdly, through stress perpetuation: the perfectionist engages in maladaptive cognitive coping strategies which exacerbate stressful episodes. Finally, through stress enhancement: the perfectionist appraises all encounters with stress in terms of failure, and this feeling of failure and self-

defeat is eventually generalised to other aspects of life thereby affecting problem solving skills as a whole.

Thus, of great importance to perfectionists is the need to detect perceived discrepancies between actual behaviour and expected standards and as a result perfectionism is characterised by an element of self-monitoring. On this basis, it is possible to place perfectionism within another theoretical framework: The third step of the Escape from Self Model (Baumeister, 1990; Section 2.5.1) argues that when an individual falls short of self or perceived other-imposed standards, blame will always be directed at the self which will result in elevated levels of negative self-awareness.

Although an association between perfectionistic cognitions and negative self-rumination seems logical on the strength of the fact that both constructs emphasise cognitive perseverance (Flett et al., 2002), this relationship has only recently become a topic of interest. Consequently it seems pertinent to investigate the extent to which perfectionistic individuals also demonstrate slower latencies in the recall of specific memories, on the basis that ruminative self-focus may result in reduced working memory capacity which causes the mnemonic interlock as proposed by Williams (1996).

#### *3.4.8 Perfectionism: Adaptive or Maladaptive?*

Although there is now general agreement concerning the notion of a multidimensional perfectionism construct, the issue of whether perfectionism is most accurately conceptualised as adaptive or maladaptive, is as yet unresolved.

Indeed, there has been an emphasis on establishing the potential links to psychopathology, but little effort has gone into differentiating between pathological and 'healthy' perfectionism. From the very beginning it has been suggested that perfectionism may contain some adaptive properties, and for example, Hamachek (1978) argued that normal perfectionism (as opposed to neurotic perfectionism) is a positive factor which through the self-imposed evaluations of performance will lead to high achievement and consequent satisfaction. This conception is consistent with later work by, for example, Flett, Hewitt, Blankstein & Mosher (1991) which suggests that self-oriented perfectionism has an adaptive potential, as it is related to resourcefulness, self-esteem, perceived personal control, and constructive striving; however, at the same time it also interacts with negative life events or perceived stress to produce depression, i.e. it becomes "neurotic" (Blatt, 1995).

Following in this tradition a minority of research has focused on the extent to which the perfectionism dimensions have any potentially positive or adaptive components. Brown, Heimberg, Frost, Makris, Juster & Leung (1999) found that high personal standards and a need for order and organisation are associated with adaptive work habits and high achievement in the class room, and Mills & Blankstein (2000) found evidence to support an adaptive role for self-oriented perfectionism as they demonstrated that individuals with high levels of self-oriented perfectionism are not only extremely motivated to achieve self-imposed standards for academic success, but are also more likely to use adaptive learning strategies which are associated with positive academic outcomes. Finally, Hunter and O'Connor (2003) and O'Connor, O'Connor, Harper, Smallwood and Miles (2004) found some evidence to suggest that other-oriented perfectionism may also have some beneficial effects: Other-

oriented perfectionism correlated positively with positive future thinking and negatively with hopelessness.

Thus, whereas the common assumption in most research is that higher levels of perfectionism lead to increased depressive affect (Blatt, 1995), there is evidence to suggest that the relationship between the perfectionism dimensions and depressive affect is much more complicated. However, this very idea has caused significant disagreement within perfectionism research, and has reopened the issue of a clear and unequivocal definition of perfectionism (Rasmussen, 2004). Frost (2003; Interview in the APA Online Monitor on Psychology; Benson, 2003) argued that the suggestion that perfectionism could have some adaptive properties is an unfortunate consequence of the widening scope of the field. In the same way, Shafran, Cooper and Fairburn (2002) argued that research based on multidimensional conceptualisations of perfectionism have failed to advance both the theoretical understanding of perfectionism and the clinical treatment of psychiatric disorders which are affected by perfectionism. This argument is based on the claim that multidimensional perfectionism, as we know it at present, does not measure perfectionism itself, but rather taps into associated constructs. Consequently, more research on perfectionism is necessary to probe these claims.

#### *3.4.9 Perfectionism Cognitions*

Although it is generally agreed that perfectionism is (a) multi-dimensional, and (b) a relatively stable trait, recent research has suggested that perfectionism is much more complex than first imagined, and that it is useful to think of the trait as having a cognitive component (Hewitt & Flett, 1997). One example of this development is

found in the work by Hewitt, Flett and colleagues (Hewitt, Flett, Sherry, Habke, Parkin, Lam, McMurty, Ediger, Fairlie, & Stein, 2003) who argued that it might be useful to include another dimension to the perfectionism scale (the self presentation scale) which looks at whether the individual is interested in perfectionistic self-promotion to others or minimising public displays of mistakes or shortcomings. This distinction is compatible with the self-regulation literature which distinguishes between “proclaiming a desired identity by attempting to promote flawlessly positive aspects of the self in interactions with others, and disavowing an undesired identity by concealing or excluding the presentation of any perceived negative aspects of the self”. Thus, there are two general motivational components: motivation to present one’s perfections or striving to avoid revealing one’s imperfections. This way of thinking links quite well with the BIS/BAS framework (see Section 3.4.12).

At the same time they have also suggested that although perfectionism is a stable trait it is possible that it is unhelpful to take such a static view of the construct and that it is also important to take into account the process by which traits may be involved in developing and maintaining psychological problems. In other words, it is imperative to consider how people think about their perfectionism as well as the extent to which these thoughts are accessed. Consequently, investigations of the role of cognitive processes in emotional distress have recently been extended to include perfectionism. From a cognitive perspective perfectionistic thinking, which centres around the belief that failure is probable when dealing with a personal or interpersonal problem, is likely to result in an attributional style which confirms or intensifies such negative self-evaluation.

This conceptualisation of perfectionism can be related to research on rumination which suggests that individuals who ruminate, direct their attention to thoughts and emotions concerning a stressful event, and this cognitive style consequently may impair problem-solving skills and result in increased depression (e.g. Nolen-Hoeksema, Parker & Larson, 1994; Lyubomirsky, Tucker, Caldwell & Berg, 1999). Furthermore, a ruminative cognitive style is also associated with a focus on current aspects of the self and the surrounding environment; a feature also present in perfectionism.

In the past, research has indicated that individuals who have an introjective personality style have a tendency to ruminate excessively about failures to meet personal standards (Blatt & Schichman, 1983), and Hewitt and Genest (1990) hypothesised that this tendency is a function of the ideal self which functions as a schema involved in the processing of available information, with particular focus on information with a perfectionistic content. That is, a negative life-event would serve as a salient cue of failure and the self-schema encodes and processes this information which suggests that perfection has not been achieved; this process will subsequently activate a preponderance of negative automatic thoughts involving the need to be perfect which are associated with psychological distress.

Hewitt and Flett (1997) have developed a Perfectionism Cognitions Inventory based on the premise that perfectionists that feel a discrepancy between their actual self and their ideal self or their actual level of goal attainment will experience automatic



thoughts that reflect perfectionistic themes. Flett, Hewitt, Blankstein & Gray (1998) investigated whether a personality trait such as perfectionism can be assessed in terms of frequency of thinking, and whether high frequency of perfectionistic cognitions predict elevated levels of psychological distress. They found that it is a high level of such cognitions which renders the individual susceptible to psychological distress (which can either be concerned with failure to attain perfection in the past or anxiety about failing to attain it in the future). Research using this scale is still in its infancy but what has been done seems to suggest that individuals who report high scores on perfectionism cognitions also report high levels of persevering thoughts following the experience of failure and lack of attentional control. They also seem to experience more frequent thoughts with depressive themes and find it difficult to remove any such thoughts from their minds. Thus, it is possible that some perfectionists who also have a perfectionistic rumination style are more vulnerable to psychological distress as they have a tendency to recall negative autobiographical memories.

#### *3.4.10 Perfectionism in a Clinical Context*

Personality characteristics play a role in the response to therapeutic intervention and also affect the nature of the therapeutic change (Blatt, Quinlan, Pilkonis & Shea, 1995). Thus, it seems that high levels of perfectionism prior to treatment affect the outcome of the treatment as well as satisfaction with the treatment. It has been suggested that this problem may to some extent be related to an inability to develop a strong therapeutic alliance (Shafran & Mansell, 2001), and as a consequence the perfectionist is likely to believe that the therapy has failed (Blatt, Zuroff, Bondi, Sanislow & Pilkonis, 1998)

### *3.4.11 Motivation*

In recent years motivation has been highlighted as an important factor in shaping a person's life orientation as well as in establishing their sense of wellbeing (Dickson & MacLeod, 2004). Several theorists over the years have supported the existence of two basic motivational systems: one system which is responsible for the facilitation of behaviour and positive affect, and one system for the inhibition of behaviour and generation of negative affect (e.g. Konorski, 1967; Cacioppo & Berntson, 1994). Of particular importance has been the work of Gray (1970) who proposed a motivational theory of personality with a biological basis.

### *3.4.12 Behavioural Inhibition and Behavioural Activation (BIS/BAS)*

Gray's (1981) model of personality suggests that basic to personality is the existence of three fundamental emotional systems, which are neurobiologically independent, and which respond to subsets of reinforcing events with specific types of behaviours and emotions. Each system regulates approach and withdrawal or avoidance behaviour in response to environmental cues, and thus, influences the sensitivity to reinforcing events and control the experience of emotions.

The Behavioural Approach System (BAS; Gray, 1981) is believed to facilitate goal-motivated behaviour and is activated by incentive cues associated with reward. Activation of the BAS generates increased approach behaviours, motor activity and feelings of psychological well-being (Depue & Zald, 1993). In this way, the BAS can be thought of in terms of a feedback loop through which the surrounding environment is constantly being monitored for reward cues. When such a sign is

detected the BAS responds by increasing motor output and consequent approach behaviour (Carver & White, 1994). In contrast, the Behavioural Inhibition System (BIS; Gray, 1981) inhibits behaviours in the presence of cues which signal the possibility of aversive consequences by increasing arousal and attention. The BIS is, thus, involved in the expression of negative affective states and is manifested through the display of either withdrawal-oriented behaviour or avoidance.

The final motivational system proposed by Gray (1981) is the Fight/Flight System (FFS). This system provides a parallel neural network to the BIS and is seen to mediate fear. Abnormal sensitivity to any of the three motivational systems is generally believed to reflect proneness to psychopathology; however, the FFS has received little research attention and will therefore not be included in this review.

Carver and White (1994) developed a self-report scale to measure BIS and BAS sensitivities, and O'Connor and Forgan (in press) argued that if the BIS and BAS motivational systems are instrumental to the method by which we regulate behaviour and emotion, then they might very well play a role in perfectionism. They found that a high level of behavioural inhibition was positively associated with suicidal thinking; thus, supporting a detrimental role for this motivation system. Furthermore, they found that self-oriented and other-oriented perfectionism were both positively associated with BAS drive. This finding corroborates the findings of Hewitt and Flett (2002) who found similar associations. All in all, these findings are suggestive of a motivational basis of perfectionism; however, this research is still in its infancy and much more research is required which includes prospective assessments of these relationships in both clinical and non-clinical populations.

### *3.4.13 Goal Orientation*

The concept of reward and punishment driven motivational systems has provided a conceptual framework for the study of personal goal striving. Personal goals typically denote an endeavour to achieve purpose and direction in life as well as a sense of well-being. This end goal can be achieved either through attempts to move away from a present state towards a desired state (approach), or through an attempt to move away from some undesired state (avoidance). Thus, researchers interested in the role of personal goals essentially define goals according to Gray's motivational distinction: approach goals are defined as focused on positive outcomes (i.e. a goal orientation aimed at moving towards or maintaining a desirable end state), whereas avoidance goals are focused on negative outcomes (i.e. a goal orientation aimed at moving away from or inhibiting undesirable end states).

Dickson & MacLeod (2004) found that mood-disturbed individuals were (i) more likely to generate fewer approach goals and plans, and (ii) had difficulty in forming specific mental representations of their goals and plans. These findings are, thus, consistent with previous autobiographical memory research, and would suggest that these individuals become stuck at a general level of goal formulation and planning such that they continue to pursue vague and unfulfilled goals thereby impeding the development of more defined and adaptive goals.

Consequently there is value in studying different aspects of motivation (i.e. goals and plans) to gain a more detailed understanding of motivational and cognitive processes associated with psychological distress. Indeed, it is possible that

motivational systems may be useful constructs for understanding the role of specificity in forming representations of our past and our goals for the future.

### **3.5 An Integrative Model of Suicide**

There are a number of reasons why it is important to include personality traits in any research attempting to elucidate suicide risk factors. Suicidal behaviour is now widely regarded as the result of a state-trait interaction (Van Heeringen, Hawton & Williams, 2000), and consequently any examination of personality traits may have two useful outcomes: (i) as traits are relatively stable over time, and are also potentially heritable, their identification can result in early recognition of suicide risk, and (ii) treatment strategies are, now more than ever, taking into account the role that personality traits have in clinical application; for example temperament is a strong indicator of efficacy of antidepressants in treating depressed individuals (Cohen, Ross, Bagby, Farvolden & Kennedy, 2004).

In recent years there has been a call to address the shortcomings of existing theories of psychological distress by adopting a more unifying framework which incorporates both personality and cognitive factors. Dykman (1998) suggested that the predictive and explanatory power of such theories could be enhanced dramatically by combining these apparently disparate factors into a more integrated model. The purpose of the following chapter (Chapter 4) is to incorporate the personality and cognitive factors described in this chapter into one such integrative model, which consequently gives rise to a number of research questions to be addressed throughout the thesis. Chapter four will, therefore, outline the aims and rationale for each of the four studies included in this thesis, based on the literature

reviewed in the previous chapters, as well as providing an overarching framework for the thesis.

### **3.6 Chapter Summary**

Despite the prevalence of suicidal behaviours, little is known about the characteristics of suicidal thoughts and behaviours. Research on the psychological factors associated with suicide has addressed several categories of variables including cognitions and personality factors. This research suggests that individuals who are predisposed to suicidal behaviours may be cognitively and emotionally unprepared to cope with stressful life events in a constructive manner. Part of this vulnerability seems, at least in part, to involve a negative view of the self and/or a negative perception of other people's expectations of oneself.

Psychological research has demonstrated that hopelessness is related to a reduced ability to find reasons for living and to see a way out other than suicide, i.e. the individual feels trapped. Underlying such thoughts is a tendency to demonstrate poor problem solving abilities, and research into autobiographical memory has provided a potential explanation for this problem. Similarly, perfectionism appears to be a pernicious factor in psychological distress and suicidality.

## **Chapter 4: Aims, Rationale and Hypotheses**

### **4.0 Overview**

The findings of the research described in the previous chapters are of significance to our understanding of suicidal thoughts and behaviour. However, in general this previous research has been confined to their respective fields and little effort has been invested in attempting to bring such research together in a cohesive theory-driven manner. On the basis of the aforementioned research findings, therefore, a significant aim of this chapter is to suggest that it is both relevant and important to investigate these factors concomitantly, and by doing so, it will be possible to develop a better understanding of hopelessness and suicidality.

### **4.1 An Integrative Approach**

The research summarised in Chapter 1 has made great strides in the identification of groups of people who are at risk of suicide behaviour. Nevertheless, the issues around why people might kill themselves, and how we prevent suicidal behaviour, are still the subject of much debate (Baumeister, 1990; Silverman & Maris, 1995; Jobes, Jacoby, Cimboric & Hustead, 1997; Dieserud, Røysamb, Ekeberg & Kraft, 2001). Indeed, it has been argued that despite concerted efforts to enhance our understanding of the suicidal mind, research has, for the most part, been disappointingly limited. One major issue derives from the fact that the topic of suicidal behaviour has traditionally been approached and dealt with through the biomedical model (See Section 2.1). That is, research has been biased towards conceptualising suicide in terms of underlying pathological issues, and therefore, it has not taken into account social or psychological factors sufficiently (Michel &

Valach, 2001; O'Connor & Sheehy, 2002). Furthermore, O'Connor (2003) suggested three main reasons for this failing: (i) the prediction of suicide is difficult simply by the fact that completed suicide is a statistical rarity, (ii) research is regularly conducted without the structure of a theoretical framework, and, thus, the outcome can be spurious and difficult to explicate, and finally (iii) suicide prevention strategies as well as therapeutic interventions aimed at reducing repeated suicidal attempts have "lacked a solid evidence base" (p. 298).

Consequently, more recently, there has been a shift in attention away from a purely biological perspective on suicide (i.e. biomedical model), and on to a more all-encompassing view (i.e. biopsychosocial model) through which suicide is regarded as the outcome of 'psychache' (Shneidman, 1985). As described in Chapter 2, the application of the biopsychosocial model has allowed researchers to show that it is possible for psychological research to identify individual differences within these risk groups, and that such research is vital to understanding "the process of risk" (p. 75; O'Connor & Sheehy, 2000). This thesis was, therefore, guided by the theoretical frameworks summarised in Chapter 2, and attempts to integrate the currently available knowledge of some of the important individual differences factors as described in Chapter 3.

## **4.2 Why Study Perfectionism and Autobiographical Memory Together?**

There are a number of reasons underlying our attempt to relate these constructs to each other. Firstly, as shown in Chapter 2, both factors have been found to be important individual difference dimensions which predict components of



psychological distress such as hopelessness and depression, as well as suicidal behaviour; yet how they relate to each other remains entirely unexplored. The consideration of how these constructs relate to each other and 'perform' relative to each other in the prediction of distress and suicidality is, thus, in itself of interest. Furthermore, there are also a number of theoretical reasons for examining the link between perfectionism and autobiographical memory as previous research has suggested the perfectionists are prone to engage in over-generalisation of thinking (Kutlesa & Arthus, 2001; see also Section 3.4.2). The aim of this chapter is, therefore, to briefly present evidence for why we want to examine these factors jointly, and to provide the aims and hypotheses for each of the four studies which comprise this thesis.

### **4.3 Placing an Integrative Model within a Theoretical Framework**

The notion that suicide is an attempt to escape 'psychache' is central to the theoretical frameworks described in Chapter 2 (Escape from Self Model: Baumeister, 1990; Cry of Pain Model: Williams, 1997). Although not explicitly proposed in these frameworks, perfectionism can easily be related to aspects of these models. For example, the Escape from Self Model, which is a step-wise model, proposes that the suicidal spiral is initiated by an individual's self- or other-imposed unrealistically high standards, recent stressful events, or a combination of both, which causes self-blame, negative affect and, finally, necessitates the need to escape painful self-awareness. This is consistent with one of the pioneering definitions of perfectionism which represented the construct in terms of rigid, unrealistic high standards and a tendency to engage in all-or-none thinking (Hollander, 1965). Within this conceptualisation, success is only possible when high

standards have been met in a flawless manner. Similarly, defeat, which is a central component to the Cry of Pain Model, could be thought of as a likely outcome of such constriction of thinking.

Another issue, central to these models, is the presence of stress. As shown in Chapter 3, perfectionism is generally more strongly associated with psychological distress and suicidal behaviour in the presence of stressful life events (i.e. diathesis-stress relationship; Hewitt & Flett, 2002). When considering the interaction between the stressful situation and the vulnerability or diathesis (perfectionism), it is important to bear in mind that the interaction manifests itself in at least two important ways: (i) a social element which has an effect on how life events are perceived, and (ii) a cognitive component which is responsible for the manner in which the life events are dealt with (i.e. problem-solving strategies).

The Cry of Pain Model (Williams, 1997) expands the diathesis-stress framework and proposes that suicidal behaviour should be conceptualised in terms of 'defeat', 'no escape', and 'no rescue' (see Section 2.4.3 for a summary). According to this framework, stressful life events which promote a sense of defeat provide the first step towards suicidal behaviour. We believe that perfectionism might be a useful factor to include in this framework as it is particularly concerned with sensitivity to signals of defeat. As shown in Chapter 3, the self-oriented and socially prescribed perfectionism dimensions are characterised by an intense fear of failure which both mediates and moderates the relationship between stress and psychological distress (Hewitt & Flett, 2002). Furthermore, more recent research which investigated the motivational basis of the construct (O'Connor & Forgan, in press; see Section

3.4.12), has suggested that it might be important to investigate further the effects of behavioural inhibition and activation (BIS/BAS) on the relationship between perfectionism and suicide, as these motivational sensitivities are important regulators of our responses to cues and signals.

Perfectionism, therefore, becomes an even more likely candidate to be included in this model, when one considers the next step in the suicidal process, namely, escape potential. Although internal and external stressors are vital, they only take on a detrimental role when combined with a lack of escape potential and rescue factors. Williams and Pollock (2001) argued that the sense of no escape promotes the impression of entrapment which is maintained by an inability to generate escape potentials. Research on autobiographical memory has highlighted the importance of being able to recall specific memories from the past, in the ability to solve current problems (see Section 2.5.2).

Furthermore, psychological research focusing on the role of cognitions in understanding suicide has highlighted the finding that positive and negative cognitions are not functionally equivalent; that is, suicidal individuals appear to be impaired in their ability to recall specific positive memories from their past, and impaired in their capacity to generate specific positive cognitions about the future (Williams & Broadbent, 1986; O'Connor & Sheehy, 2000). It is, thus, possible that perfectionism plays a role in the relationship between positive cognitions (both past and future) and suicide, on the basis that high levels of perfectionism (in particular socially prescribed perfectionism) are linked with apprehension about the future as these events signify a potential occasion for failure (i.e. fear of failure). Similarly, it

has been suggested (Hewitt, et al., 1998) that perfectionism has a cognitive component which results in a ruminative cognitive style that, in turn, promotes focus on current aspects of the self and the environment (see Section 3.4.9). In this way, a negative life-event serves as a cue for failure (defeat), which is maintained by the tendency to engage in negative automatic thoughts about the failure to achieve perfection. The diathesis-stress interaction, therefore, not only has an immediate effect but does also over time give rise to less stressful situations resulting in suicidal behaviour (Van Heeringen et al., 2000).

The final factor in the suicidal process is the lack of rescue factors, i.e. factors which indicate that it is possible to change the situation for the better. Rescue factors play an important moderating role on the effect of escape to reduce suicide risk (O'Connor, 2003). In particular, social support has been highlighted as one such factor, and research on perfectionism has shown that social support and maladaptive coping are important mediators of the relationship between perfectionism and psychological distress (Dunkley et al., 2000). However, despite the potential importance of specific coping strategies associated with perfectionism, only a few studies have investigated a direct link (e.g. Dunkley and Blankstein, 2000; O'Connor & O'Connor, 2003).

#### **4.4 Motivational Precursors to Perfectionism: BIS/BAS**

Finally, the importance of cognitions about the past has been extended to cognitions about the future (see Section 3.4.13): In short, the ability to generate and pursue goals is central to adaptive self-regulation (O'Connor & Forgan, in press). The concept of reward and punishment driven motivational systems (BIS/BAS) has also

recently been used as a framework for studying prospective goals (Elliot & Sheldon, 1997; Dickson & MacLeod, 2004; see Section 3.4.13). In this way, it has been hypothesised that the motive to avoid failure is an antecedent of avoidant goal pursuit; indeed, research on perfectionism has highlighted the deleterious consequences of an avoidant coping style on achievement-relevant outcomes and psychological well-being. However, to date the potential relationship between motivation, perfectionism, and goal pursuit, remains to be examined.

All-in-all, the idea that unbearable psychological pain is the common stimulus in suicidal behaviour, as stated by Shneidman (1996) is consistent with much of the psychological research which has been reviewed in the previous chapters. That is, suicidal behaviour is reactive in as far as it represents an attempt to escape unbearable pain in which hopelessness is a frequent feeling. The importance of viewing suicide in terms of a dynamic diathesis-stress interaction is, therefore, crucial as it allows for the possibility that protective factors may also have an effect on the aetiological process and, thus, therapeutic interventions are likely to be effective. However, to do so it is necessary to apply integrative models to the study of suicide.

#### **4.5 Overall Aims and Rationale**

In general, the aim of this chapter is to demonstrate the utility of integrative psychological models of suicide, and to highlight the value of including psychological, social and biological factors in such models. The Escape from Self Model (Baumeister, 1990) and the Cry of Pain Model (Williams, 1997) both emphasise the importance of defeat and escape as being central to suicidal

behaviour. We believe that it is important to acknowledge these factors, as understanding the psychological mechanisms which might trigger them, is essential to the development of successful psychological intervention strategies, and more specifically, we think that perfectionism may be an important factor which may result in a sense of no escape.

However, surprisingly, few studies have investigated the link between perfectionism and suicidal behaviour (e.g. Hewitt et al., 1998; Hunter & O'Connor, 1998), and although there is a plethora of research examining the role of multidimensional perfectionism in psychological distress (see Section 3.4.6), these studies are often limited in as far as they tend to be cross-sectional and they do not investigate changes in distress over time, nor do they investigate perfectionism within integrative models based on theoretically sound frameworks (Chang & Sanna, 2001; O'Connor & O'Connor, 2003). Consequently, a broad goal of this doctoral thesis is, therefore, to examine the role of cognitive and personality factors in suicidality in the hope of elucidating the psychological mechanisms which precede suicidal behaviour, as this is a necessary step in aiding treatment development. A key component of this research is the examination of an integrative model for understanding suicidal thinking in both cross-sectional and prospective research. A prospective component is essential because ultimately suicidological research is aimed at predicting suicide thinking and behaviours over time. Once it has been established that particular variables confer significant risk, it then becomes possible to design preventive programs to decrease the likelihood of vulnerable individuals engaging in suicidal behaviour.

Collectively the present thesis is composed of a series of four studies designed to replicate and extend previous research on the role of psychological vulnerability factors in suicide. More specifically, the research aims to test an integrative model of personality and cognitive variables in the prediction of suicidality and psychological distress in both non-clinical (Studies 1, 2 and 3) and clinical populations (Study 4). A clear understanding of the relationship between perfectionism and psychological distress and suicidality, requires a consideration of the psychological processes evoked by this particular personality trait, and the impact that these processes have, in turn, on the outcome variables. In particular, the role of cognitive biases such as over-general autobiographical memory recall is believed to be important as such overgeneralisations may result in subsequent self-criticism and negative self-evaluation.

As pointed out in Chapter 3, the relationship between over-general/slow memory recall and psychological distress is well-established; however, the specific role of positive and negative memories is less straightforward. Although research has emphasised the importance of positive cognitions concerning the past (and the future), there is still not a clear explanation for the relationship between over-general memory recall and psychological distress. Consequently, an additional aim of this thesis is to investigate whether perfectionism might help us understand this relationship. For example, do perfectionists demonstrate slower recall latency for negative memories because a ruminative self-focus results in reduced working memory as proposed by Williams (1996)?

Furthermore, from a clinical point of view, it is well-established that patient characteristics play an important role in the value of therapeutic interventions (see Section 3.4.10). Not only is perfectionism implicated in reduced treatment response and difficulties establishing an efficacious patient-therapist relationship, but trait perfectionism itself has also been found to be relatively difficult to modify. Therefore, it is important not only to understand the way in which perfectionism exerts its effects, but also to understand the mechanisms which may underlie the maintenance of perfectionism. For that reason, we are also investigating motivational sensitivities which may contribute to the development of perfectionism, as well as the possibility that the maladaptive aspect of perfectionism is maintained by a cognitive component. The broader implications of such investigations will appeal to researchers/practitioners interested in including perfectionism in therapeutic interventions. Rather than engaging in long-term therapy to change trait perfectionism, it might be more useful to engage in strategies aimed at developing effective task-focused coping strategies and to aid the recall of beneficial positive memories.

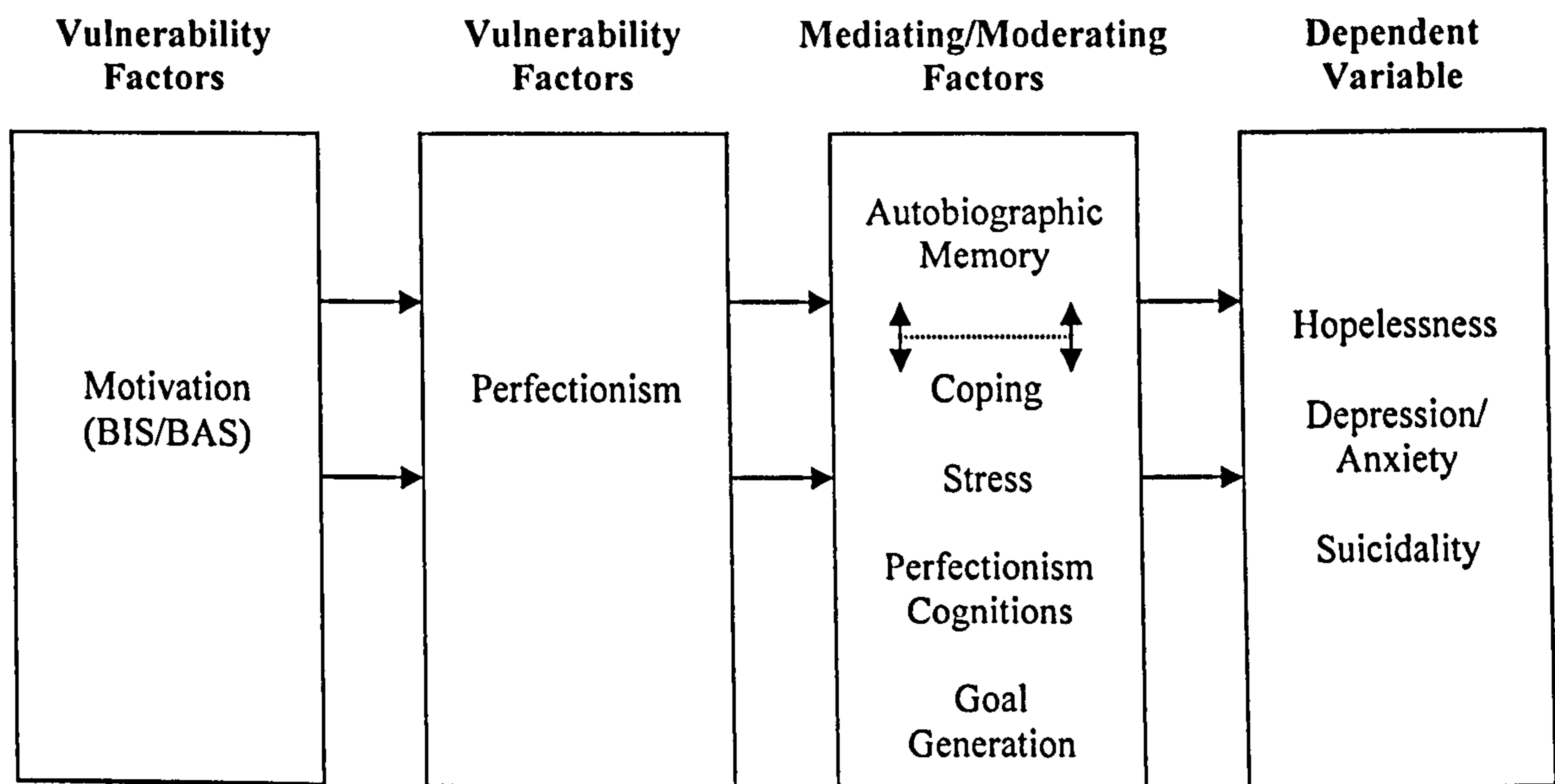
The task of investigating an integrative model of suicide/psychological distress is complicated; therefore, we have chosen to approach the task by dividing it into four related, but independent, studies. That is, although the studies build upon each other, they may also stand along as independent studies, and we have, therefore, written them up as such. Although our main priority is to investigate the link between perfectionism and autobiographical memory recall, we are also attempting to address a number of additional issues pertaining to the understanding and maintenance of perfectionism and to investigate further the relationship between



perfectionism and psychological distress and suicidality. A model illustrating the theoretical framework for the studies is shown in Figure 4.1. From this model we are able to pose a number of research questions, which are as follows:

1. Do perfectionism and autobiographical memory interact to predict psychological distress (hopelessness & depression/anxiety) and suicidality? And if so, what is the nature of this relationship (mediating/moderating)?
2. What is the motivational background of trait perfectionism? Can we understand it via the BIS/BAS sensitivities?
3. Is it useful to consider trait perfectionism as including a cognitive component (i.e. perfectionism cognitions)?
4. Do the dimensions of perfectionism relate differentially to coping strategies/perceived mood regulation ability and psychological distress and suicidality?
5. Is the relationship between perfectionism and psychological distress/suicidality mediated or moderated by perceived stress?
6. Previous research has shown the parasuicide patients are over-general in their recall of autobiographical memories (Williams & Broadbent, 1986). However, are parasuicide patients also over-general in their ability to generate goals and goal achievement strategies for the future?

Figure 4.1. Model illustrating the factors being investigated during the course of this thesis.



Although a brief introduction and hypotheses are outlined in each chapter, the primary aims and hypotheses for each study are summarised below:

#### 4.5.1 Study 1: Aims and Hypotheses

The aims of the first experiment were four-fold: (i) the primary goal was to, for the first time, examine the relationship between perfectionism and autobiographical memory recall in a student population, (ii) to expand our understanding of the relationship between autobiographical memory recall and psychological distress and suicidality, (iii) to empirically test the link between perfectionism and stress, and (iv) to investigate these aims both concurrently and prospectively.

In the light of previous research, it is hypothesised that high levels of socially prescribed (and self-oriented) perfectionism will interact with slow recall of memories in response to cue words, and that this interaction will predict increased psychological distress and suicidality. Nonetheless, on the basis that hopelessness

can be conceptualised as the reduced expectation of positive events in the future (MacLeod et al., 1993, 1997; O'Connor et al., 2003, 2004), it is expected that hopelessness will be positively associated with the slow recall of positive autobiographical memories. It is also hypothesised that high levels of both self-oriented and socially prescribed perfectionism will be associated with increased levels of psychological distress (depression, hopelessness, and suicidality), and that this relationship will be further exacerbated in the presence of stress. We made no specific hypotheses about other-oriented perfectionism given the equivocal findings in the literature.

#### *4.5.2 Study 2: Aims and Hypotheses*

In order to extend the findings of the first experiment, study 2 included a mood manipulation with the intention of investigating the following points: (i) to investigate the role of mood in the relationship between perfectionism and autobiographical memory recall, (ii) to investigate any associations between perfectionism and coping strategies and perceived mood regulation abilities in dealing with negative mood, and (iii) to determine whether perfectionism is a stable personality trait, as research in general tends to treat it as such, or is it more appropriately considered as state-like?

Based on these aims there are a number of research hypotheses: (i) self-oriented and socially prescribed perfectionists, when faced with negative mood, will experience slow recall of autobiographical memories, (ii) maladaptive coping/low perceived ability to regulate negative mood will mediate the relationship between perfectionism and psychological distress (hopelessness, depression, suicidality), (iii)

as perfectionism is widely believed to be a stable personality trait, it is hypothesised that the mood manipulation won't cause a change in perfectionism, and (iv) perfectionism will be associated with increased stress, and stress will mediate the relationship between perfectionism and psychological distress.

#### *4.5.3 Study 3: Aims and Hypotheses*

A questionnaire study was carried out to examine further the effects of perfectionism and over-general autobiographical memory in a student population. Furthermore, Study 3 also focused on dispositional behavioural inhibition and activation sensitivities, measured via Carver and White's (1994) BIS/BAS questionnaire. The aim was to investigate their relations to perfectionism in the prediction of psychological distress and suicidality, both concurrently and prospectively. Specifically, the aim was to elucidate the mediating or moderating pathways between these variables. We hypothesised that perfectionism will mediate the relationship between motivational sensitivities (BIS/BAS) and psychological distress.

A related focus of this study was to investigate further the apparent link between perfectionism and negative autobiographical memories as found in Study 1; however, the current study will include a written version of the AMT, rather than the traditional verbal procedure. In addition, empirical studies of autobiographical memory ordinarily only categorise memory responses in terms of specificity or over-generality; however, in Studies 1 and 2 of this thesis it was observed that participants frequently didn't produce any memories at all, and, consequently, a further category of memories was added to this study. That is, memory responses

were grouped as either (i) specific, (ii) over-general, or (iii) not provided (i.e. missing). As the study employed a verbal procedure memories were simply reported in writing by the participants and, therefore, the time taken to generate the memories was not recorded. The hypothesis for this part of the study is that self and social perfectionism will interact with over-general recall of negative memories.

Finally, a measure of automatic thinking with a perfectionistic content (i.e. perfectionism cognitions) was included to examine the extent to which perfectionism contains a cognitive component. On the basis of past research it was, thus, hypothesised that high levels of self-oriented and socially prescribed perfectionism will be associated with high levels of perfectionism cognitions, and that perfectionism cognitions will mediate the relationship between perfectionism and psychological distress.

#### *4.5.4 Study 4: Aims and Hypotheses*

The final study was conducted to achieve a number of goals. As observed by Hunter and O'Connor (2003) a plethora of studies have been conducted to investigate the relationship between perfectionism and suicidal thinking (e.g. Hewitt, Flett & Weber, 1994; Hewitt, Flett, Blankstein & Mosher, 1995; Dean & Range, 1999; however, only a few studies have actually examined levels of perfectionism in individuals who have attempted to take their own lives (Hewitt, Norton, Flett, Calander & Cowan, 1998; Hunter & O'Connor, 1998). Consequently, the main aim of this study was to replicate the most important findings of the previous studies in a sample of parasuicidal patients. Thus, we aimed to investigate the moderating effect of autobiographical memory recall on the relationship between perfectionism and

psychological distress/suicide ideation, as well as the role of behavioural inhibition and activation sensitivities in this relationship. In addition, we wanted to extend this research by exploring the role of these motivational sensitivities in producing specific goals about the future. Finally, we wanted to investigate any differences between first-time parasuicide patients and repeated attempts parasuicide patients.

The overarching hypothesis guiding this research was that perfectionism and over-general autobiographical memory recall would interact to predict psychological distress and suicide ideation. Furthermore, it was hypothesised that perfectionism would mediate the relationship between BIS and distress/suicide ideation, whilst BAS would act as a protective factor. Finally, we hypothesised that BIS would correlate with the number of avoidance goals for the future, whilst BAS would correlate with the number of approach goals for the future.

## **Chapter 5: Methodology**

### **5.0 General Methodology: Overview**

On the basis of the aims and hypotheses underpinning this research (Chapter 4), this chapter endeavours to describe the assessment tools employed during the four studies. This synopsis will avoid unnecessary repetition of the description of measures as there is some overlap of measures between the four studies. However, each study description will include an outline of the individual method and procedure. The measures are described in terms of two general categories: (i) outcome variables, and (ii) predictor variables. Below is a table of the measures used in each individual study (Table 5.1), and what follows is a detailed description of each measure. Furthermore, Table 5.2, at the back of this chapter, provides a brief summary of the measures and tasks included in the four studies. The Cronbach's alphas will be presented separately in each study.

Table 5.1 Summary of the measures included at Time 1 and Time 2 for each study.

	Measures (Time 1)	Measures (Time 2)
Study 1	Hopelessness (BHS) Depression (CES-D) Suicidality (GHQ-28) Perfectionism (MPS-H) Autobiographical Memory (AMT) Stress (PSS) General Health (GHQ-28)	Hopelessness (BHS) Depression (CES-D) Suicidality (GHQ-28) Stress (PSS) General Health (GHQ-28)
Study 2	Hopelessness (BHS) Suicidality (GHQ-28) Depression (BDI) Perfectionism (MPS-H) Coping (CISS) Mood Regulation (NMR) Stress (PSS) Mood General Health (GHQ-28)	Hopelessness (BHS) Suicidality (GHQ-28) Depression (BDI) Perfectionism (MPS-H) Autobiographical Memory (AMT) Coping (CISS) Mood Regulation (NMR) Stress (PSS) Mood General health (GHQ-28)
Study 3	Hopelessness (BHS) Depression (GHQ-28) Suicidality (GHQ-28) Suicide Ideation (BDI) Autobiographical Memory Task (AMT) Perfectionism (MPS-H) Motivation (BIS/BAS) Stress (PPS)	Hopelessness (BHS) Depression (GHQ-28) Suicidality (GHQ-28) Suicide Ideation (BDI) Stress (PPS)
Study 4	Hopelessness (BHS) Depression and Anxiety (HADS) Suicide Ideation (SPS) Autobiographical Memory Task (AMT) Perfectionism (MPS-H) Motivation (BIS/BAS) Stress (PPS) Goals Task	Hopelessness (BHS) Depression and Anxiety (HADS) Suicide Ideation (SPS)

## 5.1 Outcome Variables

### 5.1.1 Hopelessness

The Beck Hopelessness Scale (BHS; Beck, Weissman, Lester & Trexler, 1974) is a 20 item true-false scale (items 1, 3, 5, 6, 8, 10, 13, 15, and 19 were reverse scored).

The scale uses statements such as “I look forward to the future with hope and enthusiasm” to yield information regarding an individual’s negative expectations of the future. Participants are asked to indicate agreement or disagreement with these



statements and higher scores are seen to represent higher feelings of hopelessness. Hopelessness is characterised by expectations that negative consequences will be encountered in the future, and a feeling of having no control over future events. The hopelessness scale was included on the basis that hopelessness has repeatedly been found to be associated with both frequency and severity of suicidal ideation (Nekanda-Trepka, Bishop & Blackburn, 1983), and suicidal intent (Dyer & Kreitman, 1984). Indeed, hopelessness is generally believed to be an even stronger predictor of suicidal behaviour than depression, and the best predictor of completed suicide (Beck, Steer, Kovacs & Garrison, 1985). This scale has received satisfactory reliability and validity estimates in several studies (e.g. Beck & Steer, 1988; Holden & Fekken, 1988).

### *5.1.2 Depression*

#### *5.1.2a Centre for Epidemiological Studies Depression Scale*

The Centre for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977) is a 20 item scale which requires the respondent to rate statements such as “I felt bothered by things that usually don’t bother me” according to their relevance to the respondent’s life during the last week. The statements are rated on a 4-point scale ranging from 1 (Rarely or none of the time: less than 1 day) to 4 (Most or all of the time: 5-7 days), and consequently higher scores reflect elevated levels of depression/dysphoria. In order to avoid response bias, four items are reverse scored (items 4, 8, 12 and 16). The scale has been recommended for use in the general population and is, therefore, deemed to be an appropriate measure of depressive symptoms within Study 1 (Radloff, 1977). Studies investigating the psychometric

properties of the scale have shown that the CES-D has good construct validity and internal validity whilst also displaying a high internal consistency (Radloff, 1977).

#### *5.1.2b Beck's Depression Inventory (Version 2)*

Beck's Depression Inventory (BDI-II; Beck, Rush, Shaw & Emery, 1979) is a 21 item test presented in multiple choice format. Each item describes a specific behavioural manifestation (e.g. sleep, appetite) of depression and contains four self-evaluative statements arranged according to increased severity. These statements are rank ordered to reflect the range of severity and are assigned a numerical value to indicate this severity (e.g. item one: 0= I do not feel sad, 1= I feel sad much of the time, 2= I am sad all the time, and 4= I am so sad or unhappy that I can't stand it). An overall score of between 0-19 is seen to reflect minimal to mild depression, whilst a score between 20-63 indicates moderate to severe depression.

The BDI is one of the most widely accepted measures of severity of depression in adult and adolescent populations; both in clinical and non-clinical populations. As a result, there have been a number of review studies attempting to clarify the application and psychometric properties of the scale (e.g. Dahlstrom, Brooks & Peterson, 1990). These have established that the BDI successfully differentiates between clinically depressed individuals and non-depressed psychiatric patients (Steer, Beck & Garrison, 1986), and achieves a coefficient alpha above .80 in psychiatric individuals (e.g. Steer et al., 1986).

### *5.1.2c Hospital Anxiety and Depression Scale*

The Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983) is a 14 item self-report measure which contains two 4 item Likert type subscales; one for anxiety (items 1, 3, 5, 7, 9, 11, 13 (odd numbered items)) and one for depression (2, 4, 6, 8, 10, 12, 14 (even numbered items)). The HADS is scored by summing the ratings for the items to yield a total score. Items are scored from 0 to 3, with a higher score indicating a higher level of depression or anxiety. An example of an anxiety statement (item 7) is “I can sit at ease and feel relaxed”; this item is responded to by way of the following possibilities: definitely (0), usually (1), not often (2), not at all (3). An example of a depression statement (item 2) is: “I still enjoy the things I used to enjoy”, which is answered with the following responses: definitely as much (0), not quite as much (1), only a little (2), and hardly at all (3). Eight items are reverse scored to avoid response bias (items 1, 3, 5, 6, 8, 10, 11, 13).

A recent review of over 700 studies using the HADS found it to have good psychometric properties and to be a good screening tool for depression and anxiety in both the general public and in a health setting (Bjelland, Dahl, Haug & Neckelmann, 2002). Furthermore, the scale has been found to have good test-retest reliability (6 months or less) (Savard, Laberge, Gauthier, Ivers & Bergeron, 1998).

### *5.1.3 General Health*

The General Health Questionnaire (GHQ-28; Goldberg & Hillier, 1979) is a revised version of the original General Health Questionnaire (GHQ-60; Goldberg, 1960), and consists of 4 subscales (somatic complaints, anxiety and insomnia, social dysfunction, and severe depression). The somatic complaints subscale is measured

by questions such as “Have you recently been getting any pains in your head?”. The anxiety and insomnia subscale includes questions such as “Have you recently been getting scared or panicky for no good reason?”. The social dysfunction subscale is measured by way of questions such as “Have you recently felt capable of making decisions about things?”. Finally, the severe depression subscale includes questions such as “Have you lately felt that life is entirely hopeless?”. Thus, the GHQ-28 is a self-administered screening instrument designed to detect psychological distress in both clinical and non-clinical populations, and it has consistently been found to have good validity and reliability (Goldberg & Williams, 1988).

The GHQ-28 is included as research suggests that the scale usefully screens the general population for minor psychiatric disorders (Wyatt & Gilbert, 1998), and it has been found to be a useful measure of suicidality. Suicidality is measured through responses to four items extracted from the severe depression subscale. These are: “Have you recently felt that life isn’t worth living?”, “Have you recently thought of the possibility that you might do away with yourself?”, “Have you recently found yourself wishing that you were dead and away from it all?”, and “Have you recently felt that the idea of making away with yourself kept coming into your mind?”. Previous research has suggested that the suicidality questions of the GHQ-28 are significantly associated with measures of depression hopelessness and self-esteem in a non-clinical population (Goldney, Winefield, Tiggemann, Winefield & Smith, 1989).

#### *5.1.4 Suicidality*

##### The Suicide Probability Scale (Suicide ideation subscale)

The Suicide Probability Scale (SPS; Cull & Gill, 1988) is a measure of suicide risk potential in both clinical and non-clinical populations. The scale consists of 36 statements and 4 subscales: (i) hopelessness, (ii) suicidal ideation, (iii) negative self-assessment, and (iv) hostility. The statements are evaluated by way of 4 responses: none or a little of the time, some of the time, good part of the time, and most or all of the time, and are scored in the direction of increasing suicide risk such that a high score on a scale indicates a higher level of assessed risk.

The suicide ideation subscale is aimed at establishing an individual's reported thoughts or behaviours associated with suicide. The scale contains 8 items which range in focus from establishing specificity of suicide plans (e.g.. item 30 "I have thought of how to do myself in"), to determining the meaning of suicidal behaviour and thoughts within a social context (e.g.. item 7 "In other to punish others I think of suicide"). This scale was developed on the basis of previous research with particular emphasis on the thinking of Shneidman (1996). Thus, it was taken as a starting point that the act of suicide may be impulsive but the inherent predisposition to engage in life-threatening behaviours, and to complete suicide, is long-standing. In this way, the scale was developed to measure both state and trait components of suicide.

The items were generated from a pool of 200 statements and were rated on their discriminative power to differentiate between individuals who had previously attempted suicide and individuals who had never attempted suicide. Furthermore,

the items with the highest discriminative validity were rated by clinical judges in terms of clarity and appropriateness. Finally, items were chosen on (i) their ability to relate to previous theoretical explanations of suicide, (ii) their clinical importance in relation to retrospective analysis of suicide notes as well as interviews with suicidal individuals, (iii) their ability to be easily converted into a statement relating to either a suicide feeling or behaviour, (iv) their applicability to both genders, all ages, and across ethnicities, and (v) the absence of overlapping contribution to the predictive validity of the scale. The scale was shown to have high levels of reliability and validity (Cull & Gill, 1988).

## **5.2 Predictor Variables**

### **5.2.1 Autobiographical Memory Task**

Williams (2001) argued that the importance of memory in suicide cannot be overstated as memory “provides the key to understanding how, when someone feels under pressure from their life circumstances, they begin to feel trapped in a mental cage from which they appear unable to escape” (p. 156). The significance of memory biases in suicidal patients was first investigated by Williams and Broadbent (1986) who devised a memory task similar to the word-association tests employed within a therapeutic setting by Jung. They found that suicidal patients were much slower at recalling specific positive memories, and concluded that these patients appear to abort specific memory recall at an early stage, resulting in patients being stuck at an intermediate description level known as the mnemonic interlock. This memory bias not only affects memory recall from the past but also promotes vagueness about the future; and this ultimately influences effective problem-solving (Williams, 2001).

The Autobiographical Memory Task (AMT; Williams & Broadbent, 1986) requires participants to generate specific autobiographical memories in response to cue words. Prior to formal testing it is explained to the participants that a specific memory is defined as the recollection of an event which occurred on a particular day within a limited timeframe. Examples of a specific memory and a general memory i.e. a memory for an event which happened repeatedly or over an extended period of time) are provided, and the participants are encouraged to provide examples of their own in response to trial words, until they feel comfortable with the task. The cue words, which alternated between negative, positive and neutral valenced words, were presented verbally for a period of 30 (Studies 2 & 4) or 60 (Study 1) seconds. As Study 1 included the cue words from the original autobiographical memory study by Williams and Broadbent (1986), the time given to recall a memory was also replicated. However, more recently, studies have only allowed 30 seconds for each cue words, and consequently, the methodology was adapted to reflect this change.

The time was stopped if the participant started talking; however, if the participant provided an over-general memory, the researcher asked the participant to think of a memory that was more specific and the timer was restarted. If no memory is provided within the time limit a score of 30 (or 60) seconds is recorded. In keeping with the original AMT by Williams & Broadbent (1986) all words were generated from a lists of words which had been matched for emotionality (see Brittlebank, Scott, Williams & Ferrier, 1993). Below are listed the words used in each study.

5.2.1a Study 1: To minimise the duration of a testing session, in Study 1 only positive and negative words are included. The cue words are drawn from the original William and Broadbent (1986) study

- Positive words: happy, safe, interested, successful, and surprised.
- Negative words: sorry, angry, clumsy, hurt, and lonely.

Latencies were recorded based on the time taken to recall the first specific memory within the timeframe (60 seconds). If an over-general memory was generated, participants were simply prompted to recall another memory which is more specific. If no memory was produced within the timeframe, a response latency of 60 seconds was recorded.

5.2.1b Study 2: As a result of some ambiguity regarding some of the words used in Study 1, i.e. surprised and safe, it was thought best to employ different words in this study. Consequently different cue were chosen from the list provided in the paper by Brittlebank et al. (1993).The words are as follows:

- Positive words: happy, excited, pleased, smile, glorious.
- Negative words: failure, rejected, sad, hopeless, grief.
- Neutral words: grass, pottery, bread, search, and occasion.

The memory recall latency reflects the time taken to generate the first specific memory. Thus, if the first response was generic (over-general), the participant was simply asked to provide another memory until the 30 second timeframe had elapsed. If my memory had been generated within this timeframe, a response latency of 30 seconds was recorded.



5.2.1c Study 3: Experiment 3 took the form of a self-report questionnaire study, and as a result the AMT was modified to be administered in a written group delivery format. This modification has been successfully applied in an earlier research study (Henderson, Hargreaves, Gregory & Williams, 2002). The instructions provided for the task are matched to the instructions provided in the verbal AMT; however, in the written AMT they are provided at the top of the questionnaire. Furthermore, spaces are provided for participants to write down their memory for each cue word. The words used in Study 3 are the same used in the Henderson et al. (2002) study:

- Positive: joy, relieved, proud, eager, glorious, sunny.
- Negative: guilty, hopeless, failure, grave, ugly, worse.
- Neutral: grass, gigantic, absence, wildlife, bread, search.

The instructions are as follows: *We are interested in your memory for events that have happened in your life. Below is a list of 18 words. For each one, we want you to remember an event from your life that the word reminds you of. The event can have occurred at any time in your life and may be trivial or important. However, the event should be a SPECIFIC event and have occurred on a particular occasion. By that we mean that it has to be an event which happened within the space of one day; it can't be something that happened over an extended period of time. For example, in response to the word "party", you could NOT say 'I always enjoy a good party' or 'I have been to many good parties in the past' because these memories are very general. But you could say 'I went to a party in the student union on Monday' or 'I had a good time at Jane's party last month', because that would be talking about a specific event.*

As this was a written version of the AMT, no measure of response latency was recorded. Instead, memories were categorised into specific (a memory which covers an event which happened within the space of one day) or over-general (a memory of an event which took place over a prolonged period of time or which described events which happens frequently (Williams & Dritschel, 1992); see Figure 3.1). Furthermore, in Studies 1 and 2 we observed that participants quite often were unable to produce any memories at all, and consequently we included another memory category (missing) to describe instances where no memories were generated at all.

5.2.1d Study 4: Similar to Study 1, Study 4 only includes positive and negative words in order to limit the time taken to complete the task. The words included are generated from the Brittlebank et al. (1993) study, and are as follows:

- Positive: happy, excited, pleased, smile and glorious.
- Negative: failure, rejected, sad, hopeless, and grief.

For this final study we included memory recall latencies (time taken to recall first specific memory), and categorised memories into whether the first response was specific, over-general or missing.

### *5.2.2 Perfectionism*

The Multidimensional Perfectionism Scale (MPS-H; Hewitt & Flett, 1991) is a 45-item measure of perfectionism which consists of three theoretically distinct scales (self-oriented, other-oriented, and socially prescribed), each of which is assessed by 15 questions. Self-oriented perfectionism, which is the need for personal high achievement and perfection, is measured by way of statements such as “One of my

goals is to be perfect in everything I do". Other-oriented perfectionism, which is defined as the need for others to achieve perfection, is measured by statements such as "I have high expectations for people who are important to me". Finally, socially prescribed perfectionism describes the need to meet the perceived expectations and standards of others, and is measured by statements such as "People will probably think less of me if I make a mistake". Respondents are asked to rate the statements on a 7-point Likert type scale ranging from 1 (strongly disagree) to 7 (strongly agree) with 4 representing a neutral or undecided response. To avoid response biases the following items are reverse scored: 2, 3, 4, 8, 9, 10, 12, 19, 21, 24, 30, 34, 36, 37, 38, 43, 44, and 45, and each subscale is scored individually with a higher score signifying a greater level of that particular form of perfectionism.

Each dimension is believed to measure a specific personality trait and as such they are associated differentially with various types of psychopathology. The MPS-H is based on the contention that perfectionism is not only self-relevant, but also has important inter-personal aspects which are of great significance to the prediction of psychological distress. Furthermore, the authors aimed to develop a scale which would stand up to psychometric examinations of reliability and validity; an issue which had only been addressed sparingly in previously developed scales. Subsequent research on the MPS has confirmed each of the three dimensions to be reliable and valid (e.g. Flett, Hewitt, Blankstein & Dynin, 1994). In addition, there is also evidence to suggest that the MPS-H is not influenced significantly by response biases in non-clinical or clinical subgroups (Hewitt, Flett & Blankstein, 1991).

### *5.2.3 Perfectionism Cognitions*

Existing measures of multidimensional perfectionism, such as the MPS-H (Hewitt & Flett, 1991), are general instruments developed to assess trait levels of perfectionism. In this way, they do not consider any ongoing cognitive activity regarding the need to attain perfectionism. There is, however, important evidence to suggest that perfectionists are characterised by some degree of cognitive preoccupation with their perfectionistic goals: for example, Hewitt and Genest (1990) found that the ideal self operates as a form of self-directed schema which favours the processing and encoding of information which indicates that perfection has not been obtained. Thus, it promotes rumination about the lack of perfectionism achieved. Flett et al. (1998) set out to develop a measure of individual differences in the perceived frequency of perfectionistic thoughts. They proposed that perfectionists who also demonstrate a cognitive preoccupation with their perfectionism, are more likely to report higher levels of negative affectivity and depressive symptomatology: Frequent perfectionistic thinking may result in ambiguous feedback being interpreted more rigidly in terms of failure or success, and may also engage in deeper level of processing of events. The development of a reliable measure of perfectionism cognitions, thus, has important practical implications. As treatment of perfectionism has proved difficult, it is possible that effort could be directed at the amelioration of the tendency to engage in ruminative thoughts with a perfectionistic content.

The Perfectionism Cognitions Inventory (PCI; Flett, Hewitt, Blankstein & Gray, 1998) is a 25 item measure of automatic thoughts associated with perfectionism.

The PCI items were generated from the existing perfectionism literature and reflect

different issues pertaining to perfectionism: (i) direct perfectionism (e.g. “I should be perfect”), (ii) upward striving (e.g. “I can always do better, even if things are almost perfect”), and (iii) upward striving by way of social comparison (e.g. “I have to be the best”). In addition, items were also generated to reflect awareness of imperfection (e.g. “I need to do better”) and inability to attain high goals (“I’ve got to keep working on my goals”). The items are assessed by way of a 5 point Likert type scale ranging from not at all (0), to all the time (4). Examination of Cronbach’s alpha on these items determined an alpha coefficient of .96 (Flett et al., 1998).

#### *5.2.4 Behavioural Inhibition and Activation (Motivation)*

A measure of motivation was included to investigate the extent to which individuals are differently prepared to respond to every day events and emotions with specific emotions, i.e. individual differences in proneness to experience positive and negative affect. Behavioural and inhibition activation levels have been theorised to relate to psychological problems, and recent it has been suggested that there may be an important link between motivation and perfectionism (O’Connor & Forgan, in press).

The Behavioural Inhibition Scale/ Behavioural Activation Scale (BIS/BAS; Carver & White, 1994) is a 22-item self-report measure of inhibition and activation dispositional sensitivities, which are rated along a 4-point Likert type scale where 1 indicates “very false for me” and 4 indicates “very true for me”. The BIS scale measures the tendency of an individual to experience negative affect (behavioural inhibition) in the presence of threat cues. In contrast, the BAS scale assesses the experience of positive affect (behavioural approach) in the presence of cues of

incentive. The scale is designed to measure four separate scores: BIS Sensitivity (e.g. “I worry about making mistakes”), BAS reward responsiveness (e.g. “It would excite me to win a contest”), BAS drive (e.g. “When I want something I usually go all out to get it”), and BAS fun seeking (e.g. “I crave excitement and new sensations”). For each subscale, a response score is achieved by summing the responses for the scale items (reverse scoring used for items 8, 11, 13, 16, 17, 19, and 24). The BIS/BAS has consistently been found to demonstrate adequate internal consistency, as well as convergent and discriminant validity (Carver & White, 1994).

#### *5.2.5 Future Goals Task*

The Future Goals Task (FGT; Dickson & Macleod, 2004) was designed to measure respondents’ self-generated future approach and avoidance goals. These goals refer to future experiences that individuals think they will typically be trying to accomplish or trying to avoid. The prompts for approach and avoidance goals are:

*“In the future it will be important for me to....”* (Approach)

*“In the future it will be important for me to avoid....”* (Avoidance)

Participants are given 75 seconds to write down as many future goals that come to mind within each respective condition and scores are calculated representing the total number of approach goals and total number of avoidance goals. The time limit means that all participants have to try to generate responses for the same amount of time, which helps control for variations in effort and task motivation. Goals are categorised as approach or avoidance using criteria based on Gray’s theoretical account of motivation and previous research (Elliot, Sheldon & Church, 1997; Emmons & Kaiser, 1996). The goals are coded in a similar manner to the Autobiographical Memory Task (Williams & Broadbent, 1986); thus, they are coded as either over-general or specific. Dickson and MacLeod (2004) suggested that a goal can be classified as specific when it is described as a future aspiration

with a particular target feature and which also included at least one of the following features: Place, time, or people. In contrast, an over-general goal is a more global aspiration with no particular target feature.

Following the goals task, participants are invited to point out their two most important approach goals and their two most important avoidance goals, and are then asked to think of strategies or ways to achieve these goals. The prompts for approach and avoidance goals are:

*“How can I accomplish this?”* (Approach)

*“How can I avoid this?”* (Avoidance)

Participants are given 75 seconds to generate as many plans (i.e. strategies to achieve or avoid goals), and these are coded in a similar way to approach and avoidance goals. Thus, plans are coded as specific when it includes a target action (as opposed to a feature on the goal generation task) and incorporates at least one of the three features: Place, time or people. The 75 second time limit is replicated from Dickson and MacLeod, 2004).

#### *5.2.6 Perceived Stress*

It is generally acknowledged that personality factors, such as perfectionism, are involved both in the anticipation, generation, and perpetuation of stressful situations (Bolger & Zuckerman, 1995). In other words, the association between perfectionism and psychological distress is, at least in part, the outcome of the relationship between perfectionism and stress. Furthermore, diathesis-stress models suggest that vulnerability to negative affectivity only occurs in the presence of adverse life experiences (e.g. Peterson & Seligman, 1984; Abramson, Metalsky & Alloy, 1989). Consequently, a measure of stress was included throughout the studies on the basis that perfectionists are believed to be more likely than non-perfectionists to experience stress (Hewitt & Flett, 2002).

Self-appraised stress was measured by way of the Perceived Stress Scale (PSS; Cohen, Kamarck & Mermelstein, 1983). Respondents are asked to rate 15 questions which relate to their life during the last two weeks (e.g. “In the last two weeks, how often have you felt you were effectively coping with important changes that were occurring in your life?”). Rating of agreement is achieved through a 5-point Likert type scale ranging from 0 (Never) to 4 (Very often). Higher overall scores reflect greater perceived stress over the last two weeks. Studies have consistently shown this scale to have high internal consistency (Chang, 1998).

#### 5.2.7 Mood

As an experimental mood manipulation was included in Study 2, it was necessary to incorporate a measure of mood to establish the effectiveness of the mood manipulation. Seeing that the mood manipulation was adapted from the Moore and Oaksford (2002) study, it seemed sensible to also include their measure of mood.

Overall affective state was measured through 5 Likert type scales (Moore & Oaksford, 2002; Isen & Gorglione, 1983). Each scale ranged from negative to positive (-3 to +3) and included mood relevant adjectives at each end (Negative: tired, anxious, unaware, negative & sober; Positive: refreshed, calm, alert, positive & amused), such that each pair of statements will be opposites and affectively salient. Several studies have demonstrated the validity of such Likert type scales in assessing mood states (e.g. Isen & Gorglione, 1983).



### *5.2.8 Mood Induction*

A mood induction was incorporated into Study 2 for a number of reasons: Firstly, research on perfectionism is generally based on the implicit assumption that perfectionism is a stable personality trait; a conjecture which is not often questioned. Secondly, although Study 1 had strength in as far as it was longitudinal in its nature; it is acknowledged that the results are limited because of result of the correlational method of analysis. Therefore, it was deemed to be both necessary and important to include an experimental manipulation to strengthen the research findings.

The mood induction procedure (adapted from Moore & Oaksford, 2002) was employed to promote positive, negative and neutral emotional states. It is generally accepted that increased effectiveness of the mood induction is achieved if several procedures are carried out in conjunction (Martin, 1990), and as a result the mood induction was achieved through the combination of three well established mood induction techniques: (i) music (Positive; Mozart's *Eine Kleine Nachtmusik*, 1<sup>st</sup>, 3<sup>rd</sup> and 4<sup>th</sup> movement; Negative: Barber's *Adagio for Strings*, and Mahler's 5<sup>th</sup> *Symphony Adagietto*; Neutral: Brahms 2<sup>nd</sup> movement from the first symphony, 2<sup>nd</sup> and 3<sup>rd</sup> movement from the 3<sup>rd</sup> symphony), (ii) a modified version of the Velten mood induction procedure (Velten, 1968), and (iii) instructions which ask participants to actively enter the required mood state (Slyker & McNally, 1991; Westermann, Spies, Stahl & Hesse, 1995).

### *5.2.9 Coping*

An important reason for engaging in coping behaviours is to reduce negative or dysphoric mood caused by negative and stressful life events. Understanding the choice of coping responses and the psychological outcome of the stress-coping process has important practical implications, as it informs therapists of specific cognitions and behaviours to target for modification (Catanzaro & Greenwood, 1994). A measure of coping was included on the basis that coping strategies used in response to stressful situations are believed to be of importance in understanding psychopathology.

The Coping Inventory for Stressful Situations (CISS; Endler & Parker, 1999) was developed to measure dispositional coping strategies by way of 48 items. The scale contains 3 subscales: task-oriented, emotion-oriented, and avoidance-oriented. The avoidance-oriented dimension can be further subdivided into a distraction scale and a social diversion scale. According to the CISS coping processes are primarily cognitive and behavioural strategies which mediate between internal and/or external demands, and are believed to act either on the stressor itself, or to regulate the emotional state which is associated with the stressful event. The participant responds to the statement “When I encounter a difficult, stressful, or upsetting situation I....” by indicating how much they engage in different types of activities in the face of stress or difficulty by using a 5-point Likert type scale ranging from not at all to very much. The activities include “Focus on the problem and see how I can solve it” (Task-focused coping), “Blame myself for having gotten into this situation” (Emotion-focused coping), and “Treat myself to my favourite food or

snack” (Avoidance coping). Higher scores indicate a higher employment of the particular coping style.

The CISS has been used in both clinical and non-clinical populations, the reliability and validity has been extensively supported (e.g. Endler & Parker, 1994); and factor analysis has confirmed the multidimensional nature of the scale (e.g. Endler, Parker & Butcher, 1993). The CISS was chosen for this thesis as it, in contrast to an older and more established measure like the COPE, has defined subscales which are important in the distinction between effective and non-effective coping.

#### *5.2.10 Mood Regulation*

Social learning theory (Rotter, 1954, 1983) and response expectancy theory (Kirsch, 1985) both posit that expectancies for non-volitional responses are self-confirming. In this way, negative mood regulation expectancies are of importance to the emotional outcome of coping processes, in that, an individual’s expectancy that they can alleviate a negative mood should lead them to engage in effective problem-solving and active coping strategies (Catanzaro & Greenwood, 1994).

The Negative Mood Regulation Scale (NMR; Catanzaro & Mearns, 1990) is a 30 item questionnaire which attempts to investigate the extent to which an individual’s expectancies regarding the outcome of their attempt to alter or alleviate a negative mood state. The items are measured on a 5-point Likert type scale ranging from 1 (strongly disagree) to 5 (strongly agree), and 15 of the items have been reverse scored (items 3, 5, 8, 9, 11, 14, 18, 19, 21, 22, 24, 25, 27, 28, and 30). Each item begins with the stem “When I’m upset I believe that....”, and includes statements

such as “Going out to dinner with friends will help” and “Thinking that things will eventually be better won’t help me feel any better” (reverse scored). The scale has good internal consistency with an alpha coefficient ranging from .86 to .92 (Catanzaro & Greenwood, 1994). Research on the NMR scale has shown that individuals who score highly on this scale report less frequent dysphoric mood (Kirsch, Mearns & Catanzaro, 1990), and demonstrate more active coping strategies (Mearns, 1991).

Table 5.2 Summary table of all the variables (outcome and predictor).

Type	Name	Authors	Year	Measure	Number of Items	Rating Scale
Outcome Variable	Beck’s Hopelessness Scale (BHS)	Beck, Weissmann, Lester, Trexler	1974	Hopelessness	20	True or False
	Centre for Epidemiological Studies Depression Scale (CES-D)	Radloff	1977	Depression (non-clinical population)	20	4-point scale ranging from 1 (Rarely or none of the time: less than one day) to 4 (Most or all the time: 5-7 days)
	Beck’s Depression Inventory (BDI)	Beck, Rush, Shaw & Emery	1979	Depression	21	4 statements relevant to each items
	General Health Questionnaire (GHQ-28)	Goldberg & Hillier	1979	General Health (4 subscales: somatic complaints, anxiety and insomnia, social dysfunction, severe depression (suicidality))	28	4-point scale ranging from Not at all, to Much worse than usual
	Suicidality (SPS)	Cull & Gill	1988	Suicidal ideation subscale	8	4 items ranging from none or little of the time to most or all of the time
Predictor Variable	Autobiographical Memory Task (AMT)	Williams, & Broadbent	1986	Verbal autobiographical memory task	Usually 15 cue words (5 positive, 5 neutral, 5 negative)	Measure of response latency in seconds; Measure of number of over-general and specific memories
	Multidimensional Perfectionism Scale (MPS-H)	Hewitt & Flett	1991	Perfectionism (3 subscales: self-oriented perfectionism, other-oriented perfectionism,	45	7-point Likert type scale ranging from strongly disagree to strongly agree

				socially prescribed perfectionism)		
Perfectionism Cognitions (PCI)	Flett, Hewitt, Blankstein & Gray	1998	Automatic thoughts associated with perfectionism	25	4-point Likert type scale from Not at all to all the time	
Behavioural Inhibition/ Behavioural Activation (BIS/BAS)	Carver & White	1994	Inhibition and activation dispositional sensitivities	22	4-point Likert type scale ranging from very false for me to very true for me	
Goals Task (FGT)	Dickson & MacLeod	2004	Verbal test of future goals and goal achievement strategies	Responses to the cues: "In the future it is important for me to achieve/ avoid..", and "How can I achieve/ avoid this?"	Measure of number of specific goals and goal achievement strategies	
Stress (PSS)	Cohen, Kamarck & Mermelstein	1983	Retrospective measure of self-appraised stress	15	5-point Likert type scale ranging from never to Very often	
Mood	Moore & Oaksford,	2002	Overall affective state	5	7-point Likert type scales ranging from very negative to very positive	
Mood Induction Procedure	Moore & Oaksford	2002	An experimental manipulation of mood including 3 techniques: music, instructions, and Velten's mood induction of procedure	Mood Induction Procedure	Moore & Oaksford	
Coping (CISS)	Endler & Parker	1999	Dispositional coping (3 subscales: emotion, action, avoidance)	48	5-point scale ranging from not at all to very much	
Mood regulation (NMR)	Catanzaro & Mearns	1990	Perceived ability to alter or alleviate a negative mood state	30	5-point Likert type scale ranging from strongly agree to strongly disagree	

## **Chapter 6: Study 1**

*Autobiographical Memory as a Moderator between Perfectionism and  
Psychological Distress and Suicidality*

## *Summary*

The main objective of this study was to examine the potential relationship between perfectionism and autobiographical memory in the prediction of psychological distress (hopelessness, depression and suicidality) both concurrently and over a period of time. 117 university students participated in the study and completed the Autobiographical Memory Task and a battery of self-report measures including perfectionism, hopelessness, depression, general health (somatic complaints, social dysfunction, anxiety and insomnia, severe depression and suicidality), and stress, at two times points separated by six weeks. Hierarchical regression analyses were carried out to test for mediating and moderating relationships between the variables. The analyses showed that perfectionism when combined with slow recall of negative memories was a significant predictor of psychological distress and suicidality. Furthermore, the study revealed a moderating role for stress in the relationship between perfectionism and distress. The findings are discussed in relation to previous research and aims for further studies are proposed.

## 6.1 Introduction

Over the past decade there has been increased interest in the role of personality and cognitive factors in the understanding of psychological distress and suicidality, and as a result research within these areas has highlighted the importance of including such factors in the development of appropriate predictive models. Existing models of suicidality have consistently demonstrated the role of depression and hopelessness in the prediction of suicidal thoughts, intent, actions and completed suicide in a variety of populations including students, general adults, elderly individuals, and clinical subgroups (e.g. Clark & Fawcett, 1992; Brown, Beck, Steer & Grisham, 2000).

The theoretical frameworks which were summarised in Section 2.4.3, have emphasised the importance of cognitive factors such as cognitive rigidity, ineffective problem-solving skills, and autobiographical memory problems in the development of the psychological pain underlying suicidality (e.g. Shneidman, 1996). One particularly important theoretical framework, the Escape from Self Model (Baumeister, 1990), contends that suicidal behaviour follows from a painful self-awareness, which is the outcome of the individual's perceptions of being incapable of meeting relevant standards. This experience of failure is further exacerbated by negative internal attributions which bring about negative self-awareness and consequent cognitive deconstruction. Once an individual has engaged in such deconstruction of cognitions, rational thinking is rejected and replaced by a rigid frame of mind in which self-destructive tendencies are more likely to be deemed acceptable.



Recent research which has been of particular interest to informing theory, and indeed therapeutic interventions, has focused on the role of autobiographical memory recall (e.g. Williams & Broadbent, 1986; Watkins, Teasdale & Williams, 2000). Such research has demonstrated that suicidal and depressed individuals are much worse at recalling specific memories from their past than are controls. It has subsequently been suggested that some individuals activate over-general memory strategies in an effort to avoid potentially emotional issues (i.e. escape). However, this memory strategy has primarily been found to be detrimental to psychological well-being as the ability to be specific in memory recall has been found to be an important aspect of problem-solving (Evans, Williams, O'Loughlin & Howells, 1992; Goddard, Dritschel & Burton, 1996; Goddard, Dritschel & Burton, 1997; Sidley, Whitaker, Calam & Wells, 1997; Harvey, Bryant & Dang, 1998).

The issue of the role of cue word valence is unfortunately less clear, as some literature suggests that it is the slow, or over-general, recall of positive memories which is related to increased distress (e.g. Williams & Scott, 1988; McNally et al., 1994), whereas other research suggests that it is the slow, or over-general, recall of negative memories, which is implicated in psychological distress (e.g. Jones et al., 1999; Mackinger et al., 2000). Finally, some research suggests that over-general recall of memories is present in response to both positive and negative cue words (e.g. Goddard et al., 1996; McNally et al., 1995). A recent meta-analysis of the autobiographical memory literature (van Vreeswijk & de Wilde, 2004) proposes that this inconsistency may simply be the result of difference in patient characteristics; however, the article also acknowledges that the differences could be

the outcome of procedural differences between studies. That said, the role of negative and positive memories certainly requires further examination.

### 6.1.1 Perfectionism and Psychological Distress

Simultaneously, recent research has indicated that certain perfectionistic traits are implicated in increased hopelessness, depression, and subsequent suicidal behaviour (e.g. Hewitt & Flett, 1991; Adkins & Parker, 1996). This association fits well with both Baumeister's (1990) Escape Theory, and the Cry of Pain Hypothesis (Williams, 1997; Williams & Pollock, 2001), both of which are widely accepted theories of suicidality (please see Section 2.4.3). According to these theories suicide is motivated by the desire to escape from painful self-awareness and negative affect; an idea which is compatible with recent findings in the perfectionism literature which suggests that socially prescribed perfectionists are more likely to perceive themselves as failures, thereby increasing the wish to escape from painful self-awareness and contemplate suicide (Hewitt et al., 1994, 1998; O'Connor & O'Connor, 2003; Hunter & O'Connor, 2003; O'Connor & Forgan, in press).

However, although much has been learned about the perfectionism construct (including the fact that it is usefully conceptualised as multidimensional and may have both adaptive and maladaptive properties (e.g. Hunter & O'Connor, 2003), very little is known about the actual mechanism by which perfectionism has its effect. In other words, although research has identified a great number of psychopathologies which are associated with perfectionism, a large majority of this research is atheoretical in as far as it has been carried out without reference to any models of perfectionistic behaviours (Hewitt & Flett, 2002). Furthermore,

researchers have suggested that perfectionism may be related to psychopathology through two pathways: (i) perfectionism, through its fear of failure, exacerbates the experience of stress (moderation), and (ii) perfectionism, through the pursuit of unrealistic goals, actually creates more stressful situations or events (mediation). Unfortunately, there has been a tendency for research to focus on the moderating relationship (e.g. Hewitt & Dyck, 1986; Hewitt & Flett, 1993), and therefore, the mediating relationship still requires some investigation (Hewitt & Flett, 2002). The suggestion that perfectionism generates stressful circumstances which therefore results in increase psychological distress is consistent with the Escape from Self Model (Baumeister, 1990).

Thus, from an empirical standpoint, the literature would benefit greatly from a more theory-driven approach to the subject. Furthermore, the presence of perfectionism has been shown to hinder effective treatment of psychological symptoms, and has also been demonstrated to be a complex personality trait to treat (Blatt et al., 1998); thus, from a treatment standpoint, the identification of mechanisms in the relationship between perfectionism and psychological distress would be highly desirable in the effort to develop more effective treatment interventions (Dunkley, Blankstein, Halsall, Williams & Winkworth, 2000). However, to date, no research has investigated the potential relationship between perfectionism and cognitive vulnerability factors, such as autobiographical memory recall, in the prediction of psychological distress.

Therefore, the main aim of this study is to extend our knowledge of important individual risk factors by investigating the relationship between personality and

cognitions within an integrated predictive model of distress. Past research has shown that there is a relationship between personality and cognitions (e.g. future-thinking and perfectionism; Hunter & O'Connor, 2003); however, what is not clear is the exact nature of this relationship. We know that perfectionism can act as both a mediator and moderator (Hewitt & Flett, 2002), and, as a result, we will examine both mediating and moderating relationships within our integrative models. Consequently, the purpose of this study is to investigate two pathways by which autobiographical memory recall may relate to perfectionism to predict distress, i.e. via moderating versus mediating effects. The specific aims of the study were as follows:

1. To expand our knowledge about the role of perfectionism in predicting psychological distress (hopelessness and depression) and suicidality.
2. To investigate the relationship between perfectionism, autobiographical memory, and psychological distress and suicidality. This will be done by comparing two models of the effects of third variables on the experience of psychological distress and suicidality. Model 1 (Figure 6.1), the moderator model, would predict that trait perfectionism will interact with autobiographical memory recall to predict self-reported psychological distress. Model 2 (Figure 6.2), the mediator model, predicts that autobiographical memory will act as an intervening variable indirectly influencing the effect of perfectionism on distress.

Figure 6.1 Model 1 (moderation) to be tested in Study 1.

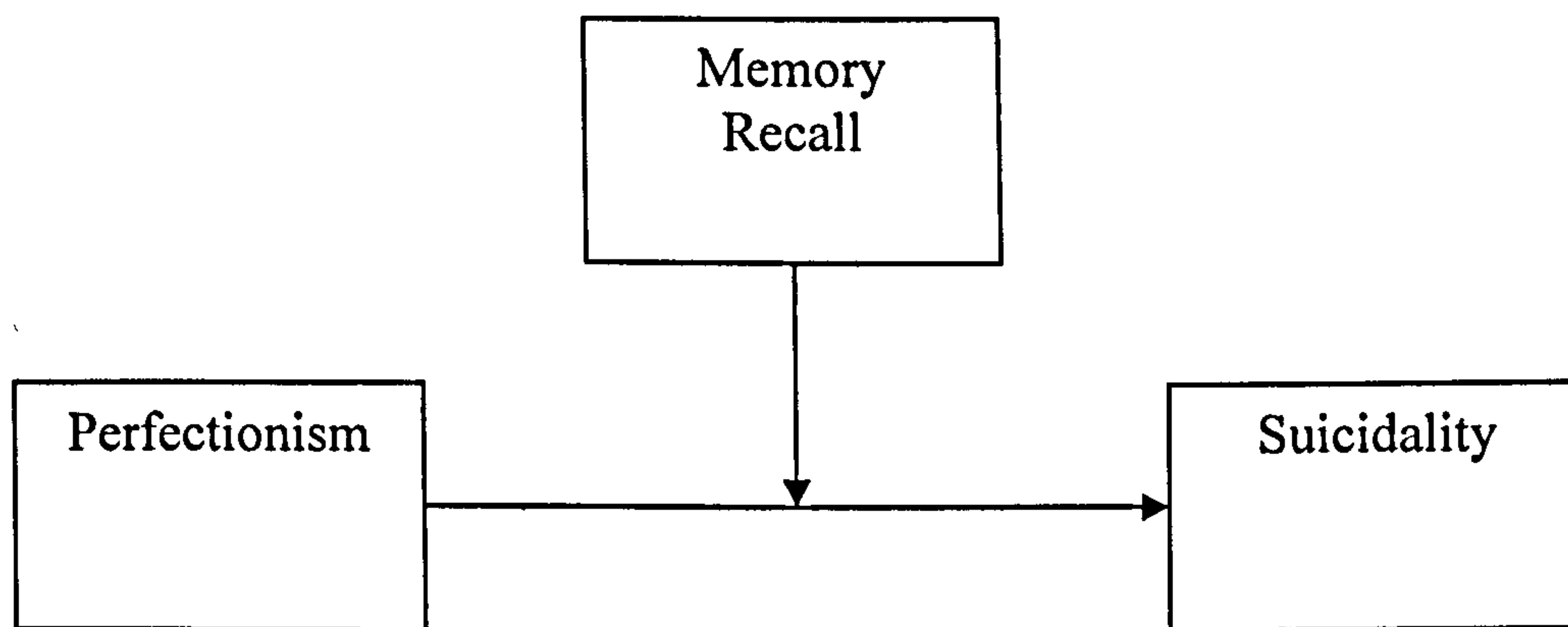
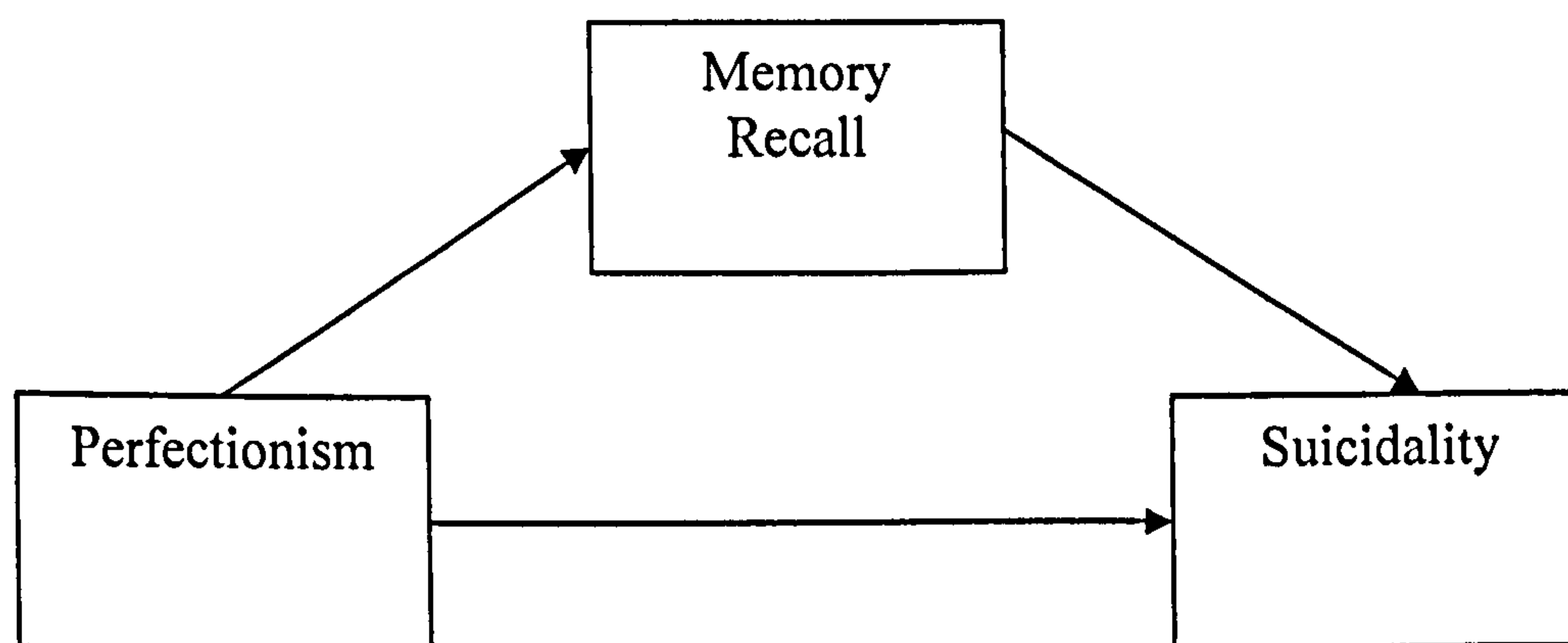


Figure 6.2 Model 2 (mediation) to be tested in Study 1.



Furthermore, there are a number of secondary research objectives: (i) to extend the current research on the efficacy of diathesis-stress models in the prediction of psychological distress, and (ii) to strengthen any findings by adding a prospective component to the research.

In light of previous research findings, the hypotheses for the study are as follows:

1. From a theoretical point of view it would be expected that self-oriented or socially prescribed high standards and a continuous fear of failure, would be a significant factor in developing a feeling of defeat; and that this feeling

would be associated with slower recall of memories from the past. Consequently, it is hypothesised that high levels of socially prescribed (and self-oriented perfectionism) will be associated with slower recall of autobiographical memories, and that they will interact to predict psychological distress/suicidality.

2. On the basis that hopelessness is a reduced expectation of positive events in the future, it is hypothesised that slow recall of positive memories will be positively related to increased hopelessness.
3. Finally, consistent with previous research (Hewitt & Flett, 1991; Blankstein et al., 1993; Flett et al., 1994) it is hypothesised that self-oriented and socially prescribed perfectionism will be associated with increased levels of psychological distress/suicidality, and that this relationship will be further exacerbated in the presence of perceived stress.

## **6.2 Methodology**

### *6.2.1 Design and Measures*

This study was a prospective design with 3 outcome measures (full summary provided in Chapter 5). The three outcome measures were chosen because of their relevance to suicide research:

- Depression (CES-D; Radloff, 1977; GHQ-28 Severe depression subscale; Goldberg & Hillier, 1979). Depression is the mood disorder most frequently associated with suicide, and accordingly, suicide prevention strategies target depression as their primary focus (Bertolote, Fleischmann, De Leo & Wasserman, 2004). Consequently, any consideration of suicide risk factors should include a measure of depression.

- Hopelessness (BHS: Beck et al., 1974). Hopelessness is currently believed to be the paramount antecedent to suicide and its manifestations (O'Connor, Sheehy & O'Connor, 1999). Nonetheless, some researchers have argued that, although the mediating role of hopelessness is well-established, a lesser amount of research has attempted to comprehend the underlying characteristics of hopelessness (O'Connor & Sheehy, 2000; Hunter & O'Connor, 2003), and therefore, more research is needed.
- Suicidality (i.e. suicidal thinking as measured by the GHQ -28 suicidality subscale). The GHQ-28 was included for two reasons: (i) it provides an additional measure of severe depression, and (ii) four items from the severe depression subscale can be used as a measure of suicidality. This measure has been deemed to be a valid measure of suicidality by the International Academy for Suicide research (Lenaars et al., 1997).

There were a number of predictor variables (Full summary provided in Chapter 5):

- Perfectionism (self-oriented, other-oriented, and socially prescribed; MPS-H; Hewitt & Flett, 1991).
- Autobiographical memory recall latency (positive and negative; AMT; Williams & Broadbent, 1986). Participants are asked to generate specific (i.e. memories of events which happened within the space of one day) memories in response to cue words. The time is recorded is the time taken to recall the first specific memory. If the first memory is over-general (i.e. concerns an event which took place over an extended period or the memory is of events which happened often), the participant is invited to think of another memory until a specific memory is provided. If a specific memory is

not provided within the timeframe (60 seconds), the response latency for that cue word is recorded as 60 seconds.

- Perceived stress (PSS; Cohen et al., 1983). A measure of perceived stress was included as stress is thought to be a primary triggering factor for perfectionism (Hewitt & Flett, 2002).

Reliability of the measures was measured by way of Cronbach's alpha analysis. With the exception of GHQ-3 (social dysfunction), all of the measures are reliable, yielding Cronbach's alphas of greater than .7 (Nunnally, 1978).

Table 6.1 Measure of Cronbach's alpha internal consistency for all the measures except the Autobiographical Memory Test.

Measure	$\alpha$	Measure	$\alpha$
Hopelessness	.77	Stress	.84
Depression	.87	GHQ-28 (1)	.81
Suicidality	.79	GHQ-28 (2)	.88
Self-oriented	.73	GHQ-28 (3)	.54
Other-oriented	.75	GHQ-28 (4)	.88
Socially prescribed	.72		

The following abbreviations were used: GHQ-28 (1): Somatic complaints; GHQ-28 (2): Anxiety and insomnia; GHQ-28 (3): Social dysfunction; GHQ-28 (4): Severe depression.

### 6.2.2 Participants

The participants were an opportunity sample of 117 students who were recruited from the University of Strathclyde and the University of Stirling. Whereas participants recruited from the University of Stirling received course credit for their contribution, the participants from the University of Strathclyde did not receive any kind of payment. The gender composition of the study was as follows: 87 female and 30 males. The age of the participants ranged from 17 to 65 years, with a mean age of 25.88 years (SD=9.39). A total of 102 participants were also tested at follow-up meaning that the attrition rate for the study was 13%. This sample size is adequate in terms of statistical power for both Time 1 and Time 2 data. Formal F-



power analysis was conducted prior to the study to determine the sample size required at follow-up. Consistent with Cohen (1992) a medium effect size of .15 was adopted. When alpha was set at .05, power at .85 with 5 predictors (i.e. the maximum number of predictors likely to be used in any single regression analysis), the power analysis indicated that a sample size of 102 individuals would be required. No details were taken concerning the marital status or ethnicity of the participants.

### *6.2.3 Procedure (Time 1)*

Participants were tested at two time points separated by approximately 6 weeks. At Time 1 the participants were provided with a brief description of the study and were asked to sign a consent form. They were informed that participation was confidential and that they could withdraw from the study at any time. Each testing session lasted approximately 30-40 minutes and consisted of a memory task and a battery of self-report measures including the measures described in section 6.2.1 (Below).

To ensure that the Autobiographical Memory Task (AMT; Williams & Broadbent, 1986) was not affected by any questions asked during the self-report part of the study, the study always commenced with the AMT. On completion of the AMT, the participants were asked to provide demographic details concerning their age and gender before completing the self-report section of the task. The battery of questionnaires included: hopelessness (BHS; Beck et al., 1974), depression (CES-D; Radloff, 1977; GHQ-28 Severe depression subscale; Goldberg & Hillier, 1979), general health (somatic complaints, anxiety and insomnia, social dysfunction,

severe depression, and suicidality; GHQ-28; Goldberg & Hillier, 1979), and stress (PSS; Cohen et al., 1983). The order of presentation of the measures included in this study (excluding the AMT) was counterbalanced in order to control for transfer effects. Prior to the study, ethical approval had been sought and obtained from the ethics committee of the Department of Psychology at both the University of Strathclyde and the University of Stirling. Copies of the AMT and self-report measures are included in Appendix 1.

#### *6.2.4 Measures and Procedure (Time 2)*

The same instructions as used at Time 1 were repeated to the participants and they were informed not to try to remember what they'd said at Time 1, but instead they were required to answer based on their current frame of mind. Similar to Time 1, participants first completed the AMT followed by the same battery of self-report measures excluding the multidimensional perfectionism scale (MPS-H). We decided to limit the space between Time 1 and Time 2 to 6 weeks as this period is an adequate time-period to demonstrate changes in distress, but it is also sufficiently short to minimise attrition.

### **6.3 Results**

#### *6.3.1 Overview*

Statistical analysis of the data was carried out by way of correlations and hierarchical multiple regressions. Test of the models provided support for the moderator model only. The results suggested that recall of negative autobiographical memories is a significant moderator of the relationship between

self-oriented and socially prescribed perfectionism and psychological distress and suicidality both concurrently and prospectively. More specifically, the regression analyses revealed that it is the slow recall of negative memories from the past that, when combined with high levels of self-oriented perfectionism, socially prescribed perfectionism, and stress, was associated with an increase in distress.

### *6.3.2 Correlational Analysis*

Preliminary zero order correlational analyses were carried out to establish the degree of relationship between the various outcome and predictor variables. The outcome of these analyses, plus means and standard deviations for the outcome variables and predictor measures, are presented in Table 6.2 (below diagonal).

As expected hopelessness, depression and suicidality were found to be positively correlated. Furthermore, all of the outcome variables were positively correlated with stress, and negatively correlated with optimism. Self-oriented perfectionism was found to be significantly positively correlated with stress, the three outcome variables, as well as both other-oriented and socially prescribed perfectionism, but was negatively correlated with optimism. Thus, individuals who placed more emphasis on achieving their self-imposed unreasonably high standards demonstrate high levels of stress and low levels of optimism for the future. A similar pattern was evident for socially prescribed perfectionism; however, this perfectionism trait was also positively correlated with the three GHQ-28 subscales (somatic complaints, anxiety and insomnia, and social dysfunction). Other-oriented perfectionism on the other hand was only found to be correlated with self-oriented perfectionism and this relationship was positive.

Recall of positive autobiographical memories was found to be positively correlated with negative memory recall, and negatively correlated with stress. Thus, it would appear that high levels of stress were associated with faster recall of positive memories. This pattern of relationship was also present for negative memory recall. Unexpectedly, however, neither positive nor negative memory recall was found to be independently related to any of the outcome variables. However, recall of negative autobiographical memories was seen to correlate negatively with socially prescribed perfectionism. Thus, a high level of social perfectionism was found to be associated with fast recall of negative memories from the past.

Finally, partial correlations between the variables, which controlled for stress, revealed some interesting results (see Table 6.2, above diagonal). Upon controlling for stress the relationship between hopelessness and memory recall now appears to be significant. That is, high levels of hopelessness are associated with slow recall of both positive and negative memories. In contrast, the relationship between hopelessness and self-oriented and socially prescribed perfectionism was rendered no longer significant. A similar, change was also noteworthy in the relationship between depression and self-oriented perfectionism, and depression and negative memory recall. Interestingly, a significant positive relationship between negative memory recall and the social dysfunction subscale of the GHQ-28 now became apparent.

Table 6.2 Zero order and partial correlations, means and standard deviations of all the outcome variables and predictor variables at Time 1.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
1. Hopelessness	-	.236*	.409***	.231*	.352***		-.403***	.161	.118	.221*	.501***	.161	.051	.114
2. Depression	.504***	-	.201*	-.058	.086		-.249**	.227*	.485***	.246**	.444***	.151	.039	.240**
3. Suicidality	.567***	.480***	-	.136	.070		.094	-.052	.076	.228*	.843***	.289**	-.073	.241**
4. Negative Words	.064	-.191*	.001	-	.472***		-.055	.126	.117	.203*	.119	-.068	.142	-.138
5. Positive Words	.154	-.120	-.077	.501***	-		-.204*	.144	.148	.067	.213*	.054	.122	-.067
6. Stress	.520***	.689***	.516***	-.218*	-.261**	-								
7. Optimism	-.571***	-.525***	-.347***	.073	-.024	-.542***	-	-.127	-.065	-.172	-.183*	-.238	-.145	-.325
8. GHQ (a)	.362***	.465***	.199*	.008	.002	.462***	-.345***	-	.466***	.145	.103	-.012	.097	-.016
9. GHQ (b)	.461***	.752***	.435***	-.092	-.106	.761***	-.448***	.620***	-	.146	.303**	-.008	.040	-.184*
10. GHQ (c)	.368***	.422***	.373***	.103	-.037	.372***	-.336***	.291**	.371***	-	.317**	.103	.082	.137
11. GHQ (d)	.660***	.686***	.886***	-.049	-.006	.634***	-.463***	.364***	.635***	.463***	-	.344***	-.070	.099
12. Self	.257**	.270**	.363***	-.117	-.011	.237*	-.323***	.099	.175	.181	.408***	-	.232*	.410***
13. Other	.092	.093	-.015	.117	.093	.093	-.172	.129	.097	.111	.005	.246**	-	.073
14. Social	.328***	.475***	.423***	-.221*	-.179	.466***	-.494***	.203*	.249**	.285**	.363***	.462***	.107	-
Mean	3.79	38.64	4.02	16.53	15.97	25.66	4.83	13.04	13.71	14.25	9.23	65.02	59.02	58.07
SD	3.15	10.03	1.95	10.41	10.56	7.98	1.88	3.77	4.90	3.36	3.71	11.90	8.51	12.07

\*\*\* p<.001, \*\* p<.01, \* p<.05 (2-tailed)

GHQ (a)= Somatic complaints; GHQ (b)= Anxiety and insomnia; GHQ (c)= Social dysfunction; GHQ (d)= Severe depression; Self= Self-oriented perfectionism; Other-oriented perfectionism; Social= Socially prescribed perfectionism

Note. Zero order correlations are presented below the diagonal and upper half represents partial correlations (controlling for stress)

### 6.3.3 Autobiographical Memory Recall (Cross-sectional Data)

The mean retrieval latencies for the participants were 16.53 seconds (SD=10.41) and 15.97 seconds (SD=10.56) for positive words and negative words respectively. The means and standard deviations for response to the positive and negative cue words at Time 1 as a function of gender are provided in Table 6.3. There was not a significant main effect of gender ( $F_{(1, 115)}=0.11$ , ns) or memory recall ( $F_{(1, 115)}=.16$ , ns). There was, however, a trend towards an interaction between memory and gender, but it was non-significant ( $F_{(1, 115)}=3.46$ ,  $p=.07$ ). Interestingly, this trend suggested that men were faster at recalling negative memories than positive memories, whereas women were faster at recalling positive memories than negative memories. However, due to the uneven distribution of gender within this sample, further gender differences will not be investigated.

Table 6.3 Means and SD in seconds for negative and positive memories according to gender.

	Male (N=30)	Female (N=87)
Negative Memories	15.16 (8.27)	17.00 (11.06)
Positive Memories	17.64 (9.88)	15.39 (10.78)

### 6.3.4 Tests of Mediation (Cross-sectional Data)

To examine whether autobiographical memory recall accounted for the relationship between perfectionism and distress, the method developed by Baron and Kenny (1986) to test mediation effects, was conducted. According to Baron and Kenny (1986), mediation effects are generally investigated by way of a series of analyses that test four conditions. It is assumed that a variable mediates the relationship between a predictor variable and an outcome variable when each of the following

conditions have been satisfied: (i) there is a significant relationship between a predictor (e.g. perfectionism) and an outcome (e.g. suicidality), (ii) there is a significant relationship between a predictor and a proposed mediator (e.g. autobiographical memory recall), (iii) there is a significant relationship between a proposed mediator and an outcome when the predictor has been controlled for, and finally (iv) the strength of the relationship between a predictor and an outcome decreases when a proposed mediator has been controlled for (Frazier, Tix & Barron, 2004).

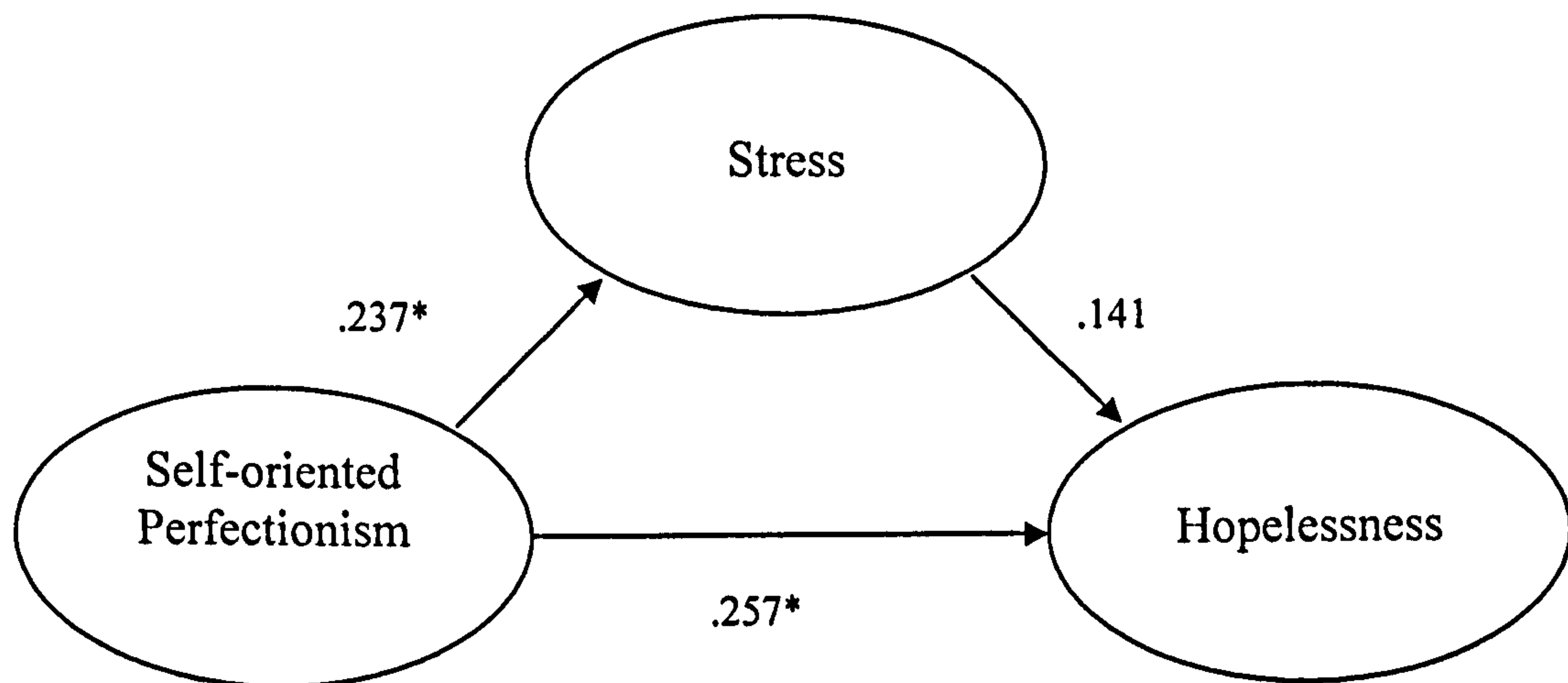
On application of this analysis to the data, using perfectionism as the predictor variable and autobiographical memory recall as the mediator variable, there was no evidence for mediation. Overall, then, the results suggests that neither negative nor positive autobiographical memory recall mediates the relationship between perfectionism and either of the outcome variables. These tests did, however, show that stress significantly mediated the relationship between both self-oriented and socially prescribed perfectionism and all of the outcome measures. The outcome of these analyses is shown below for each of the perfectionism dimensions.

#### Self-oriented Perfectionism

In the prediction of hopelessness, the hierarchical regression analysis showed that self-oriented perfectionism accounted for 5.8% of the variance ( $F_{(1, 116)}=8.11$ ,  $p<.01$ ). When stress was entered into the equation at step 2, an additional 21.9% of variance was accounted for ( $F_{(1, 116)}=23.23$ ,  $p<.001$ ), and the beta weight was reduced to non-significance ( $\beta=.14$ , ns). Consequently, a Sobel test was conducted

to further test this finding, and it confirmed that full mediation had taken place ( $Z=2.39, p<.05$ ). The mediation effect is shown in Figure 6.3.

Figure 6.3 The mediating effect of stress on the relationship between self-oriented perfectionism and hopelessness at Time 1.

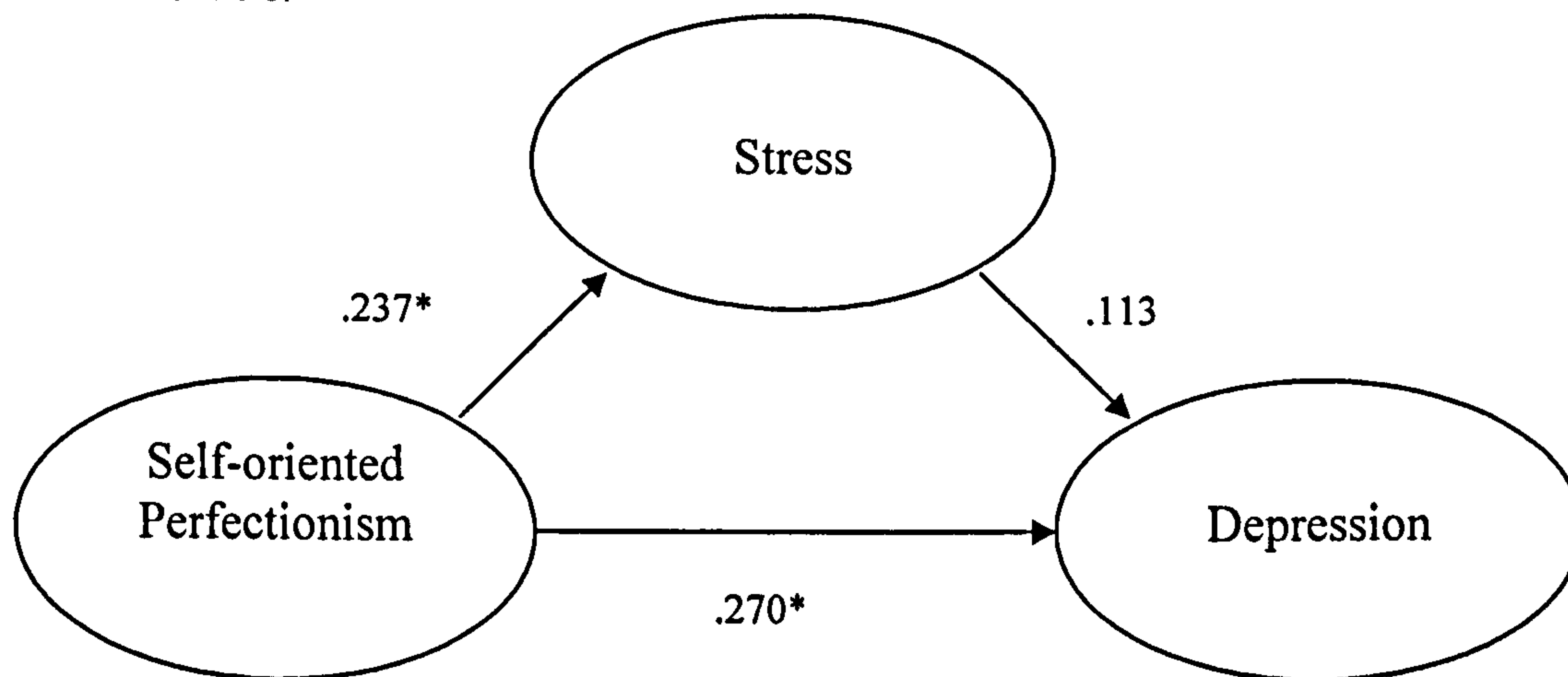


Note \*  $<.01$

A similar effect was evident in the relationship between self-oriented perfectionism and depression (Figure 6.4): Self-oriented perfectionism accounted for 6.5% of the variance ( $F_{(1, 116)}=9.02, p<.01$ ). Stress, when entered into the equation at step 2, accounted for a further 41.3% of the variance ( $F_{(1, 116)}=54.08, p<.001$ ), and, again, the beta weight for self-oriented perfectionism was reduced to non-significance ( $\beta=11, ns$ ). The Sobel test confirmed mediation ( $Z=2.52, p<.01$ ).



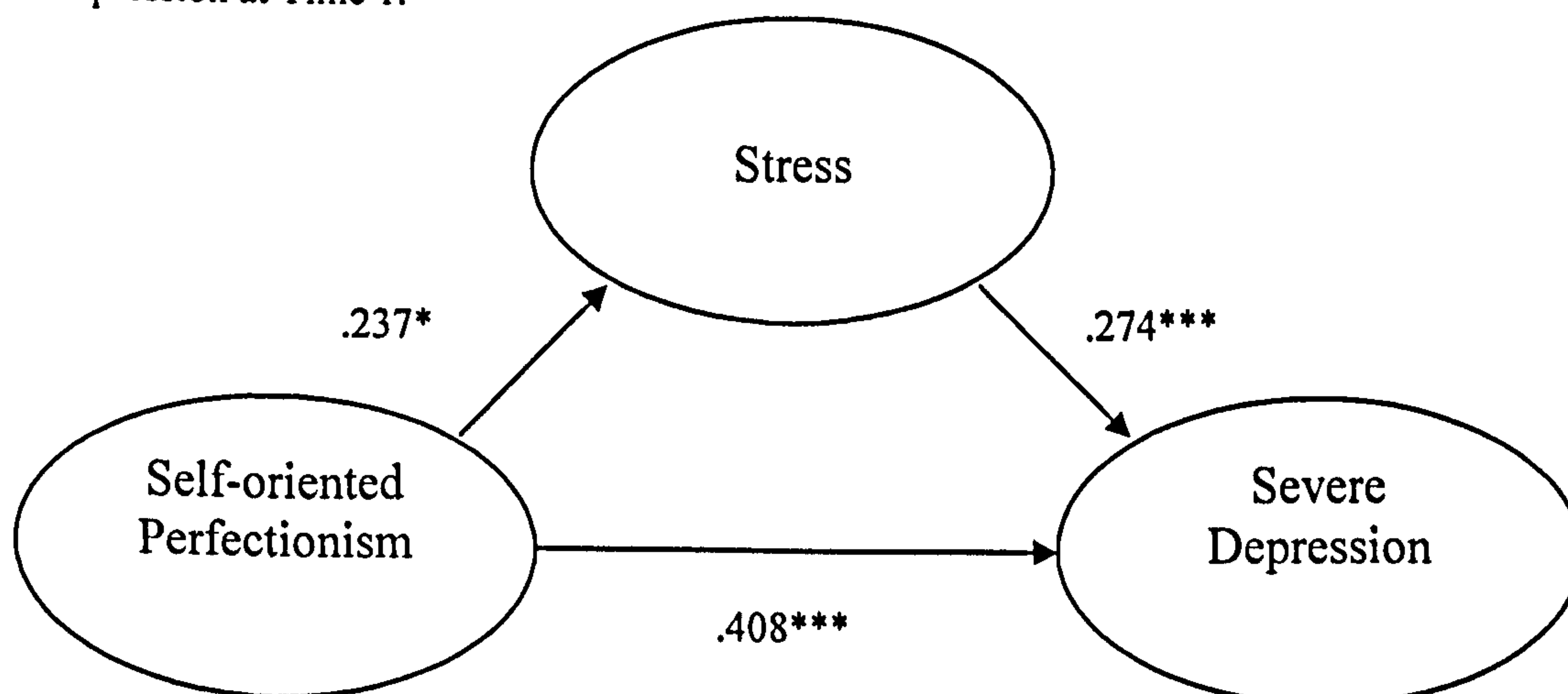
Figure 6.4 The mediating effect of stress on the relationship between self-oriented perfectionism and depression at Time 1.



Note \* <.01

In the prediction of severe depression, self-oriented perfectionism accounted for 16% of the variance ( $F_{(1, 116)}=23.03, p<.001$ ), whilst stress, when entered at step 2, accounted for a further 30.4% of variance ( $F_{(1, 116)}=49.86, p<.001$ ). The addition of stress reduced the beta weight of self-oriented perfectionism ( $\beta=.27, p<.001$ ); however, not to non-significance (Figure 6.5). The Sobel test verified that partial mediation had taken place ( $Z=2.5, p<.05$ ).

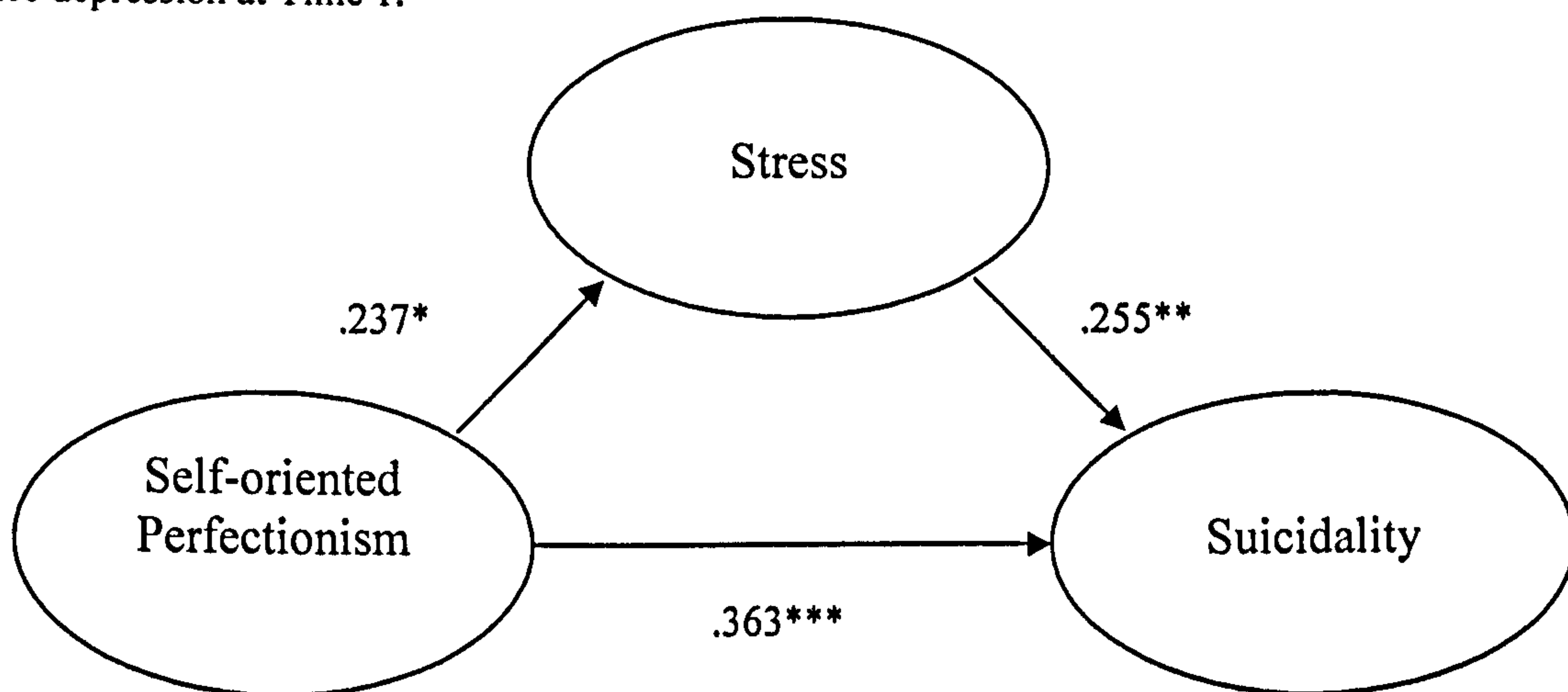
Figure 6.5 The mediating effect of stress on the relationship between self-oriented perfectionism and severe depression at Time 1.



Note \* <.01, \*\*\*<.001

Finally, in the case of suicidality, self-oriented perfectionism accounted for 12.4% of the variance ( $F_{(1, 116)}=17.46, p<.001$ ). When stress was added to the equation (Step 2), a further 19.2% of variance was accounted for ( $F_{(1, 116)}=27.80, p<.001$ ), and the beta weight for self-oriented perfectionism was reduced ( $\beta=2.38, p<.05$ ), although not to non-significance (Figure 6.6). The Sobel test once again confirmed mediation ( $Z=2.4, p<.05$ ).

Figure 6.6 The mediating effect of stress on the relationship between self-oriented perfectionism and severe depression at Time 1.

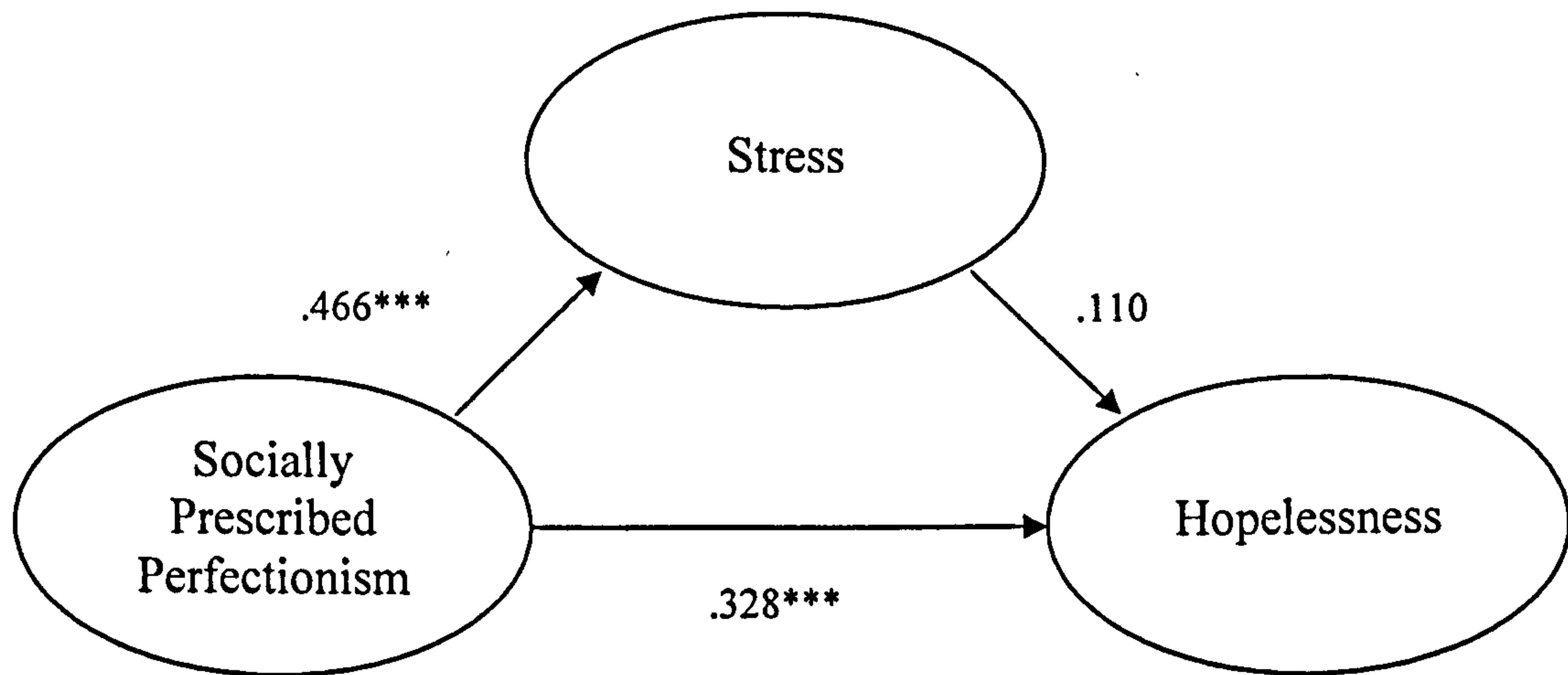


Note \* <.01, \*\*<.05, \*\*\*<.001

### Socially Prescribed Perfectionism

The same tests were conducted including socially prescribed perfectionism. In the case of hopelessness, socially prescribed perfectionism accounted for 10% of the variance ( $F_{(1, 116)}=13.91, p<.001$ ). Stress entered the equation at step 2 and was seen to account for a further 16.7% of the variance ( $F_{(1, 116)}=22.18, p<.001$ ; Figure 6.7). The addition of stress reduced the beta weight of socially prescribed perfectionism to non-significance ( $\beta=3.84, p<.001$ ).

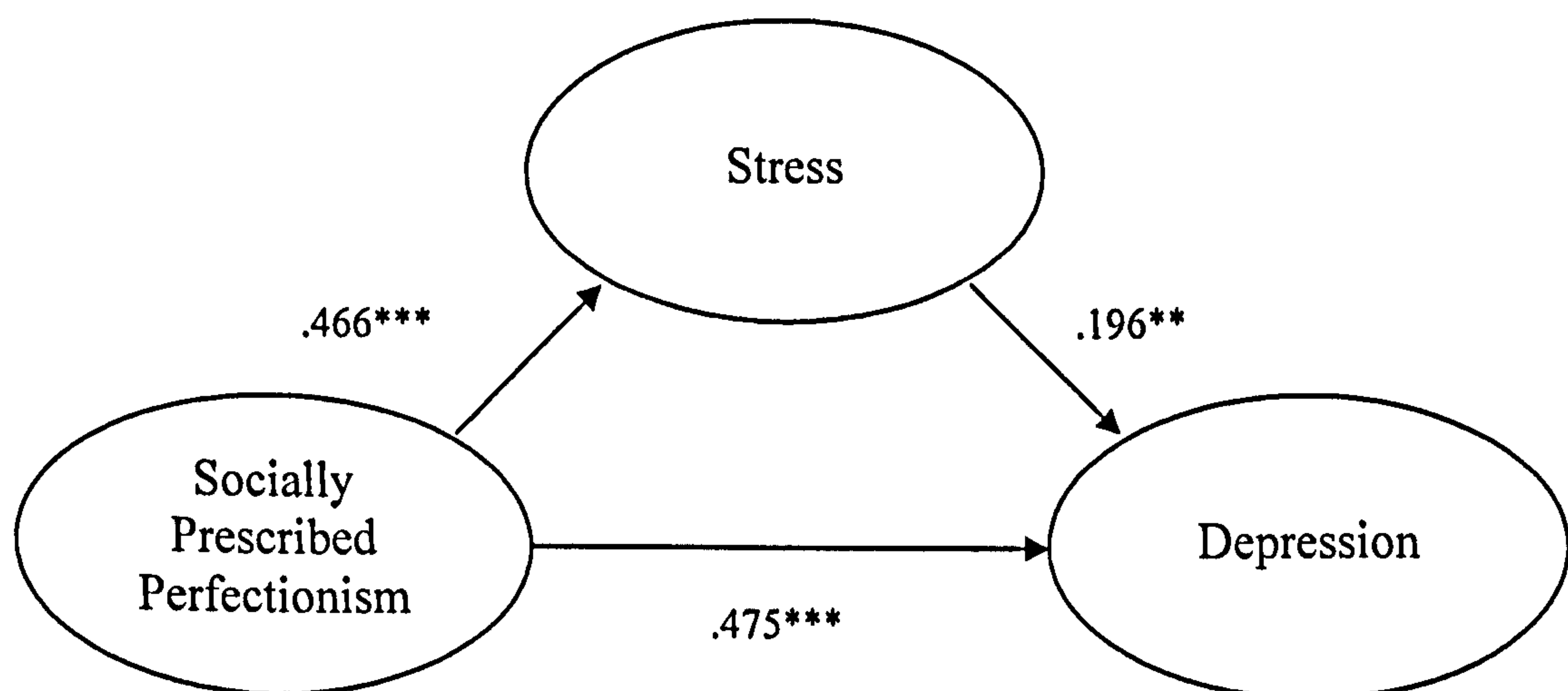
Figure 6.7 The mediating effect of stress on the relationship between socially prescribed perfectionism and hopelessness at Time 1.



Note \* <.01, \*\*<.05, \*\*\*<.001

For depression, socially prescribed perfectionism accounted for 21.9% of the variance ( $F_{(1, 116)}=33.45, p<.001$ ), whilst stress (step 2) accounted for a further 27.7% of the variance ( $F_{(1, 116)}=58.17, p<.001$ ) and reduced the beta weight for socially prescribed perfectionism ( $\beta=.20, p<.01$ ; Figure 6.8); however, not to non-significance. Mediation was confirmed by the Sobel test ( $Z=4.59, p<.001$ ).

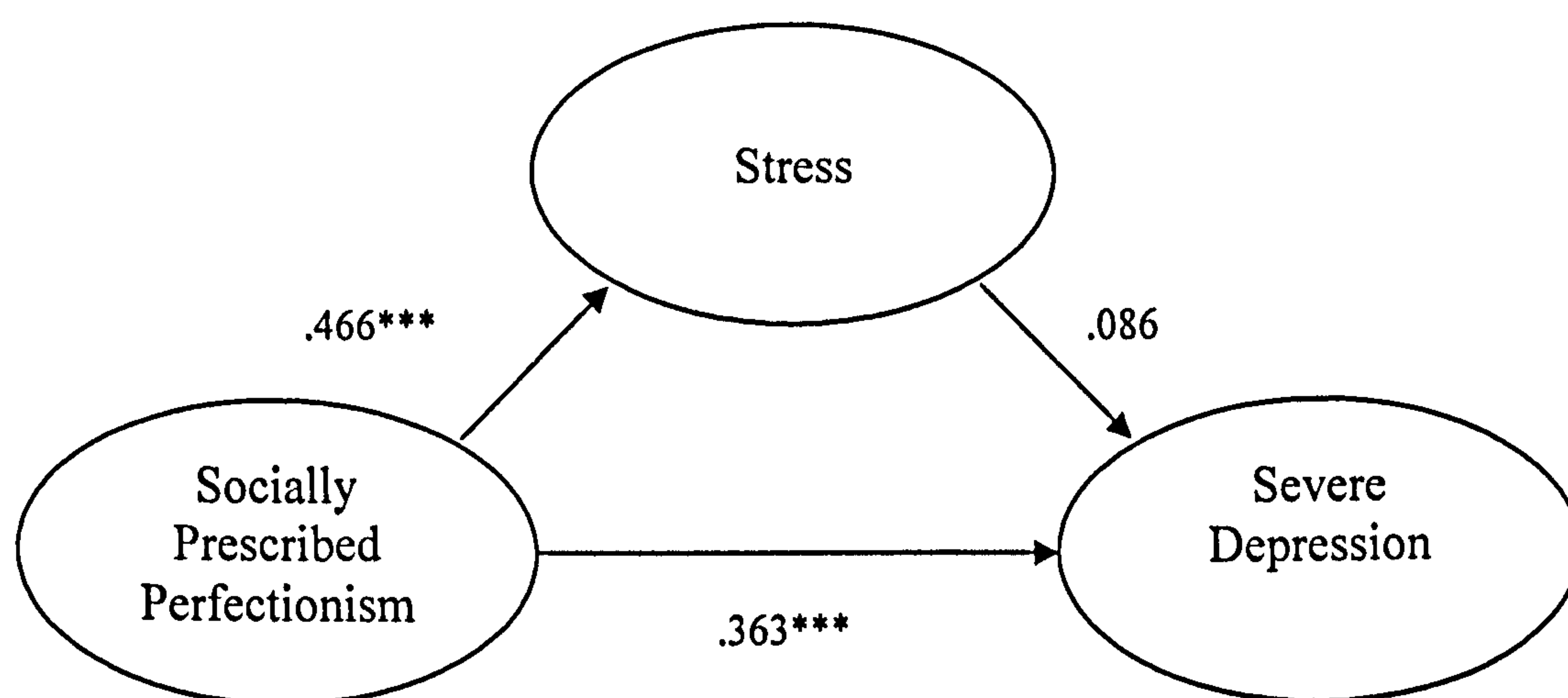
Figure 6.8 The mediating effect of stress on the relationship between socially prescribed perfectionism and depression at Time 1.



Note \* <.01, \*\*<.05, \*\*\*<.001

In the case of severe depression (Figure 6.9), socially prescribed perfectionism accounted for 12.4% of the variance ( $F_{(1, 116)}=17.46, p<.001$ ). When stress was added to the equation at step 2, a further 27.4% of variance was accounted for ( $F_{(1, 116)}=39.33, p<.001$ ). This addition reduced the beta weight of socially prescribed perfectionism to non-significance ( $\beta=.086, ns$ ), and mediation was confirmed by the Sobel test ( $Z=4.43, p<.001$ ).

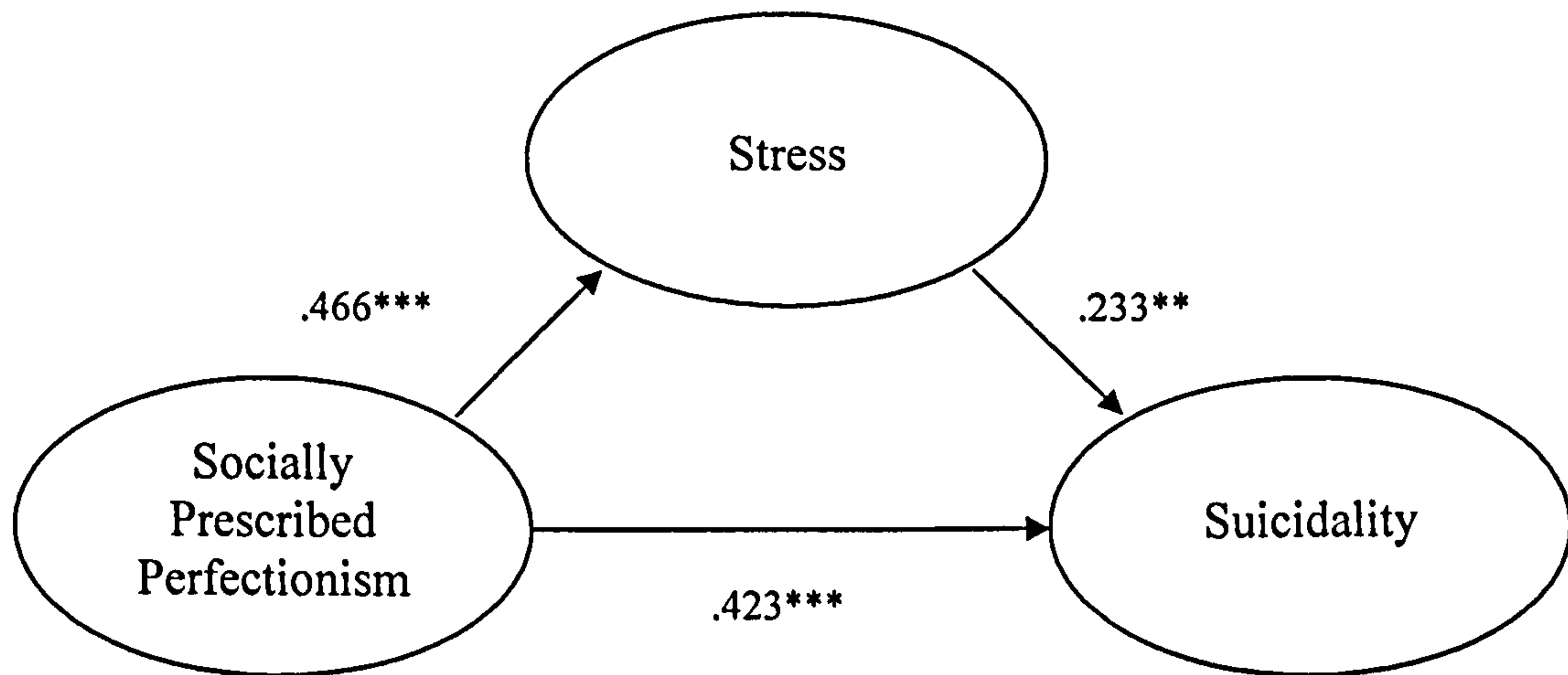
Figure 6.9 The mediating effect of stress on the relationship between socially prescribed perfectionism and severe depression at Time 1.



Note \* <.01, \*\*<.05, \*\*\*<.001

Finally, in the case of suicidality (Figure 6.10), socially prescribed perfectionism accounted 17.2% of the variance ( $F_{(1, 116)}=25.02, p<.001$ ), and stress, when entered at step 2 of the equation accounted for a further 12.5% of the variance ( $F_{(1, 116)}=25.14, p<.001$ ), thereby reducing the beta weight for socially prescribed perfectionism ( $\beta=.22, p<.01$ ); however, not to non-significance. The Sobel test confirmed mediation ( $Z=3.63, p<.001$ ).

Figure 6.10 The mediating effect of stress on the relationship between socially prescribed perfectionism and suicidality at Time 1.



Note \* <.01, \*\*<.05, \*\*\*<.001

### 6.3.5 Tests of Moderation (Cross-sectional Data)

A series of hierarchical regressions were performed to establish whether the time taken to recall positive or negative memories moderated the relationship between the perfectionism dimensions and psychological distress. Prior to analyses the predictors were centred as recommended by Aiken and West (1991). In the following regressions, one of the perfectionism subscales (self, other or social perfectionism) was entered at step 1, followed by positive or negative memory recall latencies, and finally, in order to test the interaction between each pair of variables, the relevant multiplicative term was entered (e.g. self x positive memories). This process was carried out with either hopelessness, depression (as measured by the CES-D and the GHQ severe depression subscale), or suicidality (all as measured at Time 1) entered as the dependent variables.

These analyses yielded a number of significant effects: As regards main effects, self-oriented perfectionism and socially prescribed perfectionism were both

significant predictors of hopelessness, depression (CES-D and GHQ severe depression subscale), and suicidality; whilst negative memory recall independently predicted depression. In addition there were a number of memory x perfectionism interactions (See Appendix 2). It is worth noting that of the perfectionism dimensions, socially-prescribed perfectionism was the best independent predictor of distress as it accounted for 10%, 21.9%, 12.4% and 17.2% of the variance for hopelessness, depression, severe depression, and suicidality, respectively. In contrast, self-oriented perfectionism accounted for 5.8%, 6.5%, 16% and 12.4% of the variance for the same variables.

It was found that the self-oriented perfectionism x negative memory interaction term was a significant predictor of severe depression, and that this interaction accounted for a total of 19.2% of the variance. To probe the interaction, consistent with Aiken and West (1991), the regression lines of best fit at high (one standard deviation above the mean) and low (one standard deviation below the mean) levels of self-oriented perfectionism and recall of negative memories were plotted. Further tests, as specified by Aiken and West (1991), were consequently conducted on the slopes of the slow and fast memory latencies to determine whether they were significantly different from zero. This analysis revealed that the high ( $\beta=.25$ ),  $t(101)=2.09$ ,  $p<.05$ ), but not the low ( $\beta=-.15$ ),  $t(101)=-1.52$ , ns), negative memory recall lines differed significantly from zero. In other words, those individuals who reported high levels of self-oriented perfectionism and who were also slow at recalling negative memories from their past, were significantly more depressed (see Figure 6.11).

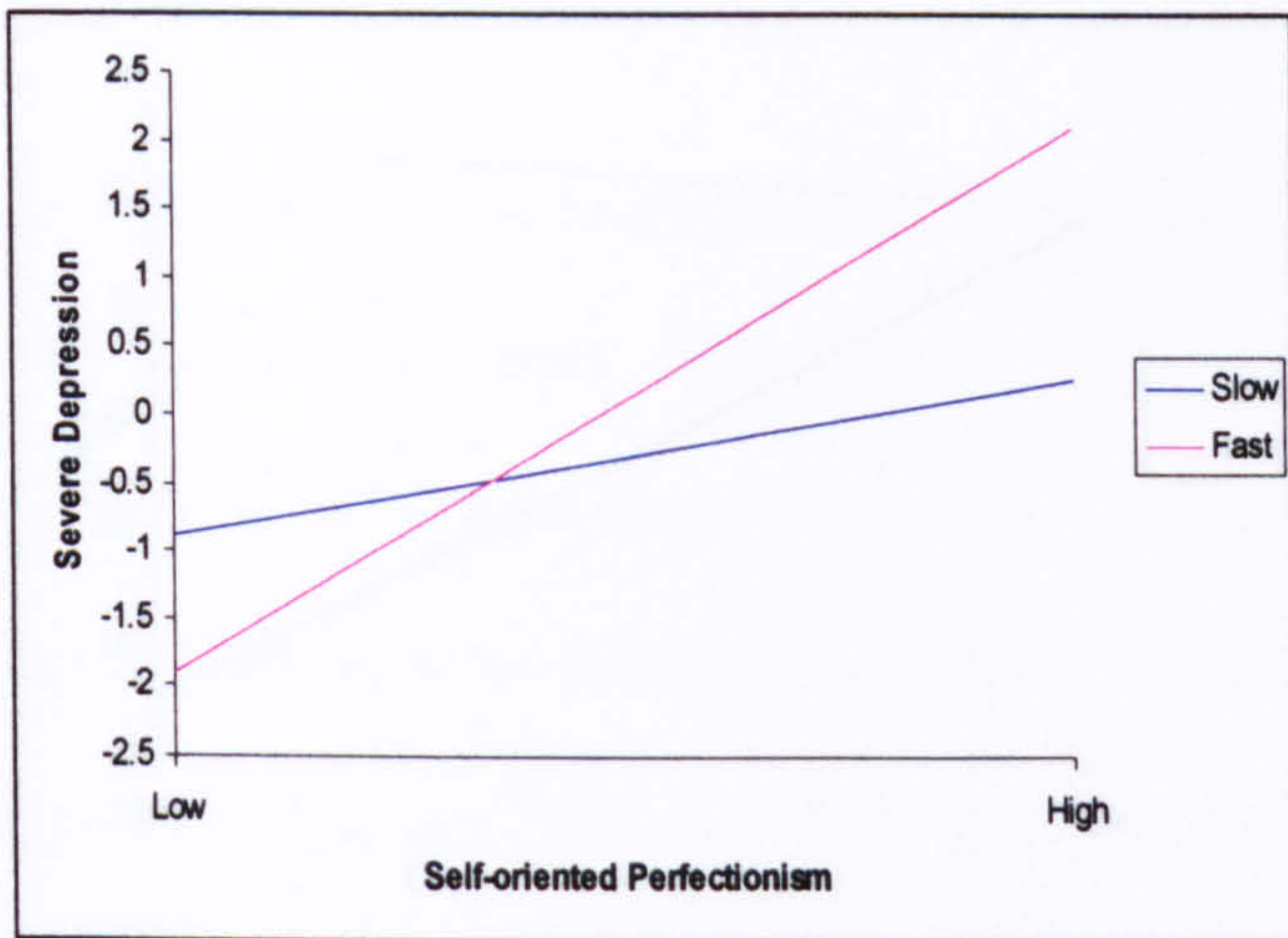


Figure 6.11. The relationship between self-oriented perfectionism and negative memory recall in the prediction of severe

Furthermore, the other-oriented x negative memory interaction was also significant in the prediction of depression and accounted for total of 7.6% of the variance (See Table 6.4).

Table 6.4 Hierarchical multiple regression analysis testing the moderating effect of negative autobiographical memory recall on the relationship between other-oriented perfectionism and depression at Time 1.

	Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1	Other	.00	.09	NS
Step 2	Negative	.03	-.21	.028
Step 3	Other x Negative	.08	.24	.014

Note. Other= Other-oriented perfectionism; Negative: Negative autobiographical memory recall

Once again, to probe this interaction further, the regression slopes at slow and fast levels of memory recall were calculated to determine whether they differed significantly from zero. It was discovered that the high ( $\beta=.45$ ),  $t(116)=2.8$ ,  $p<.01$ ), but not the low ( $\beta=-.07$ ),  $t(116)=-.59$ , ns), memory recall line differed significantly from zero. In other words, those individuals who reported low levels of other-oriented perfectionism, and who were also slow at recalling negative memories, were significantly less depressed than those who were high in other-oriented perfectionism (see Figure 6.12).

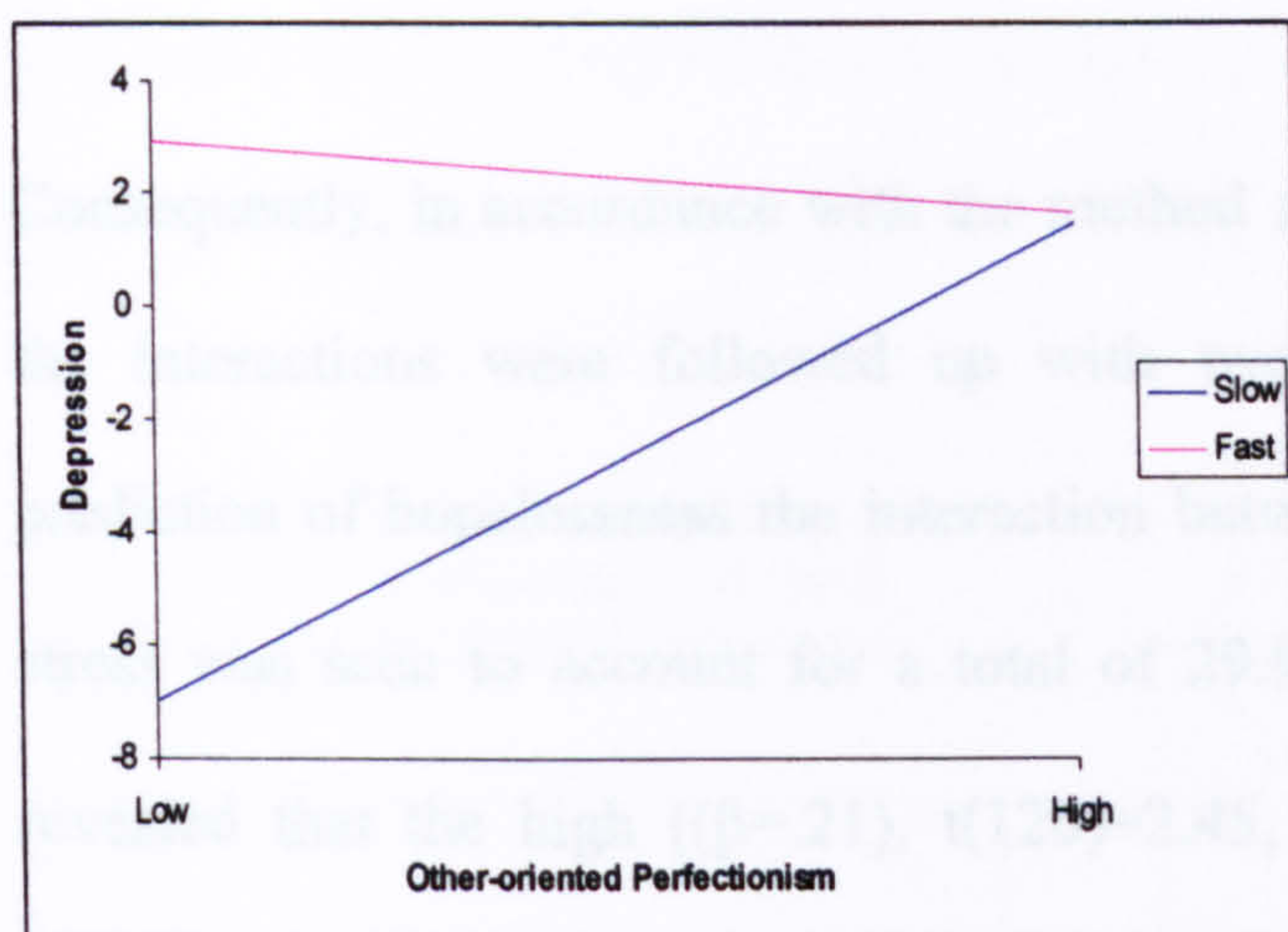


Figure 6.12. The relationship between other-oriented perfectionism and negative memory recall in the prediction of depression at Time 1.

### 6.3.6 Diathesis-Stress Models (Cross-sectional Data)

Investigations into the relevance of diathesis-stress models were subsequently deemed useful. Hierarchical regressions were carried out in which the scores from one of the MPS subscales (self-oriented, other-oriented, and socially prescribed) were entered as the first step, followed by the perceived stress scores at step two, and the multiplicative term in the final step of the equation. Results of these analyses for predicting unique variance in psychological distress are presented in Appendix 3.

#### Self-oriented Perfectionism

Stress was found to account for a significant amount of additional variance for all the outcome variables: When self-oriented perfectionism was accounted for stress added another 21.9% (hopelessness), 42.2% (depression), 30.6% (severe depression), and 19.2% (suicidality) of variance. The analyses revealed that significant (or nearly significant) self-oriented perfectionism x stress interactions were evident for all of the distress measures. These interactions are best illustrated by plotting the regression of symptoms on self-oriented perfectionism at high and low levels of stress.



Consequently, in accordance with the method specified by Aiken and West (1991), the interactions were followed up with two simple slope regressions. In the prediction of hopelessness the interaction between self-oriented perfectionism and stress was seen to account for a total of 29.9% of variance. Tests of the slopes revealed that the high ( $\beta=.21$ ,  $t(120)=2.45$ ,  $p<.05$ ), but not the low ( $\beta=-.05$ ,  $t(120)=-.41$ , ns), slopes of the stress lines differed significantly from zero. That is, in situations of high stress, individuals who are high in self-oriented perfectionism reported significantly higher levels of hopelessness (see Figure 6.13).

Figure 6.13. The relationship between self-oriented perfectionism and stress in the prediction of hopelessness at Time 1.

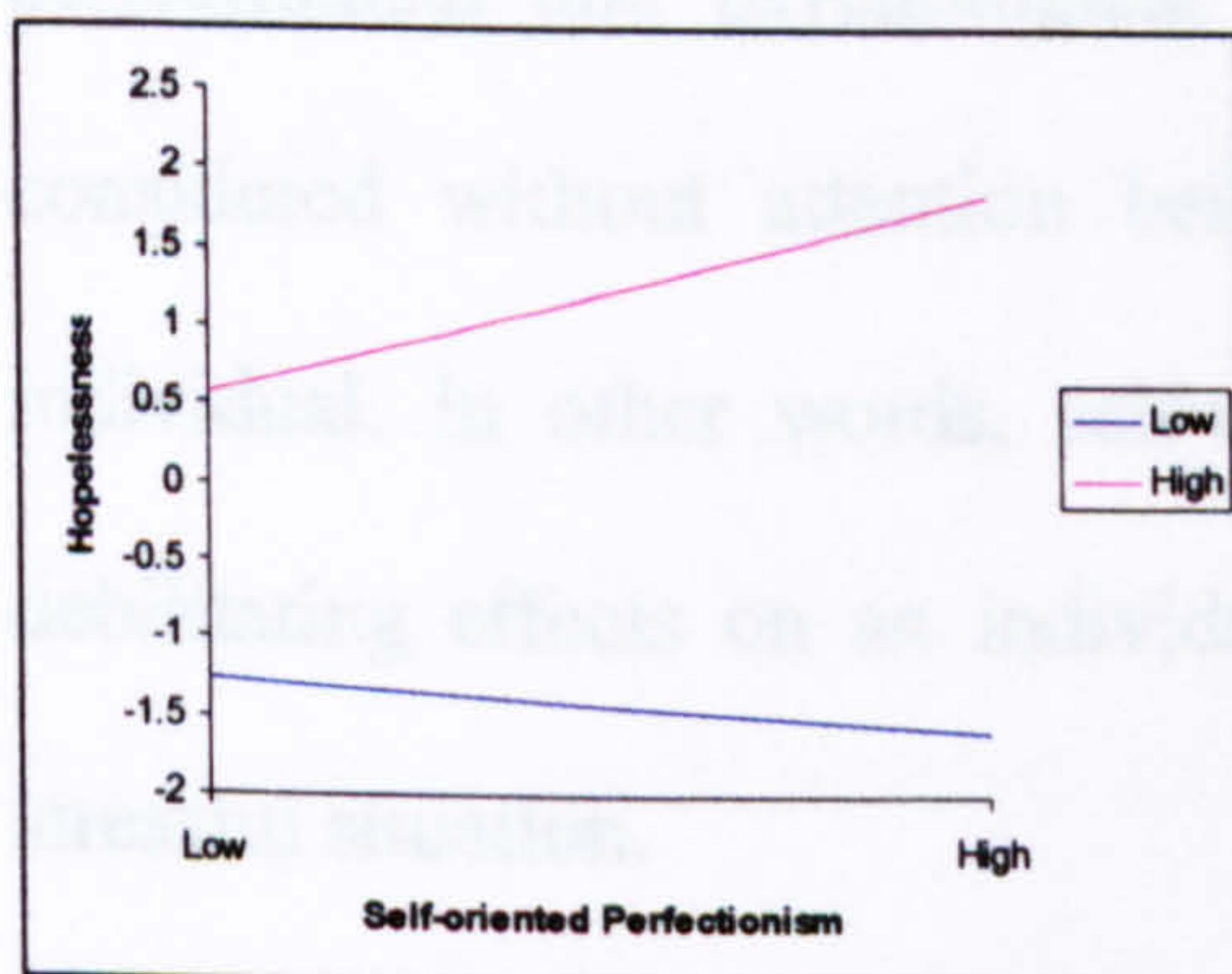
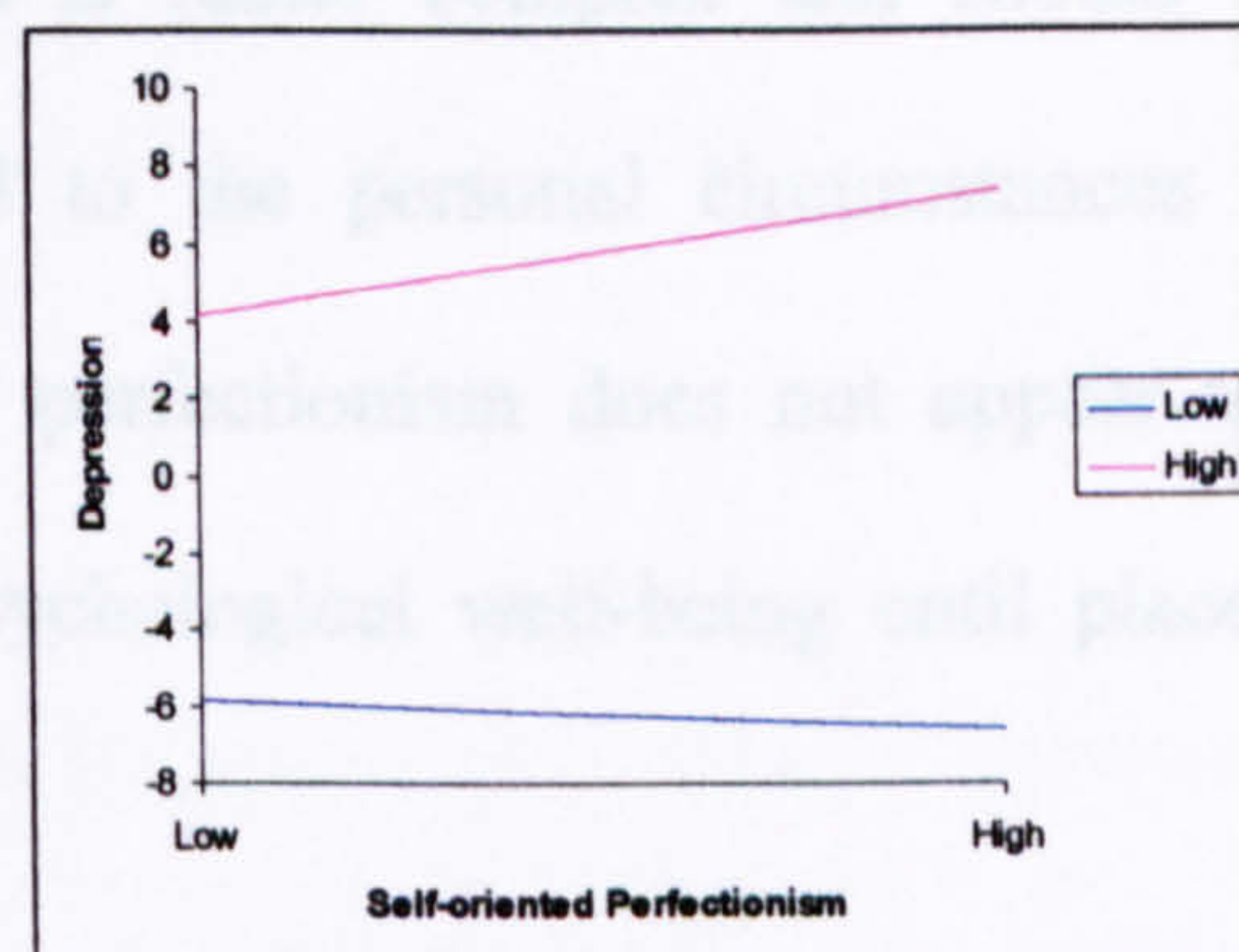


Figure 6.14. The relationship between self-oriented perfectionism and stress in the prediction of depression at Time 1.



A similar pattern of results was shown in the prediction of depression where the interactive term accounted for a total of 50.3% of variance: whereas the high slope of the stress line differed significantly from zero ( $\beta=.16$ ,  $t(120)$ ,  $p<.05$ ), the low line did not ( $\beta=-.03$ ,  $t(120)=-.31$ , ns; see Figure 6.14). This was also the case for severe depression (55.2% of variance): High: ( $\beta=.37$ ),  $t(120)=5.43$ ,  $p<.001$ ; Low: ( $\beta=-.05$ ),  $t(120)=-.49$ , ns (see Figure 6.15), and suicidality (38.2% of variance

accounted for): High: ( $\beta=.35$ ),  $t(120)=4.39$ ,  $p<.001$ ; Low: ( $\beta=-.05$ ),  $t(120)=-.45$ , ns (see Figure 6.16).

Figure 6.15. The relationship between self-oriented perfectionism and stress in the prediction of severe depression at Time 1.

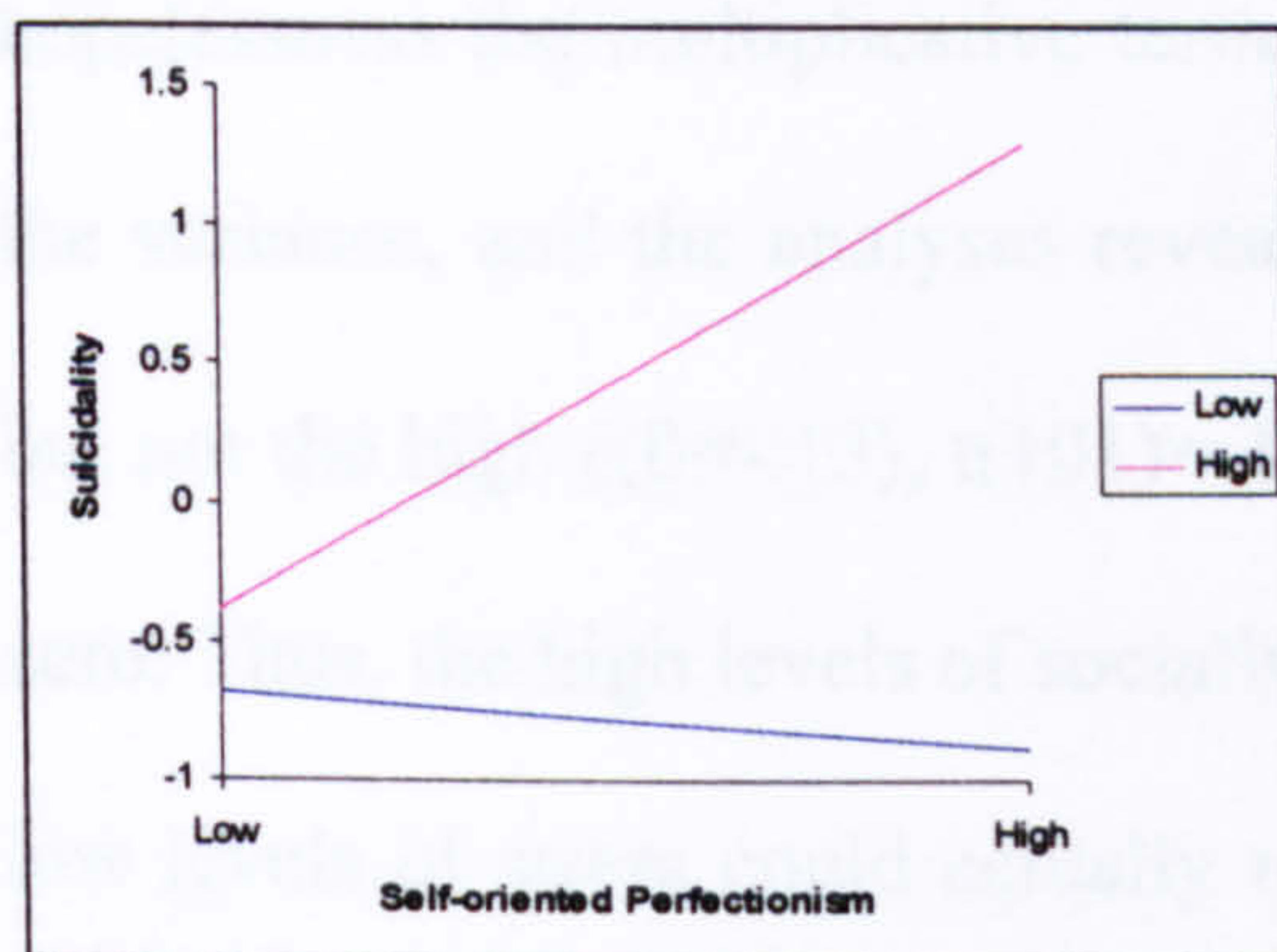
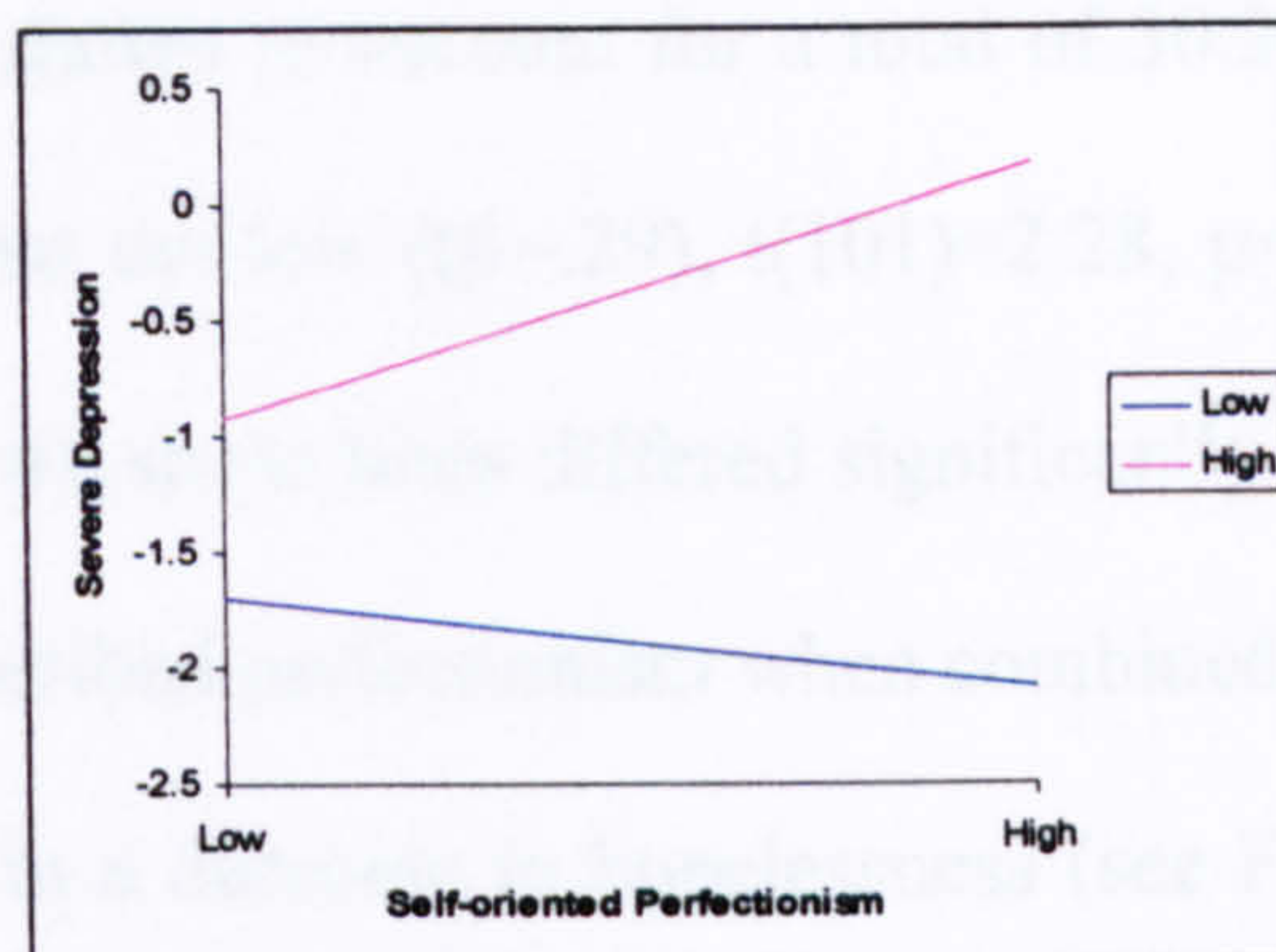


Figure 6.16. The relationship between self-oriented perfectionism and stress in the prediction of suicidality at Time 1.



From these figures it becomes apparent that the relationship between self directed perfectionism and psychological distress is rather complex and should not be considered without attention being paid to the personal circumstances of the individual. In other words, self-oriented perfectionism does not appear to have debilitating effects on an individual's psychological well-being until placed in a stressful situation.

### Socially Prescribed Perfectionism

Similar effects were also found in the examination of interactions between socially prescribed perfectionism and stress. Once again, stress was seen to account for a significant amount of additional variance for each of the outcome measures (Hopelessness: 16.7%; Depression: 27.7%; Severe depression: 27.4%; Suicidality: 22.5%). The analysis revealed that individuals who are very concerned with meeting the perceived standards of those around them, and who also feel under high stress,

demonstrate an increase in hopelessness, depression (as measured by the GHQ-28, but not the CES-D), and suicidality (see Figures 6.17, 6.18, and 6.19 respectively).

Post-hoc tests were consequently conducted on the slopes of the high and low stress lines to determine whether they differed significantly from zero. In the prediction of hopelessness the multiplicative term was shown to account for a total of 30.3% of the variance, and the analyses revealed that the low ( $\beta=.29$ ,  $t(101)=2.28$ ,  $p<.05$ ), but not the high ( $\beta=-.13$ ,  $t(101)=-1.16$ , ns), stress lines differed significantly from zero. Thus, the high levels of socially prescribed perfectionism when combined with low levels of stress could actually result in a decrease in hopelessness (see Figure 6.17). This pattern was also present in the prediction of suicidality where the interaction between socially prescribed perfectionism and stress accounted for 44.5% of the total variance. That is, the high ( $\beta=.45$ ,  $t(101)=5.23$ ,  $p<.001$ ), but not the low ( $\beta=-.11$ ,  $t(101)=-1.16$ , ns), lines of stress differed significantly from zero (see Figure 6.19).

In the case of severe depression (52.7% of variance accounted for), however, both the high ( $\beta=.29$ ,  $t(101)=3.69$ ,  $p<.001$ ), and the low ( $\beta=-.23$ ,  $t(101)=-2.50$ ,  $P<.05$ ), stress lines differed significantly from zero. Thus, not only did high levels of social perfectionism when combined with low levels of stress signify a significant decrease in severe depression; when high levels of social perfectionism was combined with high levels of stress, the outcome was a significant increase in severe depression (see Figure 6.18).

Figure 6.17. The relationship between socially prescribed perfectionism and stress in the prediction of hopelessness at Time 1.

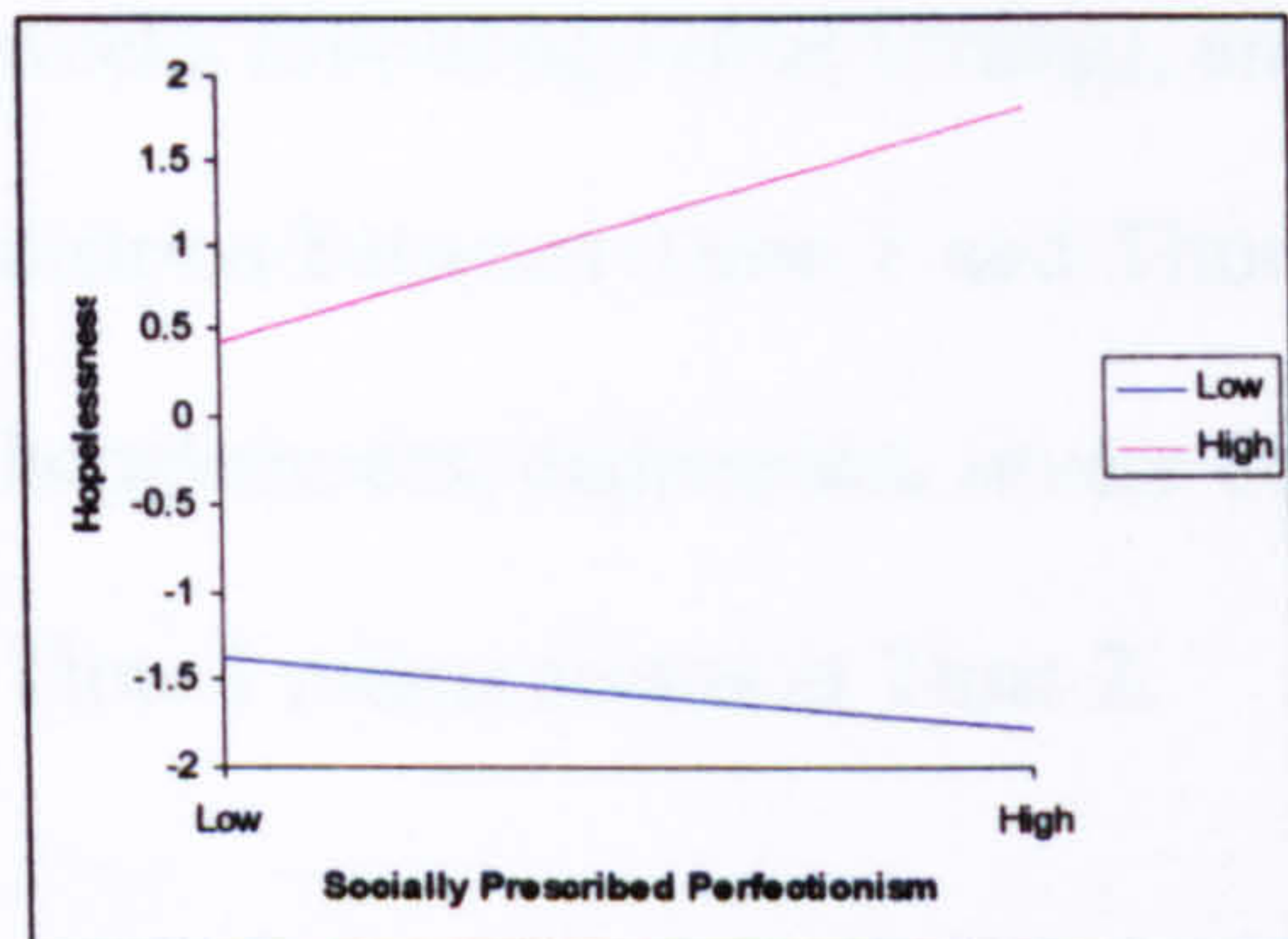


Figure 6.18. The relationship between socially prescribed perfectionism and stress in the prediction of severe depression at Time 1.

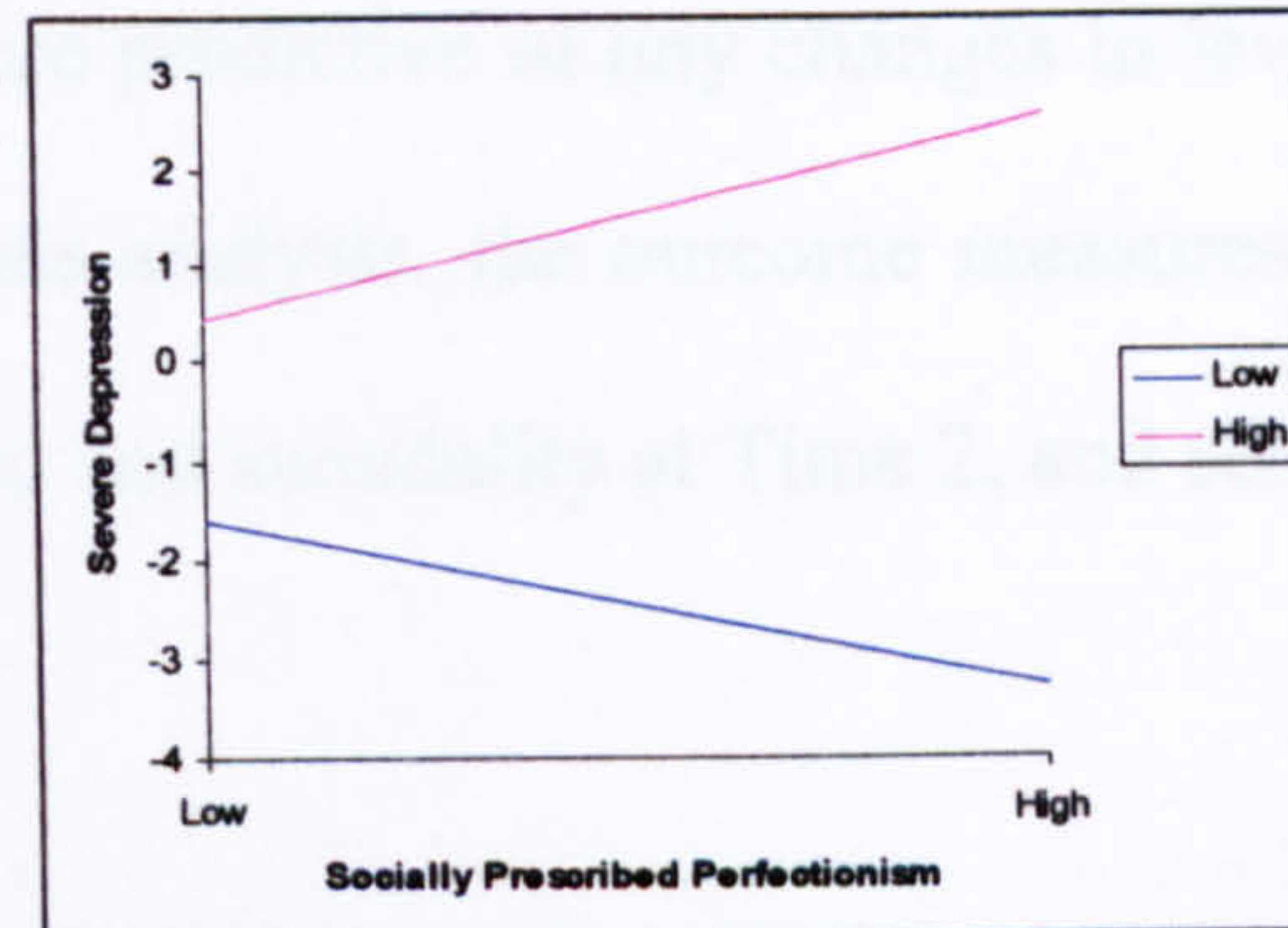
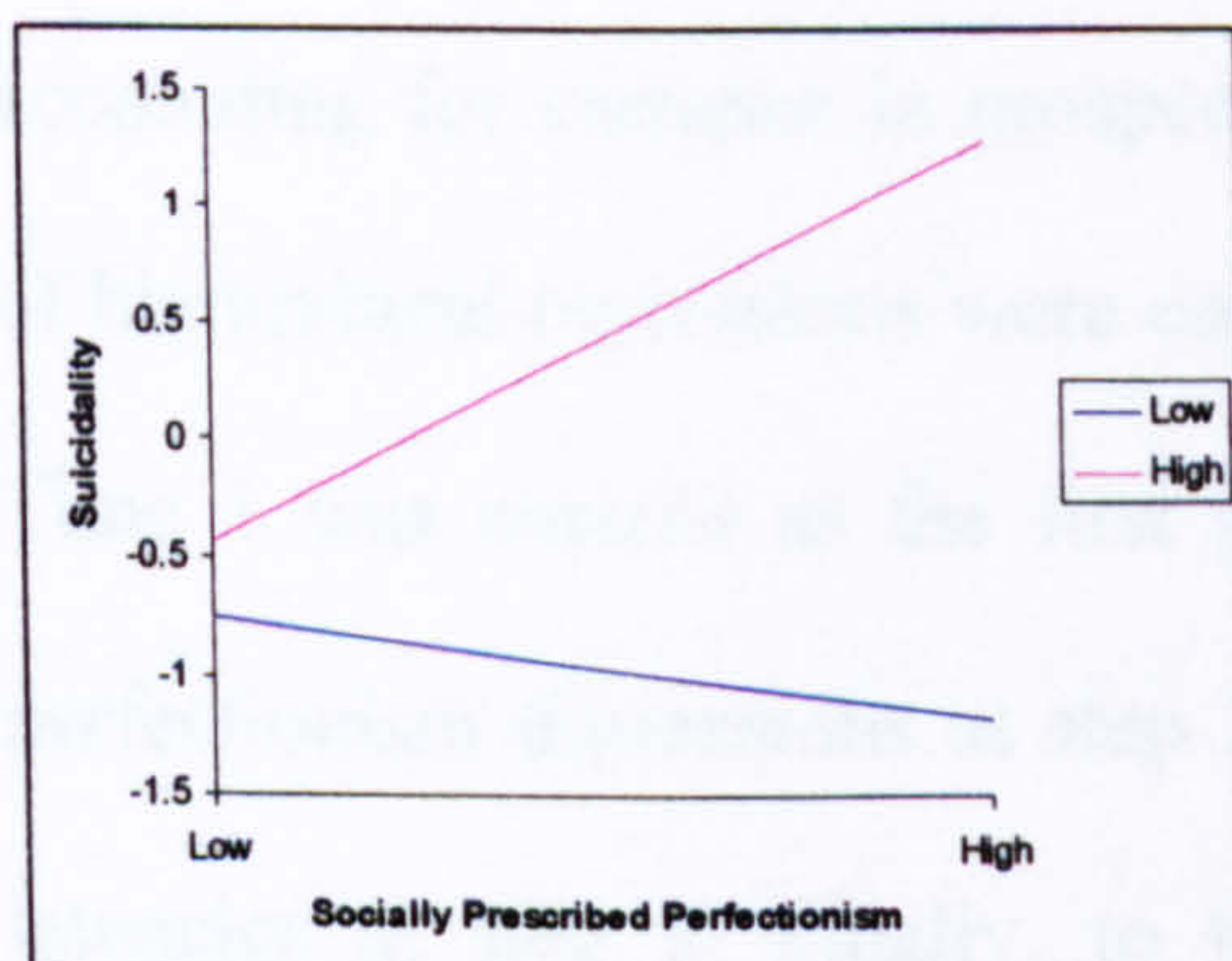


Figure 6.19. The relationship between socially prescribed perfectionism and stress in the prediction of suicidality at Time 1.



None of the stress x memory (negative or positive) recall interactions were significant, and will therefore not be reported in this study.

### 6.3.7 Prospective Findings: Aims

To examine the predictive utility of each of the perfectionism dimensions and autobiographical memory recall in accounting for variance in prospective measures of psychological distress, a series of regressions were conducted. Given that there is some debate in statistical literature about the best way to measure change, and

because our sample size is relatively small, we have included two types of analyses. Stated simply, these analyses were aimed at determining whether the predictive variables as measured at baseline, were (i) predictive of distress over time (i.e. 6 weeks following initial testing), and (ii) were predictive of any changes in levels of distress between Time 1 and Time 2. In this analysis, the outcome measures were hopelessness, depression, severe depression, and suicidality at Time 2, and scores at Time 1 minus scores at Time 2.

### *6.3.8 Prospective Findings: Prediction of Distress*

#### *6.3.9 Tests of Moderation*

To examine the predictive utility of each of the perfectionism dimensions in accounting for variance in prospective measures of psychological distress, a series of hierarchical regressions were conducted. In this analysis psychological distress at Time 1 was entered as the first predictor block, followed by either of the three perfectionism dimensions at step 2, and either positive or negative memory recall latencies at step 3. Finally, to test a memory x perfectionism interaction, the multiplicative term was entered as the final step (Step 4).

As expected, all the measures of psychological distress (hopelessness, depression and suicidality) at Time 1 were highly predictive of psychological distress at Time 2. Autobiographical memory recall (both negative and positive) was not a significant predictor of psychological distress as a main effect term except for the prediction of depression at Time 2. Similarly, none of the three perfectionism subscales, when they were used as main effect terms, were significant predictors of psychological distress over time. However, it was found that autobiographical

memory recall did interact with perfectionism to predict a significant degree of unique variance in all of the measures of psychological distress over time; although, surprisingly, only the negative autobiographical memory recall x self-oriented or socially prescribed perfectionism interactions were significant in predicting psychological distress at Time 2, after controlling for distress levels at Time 1. The outcome of the hierarchical regression analyses are shown in Appendix 4.

Once again, regressions lines of best fit were plotted for each of the significant interactions, from which further tests were conducted to establish whether the slopes of high and low negative memory recall were significantly different from zero. These analyses will be presented separately for the two perfectionism dimensions.

#### Self-oriented Perfectionism

Self-oriented perfectionism interacted with recall of negative autobiographical memories to predict hopelessness six weeks later, and this interaction accounted for 35.1% of the variance. In the prediction of hopelessness over time it was found that the high ( $\beta=.25$ )  $t(101)=2.09$ ,  $p<.05$ ), but not the low ( $\beta=-.15$ ),  $t(101)=-1.52$ , ns), negative memory recall lines differed significantly from zero. This result shows that individuals who are very concerned with achieving their own unachievable high standards, and who are also slow at recalling negative autobiographical memories, report significantly higher levels of hopelessness six weeks later (see Figure 6.20).

Figure 6.20. The relationship between self-oriented perfectionism and negative memory recall in the prediction of hopelessness over time.

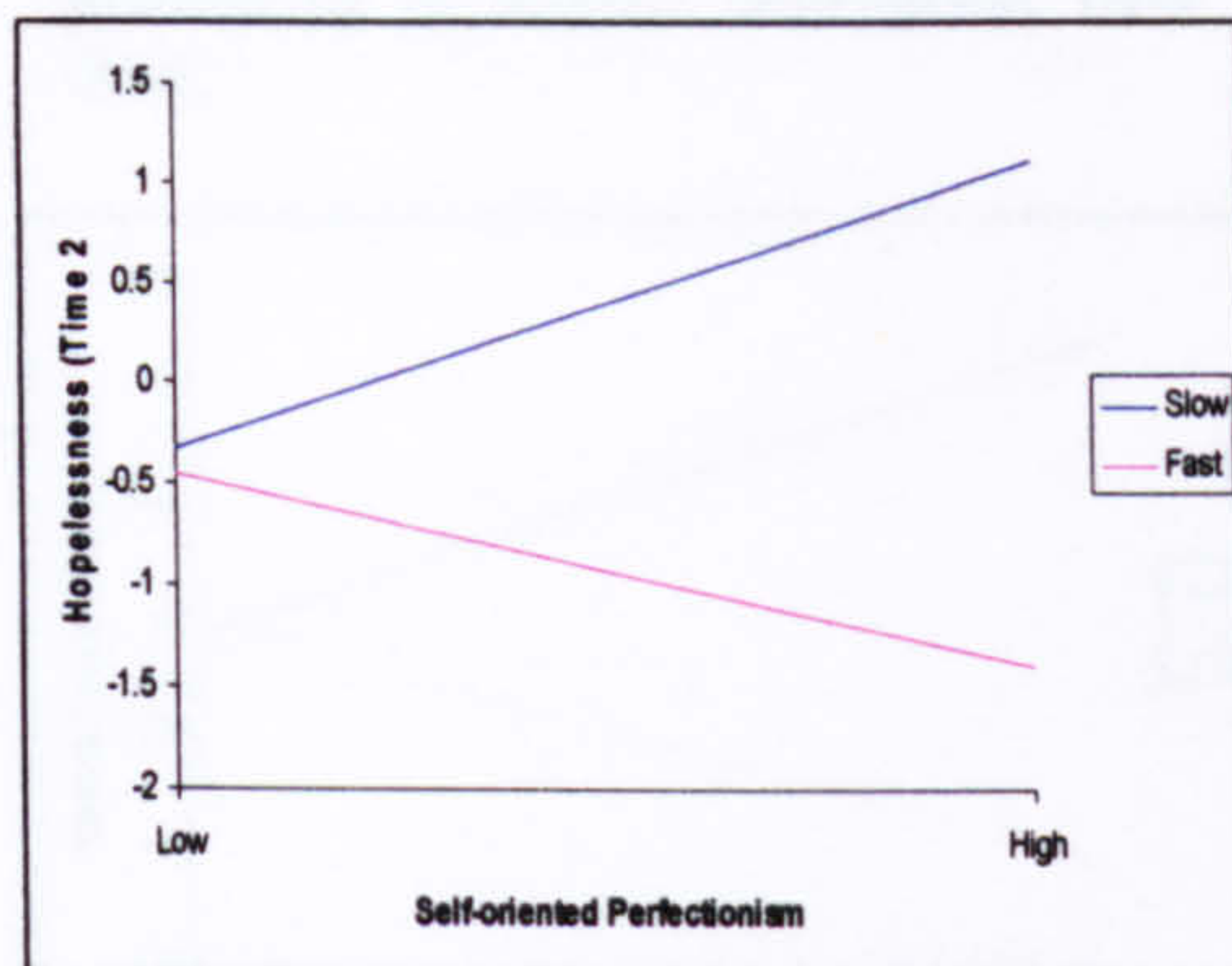
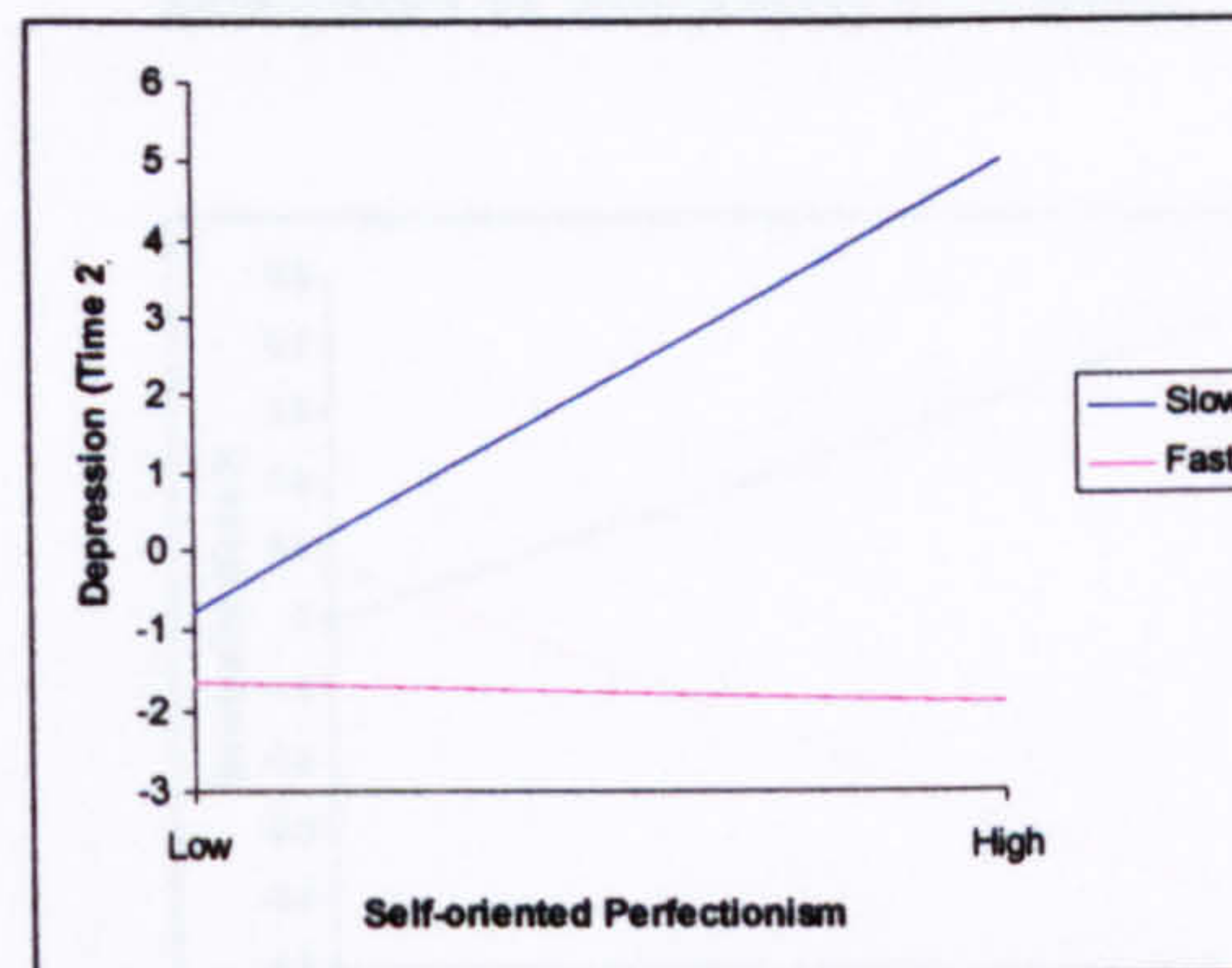


Figure 6.21. The relationship between self-oriented perfectionism and negative memory recall in the prediction of depression over time.



The tests of the regression slopes were also applied to the prediction of depression over time (Aiken & West, 1991), as there was found to be a significant interaction between self-oriented perfectionism and negative memory recall (accounted for 38.3% of variance). Application of this procedure revealed that the high ( $\beta=.26$ ,  $t(120)=2.24$ ,  $p<.05$ ), but not the low ( $\beta=-.02$ ,  $t(120)=-.21$ , ns), negative memory lines differed significantly from zero. Thus, the outcome is comparable to that found in the prediction of hopelessness (see Figure 6.21). In the case of severe depression, the interaction was found to account for 30.2% of the variance, and the tests of the slopes of high and low negative memory recall, showed that there was a similar pattern as in the hopelessness and depression regressions; however, for both the high ( $\beta=.21$ ,  $t(120)=1.72$ , ns), and low ( $\beta=-.18$ ,  $t(120)=-1.65$ , ns), lines of negative memory recall, there was only a trend towards differing from zero (see Figure 6.22). A similar, but less clear trend, was observable in the prediction of suicidality over time, where self-oriented perfectionism and negative memory recall accounted for 33.5% of the overall variance (High:  $\beta=.17$ ,  $t(120)=1.38$ , ns; Low:  $\beta=-.14$ ,  $t(120)=-1.34$ , ns; see Figure 6.23).

Figure 6.22. The relationship between self-oriented perfectionism and negative memory recall in the prediction of severe depression over time.

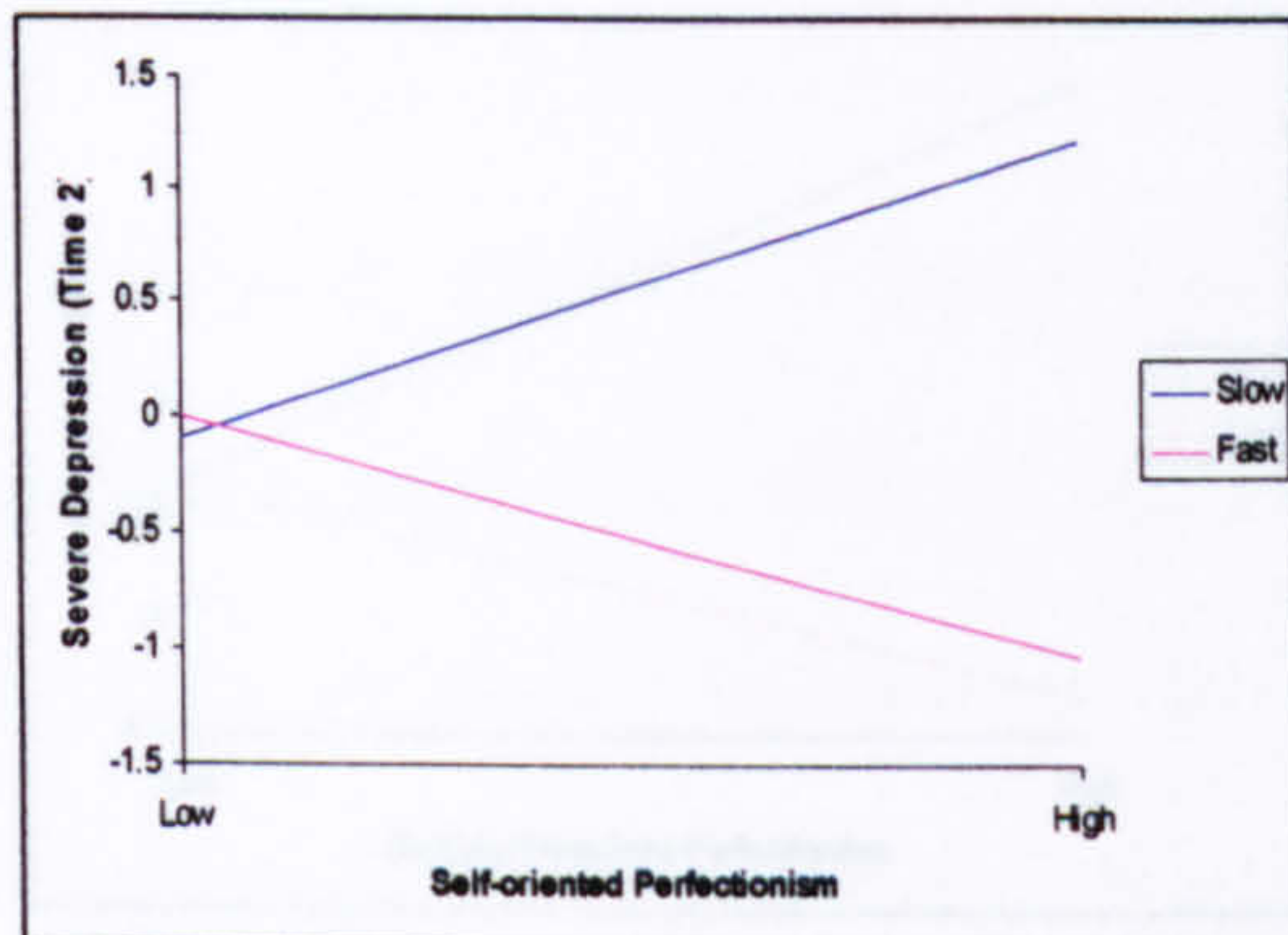


Figure 6.23. The relationship between self-oriented perfectionism and negative memory recall in the prediction of suicidality over time.



### Social Perfectionism

In the interaction between negative memory recall and social perfectionism it was found that the multiplicative term accounted for 41.5% (hopelessness), 39.7% (depression), 36.5% (severe depression), and 39.4% (suicidality) of the variance, and, as a result, the regression lines of best fit were plotted to probe the significance of the slopes for each of the outcome variables. In the prediction of hopelessness over time, the analysis revealed that the high ( $\beta=.34$ ),  $t(101)=5.74$ ,  $p<.001$ ), but not the low ( $\beta=-.12$ ),  $t(101)=-1.20$ , ns), negative memory slopes differed significantly from zero. That is, those high in social perfectionism, who were also slow at recalling negative autobiographical memories, reported significantly more hopelessness six weeks later (see Figure 6.24).



Figure 6.24. The relationship between socially prescribed perfectionism and negative memory recall in the prediction of hopelessness over time.

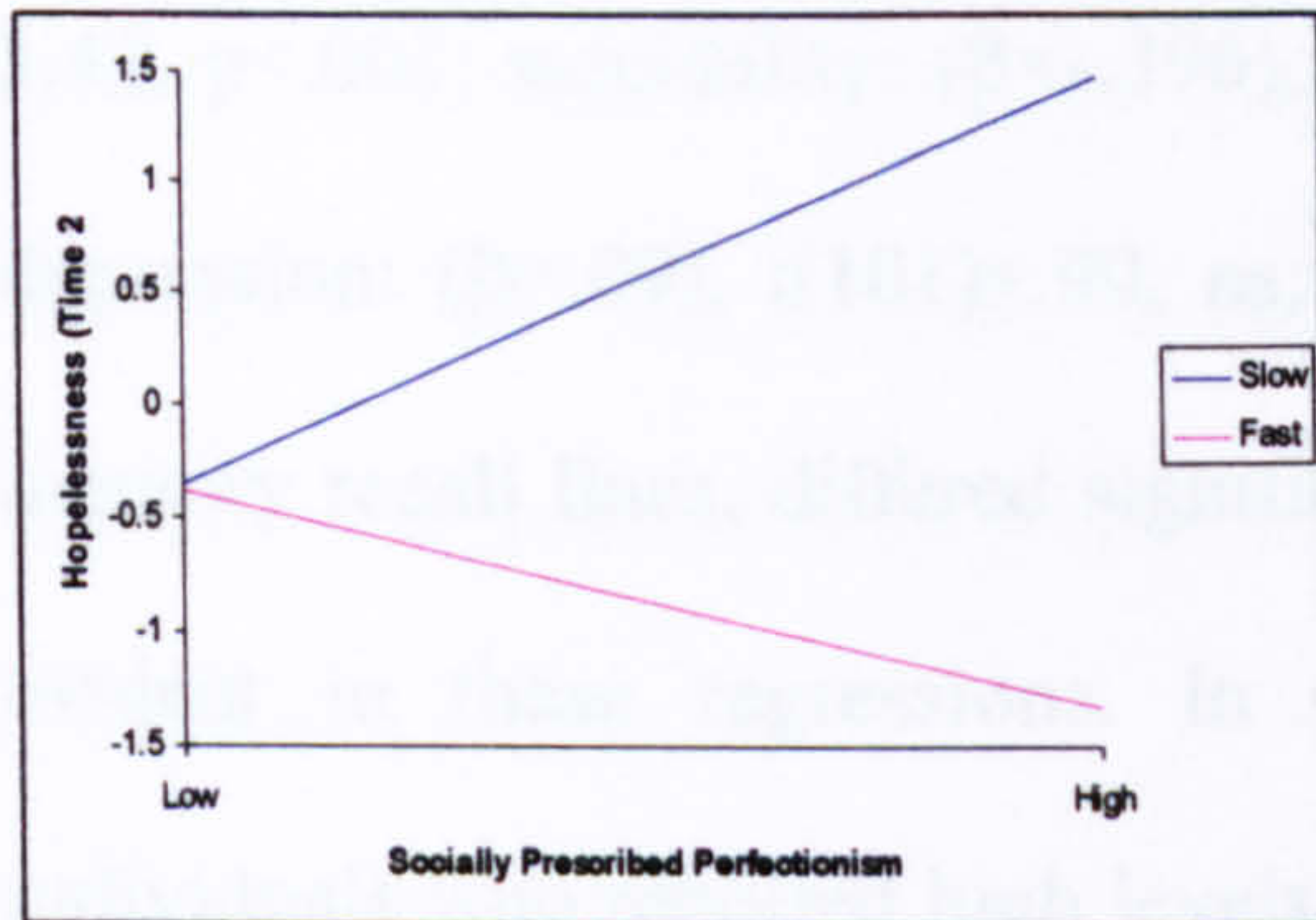
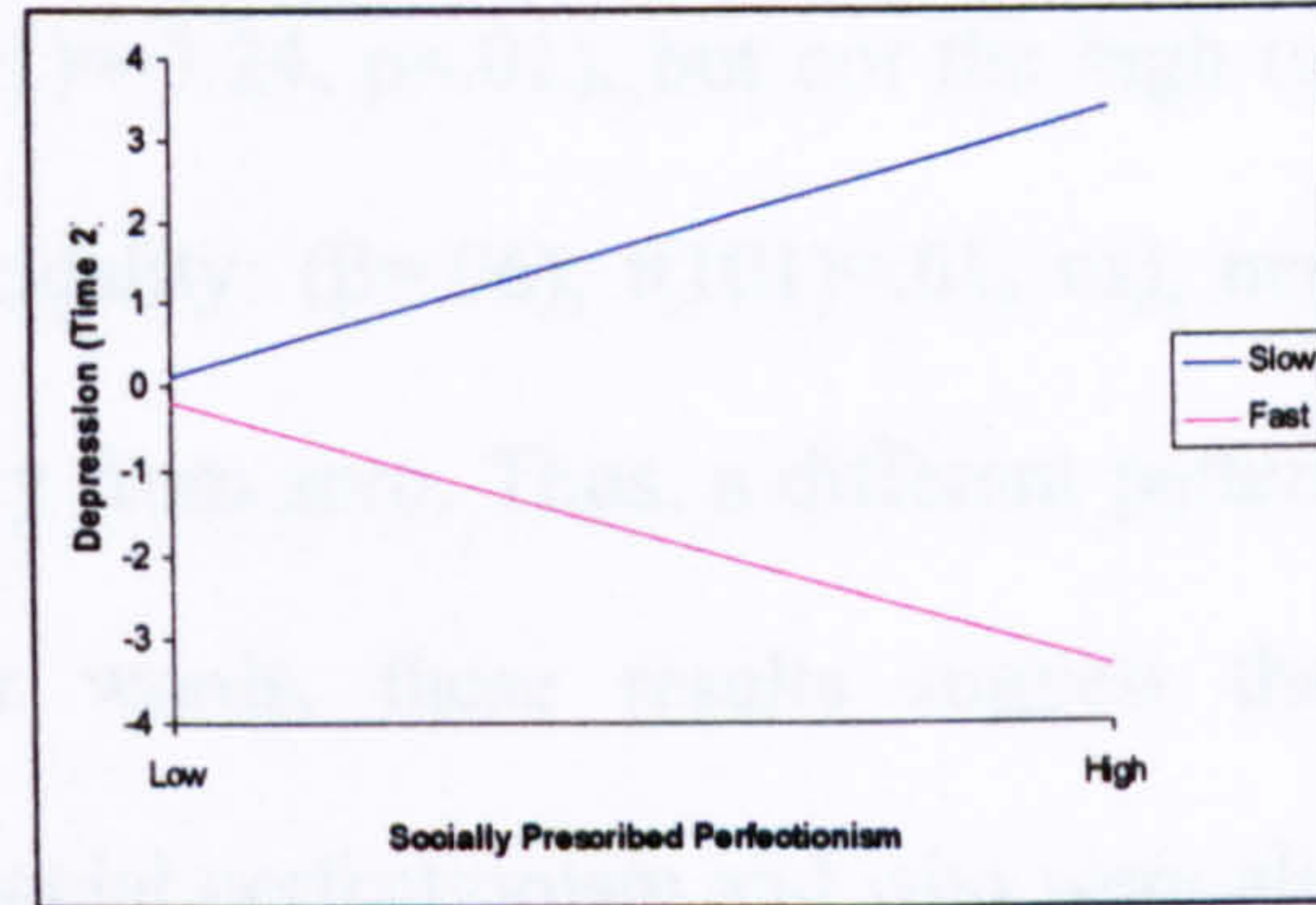


Figure 6.25. The relationship between socially prescribed perfectionism and negative memory recall in the prediction of depression over time.



In the prediction of depression over time, the interaction between social perfectionism and negative memory recall was also followed up according to the guidelines proposed by Aiken and West (1991). This analysis suggested that neither the high ( $\beta=.15$ ,  $t(101)=1.46$ , ns), nor the low ( $\beta=-.17$ ,  $t(101)=-1.52$ , ns), negative memory recall lines differed significantly from zero; however, they did show a trend similar to the hopelessness data (see Figure 6.25).

Figure 6.26. The relationship between socially prescribed perfectionism and negative memory recall in the prediction of severe depression over time.

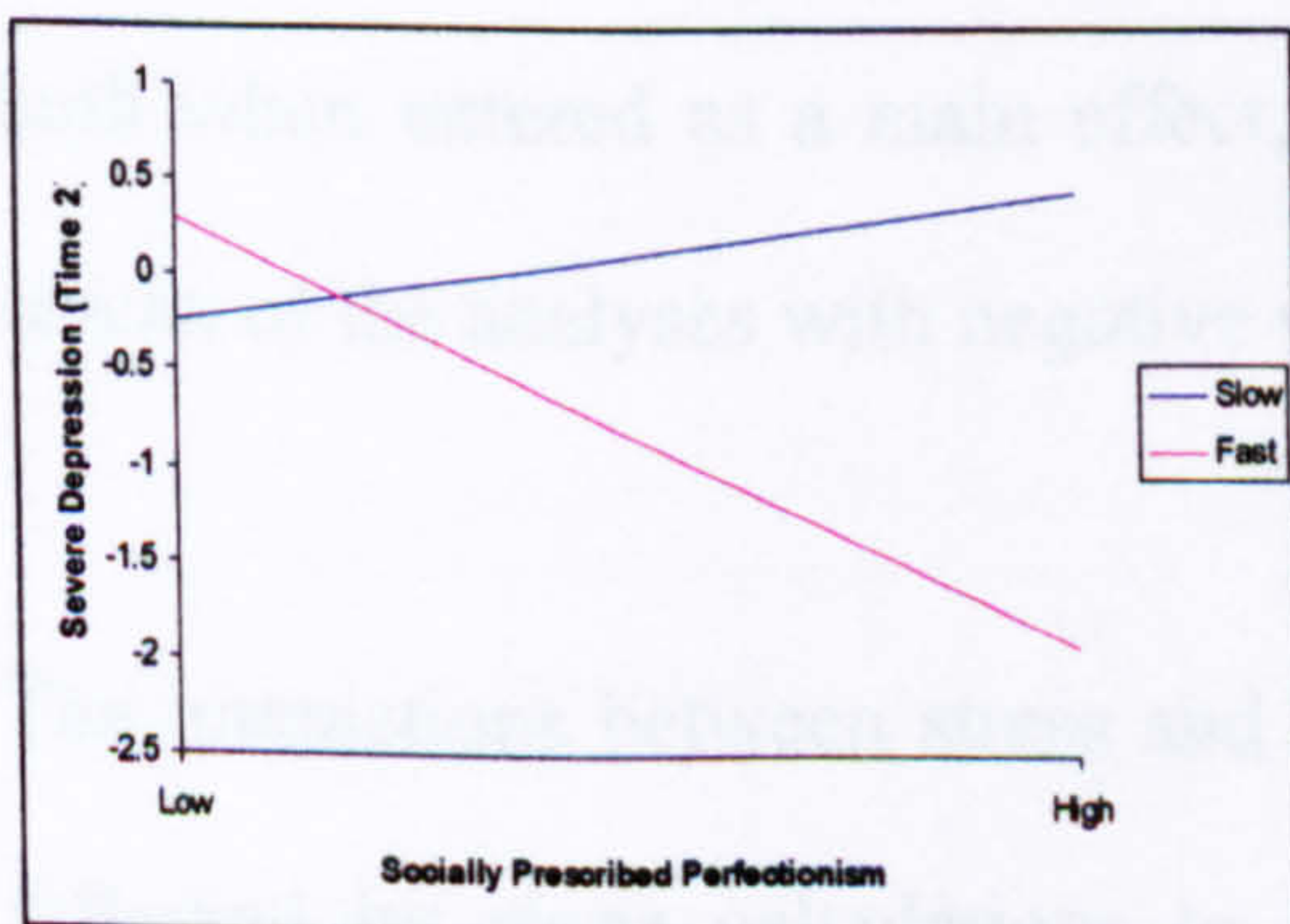
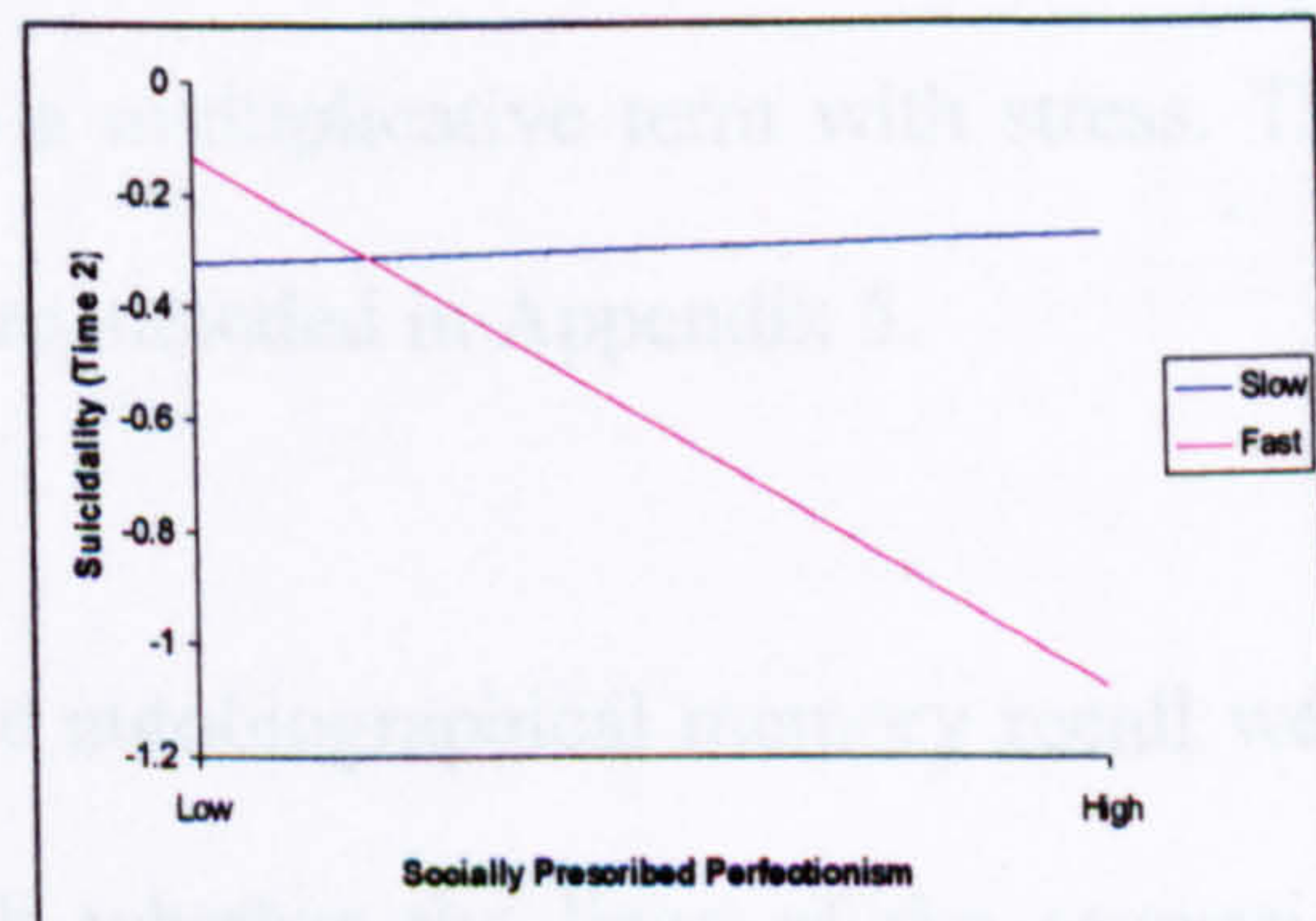


Figure 6.27. The relationship between socially prescribed perfectionism and negative memory recall in the prediction of suicidality over time.



Finally, in the case of severe depression (Figure 6.26) and suicidality (Figure 6.27), it was found that calculations of the regression slopes at high and low levels of negative memory recall, revealed that the low (severe depression: ( $\beta=-.38$ ),  $t(101)=-3.42$ ,  $p<.001$ ; suicidality: ( $\beta=-.396$ ),  $t(101)=-3.24$ ,  $p<.01$ ), but not the high (severe depression: ( $\beta=.09$ ),  $t(101)=.99$ , ns; suicidality: ( $\beta=.06$ ),  $t(101)=.61$ , ns), negative memory recall lines, differed significantly from zero. Thus, a different pattern was evident in these regressions. In other words, these results suggest that for individuals who reported high levels of social perfectionism and who were also fast at recalling negative autobiographical memories, were significantly less depressed and suicidal, than those who did not, at the time of follow-up.

#### *6.3.10 Diathesis-Stress (Prospective Data)*

In addition, tests were carried out to test the role of stress in the prediction of distress over time. Analysis revealed that the retrospective measure of stress was a significant predictor of distress over time as it accounted for 43.8%, 64.2%, 34%, and 32.2% of the variance of hopelessness, depression, severe depression, and suicidality, respectively. Furthermore, stress was found to moderate the relationship between negative memory recall and psychological distress over time. This was, however, not the case with recall of positive memories which was non-significant, both when entered as a main effect, and as a multiplicative term with stress. The results of the analyses with negative words are included in Appendix 5.

The interactions between stress and negative autobiographical memory recall were followed by slope calculations to establish whether the lines of the regression differed significantly from zero. For hopelessness, the high ( $\beta=.59$ ),  $t(101)=7.50$ ,

$p < .001$ ), but not the low ( $\beta = .14$ ,  $t(101) = 1.50$ , ns), lines of the stress regression slopes differed significantly from zero (See Figure 6.28). Similarly, for severe depression and suicidality, the high (severe depression:  $\beta = .49$ ,  $t(101) = 5.25$ ,  $p < .001$ ; suicidality:  $\beta = .26$ ,  $t(101) = 2.78$ ,  $p < .01$ ), but not the low (severe depression:  $\beta = .07$ ,  $t(101) = .59$ , ns; suicidality:  $\beta = -.11$ ,  $t(101) = -.91$ , ns), lines of the stress regression slopes differed significantly from zero (see Figures 6.29 and 6.30 respectively).

This analysis suggests that the time taken to recall negative memories only becomes of relevance when stress is experienced. Surprisingly, as illustrated in the figures (Figures 6.28, 6.29, and 6.30), it is the slow, and not the fast, recall of negative memories which, when combined with high levels of stress, is a significant predictor of both hopelessness, depression (as measured by the GHQ-28, not the CES-D), and suicidality. It is possible that this indicates an attempted coping mechanism to avoid painful memories from the past.

Figure 6.28. The relationship between stress and negative memory recall in the prediction of hopelessness over time.

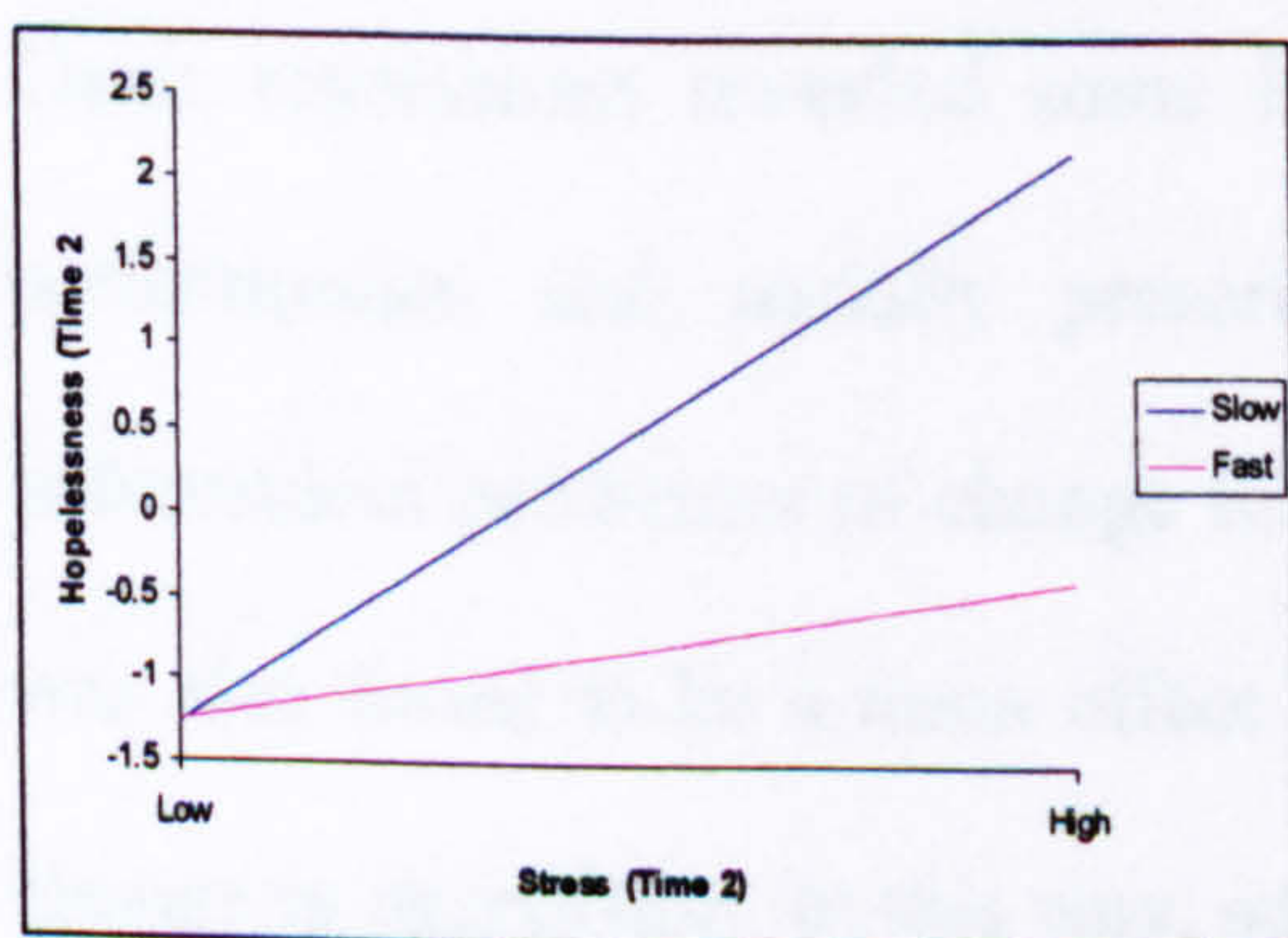


Figure 6.29. The relationship between stress and negative memory recall in the prediction of severe depression over time.

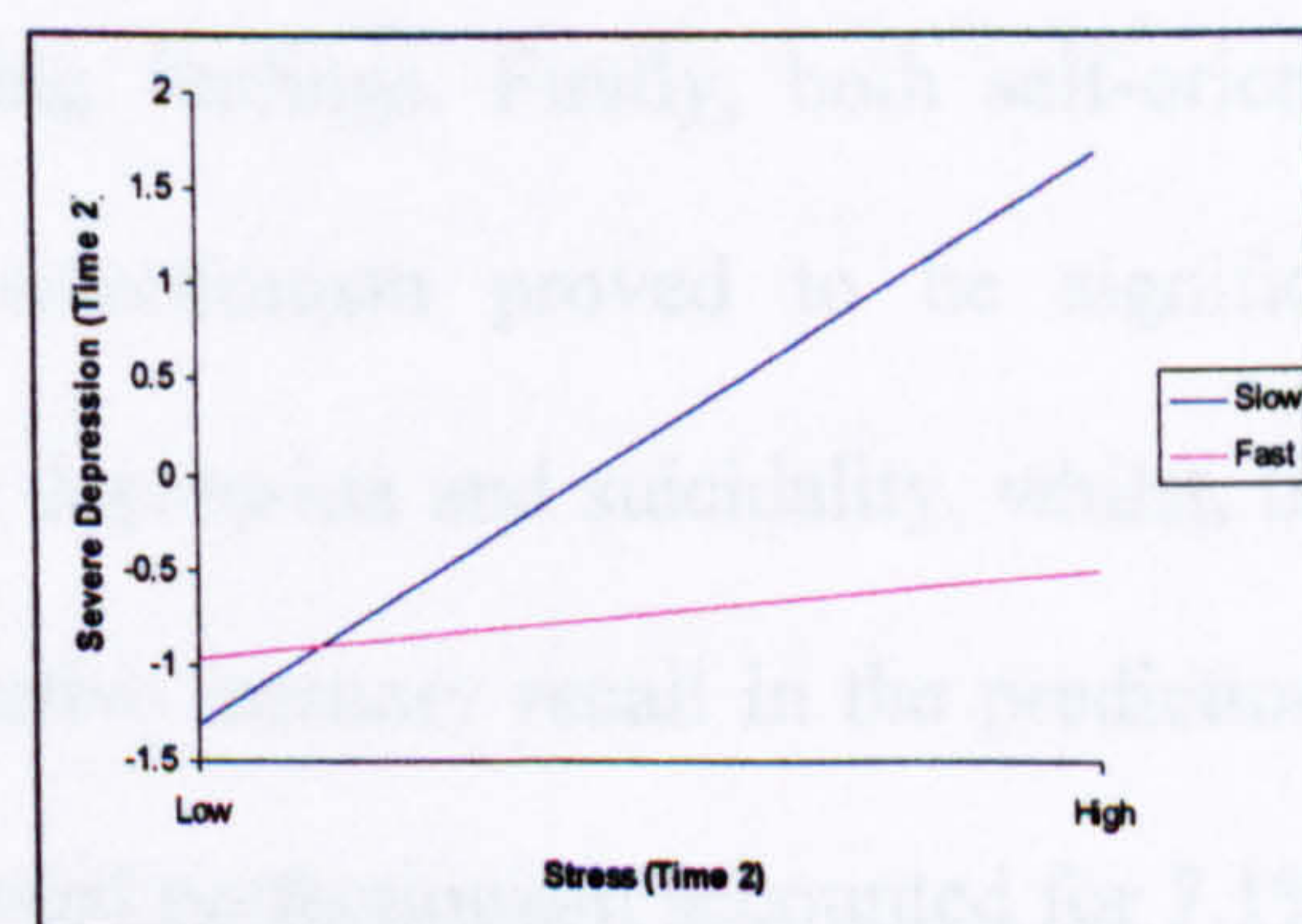
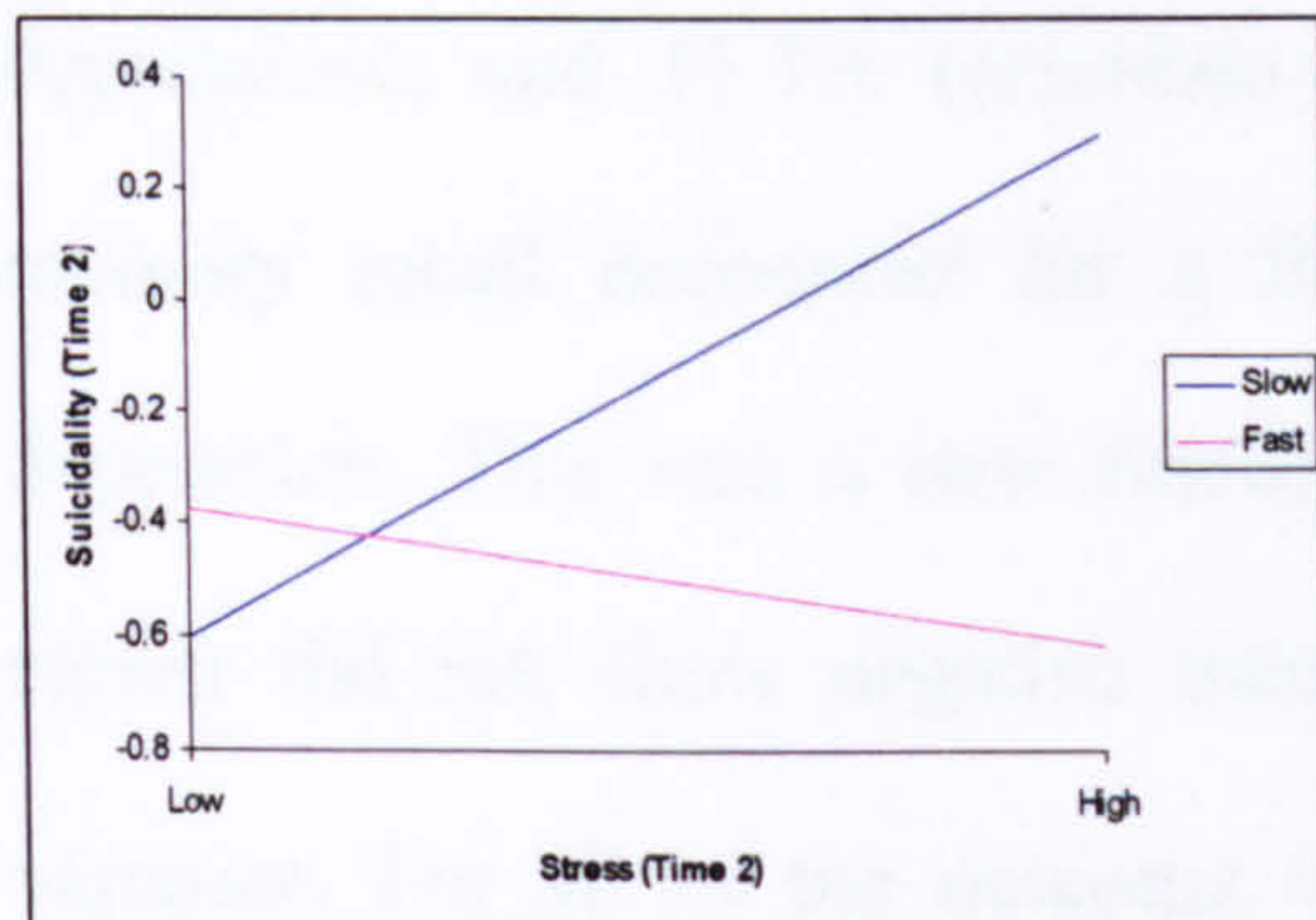


Figure 6.30. The relationship between stress and negative memory recall in the prediction of suicidality over time.



### 6.3.11 Prospective Findings: Prediction of Changes in Distress

A final set of analyses were carried out to examine whether the multiplicative terms used in the previous data would also be predictive of any changes in distress from Time 1 to Time 2. As stated earlier in this chapter (Section 6.3.6), this alternative way of investigating change in distress over time, was included to determine whether different results would result from this analysis. As before, either of the perfectionism dimensions was entered at step 1, followed by the memory recall latencies, and finished with the memory x perfectionism interaction term (Step 3). The outcome measure was distress at Time 1 minus distress at Time 2.

These regressions revealed some interesting findings. Firstly, both self-oriented perfectionism and socially prescribed perfectionism proved to be significant independent predictors of change in severe depression and suicidality, whilst, there was also found to be a main effect of negative memory recall in the prediction of change in depression. In this way, self-oriented perfectionism accounted for 7.1% of the variance in change of severe depression, and 4.4% of the variance associated with change in suicidality, whilst negative memory recall accounted for a further

5% of the variance associated with change in depression. Socially prescribed perfectionism, on the other hand, accounted for 3.6% (depression), 9.3% (severe depression), and 11.3% (suicidality) of the change in distress, whilst negative memory recall accounted for a further 2.8% of the variance associated with depression. This was a new finding as the standard method of analysis utilised earlier did not show negative memory recall to predict significant independent variance. For all of the outcome variables, self-oriented and socially prescribed perfectionism interacted with the time taken to recall negative autobiographical memories to predict changes in distress over time (See Appendix 6). The post-hoc analyses for each interaction are presented below for each perfectionism dimension.

### Self-oriented Perfectionism

The interactions are once again illustrated by plotting the lines of best fit and are illustrated in Figures 6.31-6.34. The interactions between self-oriented perfectionism and negative memory recall were followed up with two simple slope calculations. The interaction between self-oriented perfectionism and negative memory recall accounted for 7.7% of the variance, and the follow-up analyses suggested that high levels of self-oriented perfectionism predicted a change in hopelessness only when negative memory recall was fast ( $\beta=.31$ ,  $t(101)=2.76$ ,  $p<.01$ ), and not when it was slow ( $\beta=-.09$ ,  $t(101)=-.89$ , ns). In other words, only when self-oriented perfectionism was combined with fast recall of negative memories did it result in a decrease in hopelessness (see Figure 6.31).

Figure 6.31. The relationship between self-oriented perfectionism and negative memory recall in the prediction of change in hopelessness over time.

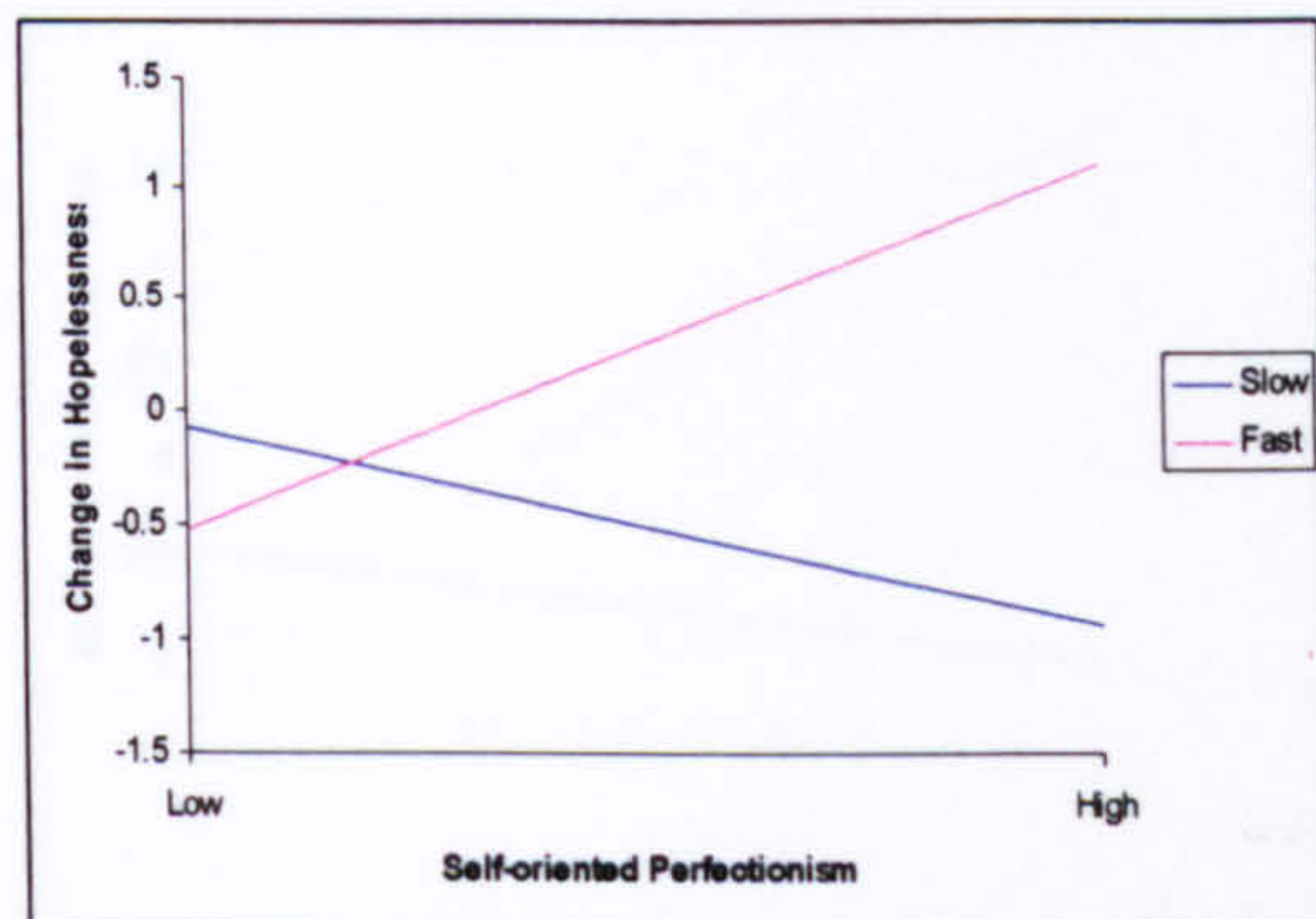
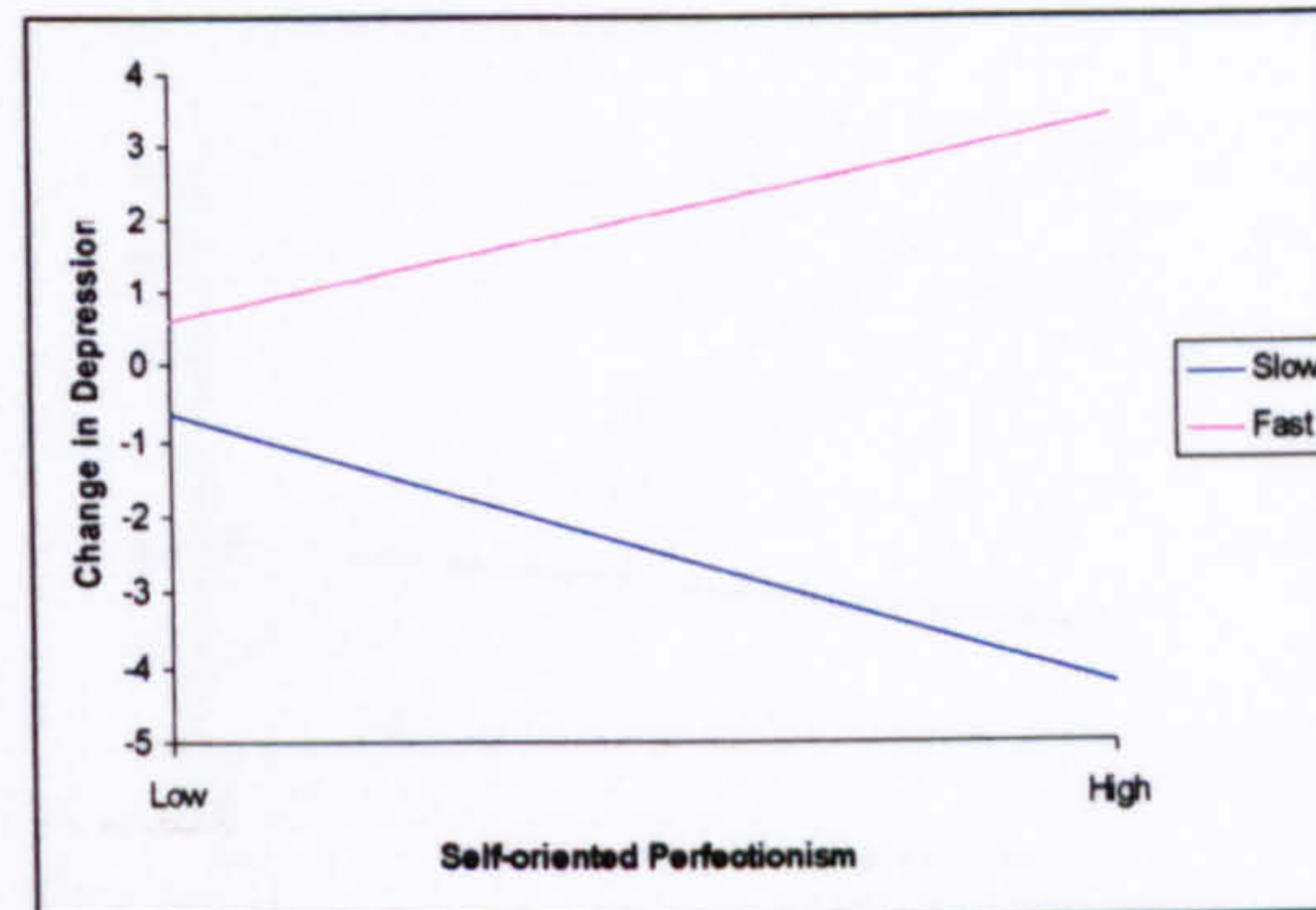


Figure 6.32. The relationship between self-oriented perfectionism and negative memory recall in the prediction of change in depression over time.



In the prediction of change in depression a similar pattern of effects was observable (accounted for 10.4% of the variance); however, both the high ( $\beta=-.22$ ,  $t(101)=1.51$ , ns), and the low ( $\beta=.17$ ,  $t(101)=1.52$ , ns), self-oriented perfectionism slopes only showed a trend towards the same relationship (see Figure 6.32). The pattern of effects was much more evident in the prediction of change in severe depression (Figure 6.33) and suicidality (6.34), where the multiplicative term of self-oriented perfectionism and negative memory recall accounted for 16.7% and 12% of the variance respectively. That is, the post-hoc analyses revealed that the low (severe depression:  $\beta=.47$ ,  $t(101)=4.36$ ,  $p<.001$ ; suicidality:  $\beta=.38$ ,  $t(101)=3.39$ ,  $p<.001$ ), and not the high (severe depression:  $\beta=-.07$ ,  $t(101)=-.55$ , ns; suicidality:  $\beta=-.04$ ,  $t(101)=-.32$ , ns), slopes of the negative memory recall slopes differed significantly from zero. That is, only when self-oriented perfectionism was combined with fast recall of negative memories, was there a significant decrease in severe depression and suicidality.

Figure 6.33. The relationship between self-oriented perfectionism and negative memory recall in the prediction of change in severe depression over time.

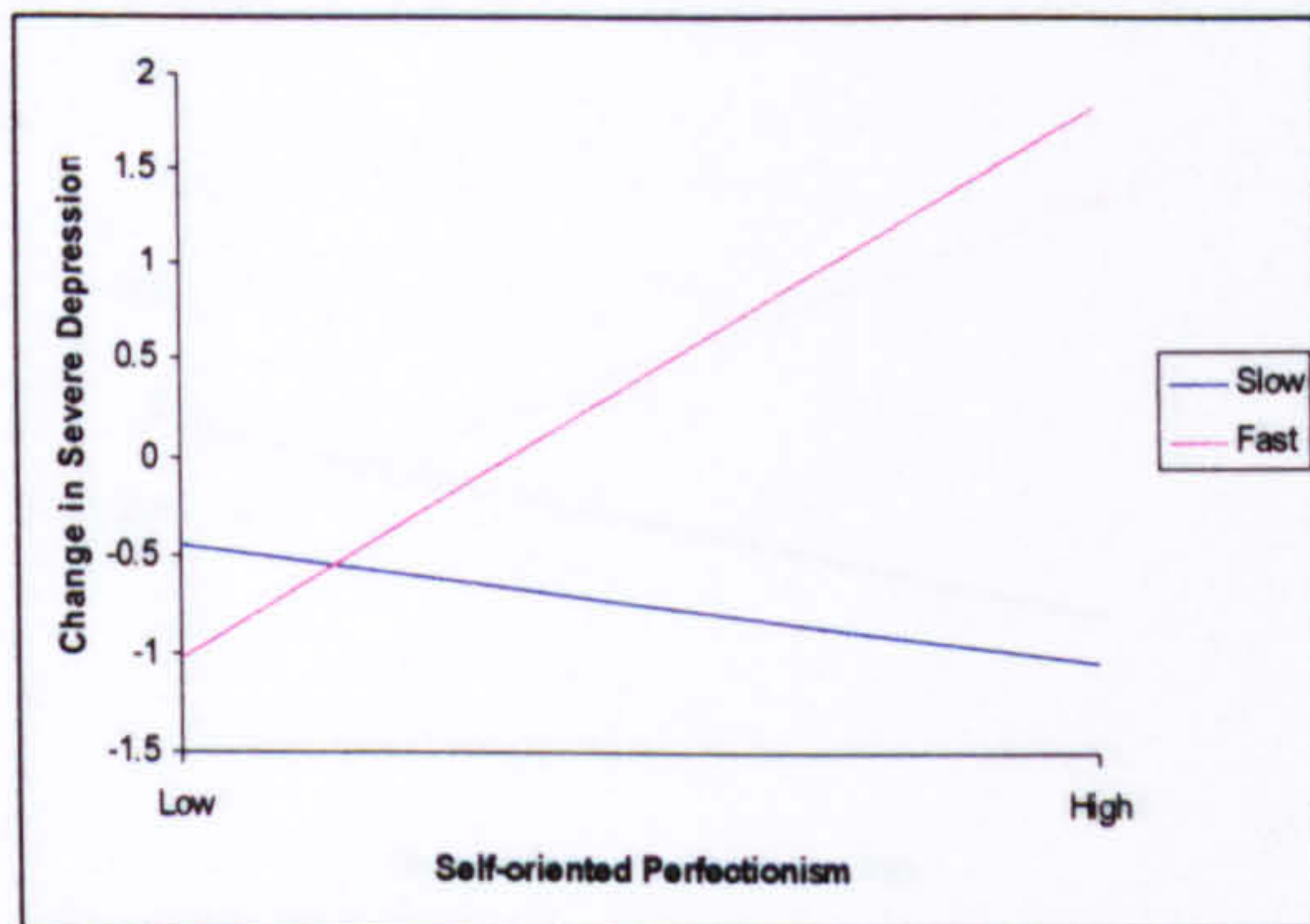
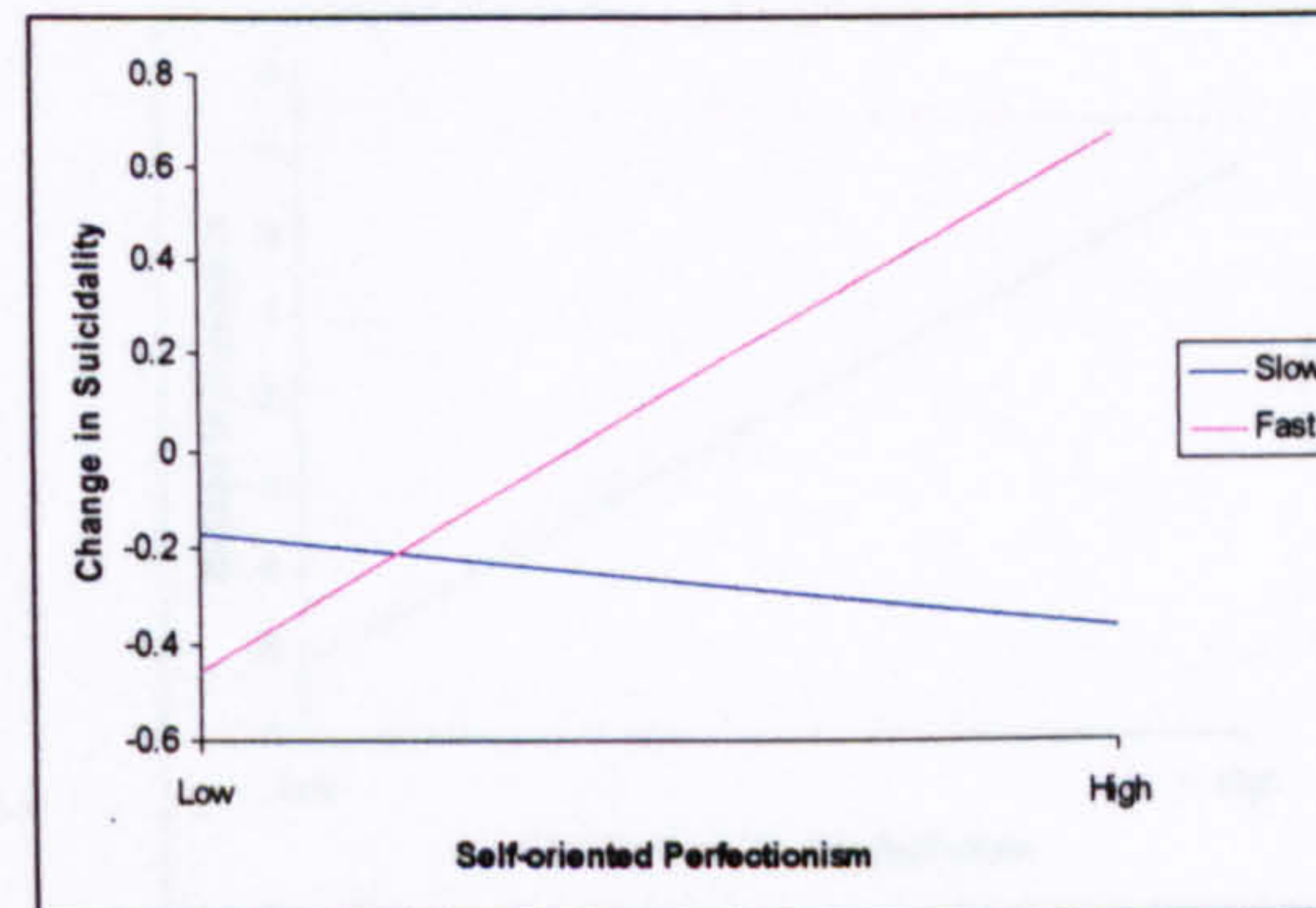


Figure 6.34. The relationship between self-oriented perfectionism and negative memory recall in the prediction of change in suicidality over time.



These figures (Figures 6.31, 6.32, 6.33 and 6.34) demonstrate a complex interaction between recall of negative memories and self-oriented perfectionism in the prediction of change in distress over time. Thus, it appears the combination of high levels of self-oriented perfectionism and fast recall of negative autobiographical memories, predicted a decrease in negative affect experienced 6 weeks later.

### Socially Prescribed Perfectionism

In the case of socially prescribed perfectionism, the analysis showed that this perfectionism dimension interacted with negative memory recall to account for 6.7% of the variance of the change in hopelessness. For hopelessness, the low (( $\beta=.29$ ),  $t(101)=2.28$ ,  $p<.05$ ), but not the high (( $\beta=-.13$ ),  $t(101)=-1.16$ , ns), memory lines differed significantly from zero. In other words, social perfectionists who were also fast at recalling negative memories reported a significant decrease in hopelessness (see Figure 6.35).

Figure 6.35. The relationship between socially prescribed perfectionism and negative memory recall in the prediction of change in hopelessness over time.

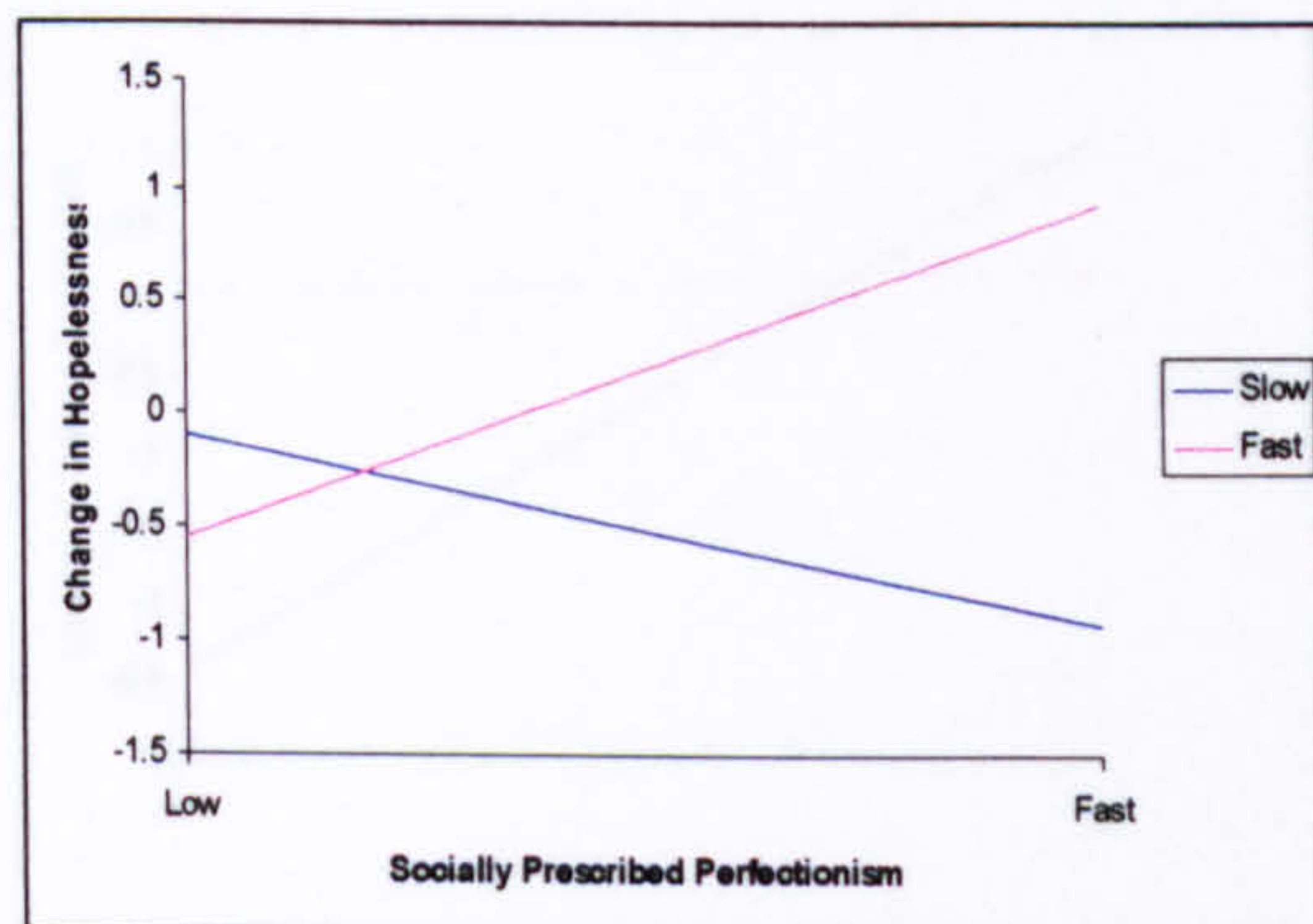
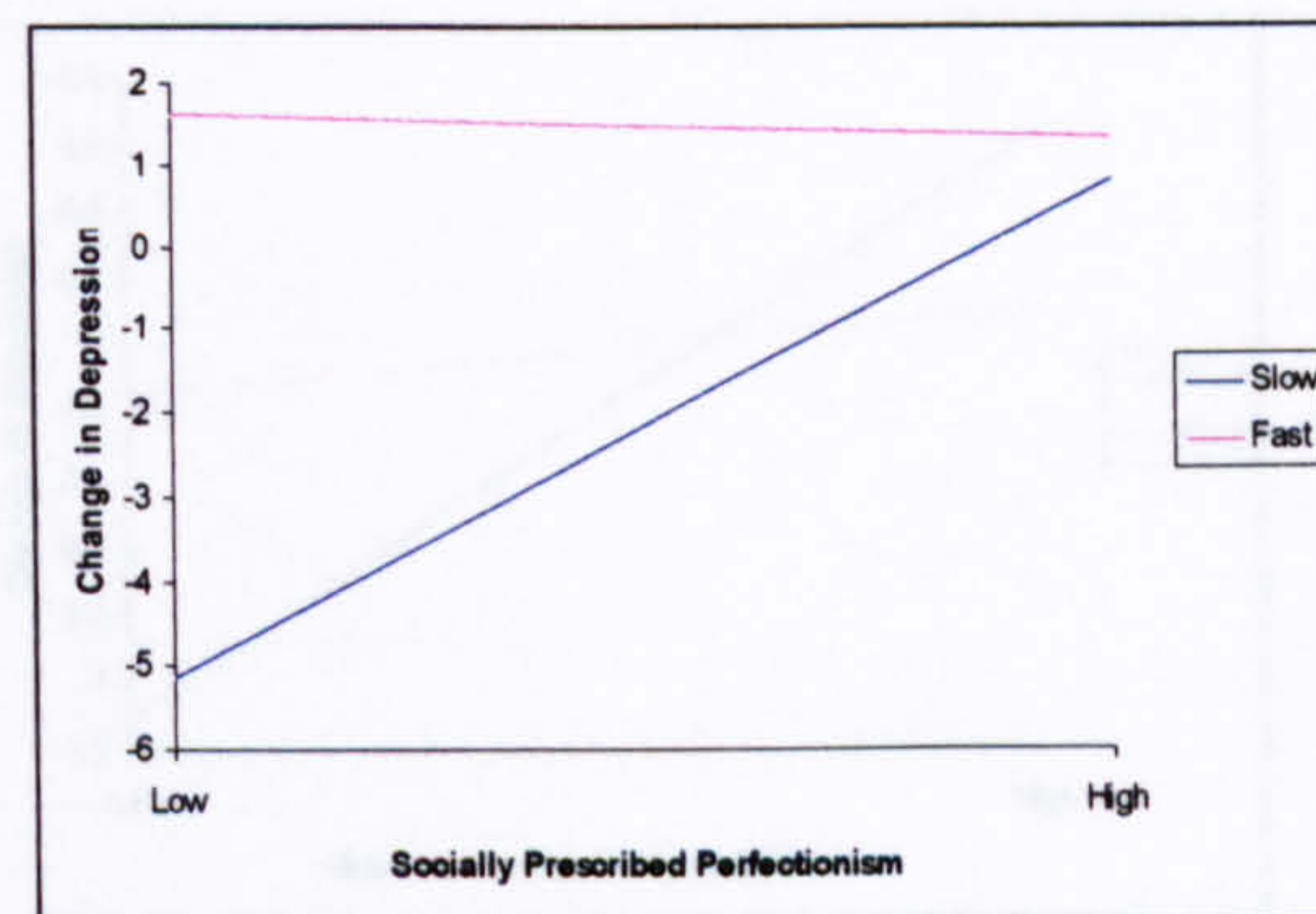


Figure 6.36. The relationship between socially prescribed perfectionism and negative memory recall in the prediction of change in depression over time.



Quite surprisingly, in the case of depression (Figure 6.36), where socially prescribed perfectionism and negative memory recall interacted to account for 11.9% of the variance, the simple slope analyses suggested that low levels of social perfectionism when combined with slow recall of negative memories predicted an increase in depression (Low: ( $\beta=.39$ ),  $t(101)=3.14$ ,  $p<.01$ ; High: ( $\beta=.02$ ),  $t(101)=.18$ ,  $p<.86$ ). A similar outcome was found in the prediction of change in severe depression (21.5% of the variance accounted for) (Low: ( $\beta=.61$ ),  $t(101)=5.21$ ,  $p<.001$ ; High: ( $\beta=.075$ ),  $t(101)=.71$ , ns; see Figure 6.37), and suicidality (20.3% of the variance accounted for) (Low: ( $\beta=.62$ ),  $t(101)=5.25$ ,  $p<.001$ ; High: ( $\beta=.14$ ),  $t(101)=1.32$ , ns; see Figure 6.38).



Figure 6.37. The relationship between socially prescribed perfectionism and negative memory recall in the prediction of change in severe depression over time.

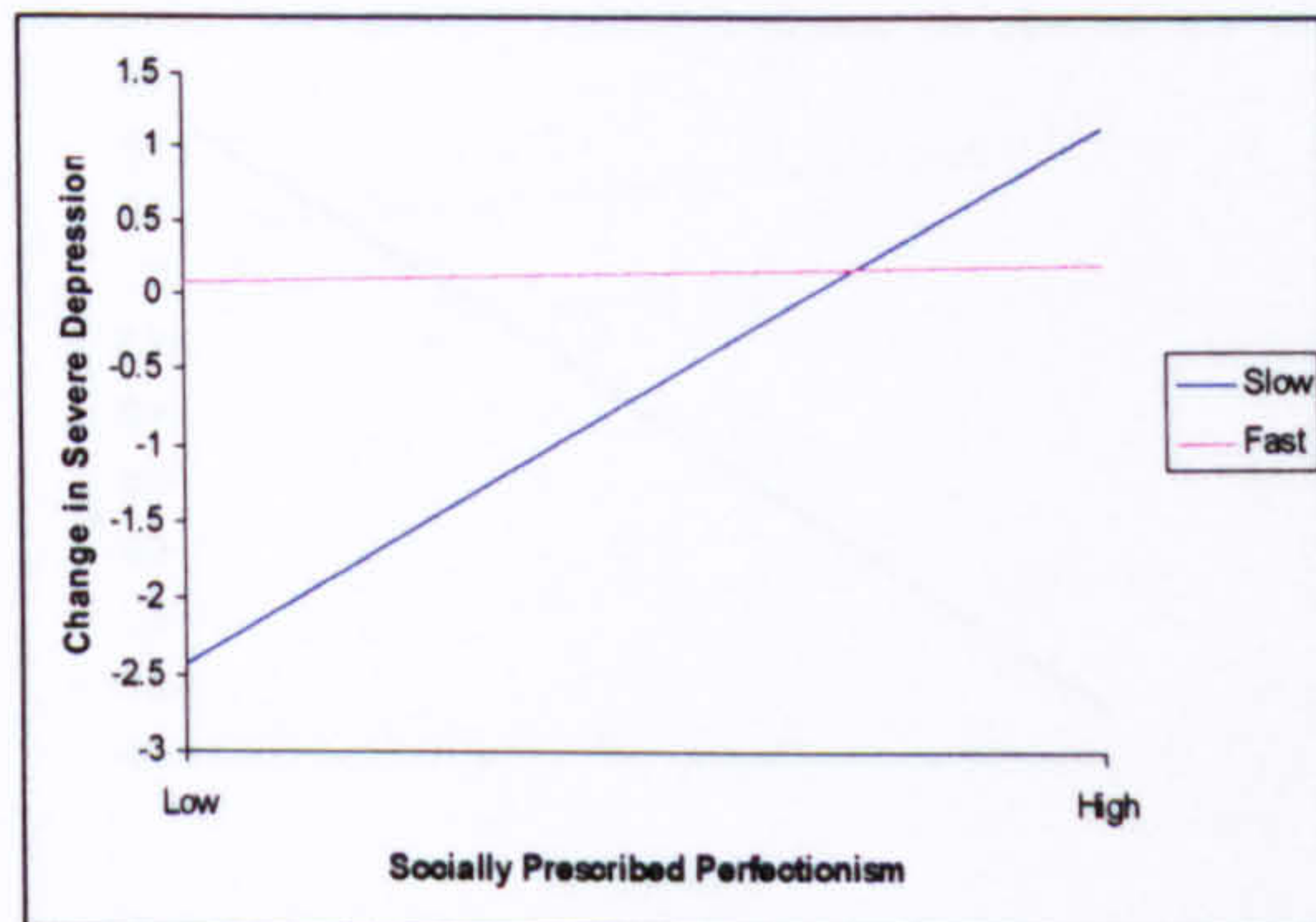
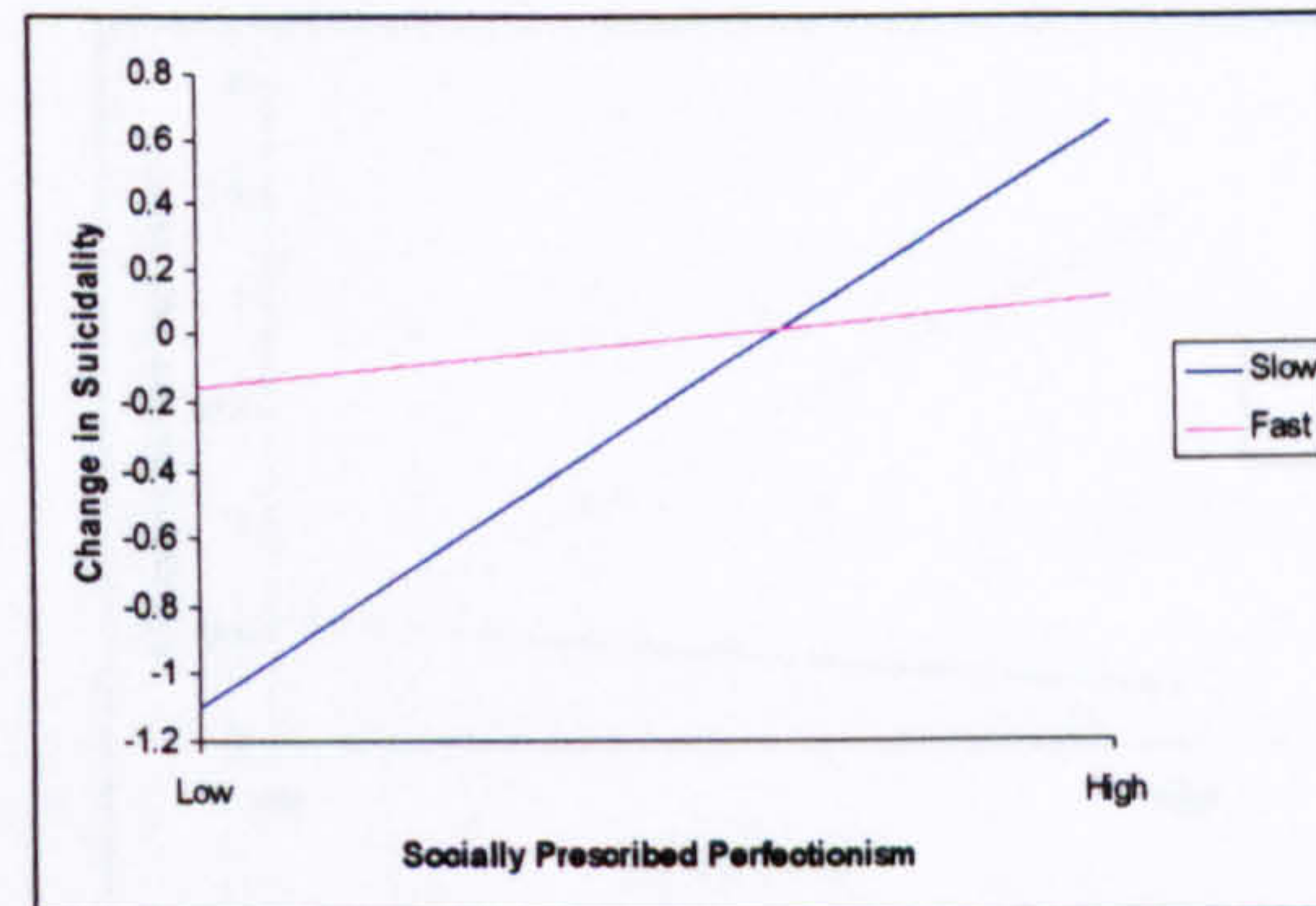


Figure 6.38. The relationship between socially prescribed perfectionism and negative memory recall in the prediction of change in suicidality over time.



### 6.3.12 Diathesis-Stress Models (Time 1 – Time 2)

Regression analyses were also carried out to investigate the role of stress in predicting change in distress and suicidality over time. The outcomes of these analyses are shown in Appendix 7. Regression analyses demonstrated that stress interacted with negative memory recall to produce changes in hopelessness, and accounted for 7.5% of the variance. The interaction was followed up with two simple slope calculations as recommended by Aiken and West (1991). These analyses revealed that the high ( $\beta=.59$ ,  $t(101)=7.50$ ,  $p<.001$ ), but not the low ( $\beta=.14$ ,  $t(101)=1.50$ , ns), lines of memory recall differed significantly from zero (see Figure 6.39). Thus, individuals who reported high levels of stress in their lives and who were also significantly slower at recalling negative memories experienced a significant change (for the worse) in hopelessness six weeks later.

Figure 6.39 The relationship between stress and negative memory recall in the prediction of change in hopelessness over time.

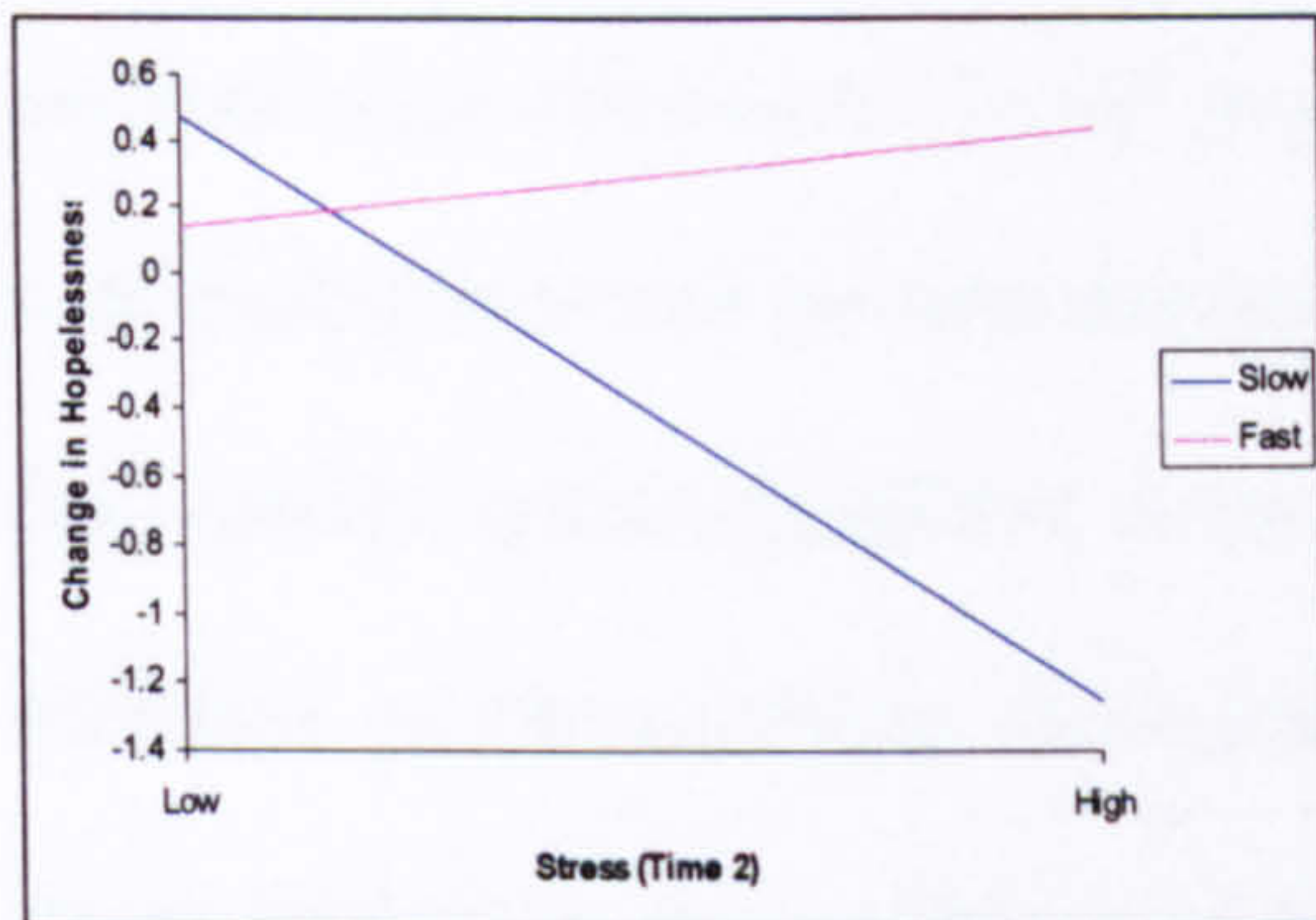


Figure 6.40. The relationship between stress and negative memory recall in the prediction of change in severe depression over time.

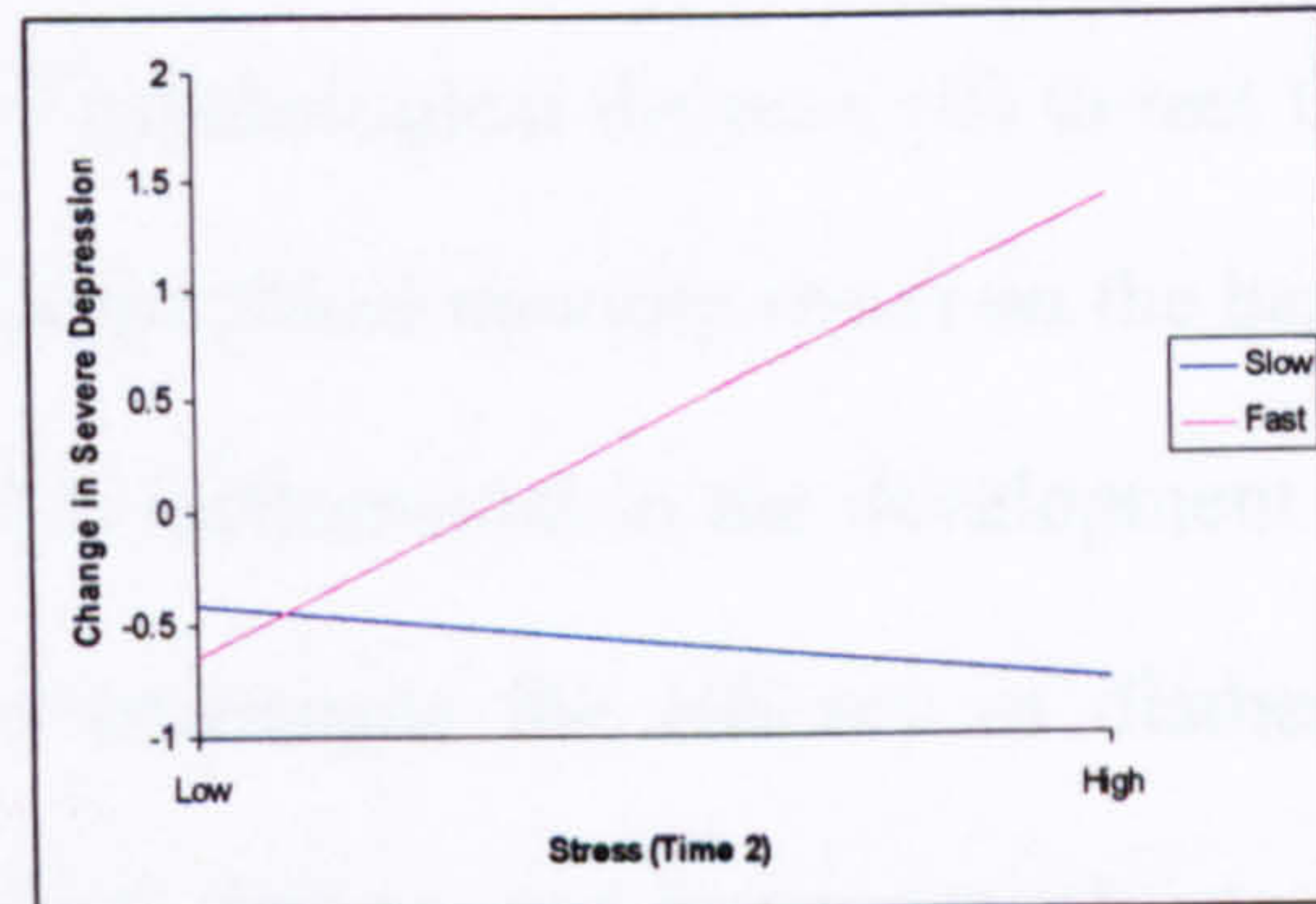
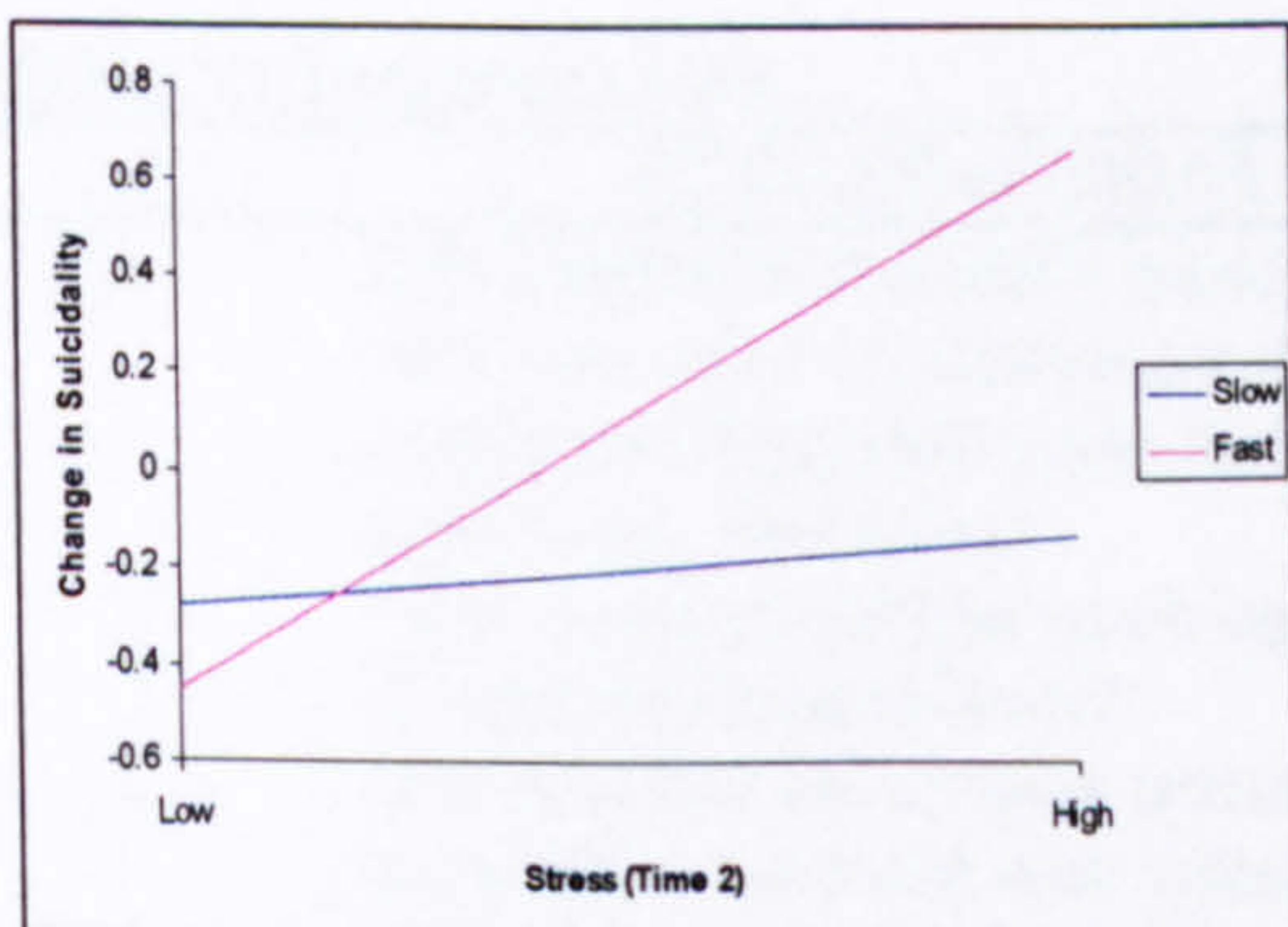


Figure 6.41. The relationship between stress and negative memory recall in the prediction of change in suicidality over time.



This relationship was also shown in the prediction of severe depression and suicidality where the interaction between socially prescribed perfectionism interacted with negative memory recall to account for 5.5% and 4% of the variance respectively. That is, the high (severe depression: ( $\beta=.49$ ),  $t(101)=5.25$ ,  $p<.001$ ; suicidality: ( $\beta=.26$ ),  $t(101)=2.78$ ,  $p<.01$ ), but not the low (severe depression: ( $\beta=.07$ ),  $t(101)=.60$ . ns; suicidality: ( $\beta=-.11$ ,  $t(101)=-.91$ , ns), memory lines differed significantly from zero (see Figures 6.40 and 6.41 for severe depression and suicidality respectively).

## 6.4 Discussion

The principal aims of this study were four fold: (i) to test the role of the perfectionism dimensions in the prediction of psychological distress, (ii) to test the relationship between perfectionism and autobiographical memory recall on the basis that specific autobiographical memory recall is instrumental in the development of effective problem-solving strategies, (iii) to investigate the efficacy of diathesis stress models in the prediction of psychological distress, and (iv) to investigate all of the previous aims both concurrently and prospectively. The extent to which each hypothesis was supported is demonstrated in Table 6.5.

Table 6.5 Hypothesis table.

	HYPOTHESIS/RESEARCH QUESTION	SUPPORT
1.	Self-oriented and socially prescribed perfectionism interact with slow recall of autobiographical memories in the prediction of psychological distress (hopelessness, depression, suicidality)	Supported
2.	Slow recall of positive autobiographical memories is related to increased hopelessness	Not supported
3.	Self-oriented and socially prescribed perfectionism will be positively associated with increased levels of distress and this relationship will be further exacerbated in the presence of stress.	Supported

### 6.4.1 Correlational Findings

The present study investigated the associations between perfectionism, psychological distress and autobiographical memory recall, and served to extend the existing literature in a number of ways. Initial tests were carried out to investigate the relationship between psychological distress (in the form of hopelessness, depression, and suicidality), perfectionistic tendencies and other psychological variables. Consistent with past research it was found that hopelessness was

positively associated with depression, stress and general health concerns. Furthermore, this analysis also revealed that self-oriented perfectionism and socially prescribed perfectionism were positively correlated with psychological distress. Thus, this preliminary analysis reveals some support for the literature which suggests that these perfectionistic traits are good predictors of distress. However, of importance to the debate on the possibility that perfectionism may not necessarily be detrimental to psychological well-being (e.g. Hunter & O'Connor, 2003), the findings did not demonstrate a similar positive association between the outcome measures and other-oriented perfectionism.

#### *6.4.2 Perfectionism x Autobiographical Memory Recall*

The results demonstrate the central role that perfectionism can play in the experience of psychological distress. However, when examining the relationship between perfectionism and autobiographical memory recall, the results were quite complex. Thus, positive memory recall did not, in any way, interact with any of the perfectionism dimensions to predict psychological stress. However, negative memory did interact with both self-oriented and socially prescribed perfectionism to predict distress both concurrently and prospectively. More specifically, it appeared to be the slow recall of negative memories which, when combined with high levels of self or social perfectionism, was predictive of distress.

This finding is, however, somewhat surprising as there is a plethora of research available which suggests that it is the absence of positive thinking, both in relation to the past and the future, which is of particular importance to the development and continuation of psychological distress (e.g. Needles & Abramson, 1990; O'Connor

& Cassidy, under review). That said, the research on autobiographical memories is quite mixed with regard to the importance of the emotional valence of the cue words, and the findings are still congruent with the mnemonic interlock framework proposed by Williams (1996). He has argued that the traumatic nature of past events may result in the search for a specific memory being aborted at an intermediate level in an effort to avoid confrontation with the past. In other words, affective aspects of a memory lead to the search being aborted and a less focused categoric event description being initiated instead, i.e. a form of selective forgetting (Barnhofer et al., 2002).

Keeping this theory in mind, it is, therefore, of interest to consider whether such memory effects have a mediating or moderating effect on the relationship between perfectionism and psychological distress and suicidality. Interestingly, this study did not find any data to support a mediational model. That is, the results did not suggest that individuals, who are concerned with achieving perfection, are disposed to a specific form of memory recall which consequently leads them to report more psychological distress. Rather, it was found that only when perfectionism is combined with delay of negative memory recall, did distress occur.

#### *6.4.3 Diathesis-Stress Models*

Diathesis-stress models which incorporate a measure of perfectionism have been of interest since the 1980's. However, much of the research to further our understanding of such models, has been methodologically weak. For example, research by Hewitt and Dyck (1986) was limited due to the inclusion of a unidimensional, rather than a multidimensional, measure of perfectionism, whilst

Hewitt and Flett (1993) made use of a hassle scale (The Revised Hassles Scale; DeLongis, Folkman & Lazarus, 1988) rather than a dedicated stress scale, thereby raising the question of contamination of measures. As a result, appropriate research within this area is still much desired, and therefore, one of the aims of this study was to establish the utility of diathesis-stress models in the prediction of psychological distress. The hypothesis that self-oriented and socially prescribed perfectionism would be positively associated with stress was partially supported.

Based on Beck's model of depression, much research has suggested that cognitive variables are implicated in the development of depression, in particular in the face of adverse life events (e.g. Abramson et al., 1989; Peterson & Seligman, 1984). As a result, diathesis-stress models have developed from the proposition that "given a relevant life event, a particular cognitive tendency renders the person vulnerable to the development of depressive symptoms" (p. 608; Carver, 1998). Hence, it should be possible to fit perfectionism into this framework on the basis that the setting of particularly high standards, whether self or other imposed, should make it more likely that a person will fall short of achieving them, which in turn will result in self-criticism and possible depressive affect.

Despite this standpoint, Hewitt et al. (1995) argued that little theoretical interest has been invested in the examination of why stress might exacerbate the psychological distress experienced by perfectionists. They argued that a central component to the high strivings of perfectionistic individuals is the need for control, and that it is this which is perceived to be threatened when encountering high levels of stress. As a result, Hewitt and colleagues carried out a study to test the hypothesis that

perfectionism moderates the association between stress and depressive symptomatology. This study did indeed indicate a moderating role for self-oriented perfectionism in the relationship between stress and depression, and it was argued that whereas self-oriented, when experienced in situations of low stress, may actually serve an adaptive role; in the face of conditions signifying high stress (i.e. low experienced control), high levels of self-oriented perfectionism was associated with significantly increased levels of depression. A similar, but statistically less significant, interaction between socially prescribed perfectionism and stress was evidenced in the prediction of depression.

The outcome of the present study, nonetheless, provided clear support for previous research which suggests that perfectionism plays a moderating role in the production of psychopathology because it exacerbates the experiences of environmental stressors or failures (Hewitt & Flett, 2002). Socially prescribed perfectionism has been identified as the perfectionism dimension which is most closely associated with hopelessness due to the tendency for social perfectionists to anticipate negative future events will occur, whilst also believing that these events are unavoidable (i.e. they experience a form of helplessness). As a result, future suffering is inevitable (Anderson, 1990). Although, socially prescribed perfectionism was not found to independently predict hopelessness, the synergistic relationship between this type of perfectionism and stress was found to be a strong predictor of not only hopelessness, but also depression and suicidality.

The majority of research on perfectionism and stress has focused on the moderating relationship between these variables, and therefore, little attention has been directed

at discovering the possibility that perfectionism generates stress (Chang & Rand, 2000; Blankstein & Dunkley, 2002). We consequently extended previous research by also showing a strong mediating relationship between the variables. In effect, our results show that mediational models involving perfectionism and stress are very relevant as we found that self-oriented and socially prescribed perfectionists, through their tendency to evaluate life stringently, actually generate stress. Indeed, we found that the mediating relationship between self-oriented and socially prescribed perfectionism and stress significantly predicted all of the outcome measures. Indeed, for hopelessness we found that stress completely mediated the association for both self-oriented and socially prescribed perfectionism. Furthermore, the relationship between self-oriented perfectionism and depression, and the relationship between socially prescribed perfectionism and severe depression, were also fully mediated by stress. Thus, overall, our results confirm that perfectionists are exposed to greater stress simply through their to achieve perfection.

#### *6.4.4 Prospective Findings*

Little research has studied the influence of the perfectionism dimensions on both measures of psychological distress and suicidality contemporaneously (Chang & Rand, 2000). However, such research is necessary to understand in full how perfectionism may influence each of these variables differentially. Furthermore, there appears to be a lack of research investigating the extent to which perfectionism is predictive of psychological distress over time. Indeed, of particular importance to research into vulnerability factors should be the extent to which they are predictive of psychological distress over time. Thus, when considering perfectionism as a



vulnerability factor, its presence, when combined with congruent stressors, should predict distress prospectively. Furthermore, such factors should be able to predict possible changes in psychological distress over time.

In our examination of the relationship between perfectionism and autobiographical memory in the prediction of psychological distress over time, we found that it was slow recall of negative memories which could be seen to interact with perfectionism. It is possible to relate these findings to previous research in the field, albeit that most of the previous research has been conducted on various clinical populations, and not, as in this case, on non-clinical participants. For example, Evans et al. (1992) found that parasuicidal individuals were slower at recalling both positive and negative memories, when compared to controls, whilst Williams and Dritschel (1988) found no overall difference in the recall latencies for positive and negative memories in a parasuicidal group. More recently, a study by Mackinger et al. (2000), which investigated recall of autobiographical memories in women with no history of depressive episodes and women in remission from major depression, found that women with a history of depression retrieved significantly more categoric memories in response to negative cue words than did the non-depressed group. This finding led the authors to argue that negative cue words are more likely to entice individuals with a history of depression to become caught in the memory search loop (i.e. the mnemonic interlock).

On the other hand, keeping in mind that the current study made use of an entirely non-clinical student population it should be remembered that the results may reflect entirely different mechanisms; for example, it is possible that the slow recall of

negative memories in the individuals displaying high levels of psychological distress, may reflect an attempt at coping with their distress by not ruminating on painful experiences from the past. However, this is only a tentative suggestion which should be examined further in consequent research.

Empirical examinations of the diathesis-stress model have often utilised cross-sectional designs, thus, overlooking the relevance of prospective findings (Abela & D'Alessandro, 2002). This is surprising considering that cross-sectional designs cannot sufficiently clarify the aetiological properties of the model as the interactions between pre-existing cognitions and subsequent occurring negative events in the prediction of psychological distress, are not measured.

The finding that high levels of self oriented and socially prescribed perfectionism when combined with slow recall of negative memory recall denoted an increase in distress over time, whereas when combined with fast recall of negative memories signified a decrease in distress, may be made sense of by looking at the latest research in the perfectionism literature which focuses on the relative adaptiveness/maladaptiveness of perfectionism rather than its multidimensional nature. That is, although it is now generally agreed that perfectionism is best conceptualised as a multidimensional phenomenon, there is still some debate as to how these dimensions are most usefully defined. There are a growing number of researchers (e.g. O'Connor & O'Connor, 2003; O'Connor, O'Connor, O'Connor, Smallwood & Miles, 2004) which contend a return to the maladaptive/adaptive classification as first proposed by Hamachek (1978).

For example, Adkins and Parker (1986) put forward the suggestion that the use of multidimensional measures of perfectionism could result in differential relationships emerging between perfectionism and psychological distress. They argued that there is a need to distinguish between “active” and “passive” perfectionism on the basis that high levels of passive perfectionism represent “individuals who are inordinately afraid of making mistakes, who frequently second-guess their own decisions, who procrastinate, and for whom perfectionism creates impediments to action”. In contrast, active perfectionism is associated with individuals “for whom perfectionistic strivings motivate rather than paralyze; for whom perfectionism spurs rather than inhibits achievement” (Adkins & Parker, 1996; p. 539). In this way, it may be that, at least in non-clinical participants, the ability to make use of past experiences to achieve perfection (i.e. by improving on past mistakes), may be a useful coping mechanism. In contrast, a tendency to worry about past mistakes and to procrastinate about their consequences, may result in an attempt to avoid thinking about them, thereby creating a mechanism similar to the mnemonic interlock described by Williams (1996).

Another explanation which may also prove relevant to the current findings was put forward by Hewitt and Flett (2002). They suggested that a major factor contributing to the perpetuation of stress in perfectionists is the need to maintain a flawless appearance and to conceal any imperfections to other people thereby avoiding negative evaluations. Kawamura and Frost (2004) suggested that this approach may appear to have some short-term benefits in as much as such concealment of failure may avoid evaluative threats from others. However, this approach is more likely to result in the experience of distress over a longer period of time. Similarly,

Pennebaker (1989) argued that the persistent monitoring and inhibition of sharing personal information with a negative contents, could also pose as an important internal stressor which over time exacerbates psychological distress. Thus, it is possible to tentatively suggest that individuals, who are slow at recalling negative memories from their past, may be engaging in a form of deliberate avoidance of such negative events in an effort to maintain the desired perfectionistic self-representation. Such an explanation is congruent with the finding in the present study that negative memory recall was positively associated with social dysfunction.

Although these interpretations are only speculative, they warrant further investigation as it is possible that the autobiographical memory phenomenon may be the mechanism which explains the sometimes confusing relationship between perfectionism and psychological distress.

## **6.5 Limitations**

Although the present study served to extend and support previous research within the area, the current investigation is not without its limitations. Firstly, the participant pool consisted almost entirely of students, and therefore, the results cannot be seen to be representative of the total population. Furthermore, when employing a correlational design, a number of issues must be addressed. On comparing correlational studies to experimental designs, it becomes obvious that any results must be considered in terms of a number of restrictions. In particular, correlational studies must recognize two important limitations which can potentially reduce the validity when concluding that one variable has caused a difference in another variable. Firstly, participants are not randomly assigned to experimental groups, and therefore, it is not possible to control for extraneous participant

variables. Secondly, it is not possible to infer causal relationships from correlational designs, as a result of there being no prior knowledge about the order of occurrences of the variables (Heiman, 1999).

An additional limitation must be acknowledged as the low number of men in this study meant that it was not possible to examine gender differences. It is generally accepted that gender differences are evident in perfectionism and mood research (e.g. Hewitt et al., 1997), and future research should endeavour to be sensitive to possible gender differences.

## **6.6 Conclusions and Where Next**

The results of this study support the view that when perfectionism is combined with a maladaptive memory recall style, in the form of delayed recall of negative autobiographical memories, then levels of psychological distress and suicidality tend to increase. In addition, the results indicate a moderating effect for memory rather than a mediational effect. The maladaptive nature of perfectionism was highlighted by the fact that the self-oriented and socially directed dimensions of perfectionism did predict significant variance in some of the outcome predictor variables. Furthermore, the importance of stress was highlighted as a significant contributor to the detrimental effects of perfectionism and autobiographical memory recall.

Further research is needed to replicate the findings, and to investigate further a possible link between perfectionism and autobiographical memory recall in maladaptive coping. Nevertheless, the present study was an initial exploration into

the links between the dimensions of perfectionism and autobiographical memory recall which may be useful in understanding psychological distress, and suicidality in particular, and in developing interventions for change.

Given that Study 1 was conducted using only correlational analyses, Study 2, an experimental study, was designed to allow us to infer more causal relationships from the data, by including a mood manipulation procedure. Furthermore, the unexpected finding that perfectionism when combined with slow recall of negative memories, rather than positive memories as predicted, predicts psychological distress and suicidality, needs to be further examined.

## **Chapter 7: Study 2**

### *Perfectionism and Autobiographical Memory: An Experimental Manipulation of Mood*

## *Summary*

An experimental study (N=90), which included a mood manipulation procedure, was conducted to address a number of questions: (i) to test the relationship between mood and perfectionism in the recall of autobiographical memories, (ii) to investigate the relationship between perfectionism and coping strategies/mood regulation in the prediction of psychological distress and suicidality, (iii) to test the temporal stability of perfectionism, and (iv) to investigate in more detail the relationship between perfectionism and stress. Student participants completed a battery of self-report measures at baseline, and three days later were randomly assigned to a positive, negative or neutral mood manipulation group. Following the experimental manipulation the participants completed the AMT and another series of questionnaires. Analyses showed that self-oriented and socially prescribed perfectionism are related to psychological distress and suicidality through their interaction with maladaptive coping strategies including low perceived mood regulation ability. Furthermore, the mood manipulation showed that the relationship between perfectionism and memory is affected by mood states. The findings are discussed in terms of their clinical and theoretical implications.



## 7.1 Introduction

Advances in the perfectionism literature have come primarily in response to dissatisfaction with the early unidimensional definition of the construct. In particular, the two multi-dimensional perfectionism scales (MPS-H; Hewitt & Flett, 1991; MPS-F, Frost et al., 1991) have contributed greatly to perfectionism being developed into a more specific and operationally useful concept with significant clinical relevance. The main focus of the majority of research in this area has traditionally been directed at its associations with psychopathology: perfectionism is a vulnerability factor which influences irrational thinking, depressive acts, suicidal thinking, and physical health difficulties (e.g. Flett, Hewitt, Blankstein & Koledin, 1991, Blankstein, Flett, Hewitt & Eng, 1993; Flett, Hewitt, Blankstein & Dynin, 1994; see full summary in Section 3.4.6). However, despite these advances, much remains to be learned about the nature of perfectionism; and, indeed, with the accumulation of associations with various psychological phenomena, it becomes necessary to pose different questions regarding the nature of perfectionism within a multidimensional framework.

Above all, there appears to be two specific questions which should be asked: (i) what do we know about the mechanism by which perfectionism has its effect on psychopathology?, and (ii) by the application of the multidimensional perfectionism scales to research it is implicitly assumed that perfectionism is a stable personality disposition (i.e. a trait); however, to what extent is such an assumption actually valid? Consequently, and keeping in mind the findings of the previous study, we aim to investigate these questions in Study 2.

### *7.1.1 Understanding Perfectionism: Investigating a Mechanism of Effect*

The conceptual complexity of perfectionism is apparent in the number of attempts to derive assessments of the construct as highlighted in Section 3.4.2. However, despite the apparent complexity of the perfectionism construct, little research has focused on elucidating the mechanism by which perfectionism has its effect on psychological distress by, for example, testing more integrative models of affect (Chang & Sanna, 2001). As pointed out by O'Connor and O'Connor (2003), this is rather surprising on the basis that the presence of moderating relationships would be in accord with some of the most influential theories of self-regulation, such as Baumeister's Escape from Self Model (1990; see Section 2.5.1): According to this model it would be expected that perfectionistic individuals who make use of maladaptive coping responses will be more susceptible to psychological distress.

Perfectionists are generally described as individuals who focus on negative aspects of events, engage in all-or-none thinking, and therefore, as a consequence, experience more psychological distress (Hewitt & Flett, 1993). In this way, perfectionists are not only more likely to appraise ordinary life events as major distressing events, but they are also more likely to amplify the severity and the duration of such events (Dunkley & Blankstein, 2000). It has recently been suggested that a major contributing factor in this relationship is the propensity for some perfectionists to engage in maladaptive coping strategies, and therefore, cope with stressful events in a manner which can be likened to a form of hopelessness or helplessness (Flett et al., 1996).

Hewitt and Genest (1990) suggested that some perfectionists are more likely to encode and process information concerning the non-attainment of perfection. Consequently, it is widely believed that these perfectionists are characterised by a tendency to ruminate about this inability to attain their perfectionistic standards. That is, the perfectionist is committed to the pursuit for perfection; however, as perfection is not achievable, the perfectionist is likely to engage in negative introspection in the form of ruminative thoughts about why perfection was not achieved (Flett, Hewitt, Blankstein & Gray, 1998), as well as the likelihood that perfection will not be attained in the future (Flett, Madorsky, Hewitt & Heisel, 2002).

Perfectionism is, thus, considered to be a stress-generating mechanism, and in this light, an important issue is the manner in which perfectionists cope with failure experiences and general negative outcomes. However, although the findings available to date are supportive of the multidimensional nature of perfectionism, the relationship between the various perfectionism dimensions and coping orientation is equivocal.

In particular, there appears to be a complex relationship between self-oriented perfectionism and coping. Some research has found that this perfection dimension is associated with a positive problem solving orientation (Flett, Hewitt, Blankstein & Van Brunschot, 1991) and greater learned resourcefulness (Flett, Hewitt, Blankstein & O'Brien, 1991), whereas others have shown self-oriented perfectionists to engage in more maladaptive emotion focused coping strategies, as well as a lack of self-acceptance in the face of stressful situations (Flett, Russo & Hewitt, 1994; Hewitt,

Flett & Endler, 1995). In contrast, other-oriented perfectionism seems to be mostly associated with adaptive coping strategies (e.g. Flett, Hewitt, Blankstein & O'Brien, 1991; Hunter & O'Connor, 2003), whilst socially prescribed perfectionism is consistently found to be associated with maladaptive coping strategies (e.g. Flett, Hewitt, Blankstein & Van Brunschot, 1991).

Although the results from these studies highlight the importance of understanding how perfectionism and coping strategies interact in the prediction of psychological distress, these findings are restricted in as far as they were not assessed using a prospective design. That said, O'Connor and O'Connor (2003), in a prospective study, found that socially prescribed perfectionism was associated with a maladaptive coping style and that the interaction between these two factors was a significant predictor of changes in psychological distress over time.

Given that an important reason for engaging in coping behaviours is to reduce the level of negative mood which is engendered by stressful life events, it follows that a person's beliefs about the effectiveness of these coping strategies will affect the extent to which they make use of those particular coping approaches. Research on mood regulation has suggested that an individual's beliefs about their own ability to alter a negative mood state will not only determine the choice of coping strategies, but will also have a direct effect on the negative mood state (Kirsch, Mearns & Catanzaro, 1990). This idea is consistent with the notion that mood states are, at least in part, determined by the affective valence of the expected outcome (Beck et al., 1979). Thus, individuals who have strong expectations that they can alleviate negative moods should attempt to engage in active coping responses such as

problem solving, problem confrontation, and seeking social support (Catanzaro & Greenwood, 1994). Despite the fact that perfectionists consistently report high levels of negative affect, no research to date has investigated the relationship between perfectionism and mood regulation in the prediction of psychological distress. In the light of these findings, and keeping in mind the outcome of Study 1 of this thesis, it is pertinent to extend this research further. What is more, it is germane to this investigation to elucidate the relationship between perfectionism and autobiographical memories.

In Study 1, the results suggested that high levels of perfectionism when combined with slow recall of negative memories from the past resulted in increased psychological distress. From these results an idea was tentatively put forward which proposed that the slow recall of memories was possibly an attempted coping strategy which ultimately failed. Such an idea is compatible with the early idea of Rotter, Chance and Phares (1972) who state that weak expectancies for success are generally associated with avoidance of tasks and memories of such previous tasks. However, if coping is conceptualised as a task which involves some degree of alleviation of negative mood, then effective coping should lead an individual to engage in active problem-solutions including social support. Indeed, research has demonstrated that individuals who believe that they can do something to feel better when they are upset, are more likely to engage in active attempts to confront problems, such as failure to achieve perfection, and are less likely to avoid dealing with these problems (Kirsch, 1990; Catanzaro & Greenwood, 1994). Thus, it would be of interest to investigate whether perfectionists have low expectancies of their

own ability to regulate negative mood, which leads them to maladaptive coping strategies such as avoidance.

### *7.1.2 Perfectionism: Addressing the State/Trait Debate*

With the growing support for the role of perfectionism in psychopathology, and an associated interest in the extent to which it is possible to incorporate this personality dimension in a therapeutic setting, it has been deemed necessary to question the temporal stability of the construct. Furthermore, critics of personality and cognitive models of psychological distress have argued that psychological vulnerabilities factors such as perfectionism are better conceptualised as largely state dependent and not stable traits; for example, it may be argued that levels of perfectionism are only elevated when an acute depressed state is experienced, and will consequently diminish with an improvement in depressive symptoms.

Although the autobiographical memory phenomenon is recognised as important in our understanding of various psychological disorders, the inconsistent findings with regard to the emotional valence of the cue words are confusing. It has been suggested that such contradictory findings may be the outcome of a number of factors including the use of different memory tasks and other methodologically differences. Most importantly, these findings are limited in as far as they do not assess the presence of emotionality during the retrieval.

Drawing upon emotion research, the aims of the current study are three-fold: (i) to investigate the role of mood and perfectionism in the recall of autobiographical memories (Figure 7.1), (ii) following on from the previous study (Study 1) another

aim is to investigate any associations between perfectionism and mood regulation abilities/coping strategies in the prediction of psychological distress and suicidality (Figure 7.2), (iii) to test further the state/trait debate within perfectionism research, and (iv) to test the stress x perfectionism relationship more specifically in terms of whether perfectionism itself is associated with increased stress which consequently leads to increased distress, or whether stress simply modifies the relationship between perfectionism and psychological distress/suicidality.

Figure 7.1 Diagram demonstrating the model being investigated in Study 2.

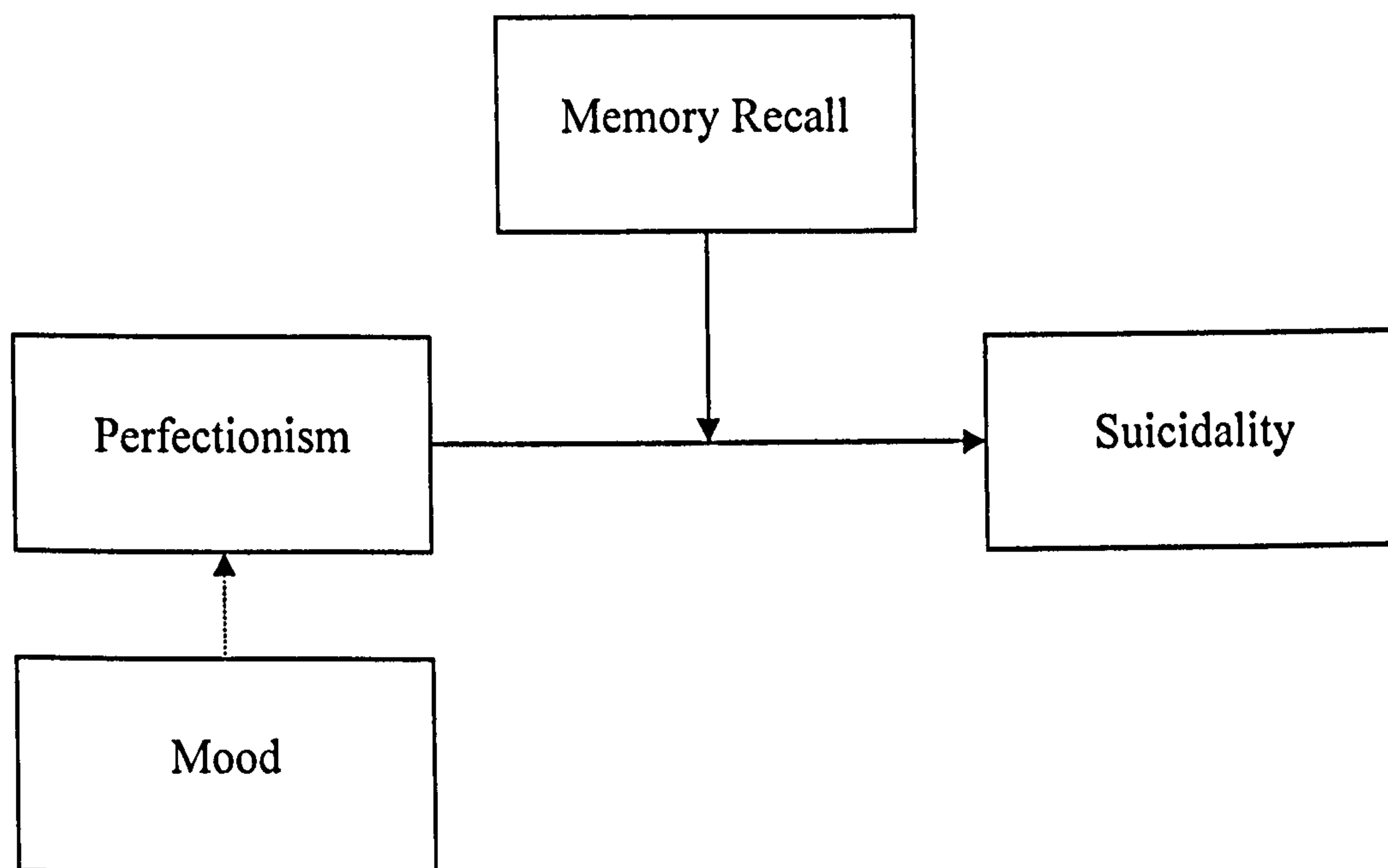
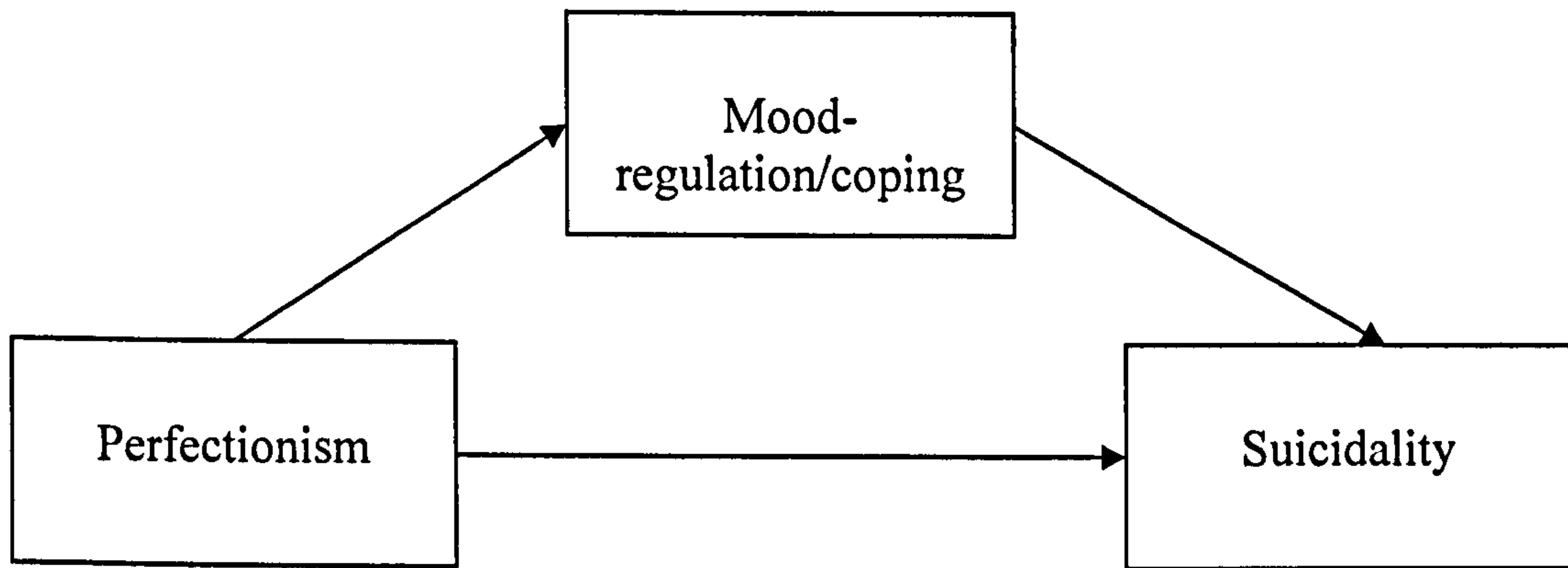


Figure 7.2 Model 2 to be investigated in Study 2.



Consequently, the primary aim of this study is to investigate the relationship between mood, perfectionism and autobiographical memories and, in line with contemporary research on perfectionism, there are a number of central hypotheses guiding the current experiment:

1. A fear of failure and an accompanying difficulty in accepting failures, lead perfectionists to respond maladaptively, both affectively and cognitively, which consequently increases the risk of psychological distress in the form of hopelessness and depression, as well as the expression of suicidal thoughts (See Figure 7.2). More specifically, it is hypothesised that those with high levels of self-oriented and socially prescribed perfectionism, when faced with negative mood, will experience slow recall of negative autobiographical memories.
2. Maladaptive coping and low perceived ability to regulate negative mood will mediate the relationship between self-oriented and socially prescribed perfectionism and psychological distress (hopelessness, depression, suicidality).



3. As perfectionism is widely believed to be a stable personality trait, it is hypothesised that the mood manipulation will not cause a change in perfectionism.
4. Finally, it is hypothesised that the relationship between perfectionism and distress/suicidality will be mediated by perceived stress.

## **7.2 Methodology**

### *7.2.1 Design and Measures*

This experimental study contains four outcome variables. As demonstrated in Chapter 5, these factors have all been shown to be reliable measures of psychological distress/suicidality:

- Hopelessness (BHS; Beck et al., 1974).
- Depression (BDI; Beck et al., 1979).
- Severe depression and suicidality (GHQ-28; Goldberg & Hiller, 1979).

There are also 7 predictor variables which were included to allow us to probe the experimental hypotheses. The measures are described in detail in Chapter 5:

- Perfectionism (MPS-H; Hewitt & Flett, 1991). The MPS-H has three independent subscales: Self-oriented (motivation to be perfect), other-oriented (the degree to which one expects significant others to achieve high standards), and socially prescribed (the belief that others hold unrealistically high expectations for one's behaviour) perfectionism.
- Autobiographical Memory (AMT; Williams & Broadbent, 1986). The AMT involves asking participants to generate specific memories (i.e. memories of events which happened within a limited time-frame) in response to

emotionally valenced cue words. Memories are subsequently categorised as being either specific or over-general (i.e. the memory covers an extended period of time or something that happens often).

- Perceived Stress (PSS; Cohen et al., 1983).
- General health (somatic complaints, anxiety and insomnia, social dysfunction, severe depression and suicidality; GHQ-28; Goldberg & Hiller, 1979).
- Mood (Moore & Oaksford, 2003). A measure of mood was included in the baseline questionnaire as this would allow us to investigate differences in mood, between high and low perfectionists. Furthermore, by including this measure it would also be possible to track changes in mood between baseline, pre-manipulation, and post manipulation.
- Coping (CISS; Endler & Parker, 1999). The CISS was included as a measure of coping as it provides a useful tool for investigating coping in terms of several different strategies (Emotion-focused, task-focused, avoidance-focused: distraction-focused and social diversion) which have both adaptive and maladaptive qualities.
- Mood regulation (NMR; Cantanzaro & Mearns, 1990). Since one of the aims in this study is to investigate the coping mechanisms of perfectionists, and how they respond to the mood manipulation, it seemed relevant to also measure coping in terms of a perceived ability to change mood.

### *7.2.2 Participants*

90 students (31 men and 59 women) from the University of Stirling and the University of Strathclyde participated in the study. The mean age for the participants was 25 years (SD=7.05). The participants recruited at the University of Stirling received course credits for taking part in the study.

### *7.2.3 Measures and Procedure (Time 1)*

All participants completed a battery of self-report measures at Time 1 (baseline). The baseline measures were always emailed to the participant to be completed 3-4 days prior to taking part in the main part of the experiment. The baseline questionnaires included: Hopelessness (BHS; Beck et al., 1974), depression, (BDI; Beck et al., 1979), somatic complaint, anxiety and insomnia, social dysfunction, severe depression, suicidality (GHQ-28; Goldberg & Hillier, 1979), Perfectionism (MPS; Hewitt & Flett, 1991), stress, (PSS; Cohen et al., 1993), mood (Moore & Oaksford, 2003), coping: task-focused, emotion-focused, avoidance-focused, distraction-focused, and social diversion (CISS; Endler & Parker, 1999), and mood regulation (NMR; Cantanzaro & Mearns, 1990). A copy of the questionnaire is included in Appendix 8.

All of the measures were internally consistent, and the outcomes of the Cronbach's alpha reliability rating for all the variables in this study are shown in Table 7.3.

Table 7.1 Measure of Cronbach's alpha internal reliability consistency for all the measures included at Time 1.

Measure	$\alpha$	Measure	$\alpha$
Hopelessness	.84	Task-oriented Coping	.91
Depression	.91	Emotion-oriented Coping	.86
Suicidality	.80	Avoidance-oriented Coping	.80
Self-oriented	.91	Distraction-oriented Coping	.76
Other-oriented	.73	Social Diversion Coping	.78
Socially Prescribed Stress	.84	GHQ-28 (1)	.86
Mood Regulation	.83	GHQ-28 (2)	.84
	.89	GHQ-28 (3)	.81
		GHQ-28 (4)	.85

*Note* The following abbreviations were used: GHQ-28 (1): Somatic complaints; GHQ-28 (2): Anxiety and insomnia; GHQ-28 (3): Social dysfunction; GHQ-28 (4): Severe depression.

#### 7.2.4 Measures and Procedure (Time 2)

Ethical approval for the study was obtained from the ethics committee at the University of Strathclyde before commencing the experiment. The participants were invited to come along to a private computer booth where all participants signed an informed consent form which outlined the background and objectives of the study, possible discomforts involved in participation, and an assertion that they could withdraw from the study at any time without explanation. Furthermore, it was made clear that at no stage would responses from individual participants be identified.

At the outset, the participant was asked to complete the mood measure, after which they were informed that they were now going to spend the next couple of minutes listening to some music whilst reading the statements which would be presented on the computer screen before them. At this time, participants were randomly assigned to either the positive, negative, or neutral mood induction procedure and it was explained that they were being asked to actively try to achieve the selected mood state. The mood induction procedure lasted for approximately 10 minutes and

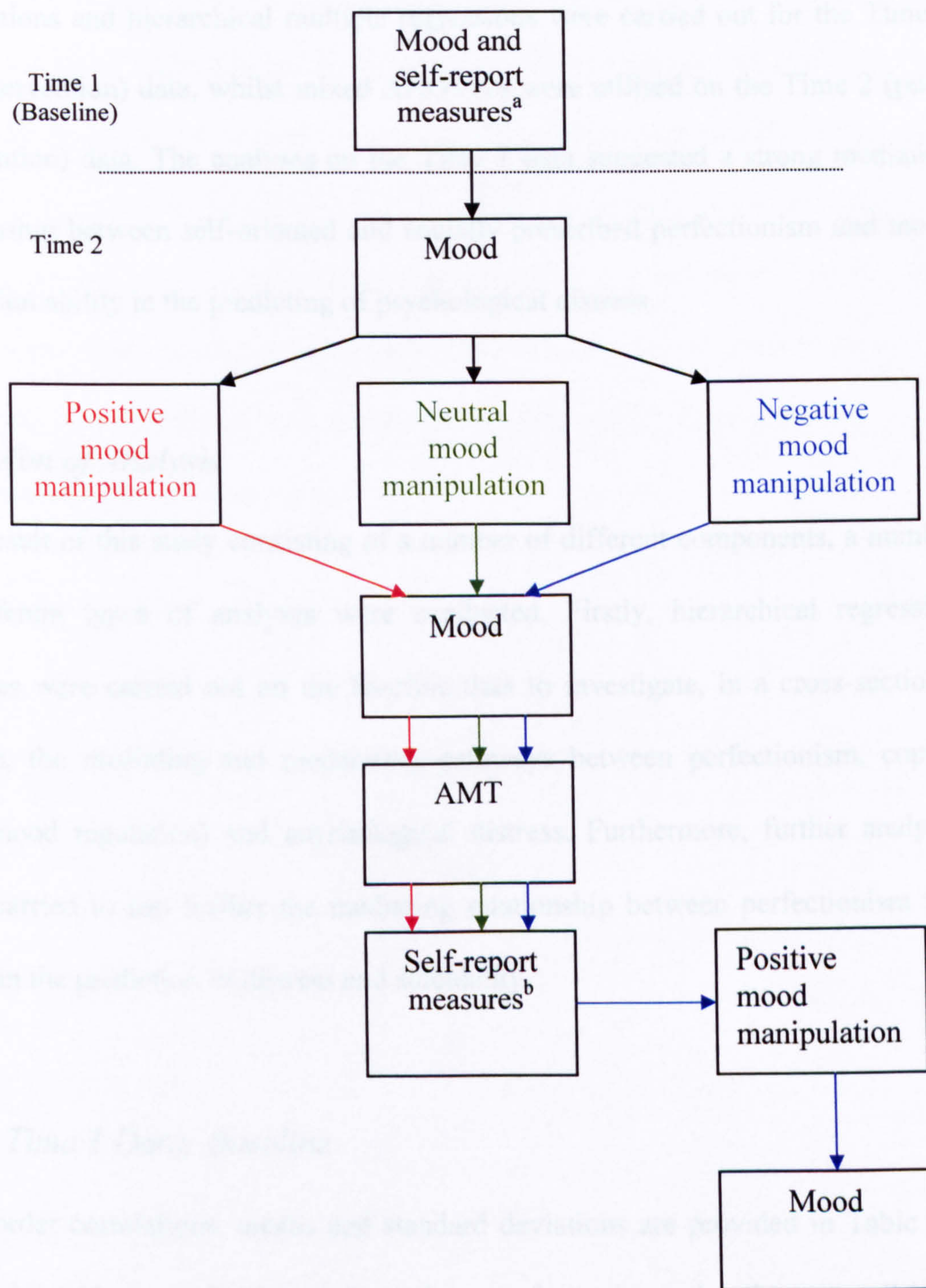
combined 3 recognised mood induction techniques including music (Positive: Mozart's *Eine Kleine Nachtmusik*, 1<sup>st</sup>, 3<sup>rd</sup> and 4<sup>th</sup> movement; Negative: Barber's *Adagio for Strings*, and Mahler's 5<sup>th</sup> *Symphony Adagietto*; Neutral: Brahms 2<sup>nd</sup> movement from the first symphony, 2<sup>nd</sup> and 3<sup>rd</sup> movement from the 3<sup>rd</sup> symphony), written statements (Velten, 1968), and specific instructions (Slyker & McNally, 1991; Westermann, Spies, Stahl & Hesse, 1995). On completion of the mood induction procedure, participants were asked to complete another mood measure to assess for any changes in mood.

This mood assessment was always followed by the Autobiographical Memory Test and another series of self-report measures which were counterbalanced to control for potential transfer effects. Included in this battery of measures were: Hopelessness (BHS; Beck et al., 1974), depression (Beck et al., 1979), severe depression, suicidality, somatic complaints, anxiety and insomnia, and social dysfunction (Goldberg & Hillier, 1979), perfectionism (MPS-H; Hewitt & Flett, 1991), coping (CISS; Endler & Parker, 1999), mood regulation (NMR; Catanzaro & Mearns, 1990), and stress (PSS; Cohen et al., 1983). The measures are summarised in Chapter 5, and a copy of the materials included in the Time 2 procedure is included in Appendix 9.

Finally, participants who had taken part in the negative mood manipulation finished off by sitting through the positive mood manipulation procedure as well. This was followed by a concluding mood measure to ensure that participants did not leave the experiment feeling in a worse mood than when entering it. All participants were sufficiently debriefed. The general procedure is shown in a flow chart in Figure 7.3.

### 7.3 Results

Figure 7.3 Diagrammatical demonstration of the procedure utilised at Time 2.



*Note*

<sup>a</sup> The self-report measures at Time 1 are summarised in section 7.2.3

<sup>b</sup> The self-report measures at Time 2 are summarised in section 7.2.4

## 7.3 Results

### 7.3.1 Overview

Correlations and hierarchical multiple regressions were carried out for the Time 1 (pre-intervention) data, whilst mixed ANOVAS were utilised on the Time 2 (post-intervention) data. The analyses on the Time 1 data suggested a strong mediating relationship between self-oriented and socially prescribed perfectionism and mood regulation ability in the predicting of psychological distress.

### 7.3.2 Aim of Analysis

As a result of this study consisting of a number of different components, a number of different types of analyses were conducted. Firstly, hierarchical regression analyses were carried out on the baseline data to investigate, in a cross-sectional sample, the mediating and moderating pathways between perfectionism, coping (and mood regulation) and psychological distress. Furthermore, further analyses were carried to test further the mediating relationship between perfectionism and stress in the prediction of distress and suicidality.

### 7.3.3 Time 1 Data: Baseline

Zero-order correlations, means and standard deviations are provided in Table 7.2. From this table it can be seen that the three perfectionism subscales were all inter-correlated, and each subscale was positively correlated with depression. In addition, self-oriented and socially prescribed perfectionism were also found to be positively correlated with both hopelessness and suicidality. Emotion regulation, which is the perceived ability that it is possible to alter a negative mood state, was negatively

correlated with all the outcome variables as well as self-oriented and socially prescribed perfectionism and stress, and was positively correlated with optimism. With regard to the coping subscales, it was found that a task-oriented coping style (i.e. a purposeful attempt to solve a problem by actively seeking out a solution) was positively associated with optimism and mood regulation, and negatively correlated with all the outcome measures, socially prescribed perfectionism, and stress. In contrast, an emotion focused problem solving style (i.e. a self-focused coping style which often results in intense emotional response in the face of stressful situations) was positively correlated with hopelessness, suicidality, depression, all of the perfectionism subscales, and stress.



Table 7.2 Zero order correlations, means and standard deviations for all the variables included at Time 1.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.
1.	-																
Hopelessness																	
2.	.533***	-															
Depression																	
3. Suicidality	.475***	.586***	-														
4. Self	.223*	.320**	.222*	-													
5. Other	.027	.241**	.065	.539***	-												
6. Social	.289**	.562***	.406***	.449***	.295**	-											
7. Stress	.360**	.663***	.391***	.320**	.276*	.423***	-										
8. GHQ (1)	.106	.519***	.069	.032	.037	.207	.588***	-									
9. GHQ (2)	.281**	.633***	.327**	.263*	.111	.293**	.740***	.690***	-								
10. GHQ (3)	.409***	.600***	.312**	.022	.026	.238*	.501***	.463***	.479***	-							
11. GHQ (4)	.533***	.771***	.898***	.236*	.098	.471***	.506***	.246*	.466***	.523***	-						
12. Mood	-	-	-	-.227*	-.111	-	-	-.332**	-	-	-	-					
Regulation	.630***	.708***	.480***			.454***	.563***	.427***	.427***	.553***	.590***						
13. Task	-.544	-.441	-.195	-.070	-.106	-.285*	-.348**	-.337**	-.295**	-	-.342**	.657***	-				
Coping										.497***							
14. Emotion	.357	.677	.271*	.429***	.351**	.367**	.581***	.505***	.499***	.429***	.392***	-	-				
Coping												.655***	.605***				
15.	-.203	-.064	-.175	-.108	.002	-.258*	.064	.277*	.096	-.113	-.160	.316**	.112	.069	-		
Avoidance																	
Coping																	
16.	.041	.027	-.001	-.001	-.010	-.120	.269*	.294*	.222*	-.019	-.018	.046	-.077	.243*	.828***	-	
Distraction																	
Coping.																	
17.	-.295**	-.287*	-.284*	-.047	.112	-.349*	-.099	.016	-.108	-.217*	-.311**	.397***	.240*	-.035	.753***	.318**	-
Diversion																	
Coping																	
Mean	3.48	9.38	3.63	68.84	58.48	50.10	22.68	13.55	12.87	14.62	8.72	109.88	59.28	44.61	50.84	22.82	18.46
SD	3.50	8.81	1.46	15.85	11.02	12.77	7.97	4.37	4.06	2.88	2.99	14.83	10.95	10.71	9.75	6.30	4.34

Note. \* p<.05, \*\* p<.01, \*\*\* p<.001

Following the initial correlation analyses, a series of hierarchical regressions were conducted to test for mediating and moderating relationships. However, first the variables were centred as suggested by Aiken and West (1991).

#### *7.3.4 Testing Mediation Effects: Mood Regulation*

In compliance with the guidelines provided by Baron and Kenny (1986) and Kenny et al. (1998), hierarchical regressions were carried out for each outcome variable to test for mediation effects. As summarised in Study 1, there are four conditions which must be satisfied to demonstrate mediation: (i) the predictor variable must affect the outcome variable (hopelessness, depression, severe depression, or suicidality), (ii) the predictor variable must affect the mediator, (iii) the mediator must affect the outcome variable even when the predictor variable has been controlled for, and (iv) the strength of the association between the predictor variable and the outcome variable is decreased after the effect of the mediator is controlled for. Full mediation has only been achieved when this relationship is reduced to non-significance; if the strength is only partly decreased, partial mediation has occurred.

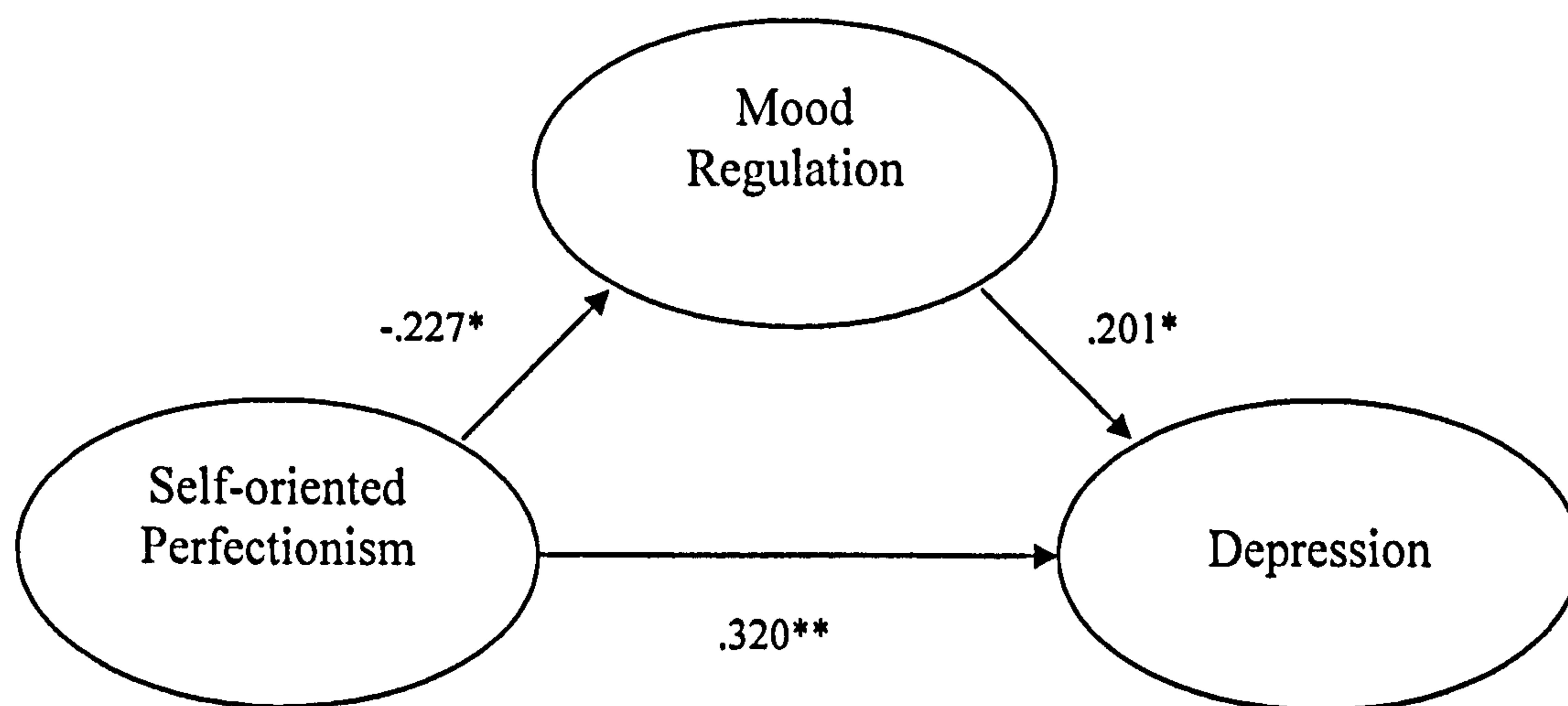
For all of the outcome measures (i.e. hopelessness, depression, severe depression and suicidality), as measured at baseline, each dimension of the perfectionism scale was entered separately as a predictor (step 1) to test the first condition; whilst the mediator, i.e. mood regulation, was regressed separately onto the predictor variables (i.e. perfectionism) in order to test the second condition. Finally, mood regulation was entered as step 2 to investigate conditions 3 and 4. The outcome of these analyses revealed that only self-oriented and socially prescribed perfectionism, and not other-oriented perfectionism, was able to satisfy the conditions necessary to

demonstrate mediation. As a result, the results for the analyses using self-oriented and socially prescribed perfectionism only, are reported below.

### Self-oriented Perfectionism

In the prediction of depression, the hierarchical regression analysis revealed that self-oriented perfectionism accounted for 10.6% of the variance ( $F_{(1, 75)}=9.86$ ,  $p<.01$ ). Mood regulation, when entered into the equation as step 2, accounted for an additional 42.6% of the variance was accounted for ( $F_{(1, 75)}=43.71$ ,  $p<.001$ ), and reduced the beta weight for self-oriented perfectionism ( $\beta=.20$ ,  $p<.05$ ); however, not to non-significance (Figure 7.4). The Sobel test confirmed that the partial mediation was significant ( $Z=1.96$ ,  $p<.05$ ).

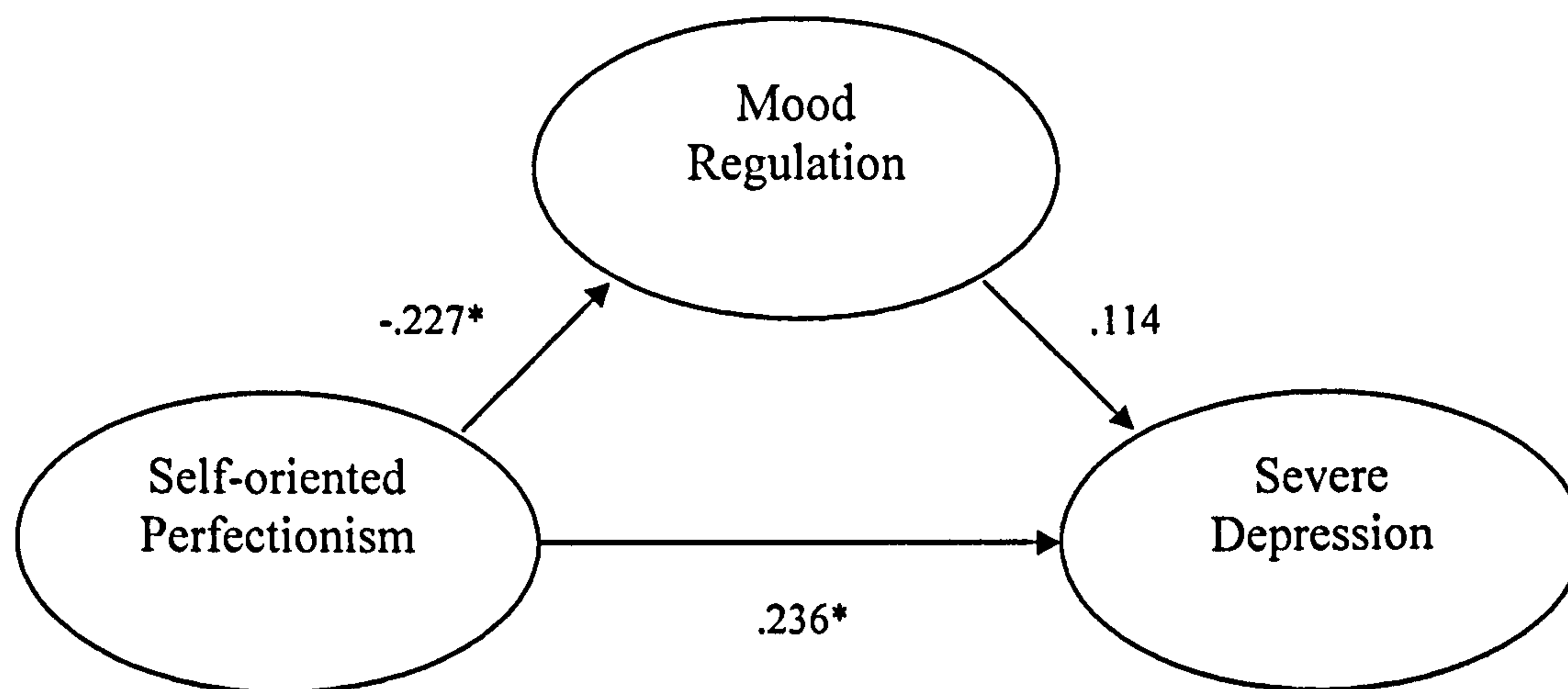
Figure 7.4 The mediating effect of mood regulation on the relationship between self-oriented perfectionism and depression at Time 1.



For severe depression (Figure 7.5), self-oriented perfectionism was seen to independently account for 4.9% of the variance ( $F_{(1, 73)}=4.74$ ,  $p<.05$ ). The addition of mood regulation added a further 32.1% of variance explained ( $F_{(1, 73)}=22.47$ ,

$p < .001$ ), whilst also reducing the beta weight for self-oriented perfectionism to non-significance ( $\beta = .11$ , ns). A Sobel test confirmed mediation ( $Z = 1.92$ ,  $p < .05$ ).

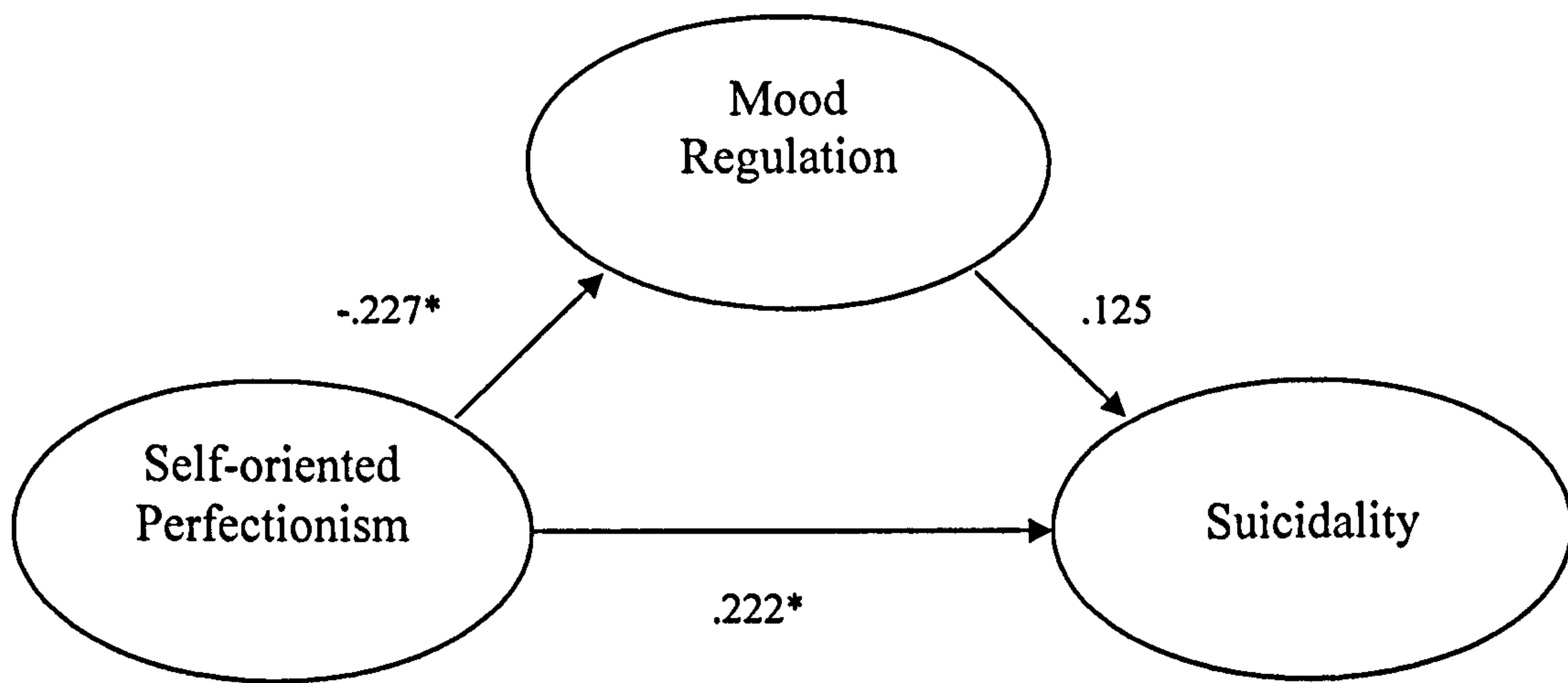
Figure 7.5 The mediating effect of mood regulation on the relationship between self-oriented perfectionism and severe depression at Time 1.



Note.  $*p < .05$ ,  $**p < .01$

Finally, for suicidality (Figure 7.6), self-oriented perfectionism accounted for 4% of the variance ( $F_{(1, 75)} = 4.16$ ,  $p < .05$ ), whilst mood regulation accounted for a further 19.4% of variance ( $F_{(1, 75)} = 12.45$ ,  $p < .001$ ). Once again the beta weight for self-oriented perfectionism was reduced to non-significance ( $\beta = .13$ , ns); however, the Sobel test only suggested a trend towards a significant mediation ( $Z = 1.83$ ,  $p = .06$ ).

Figure 7.6 The mediating effect of mood regulation on the relationship between self-oriented perfectionism and suicidality at Time 1.

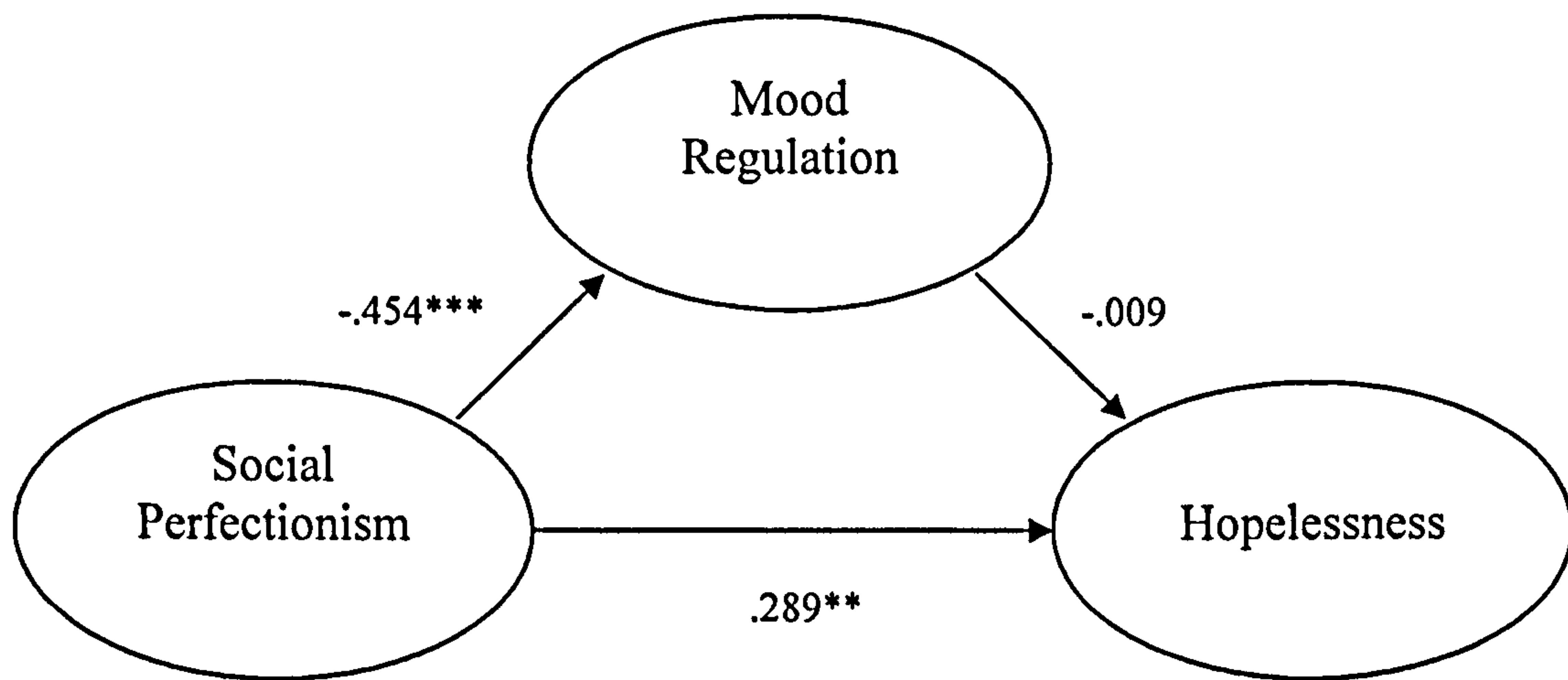


Note. \* $p < .05$ , \*\* $p < .01$

### Socially Prescribed Perfectionism

In the prediction of hopelessness (Figure 7.7), the hierarchical regression analyses showed that socially prescribed perfectionism accounted for 6% of the variance ( $F_{(1, 79)}=6.12, p < .05$ ). This results demonstrates that individuals who are reporting higher levels of this perfectionism dimension ( $\beta=.27, p < .05$ ) are also reporting significantly higher levels of hopelessness. When mood regulation is added to the equation (step 2), an additional 32% of the variance was explained ( $F_{(1, 79)}=25.28, p < .001$ ). As a result, the beta weight for socially prescribed perfectionism was reduced to non-significance ( $\beta=-.01, ns$ ). On the basis of this apparent mediation, a Sobel test was carried out to confirm the mediation: This test confirmed that full mediation had in fact taken place ( $Z=3.68, p < .001$ ).

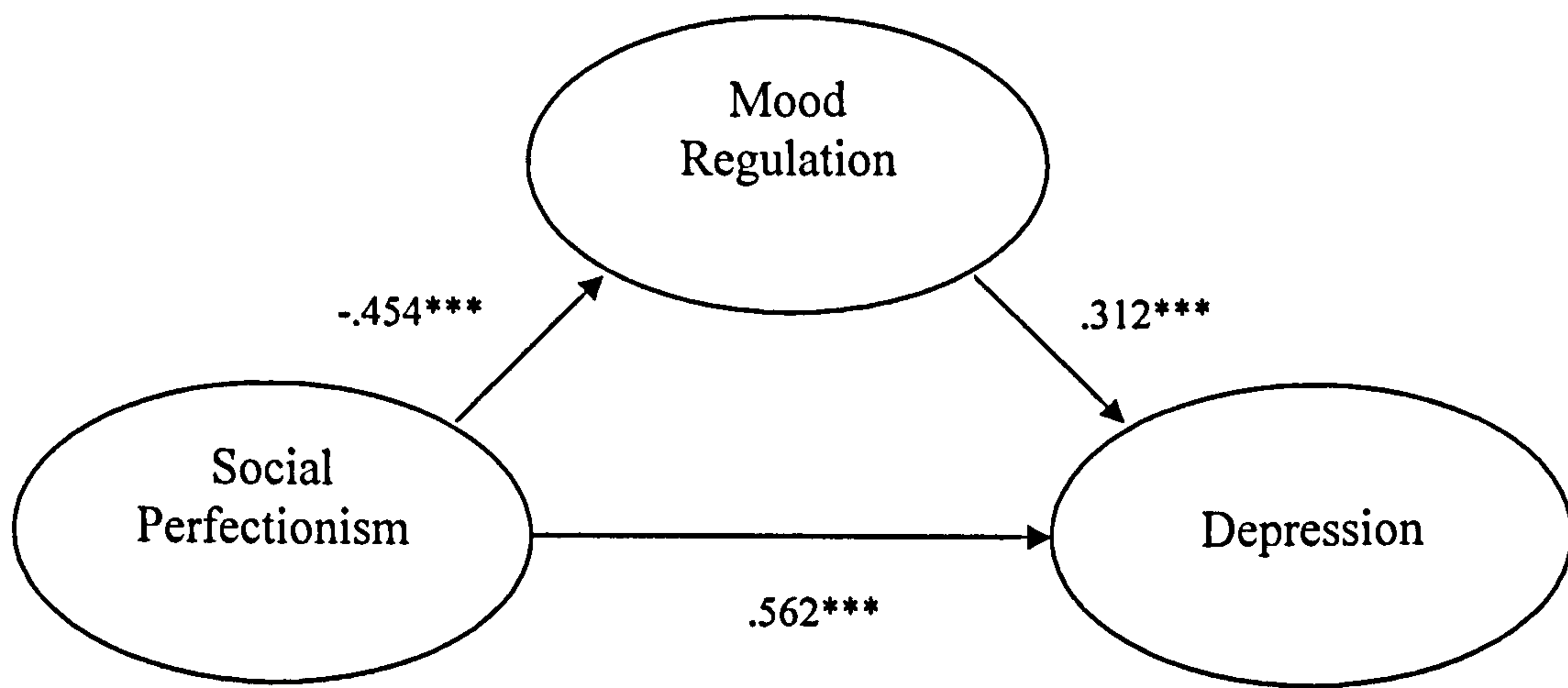
Figure 7.7 The mediating effect of mood regulation on the relationship between socially prescribed perfectionism and hopelessness at Time 1.



Note. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

In the case of depression (Figure 7.8), regression analysis revealed that socially prescribed perfectionism accounted for 31% of the variance ( $F_{(1, 79)}=36.44, p < .001$ ). The addition of mood regulation to the equation added another 26% of variance explained ( $F_{(1, 79)}=53.74, p < .001$ ). This addition did result in the beta weight for socially prescribed perfectionism being reduced ( $\beta=.31, p < .001$ ). However, as the beta coefficient was not reduced to non-significance, the fourth condition was not met, and consequently only partial mediation has taken place. A Sobel test demonstrated that the mediation was significant ( $Z=3.80, p < .001$ ).

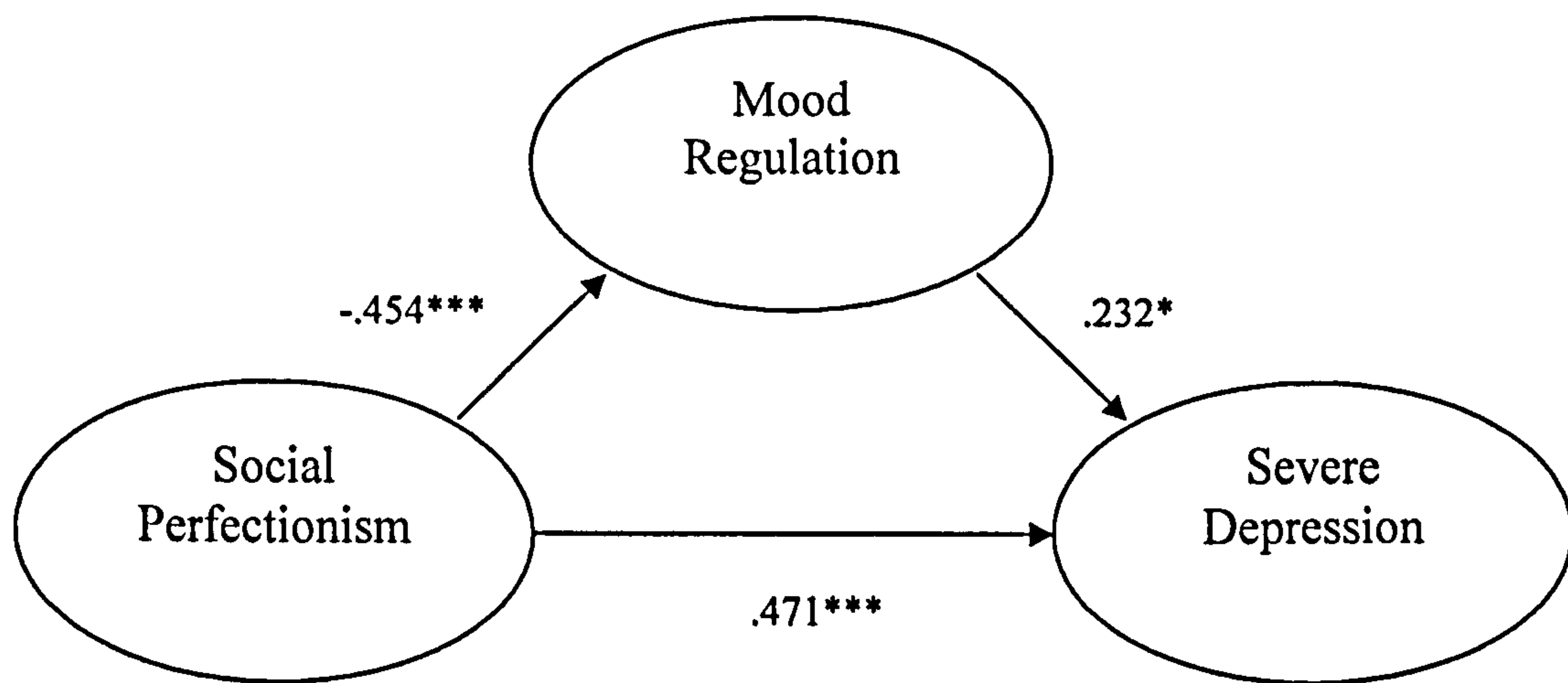
Figure 7.8 The mediating effect of mood regulation on the relationship between socially prescribed perfectionism and depression at Time 1.



Note. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

For severe depression (Figure 7.9), at step 1, socially prescribed perfectionism explained 19.6% of the variance ( $F_{(1, 77)}=19.75, p < .001$ ); whilst mood regulation, at step 2, accounted for an additional 17.7% of the variance ( $F_{(1, 77)}=23.94, p < .001$ ). Furthermore, the beta weighting for socially prescribed perfectionism was reduced ( $\beta=.23, p < .05$ ); although it was not reduced to non-significance. Thus, only partial mediation had taken place, as was also confirmed by the Sobel test ( $Z=3.30, p < .001$ ).

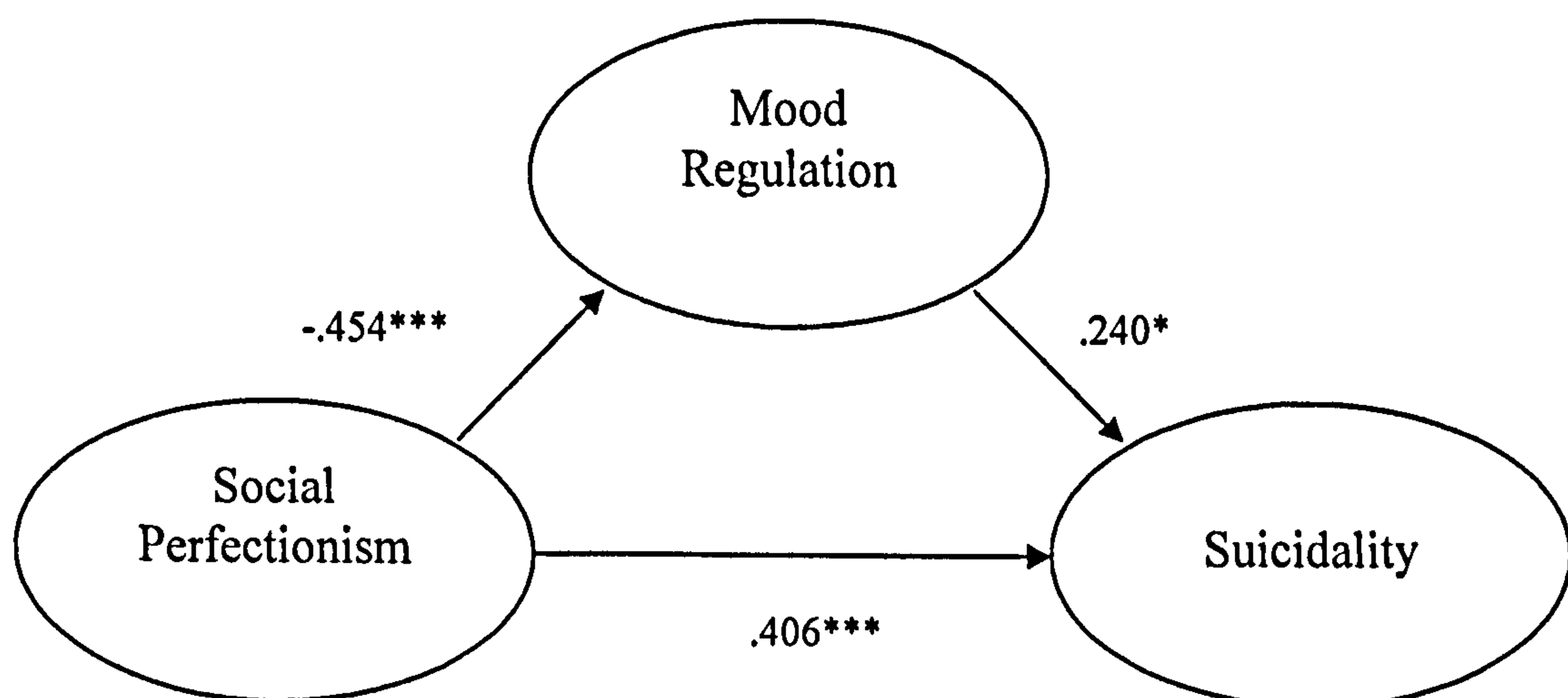
Figure 7.9 The mediating effect of mood regulation on the relationship between socially prescribed perfectionism and severe depression at Time 1.



Note. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

Finally, for suicidality (Figure 7.10), socially prescribed perfectionism explained 15.9% of the variance ( $F_{(1, 79)} = 15.97, p < .001$ ), whilst mood regulation accounted for a further 10.1% of the variance ( $F_{(1, 79)} = 14.88, p < .001$ ). The beta weight for socially prescribed perfectionism was reduced ( $\beta = .24, p < .05$ ), but to non-significance. Again, the Sobel test confirmed partial mediation ( $Z = 2.75, p < .01$ ).

Figure 7.10 The mediating effect of mood regulation on the relationship between socially prescribed perfectionism and suicidality at Time 1.



Note. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$



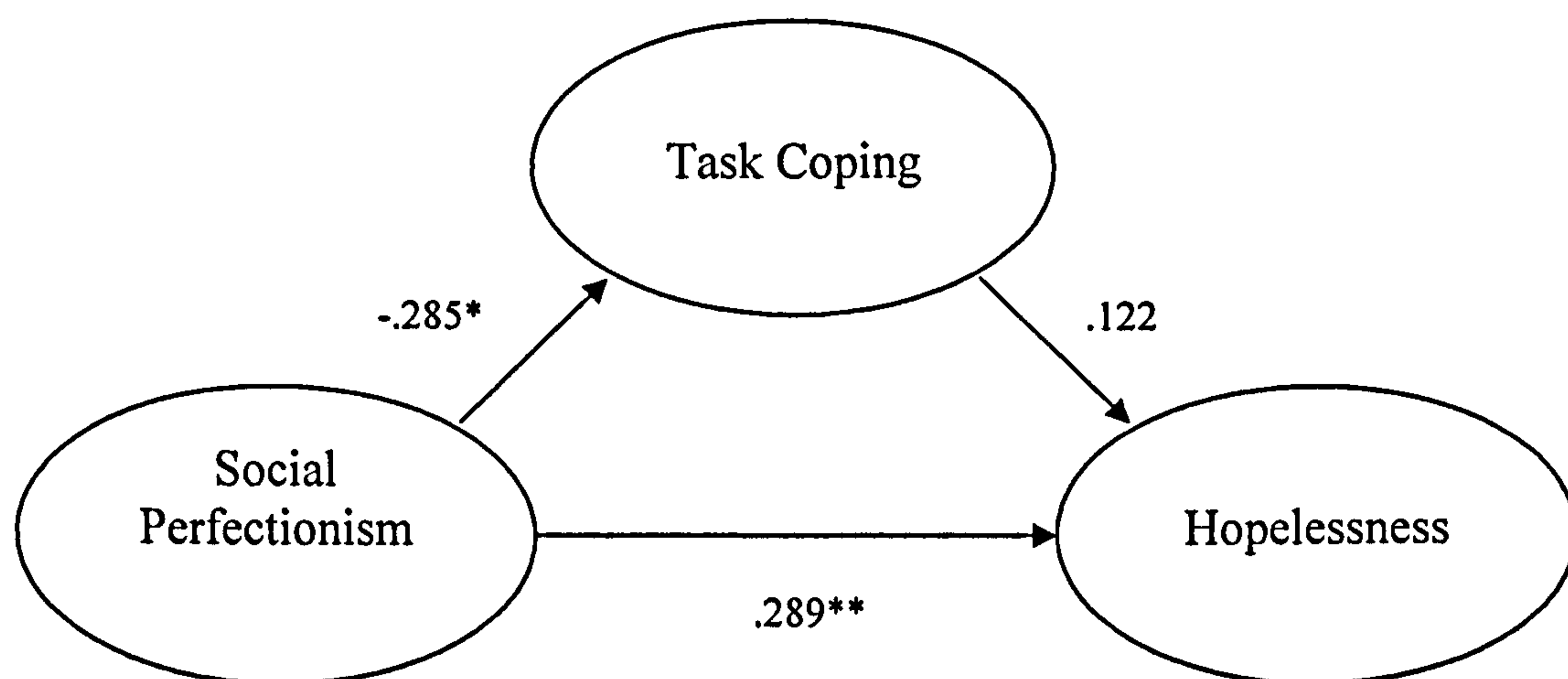
### *7.3.5 Testing Mediation Effects: Coping Strategies*

The same procedures, as described above, were utilised in the investigation of the mediating effect of coping strategies. Thus, one of the coping strategies dimensions (task, emotion, and avoidance) was regressed separately onto the predictor variables (perfectionism) in order to test the second condition, and if this condition was satisfied, it was lastly entered as step 2 to investigate whether the strength of the association between perfectionism and the outcome variable has decreased after the effect of coping has been controlled for. The results of these regressions revealed that only socially prescribed perfectionism, and not self-oriented or other-oriented perfectionism, satisfied the mediation conditions.

#### Task-focused Coping

For hopelessness (Figure 7.11), socially prescribed perfectionism was seen to independently account for 6% of the variance ( $F_{(1, 74)}=5.84, p<.05$ ), whilst the addition of task-oriented coping accounted for a further 22.7% of variance ( $F_{(1, 74)}=15.94, p<.001$ ). Once task-focused coping was accounted for, the beta weight for socially prescribed perfectionism was reduced to non-significance ( $\beta=.12, ns$ ). A Sobel test confirmed this full mediation ( $Z=2.31, p<.05$ ).

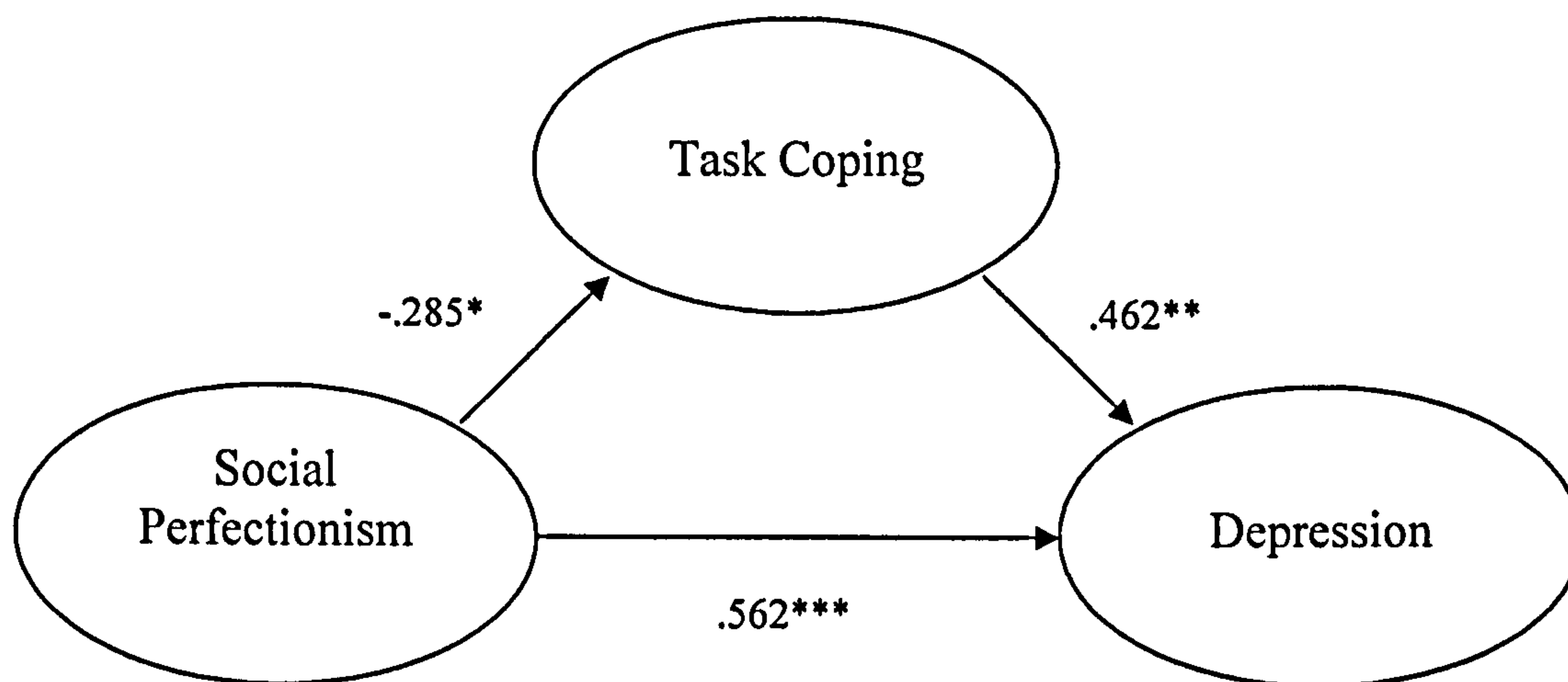
Figure 7.11 The mediating effect of task-focused coping on the relationship between socially prescribed perfectionism and hopelessness at Time 1.



Note. \* $p < .05$ , \*\* $p < .01$

In the prediction of depression (Figure 7.12), social perfectionism was seen to account for 29.5% of the variance ( $F_{(1, 77)}=33.28, p < .001$ ). The addition of task-focused coping accounted for a further 7.7% of variance ( $F_{(1, 77)}=23.81, p < .001$ ), and reduced the beta weight of social perfectionism ( $\beta=.46, p < .001$ ), although not to non-significance. The Sobel test once again confirmed the existence of mediation ( $Z=2.09, p < .05$ ).

Figure 7.12 The mediating effect of task-focused coping on the relationship between socially prescribed perfectionism and depression at Time 1.



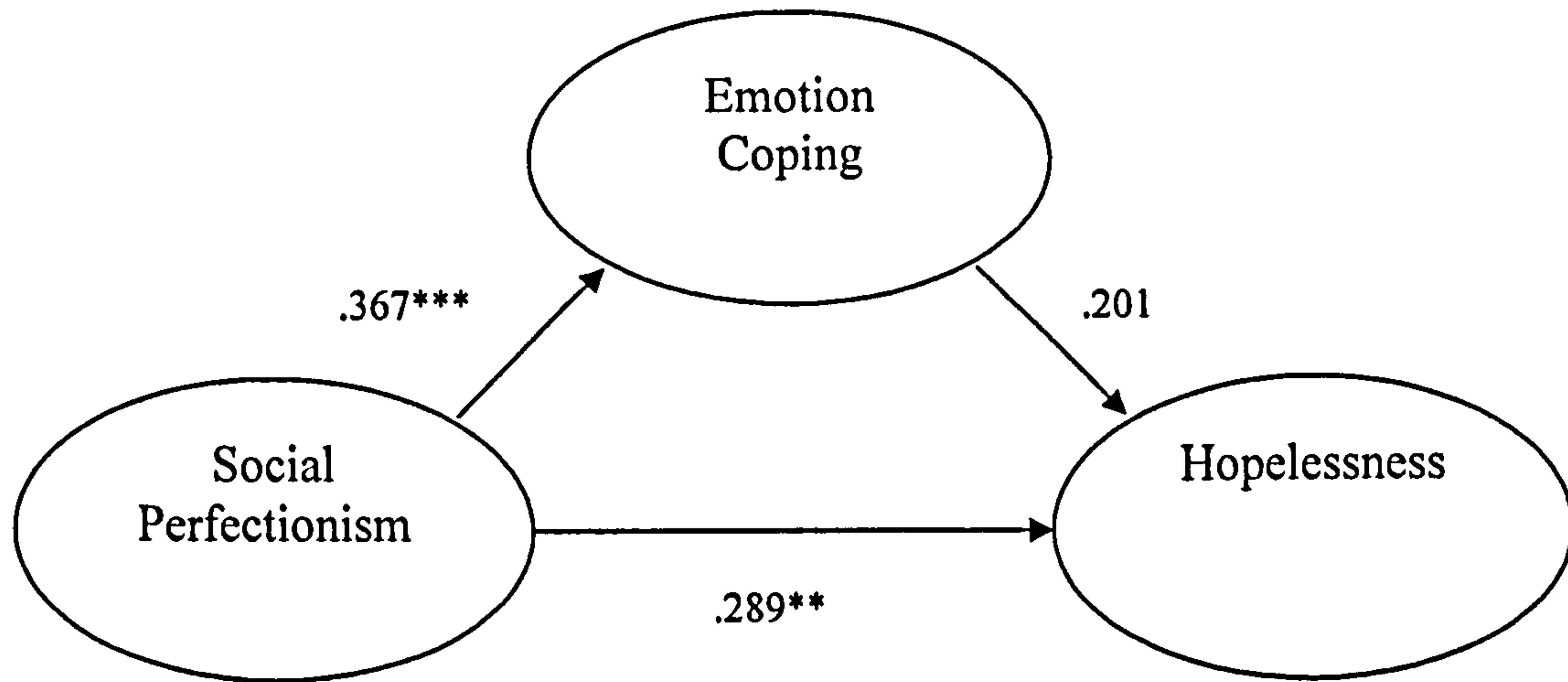
Note. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

### Emotion-focused Coping

When attention was directed at the effect of emotion-focused coping, socially prescribed perfectionism could be seen to account for 7.8% of the variance of hopelessness ( $F_{(1, 75)}=7.33, p < .01$ ). The addition of emotion-focused coping accounted for a further 5.9% of the variance ( $F_{(1, 75)}=6.97, p < .01$ ), and reduced the beta weight of socially prescribed perfectionism to non-significance ( $\beta=.20, ns$ ).

Mediation was supported by the Sobel test ( $Z=1.99, p < .05$ ). See Figure 7.13.

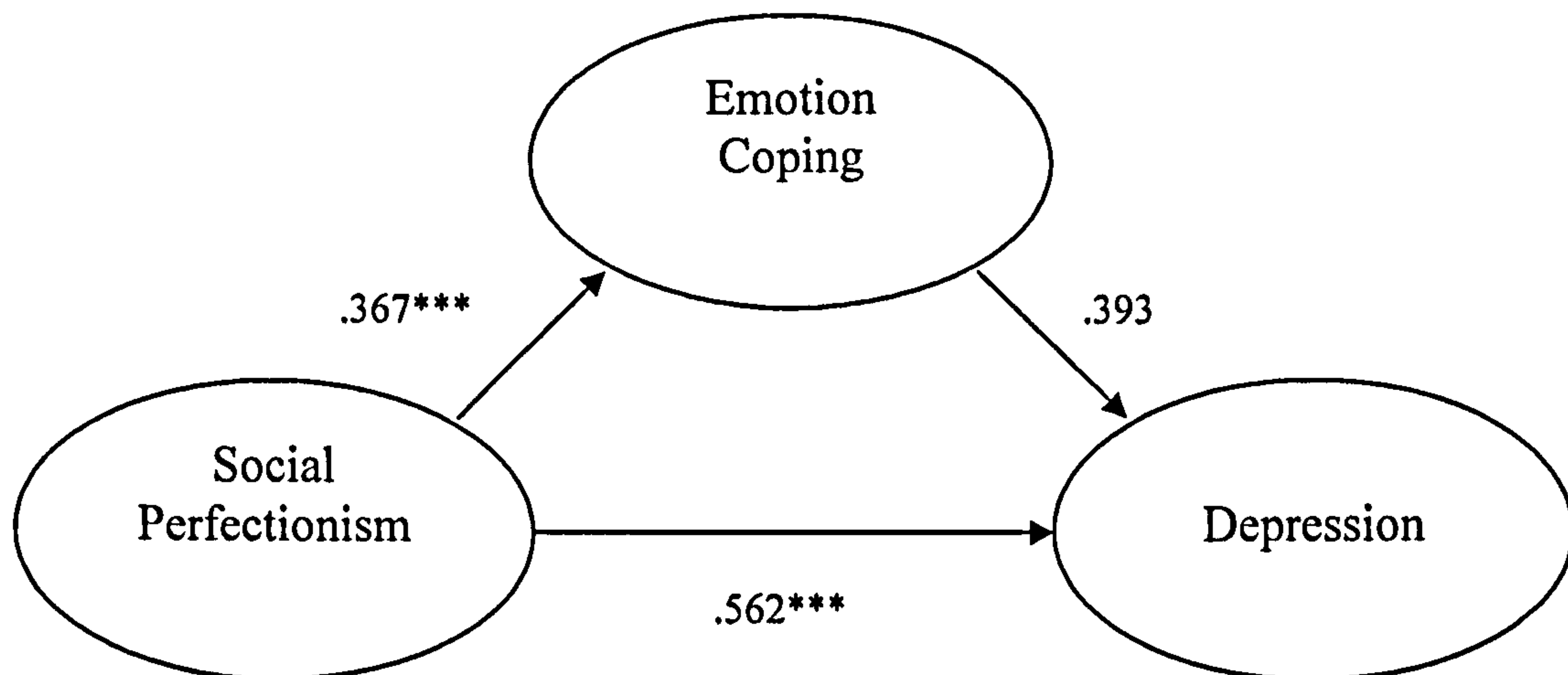
Figure 7.13 The mediating effect of emotion-focused coping on the relationship between socially prescribed perfectionism and hopelessness at Time 1.



Note. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

For depression (Figure 7.14), socially prescribed perfectionism accounted for 32.9% of the variance ( $F_{(1, 75)}=37.79, p < .001$ ), whilst emotion focused coping added a further 24.9% of variance ( $F_{(1, 75)}=52.68, p < .001$ ). The result led to the beta weight of social perfectionism to be reduced ( $\beta=.39, p < .001$ ), although not to non-significance. The Sobel test confirmed mediation ( $Z=3.02, p < .01$ ).

Figure 7.14 The mediating effect of emotion-focused coping on the relationship between socially prescribed perfectionism and depression at Time 1.



Note. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

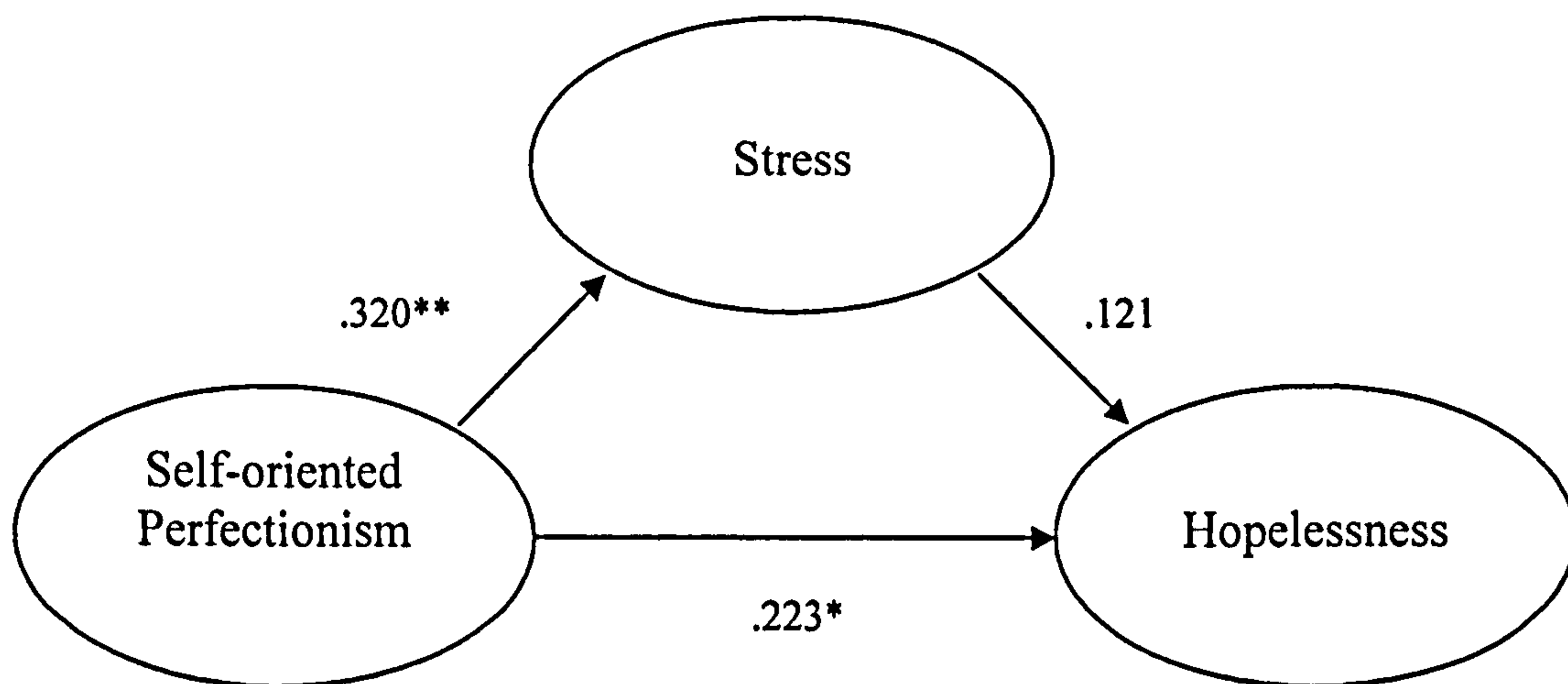
### 7.3.6 Testing Mediation Effects: Stress

Final tests of mediation were carried out to investigate the effects of stress. Again, regressions were carried out to test the mediation conditions specified by Baron and Kenny (1986), and these demonstrated that both self-oriented and socially prescribed perfectionism satisfied the guidelines.

#### Self-oriented Perfectionism

For hopelessness (Figure 7.15), self-oriented perfectionism independently accounted for 4.1% of the variance ( $F_{(1, 76)}=4.24, p < .05$ ), whilst the addition of stress accounted for a further 10.6% of variance ( $F_{(1, 76)}=7.54, p < .001$ ). The beta weight for self-oriented perfectionism was consequently reduced to non-significance ( $\beta=.121, ns$ ), suggesting that full mediation had taken place. The Sobel test confirmed this mediation ( $Z=2.18, p < .05$ ).

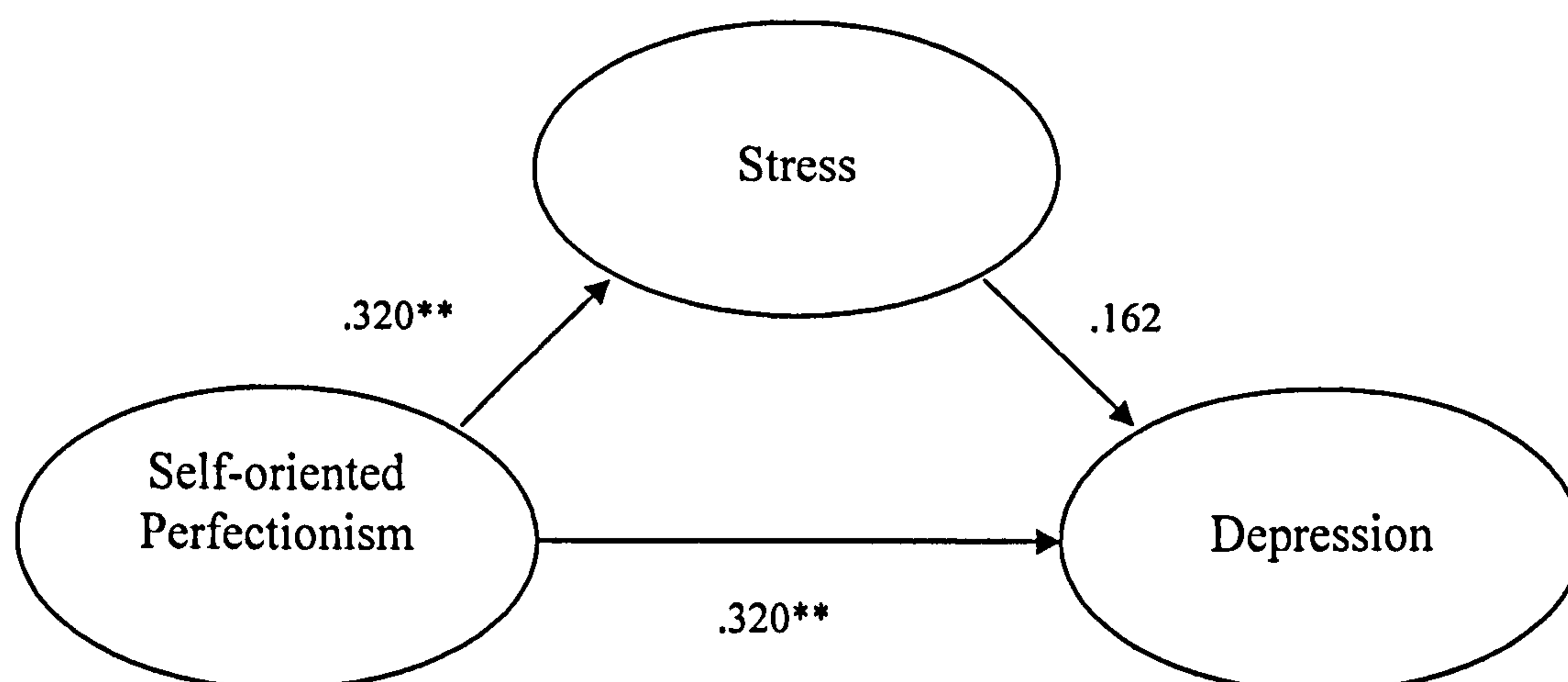
Figure 7.15 The mediating effect of stress on the relationship between self-oriented perfectionism and hopelessness at Time 1.



Note. \* $p < .05$ , \*\* $p < .01$

For depression (Figure 7.16), self-oriented perfectionism accounted for 12.2% of the variance ( $F_{(1, 76)}=11.60, p < .001$ ), whilst stress accounted for a further 39.9% of variance ( $F_{(1, 76)}=42.30, p < .001$ ), and reduced the beta weight of self-oriented perfectionism to non-significance ( $\beta=.16, ns$ ). Mediation was confirmed by the Sobel test ( $Z=2.78, p < .01$ ).

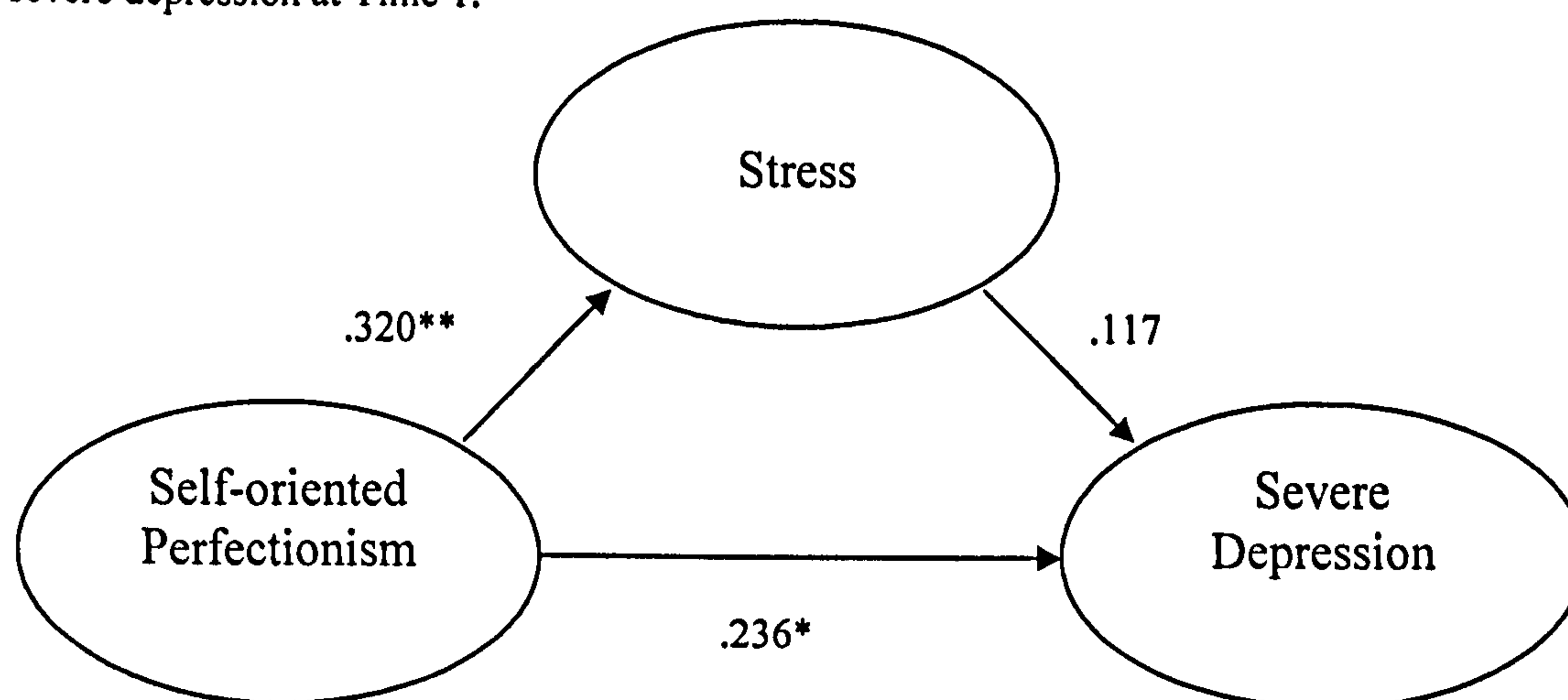
Figure 7.16 The mediating effect of stress on the relationship between self-oriented perfectionism and depression at Time 1.



Note. \* $p < .05$ , \*\* $p < .01$

In the prediction of severe depression (Figure 7.17), self-oriented perfectionism accounted for 5.5% of the variance ( $F_{(1, 74)} = 5.34, p < .05$ ). Stress added a further 16.3% to this variance ( $F_{(1, 74)} = 11.34, p < .001$ ), and reduced the beta weight of self-oriented perfectionism to non-significance ( $\beta = .12, ns$ ). Mediation was confirmed by a Sobel test ( $Z = 2.40, p < .05$ ).

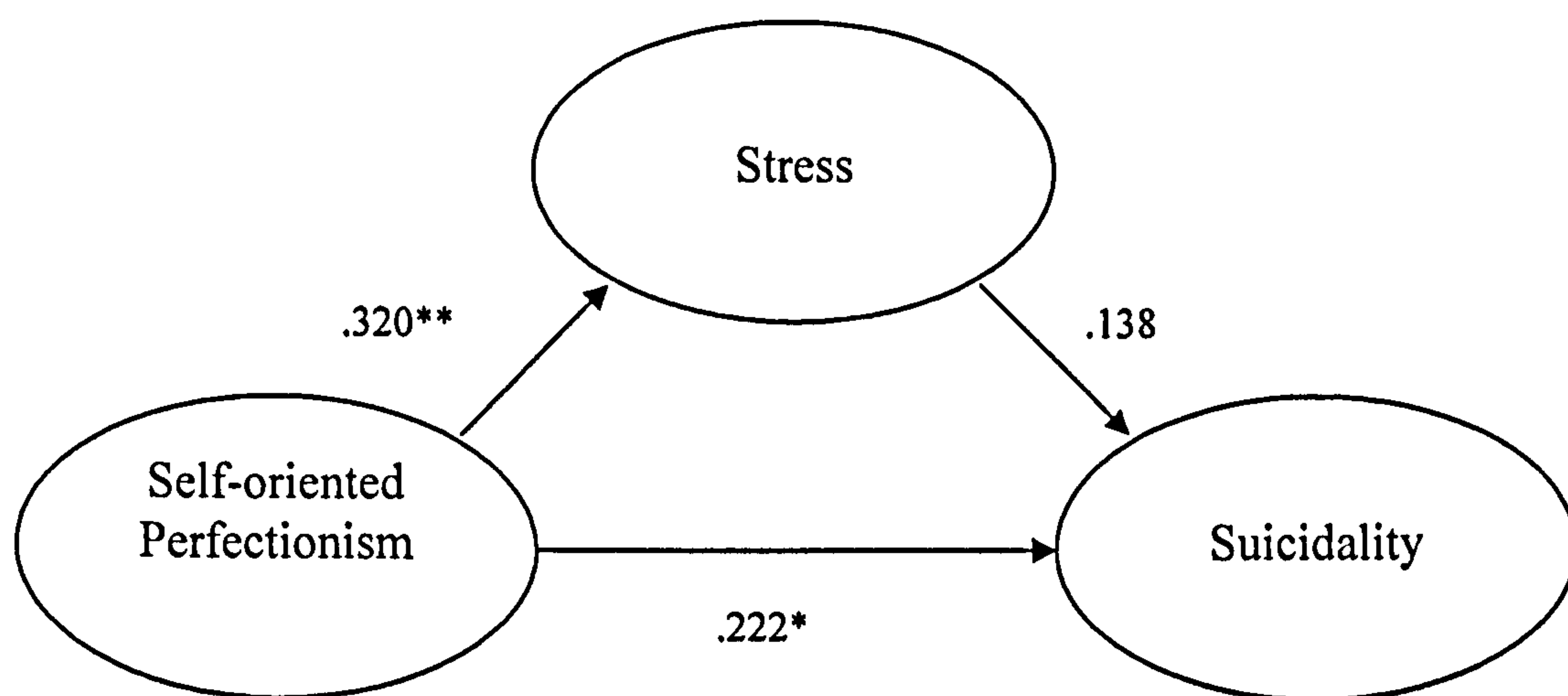
Figure 7.17 The mediating effect of stress on the relationship between self-oriented perfectionism and severe depression at Time 1.



Note. \* $p < .05$ , \*\* $p < .01$

Finally, for suicidality (Figure 7.18), self-oriented perfectionism accounted for 4.6% of the variance ( $F_{(1, 76)}=4.65, p<.05$ ), and stress added a further 8.1% ( $F_{(1, 76)}=6.54, p<.01$ ). This reduced the beta weight for self-oriented perfectionism to non-significance ( $\beta=.14, ns$ ). Mediation was confirmed by the Sobel test ( $Z=2.06, p<.05$ ).

Figure 7.18 The mediating effect of stress on the relationship between self-oriented perfectionism and suicidality at Time 1.



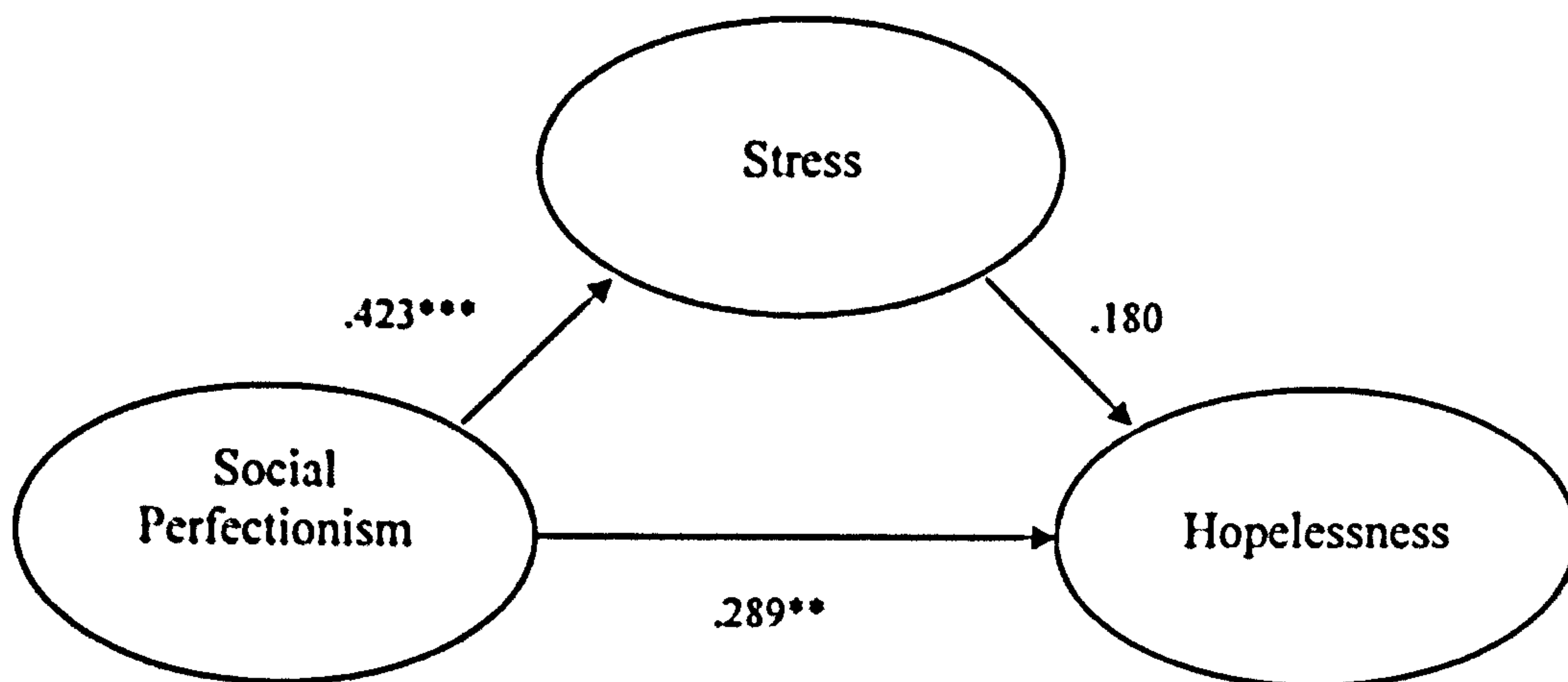
Note. \* $p<.05$ , \*\* $p<.01$

### Socially Prescribed Perfectionism

Similar tests were conducted for socially prescribed perfectionism and it was found that, for hopelessness (Figure 7.19), this perfectionism dimension accounted for 7.6% of the variance ( $F_{(1, 80)}=7.62, p<.01$ ). The addition of stress added a further 6.6% to the variance ( $F_{(1, 80)}=7.60, p<.001$ ), and reduced the beta weight of social perfectionism to non-significance ( $\beta=.18, ns$ ). Mediation was confirmed by the Sobel test ( $Z=2.24, p<.05$ ).



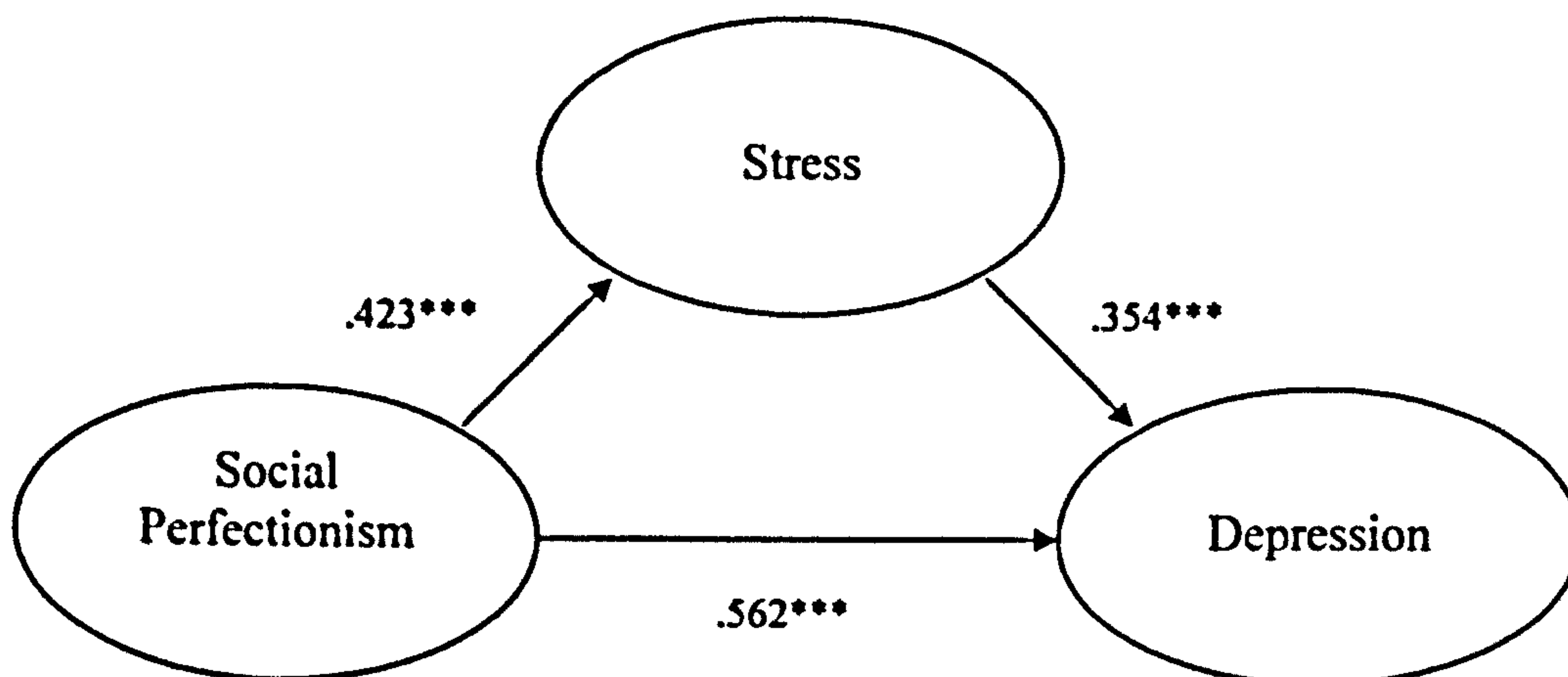
Figure 7.19 The mediating effect of stress on the relationship between socially prescribed perfectionism and hopelessness at Time 1.



Note. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

For depression (Figure 7.20), social perfectionism accounted for 31.3% of the variance ( $F_{(1, 83)}=38.74, p < .001$ ), whilst stress accounted for a further 22.1% of variance ( $F_{(1, 83)}=48.63, p < .001$ ), and reduced the beta weight of social perfectionism ( $\beta=.35, p < .001$ ), although not to non-significance. The Sobel test verified mediation ( $Z=3.51, p < .001$ ).

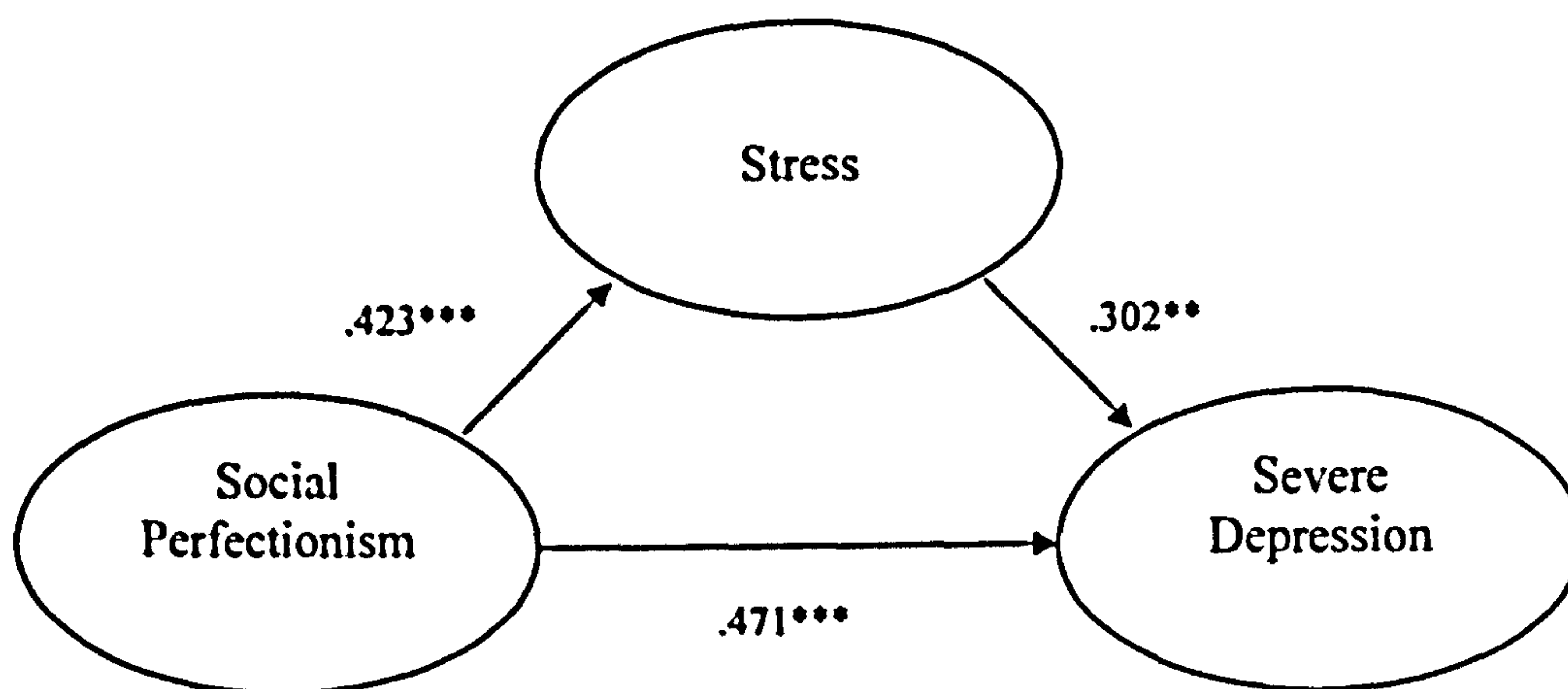
Figure 7.20 The mediating effect of stress on the relationship between socially prescribed perfectionism and depression at Time 1.



Note. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

For severe depression (Figure 7.21), socially prescribed perfectionism explained 21.7% of the variance ( $F_{(1, 81)}=23.39, p<.001$ ), and stress accounted for a further 12.7% of variance ( $F_{(1, 81)}=22.20, p<.001$ ). The beta weight was consequently reduced ( $\beta=.30, p<.01$ ), although not to non-significance. The Sobel test confirmed mediation ( $Z=2.94, p<.01$ ).

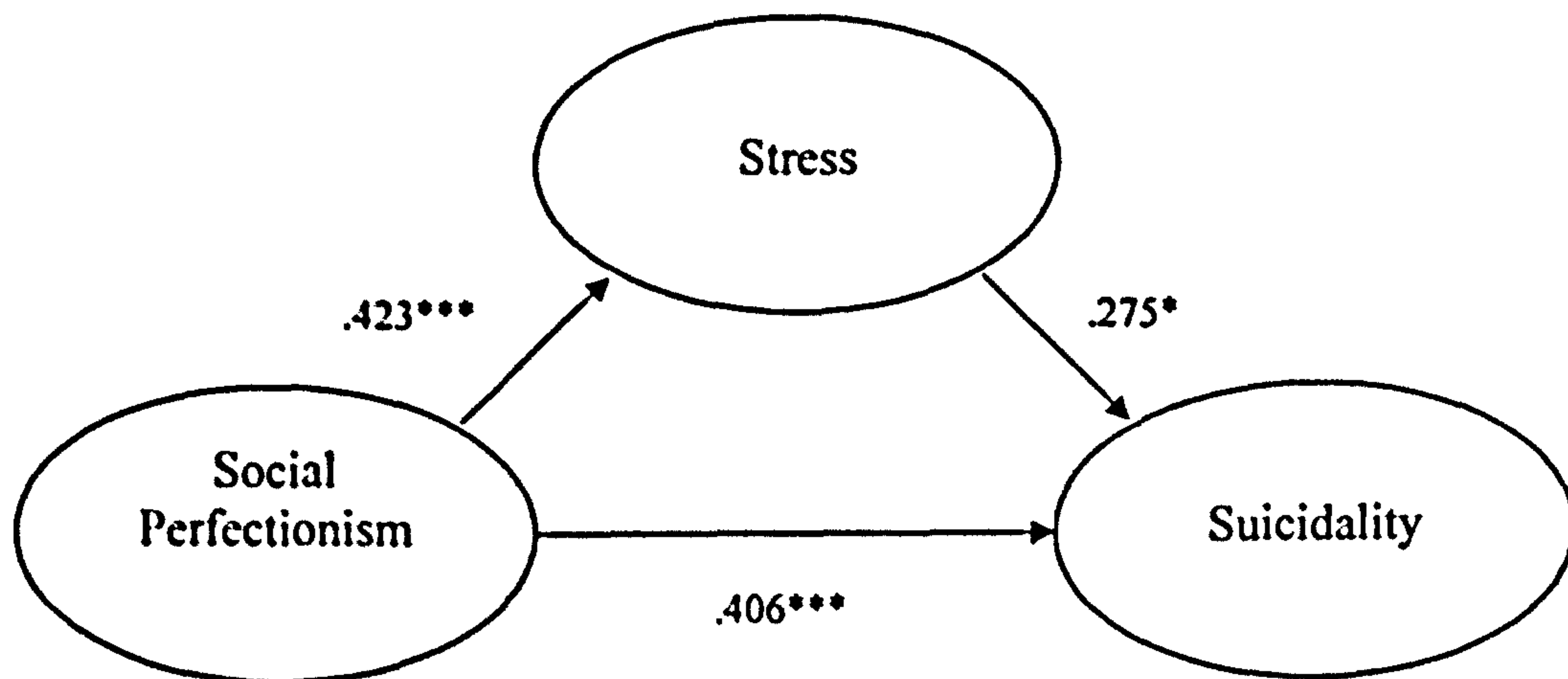
Figure 7.21 The mediating effect of stress on the relationship between socially prescribed perfectionism and severe depression at Time 1.



Note. \* $p<.05$ , \*\* $p<.01$ , \*\*\* $p<.001$

Finally, for suicidality (Figure 7.22), socially prescribed perfectionism accounted for 15.7% of the variance ( $F_{(1, 83)}=16.51, p<.001$ ), and stress accounted for another 7.1% of variance ( $F_{(1, 83)}=13.26, p<.001$ ), whilst reducing the beta weight of social perfectionism ( $\beta=.28, p<.05$ ), although not to non-significance. The Sobel test verified mediation ( $Z=2.42, p<.01$ ).

Figure 7.22 The mediating effect of stress on the relationship between socially prescribed perfectionism and suicidality at Time 1.



Note. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

### 7.3.7 Follow-Up Mediation Analysis

Finally, we should point out that data has not been included for the follow-up analyses because of the intervening mood manipulations. We did however, do exploratory analysis including mood manipulation group and didn't find any major difference from the baseline analyses.

### 7.3.8 Testing Moderation Effects

#### Mood Regulation

Hierarchical multiple regressions were carried out to test whether a person's perceived mood regulation ability moderated the relationship between the perfectionism subscales and psychological distress (hopelessness, depression, severe depression, and suicidality) at baseline. Either of the perfectionism subscales was entered at step 1, followed by mood regulation at step 2, and the relevant multiplicative term at step 3. These analyses revealed that self-oriented perfectionism and socially prescribed were both significant (or nearly significant)

independent predictors of all of the outcome variables. Similarly, mood regulation was also a significant independent predictor of distress. Other-oriented perfectionism, on the other hand, was not found to predict any of the distress measures; nor was it found to interact with mood regulation to predict distress.

The multiplicative term of self-oriented perfectionism and mood regulation did, however, emerge as a predictor of severe depression and suicidality, and was found to account for 40.2% and 29.4% of the variance for severe depression and suicidality respectively. Similarly, the multiplicative term of social perfectionism and mood regulation was found to predict depression, severe depression and suicidality (see Appendix 10). In addition, the interaction between socially prescribed perfectionism and perceived mood regulation ability was found to account for 65% of the variance of depression, 53.4% of severe depression, and 40.4% of the variance of suicidality.

To illustrate these interactions, consistent with Aiken and West (1991), the lines of best fit of self-oriented perfectionism on severe depression and suicidality at one standard deviation above (high) and one standard deviation below (low) the mean for mood regulation, were plotted (see Figures 7.23 and 7.24 respectively). Aiken and West consequently recommend that further tests should be carried out separately on the slopes of the high and low mood regulation lines to determine whether they were significant from zero. In the prediction of severe depression the low ( $\beta=.355$ ),  $t(73)=2.45$ ,  $p<.05$ ), but not the high ( $\beta=-.07$ ),  $t(73)=-.57$ , ns), slopes of the self-oriented perfectionism lines differed significantly from zero (Figure 7.23). Similarly, for suicidality, the low ( $\beta=.44$ ),  $t(75)=2.86$ ,  $p<.01$ ), but not the

high ( $\beta=-.12$ ),  $t(75)=-.912$ , ns), lines of the self-oriented perfectionism slopes differed significantly from zero (Figure 7.24). Thus, these results demonstrate that individuals who are high in self-oriented perfectionism and who have low beliefs in their own ability to regulate negative mood, reported significant higher depression and suicidality.

Figure 7.23. The relationship between self-oriented perfectionism and perceived mood regulation ability in the prediction of severe depression at baseline.

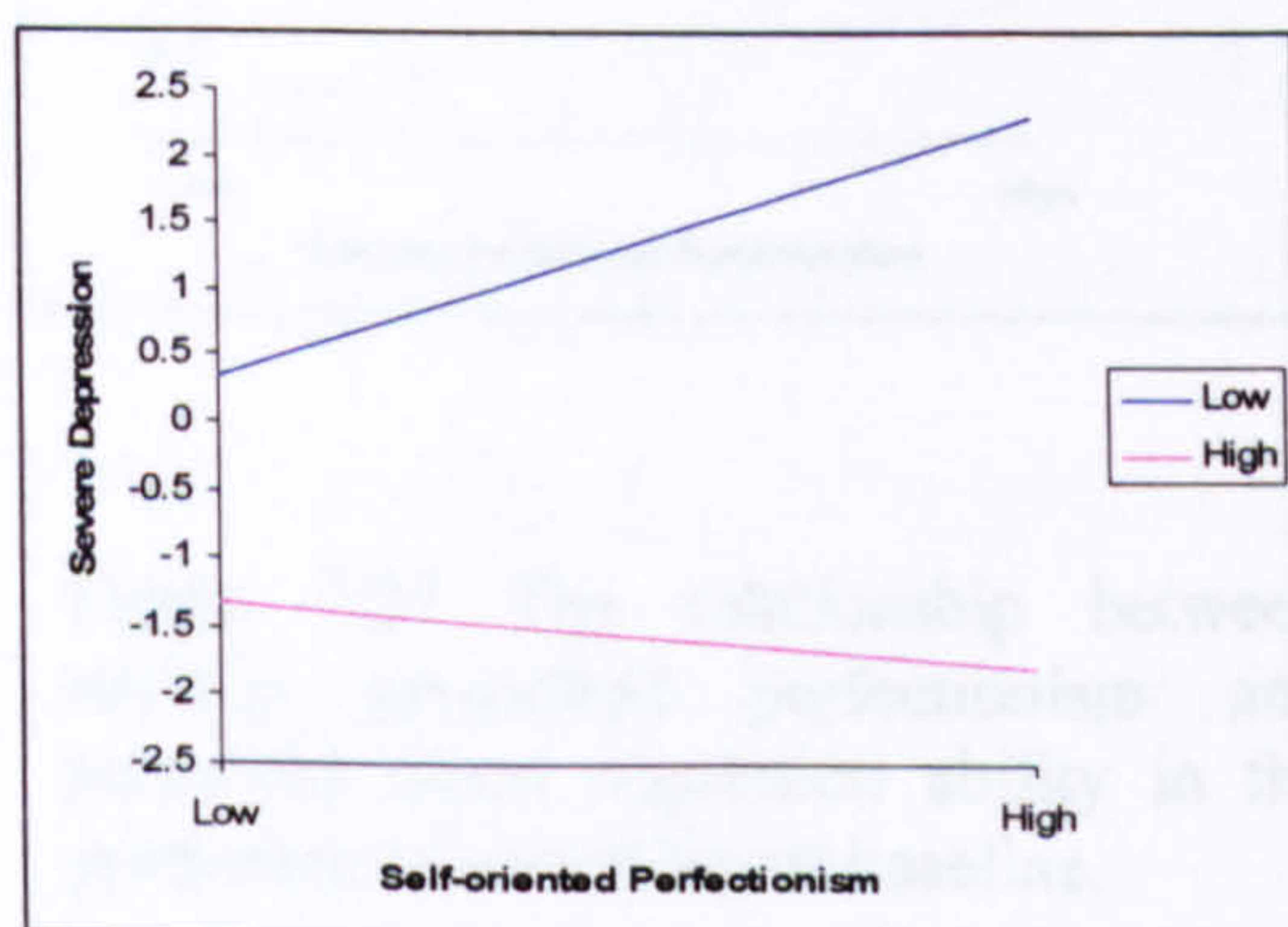
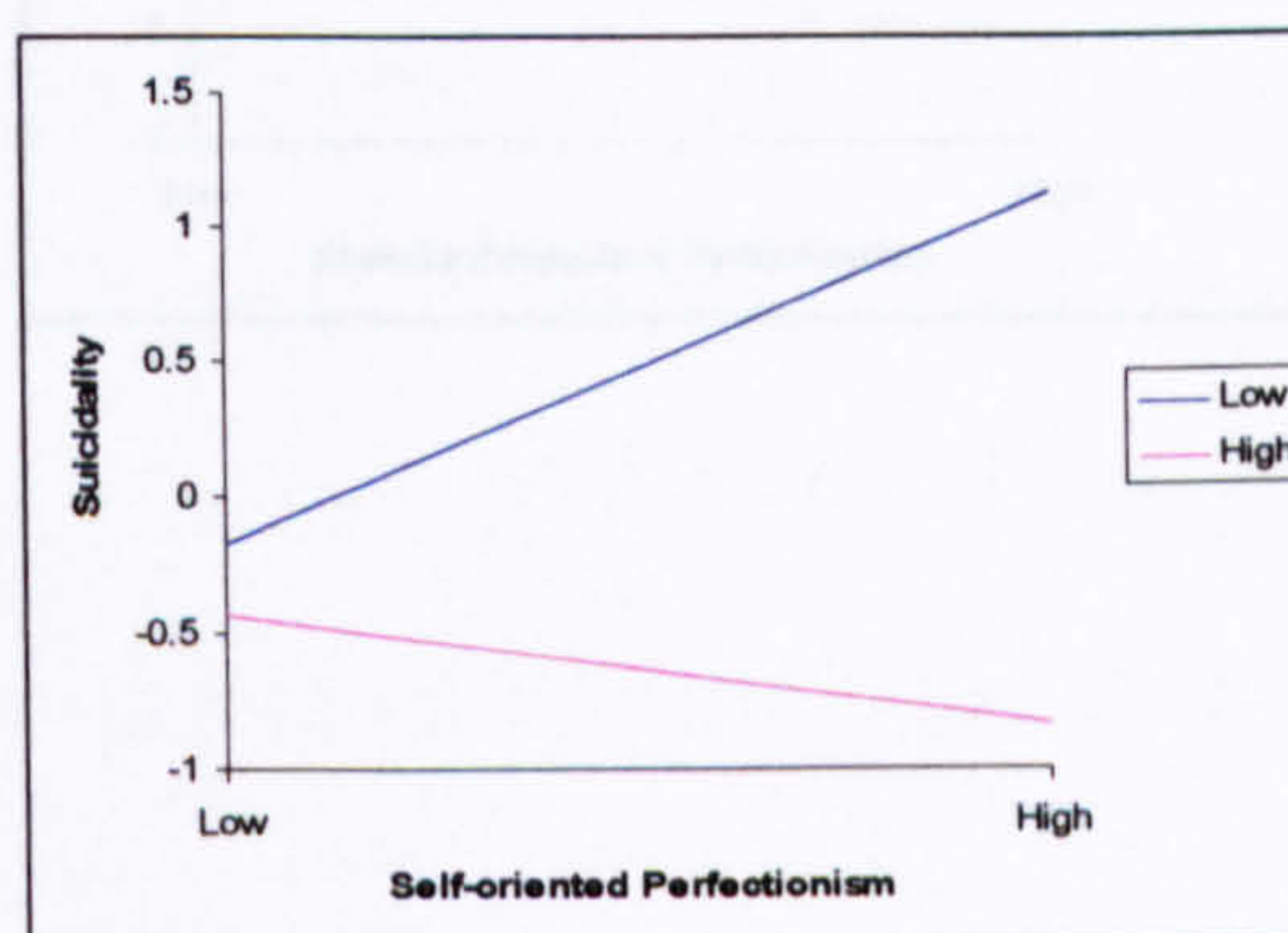


Figure 7.24. The relationship between self-oriented perfectionism and perceived mood regulation ability in the prediction of suicidality at baseline.



The same procedure was reproduced for the social perfectionism x mood regulation slopes. The tests revealed that for depression, the low ( $\beta=.62$ ),  $t(79)=6.00$ ,  $p<.001$ ), but not the high ( $\beta=.01$ ),  $t(79)=.12$ , ns), slopes of the socially prescribed perfectionism lines differed significantly from zero (see Figure 7.25). This pattern was also evident for severe depression (Figure 7.26) and suicidality (Figure 7.27). Thus, it was found that the low (severe depression:  $\beta=.64$ ,  $t(77)=5.46$ ,  $p<.001$ ; suicidality:  $\beta=.63$ ,  $t(79)=4.78$ ,  $p<.001$ ), but not the high (severe depression:  $\beta=-.22$ ,  $t(77)=-1.76$ , ns; suicidality:  $\beta=-.19$ ,  $t(79)=-1.35$ , ns), slopes of the socially prescribed perfectionism lines differed significantly from zero. These results are similar to the ones found for self-oriented perfectionism as they demonstrate that high levels of socially prescribed perfectionism combined with a low belief in one's

own ability to alter a negative mood state was associated with significantly higher levels of depression, severe depression, and suicidality.

Figure 7.25. The relationship between socially prescribed perfectionism and perceived mood regulation ability in the prediction of depression at baseline.

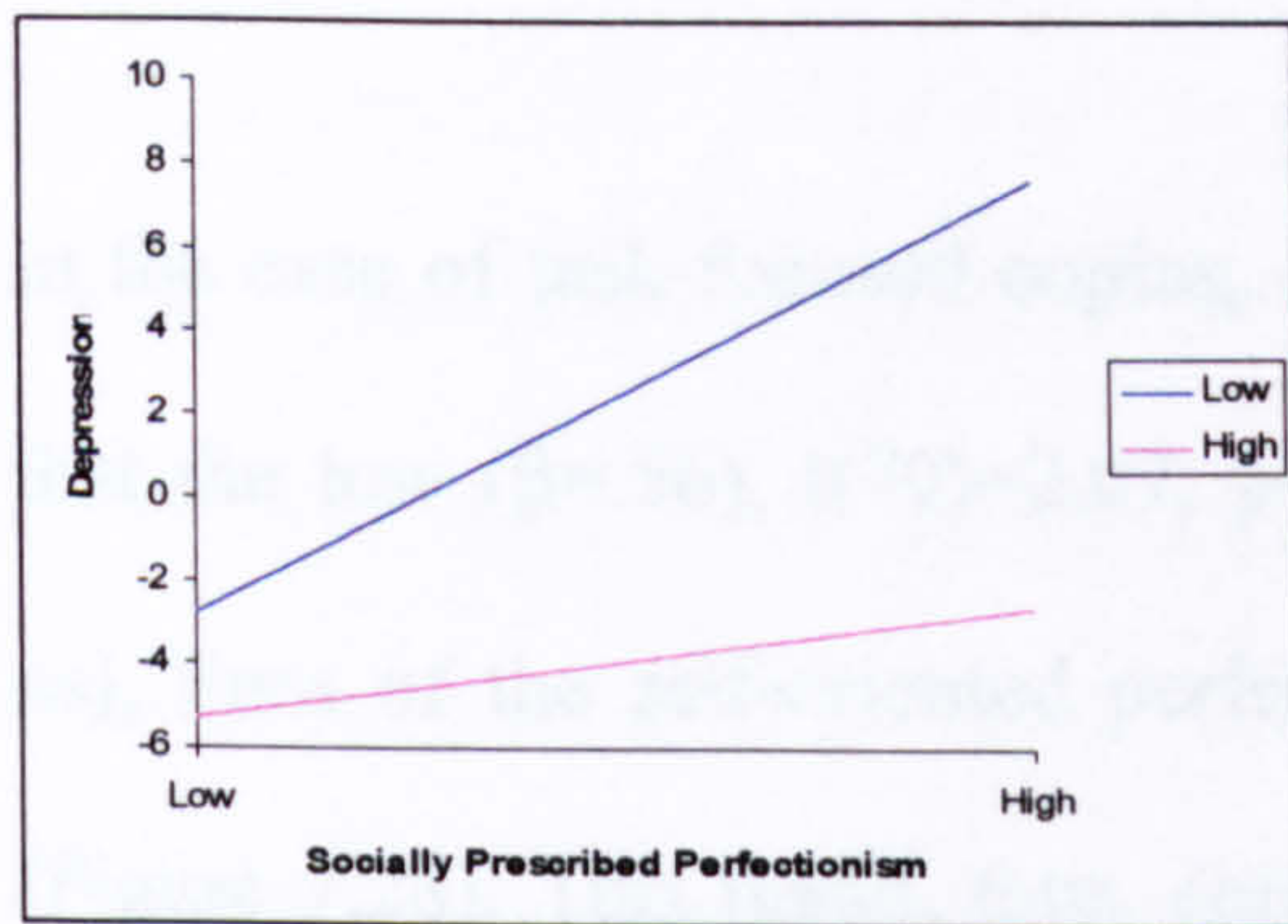


Figure 7.26 The relationship between socially prescribed perfectionism and perceived mood regulation ability in the prediction of severe depression at baseline.

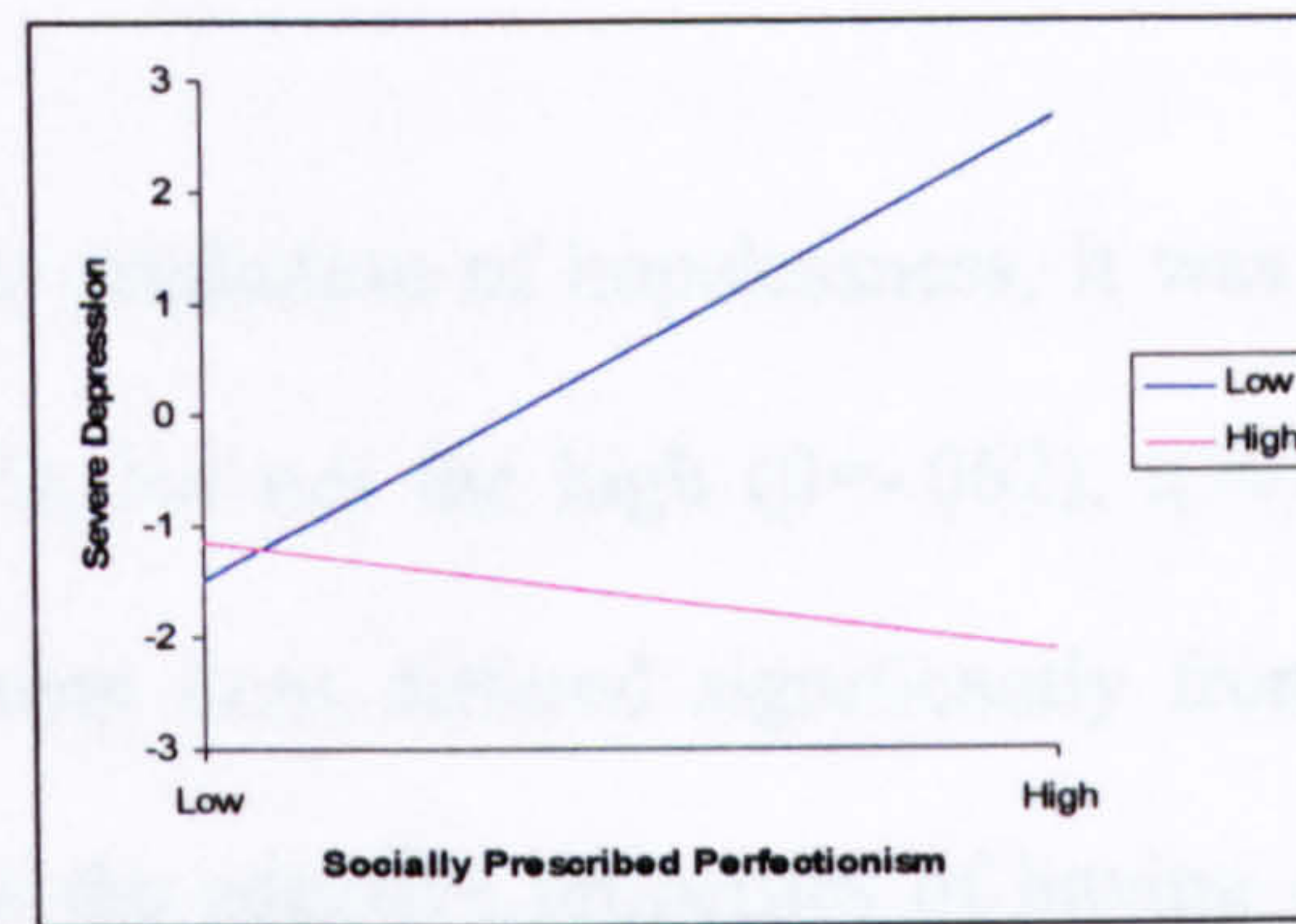
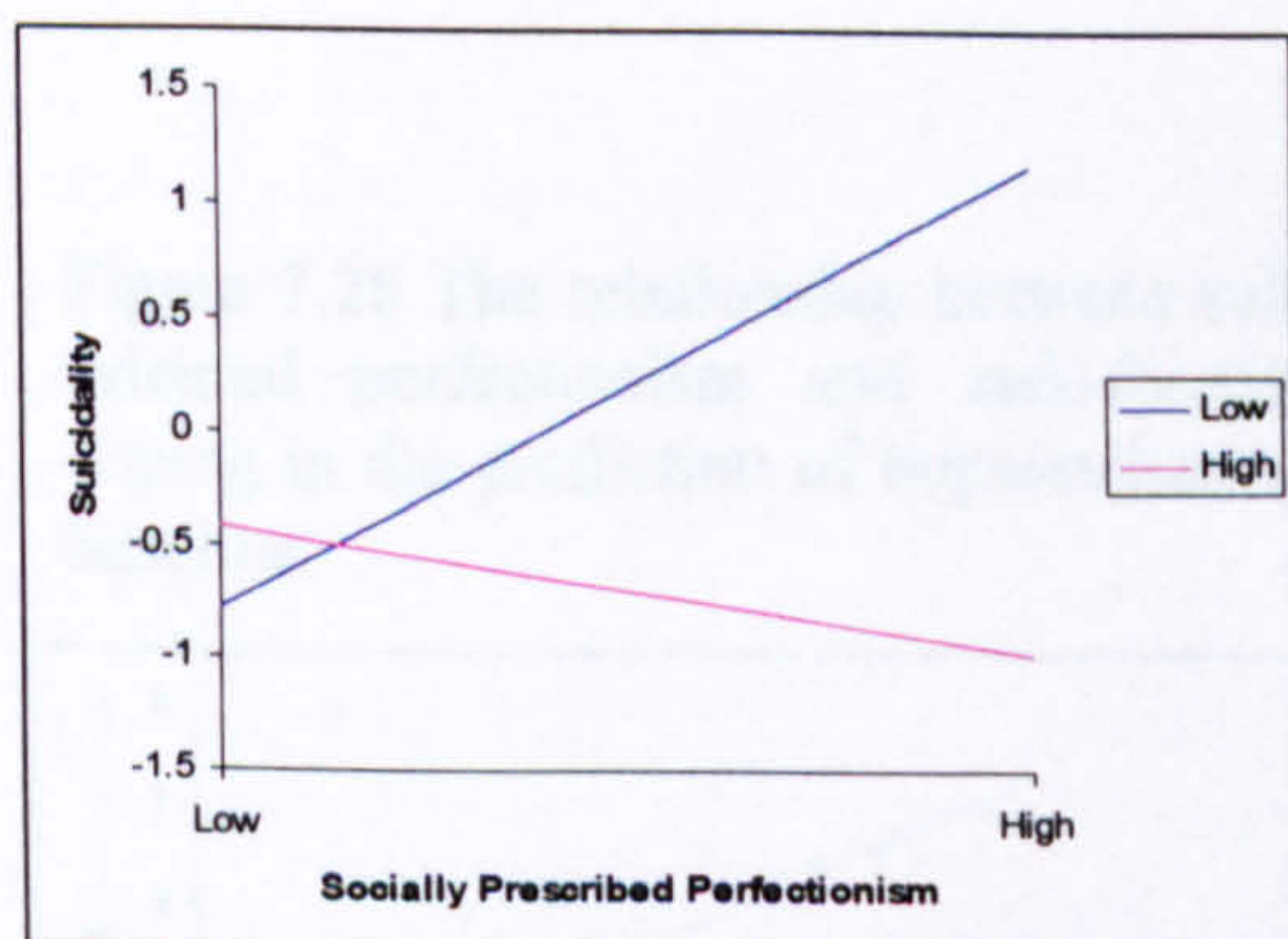


Figure 7.27 The relationship between socially prescribed perfectionism and perceived mood regulation ability in the prediction of suicidality at baseline.



### Coping Strategies

Similar to the mood regulation analyses, several multiple regressions were carried out to examine whether coping style could be seen to moderate the relationship between perfectionism and psychological distress. These analyses showed that both task-focused (Appendix 11) and emotion-focused (Appendix 12) coping styles were independent predictors of psychological distress (hopelessness, depression and

severe depression, but not suicidality). Furthermore, they also both emerged as having a significant modifying effect on the relationship between self-oriented and socially prescribed perfectionism and some of the outcome variables. As a result, the interactions were followed up by two simple slope regressions as specified by Aiken and West (1991).

In the case of task-focused coping, in the prediction of hopelessness, it was found that the low ( $\beta=.56$ ,  $t(70)=2.67$ ,  $p<.001$ ), but not the high ( $\beta=-.062$ ,  $t(70)=-.41$ , ns), lines of the self-oriented perfectionism lines differed significantly from zero (Figure 7.28). This result, thus, confirms the adaptive properties of having a task-focused coping style, as it was found that individuals who are high in self-oriented perfectionism and are low in task-focused coping style reported significantly higher hopelessness.

Figure 7.28 The relationship between self-oriented perfectionism and task-focused coping in the prediction of hopelessness at baseline.

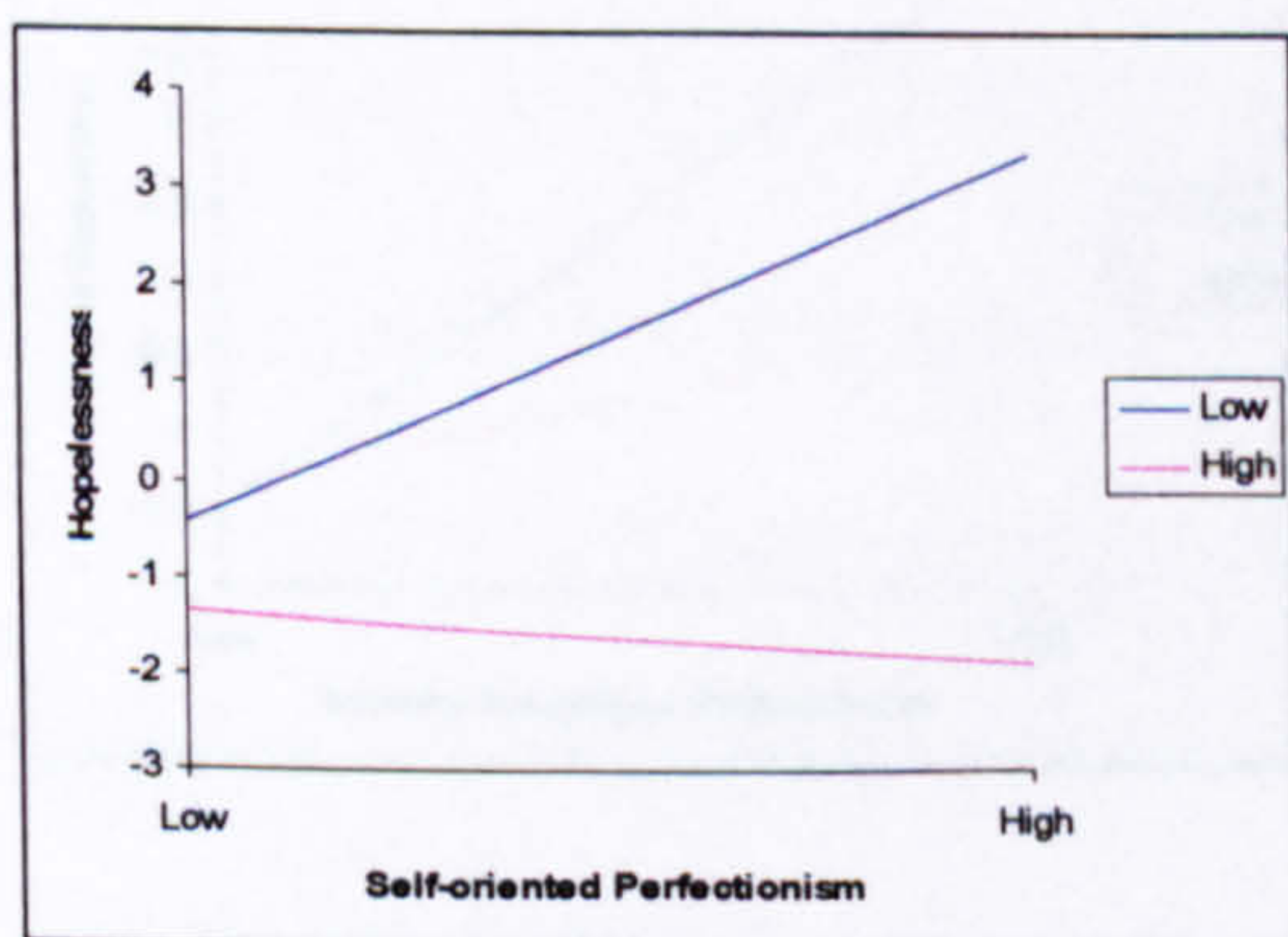
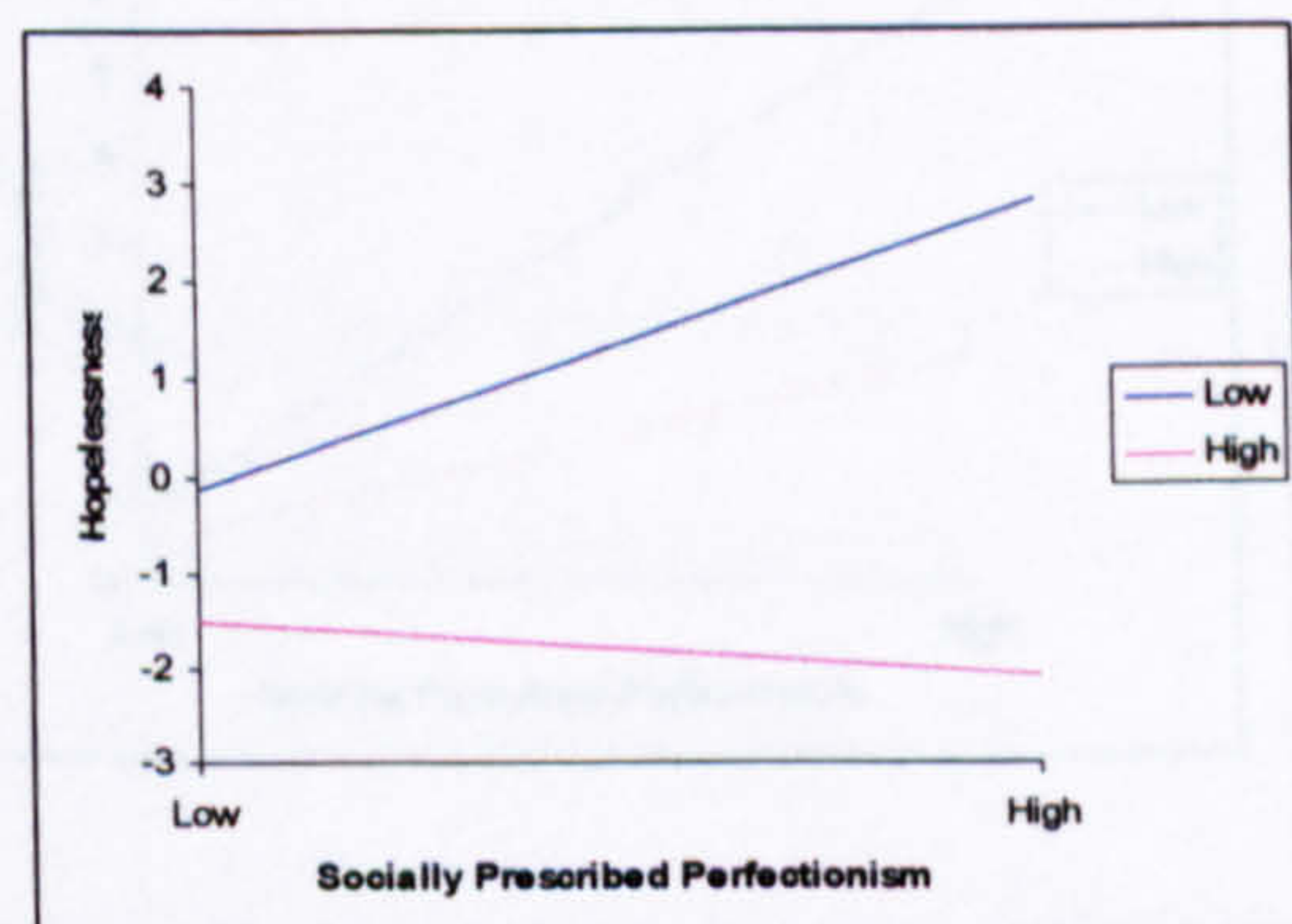


Figure 7.29 The relationship between socially prescribed perfectionism and task-focused coping in the prediction of hopelessness at baseline.



This result was also found for social perfectionism in the prediction of hopelessness (Figure 7.29) and severe depression (Figure 7.30). That is, the low (Hopelessness:  $\beta=.41$ ,  $t(74)=2.60$ ,  $p<.05$ ; Severe depression:  $\beta=.675$ ,  $t(76)=4.11$ ,  $p<.001$ ), but not

the high (hopelessness:  $\beta = -.10$ ,  $t(74) = -.72$ , ns; severe depression:  $\beta = .21$ ,  $t(76) = 1.46$ , ns), lines of social perfectionism differed significantly from zero. In the case of depression (Figure 7.31), however, both the low ( $\beta = .73$ ,  $t(77) = 4.96$ ,  $p < .001$ ), and the high ( $\beta = .26$ ,  $t(77) = 2.04$ ,  $p < .05$ ), lines of the socially prescribed perfectionism slopes, differed significantly from zero. For hopelessness (Figure 7.29) and severe depression (Figure 7.30), these results once again demonstrate that high levels of socially prescribed perfectionism, when combined with low levels of task-focused coping strategies, were associated with significantly higher levels of distress. In the case of depression, the result indicates that for social perfectionists, both the combination of high and low levels of task-focused coping style was associated with increased depression. However, depression was significantly higher for individuals who reported low levels of task-focused thinking (Figure 7.31)

Figure 7.30 The relationship between socially prescribed perfectionism and task-focused coping prediction of severe depression at baseline.

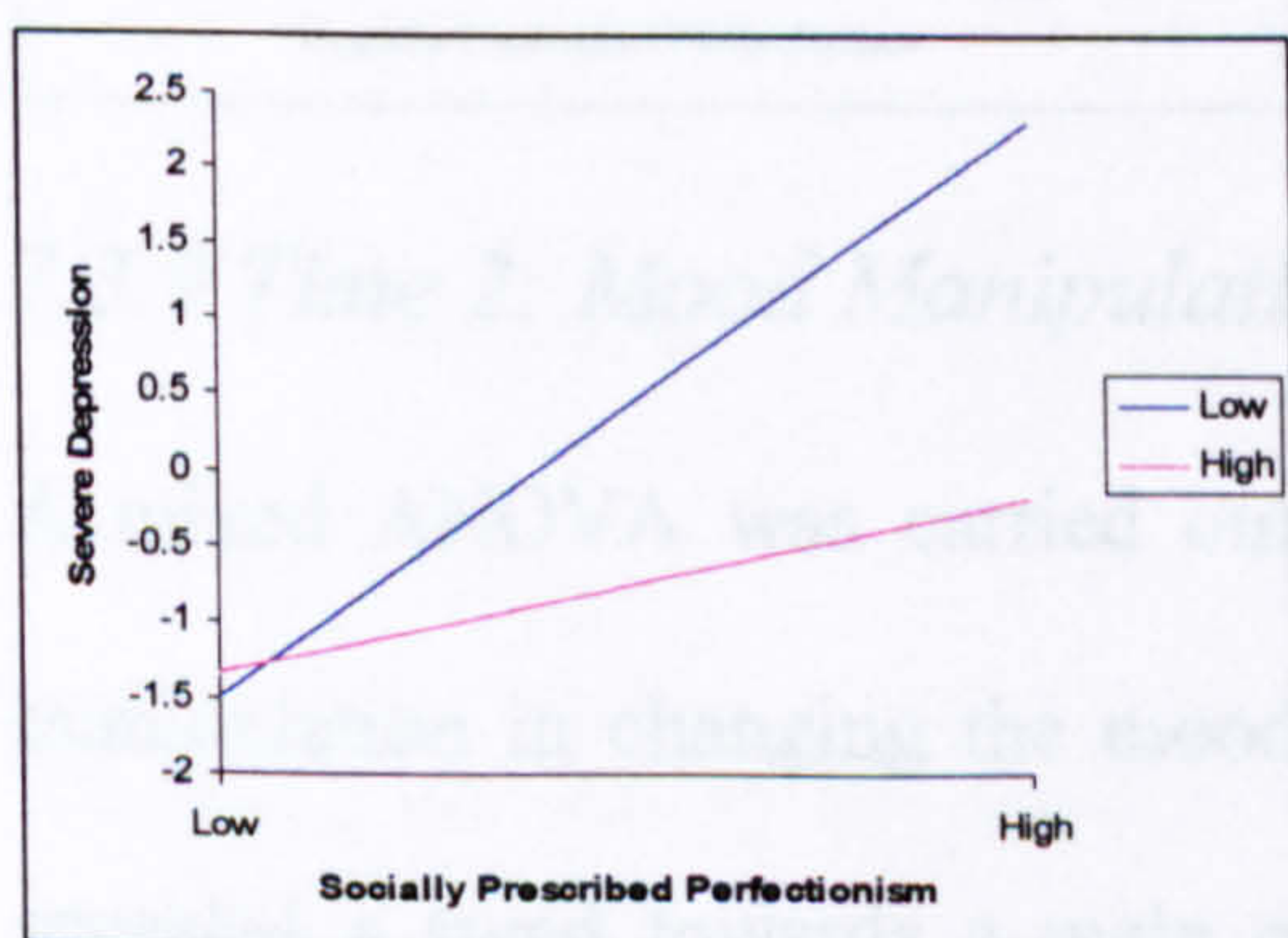
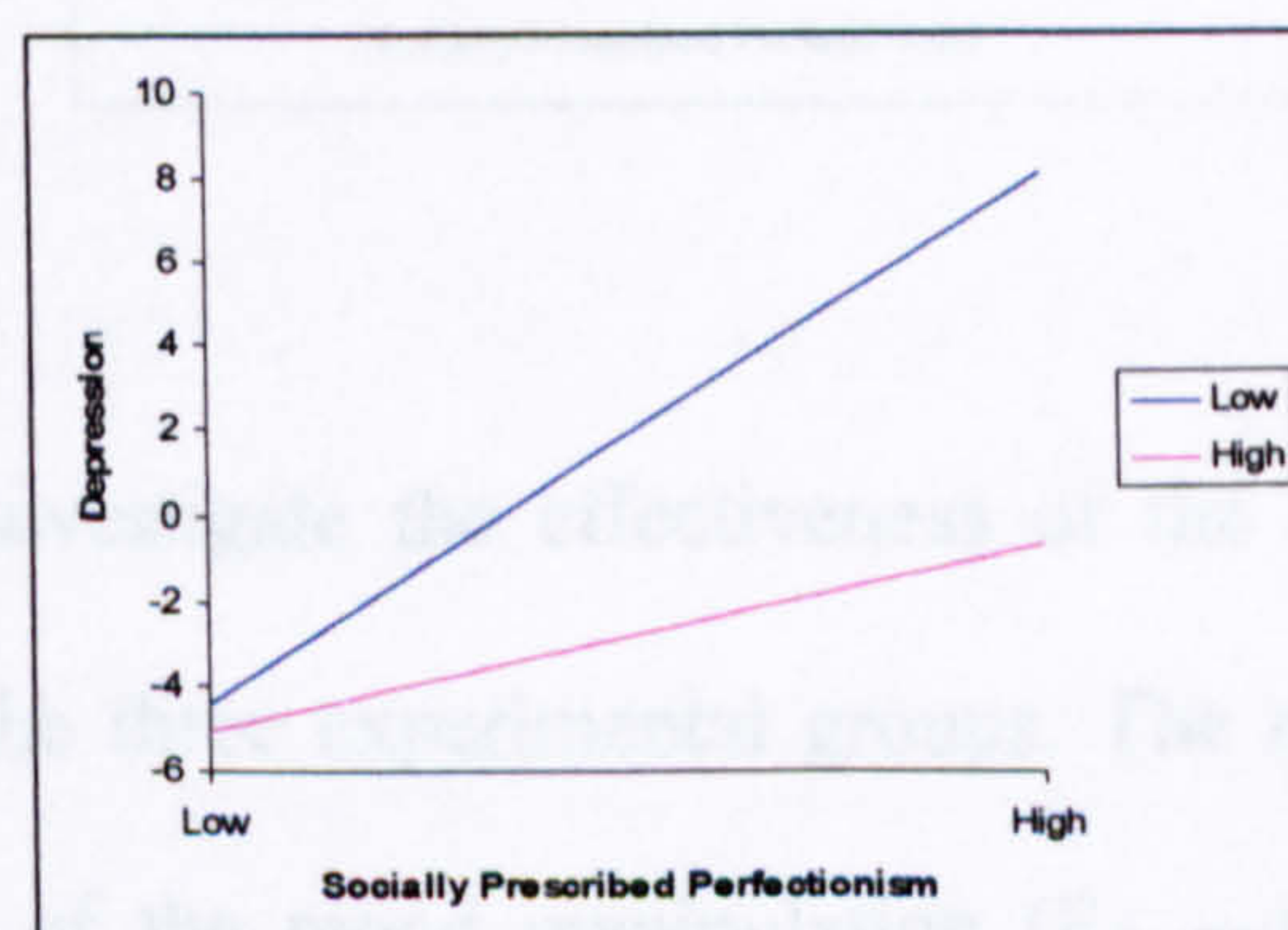


Figure 7.31 The relationship between socially prescribed perfectionism and task-focused coping in the prediction of depression at baseline.



Finally, emotion-focused coping was also found to moderate the relationship between socially prescribed perfectionism and depression and severe depression. That is, it was found that, for both depression and severe depression, both the high (depression:  $\beta = .40$ ,  $t(75) = 5.267$ ,  $p < .001$ ; severe depression:  $\beta = .36$ ,  $t(74) = 3.36$ ,



$p < .001$ ), and the low (depression:  $\beta = .40$ ,  $t(75) = 5.27$ ,  $p < .001$ ; severe depression:  $\beta = .36$ ,  $t(74) = 3.36$ ,  $p < .001$ ), lines of the socially prescribed perfectionism slopes differed significantly from zero. These results suggest that when high levels of social perfectionism is combined with both low and high levels of emotion-focused coping styles, participants reported significantly higher levels of depression (Figure 7.32) and severe depression (Figure 7.33). However, once again, depression was much higher when social perfectionism was combined with high levels of emotion-focused coping.

Figure 7.32 The relationship between socially prescribed perfectionism and emotion-focused coping in the prediction of severe depression at baseline.

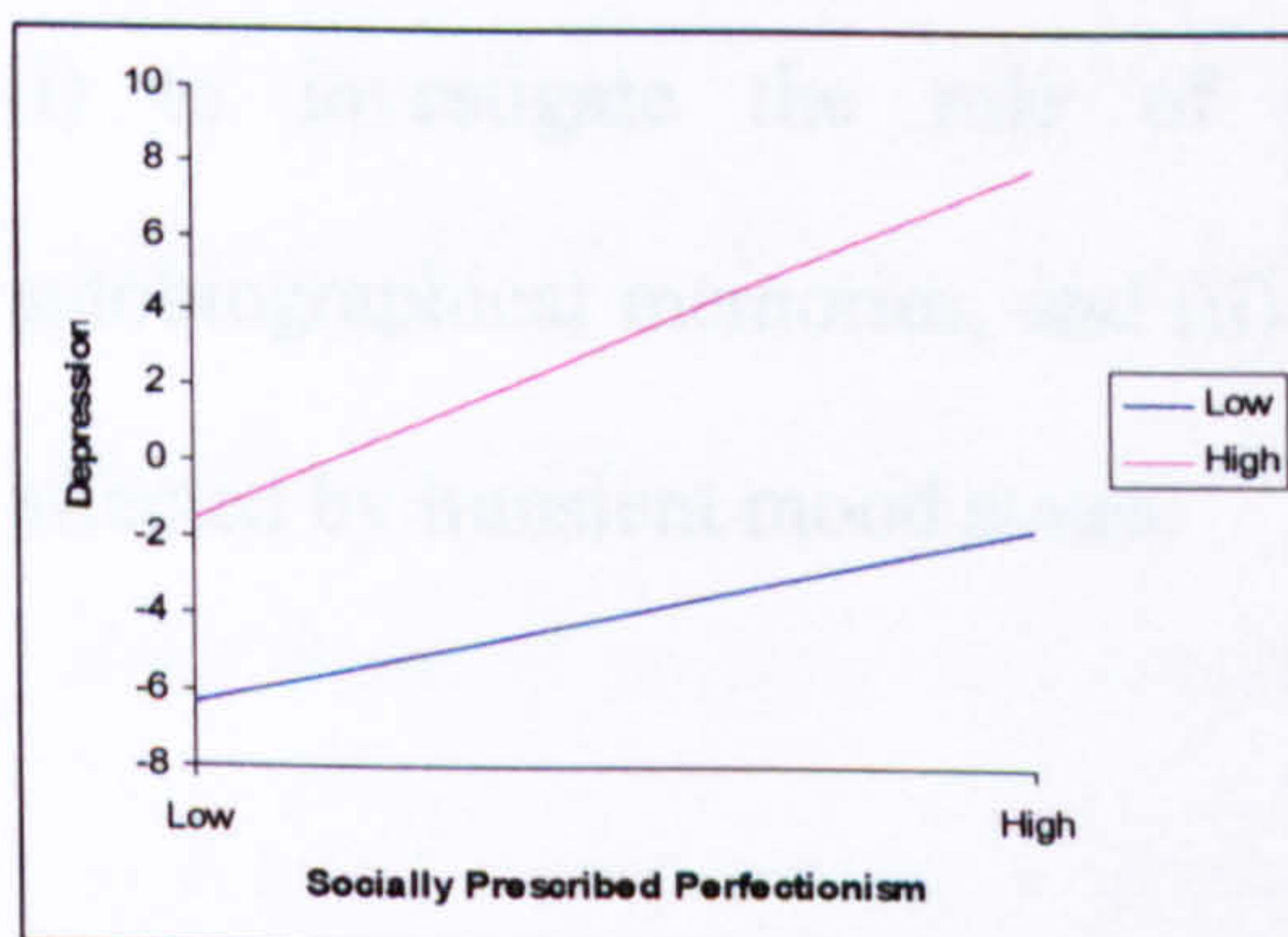
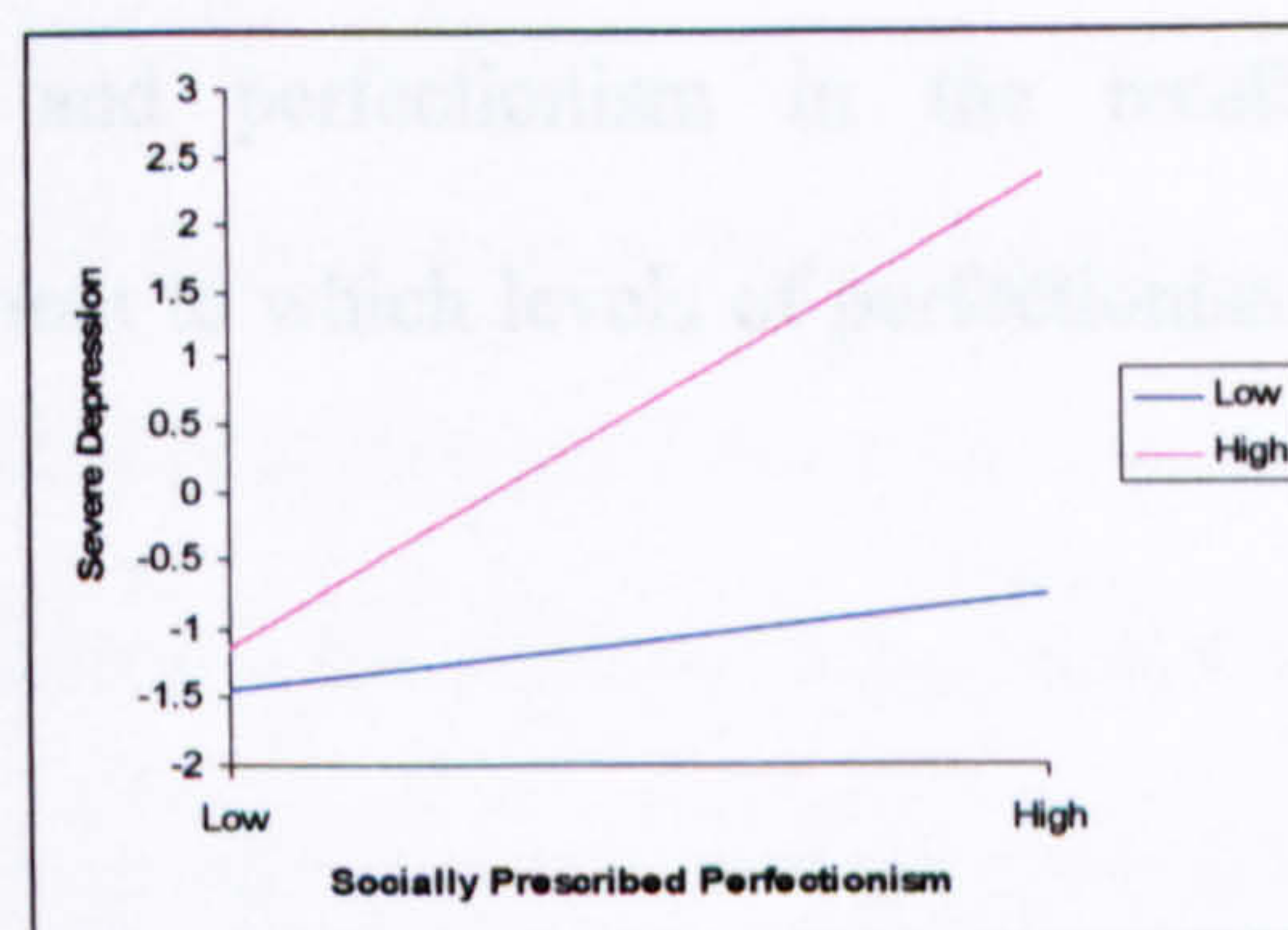


Figure 7.33 The relationship between socially prescribed perfectionism and emotion-focused coping in the prediction of severe depression at baseline.



### 7.3.9 Time 2: Mood Manipulation

A mixed ANOVA was carried out to investigate the effectiveness of the mood manipulation in changing the mood in the three experimental groups. The results revealed a trend towards a main effect of the mood manipulation ( $F_{(1, 87)} = 3.28$ ,  $p = .07$ ), and a trend towards a main effect of the groups as well ( $F_{(2, 87)} = 2.72$ ,  $p = .07$ ). In addition, there was a significant mood by group interaction ( $F_{(2, 87)} = 24.72$ ,  $p < .001$ ). The interaction is demonstrated in Figure 7.34.

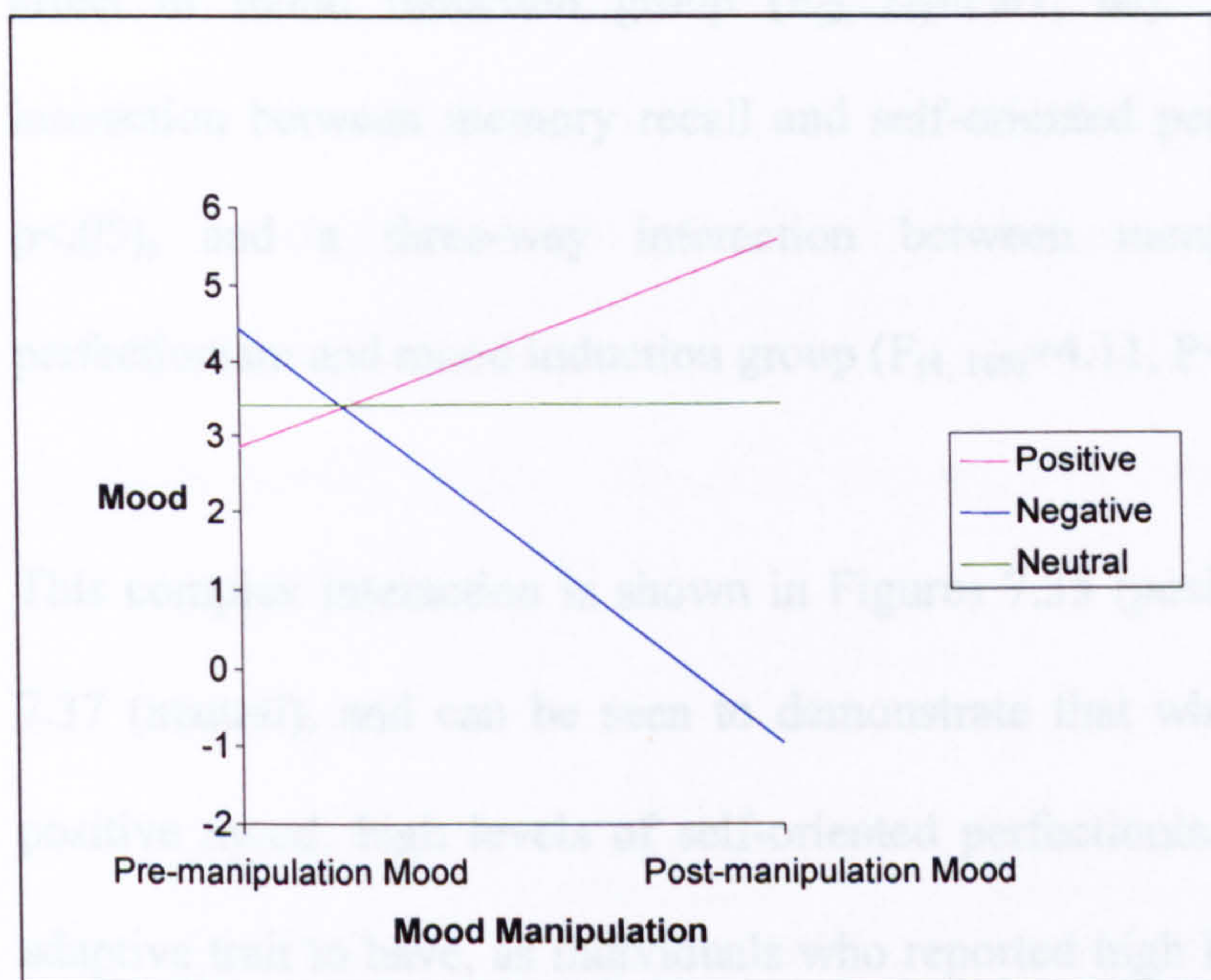


Figure 7.34 Effect of the mood manipulation on the three experimental groups.

Following these inductions further analyses were carried out to test the main aims:

- (i) to investigate the role of mood and perfectionism in the recall of autobiographical memories, and (ii) the extent to which levels of perfectionism are affected by transient mood states.

### 7.3.10 *Autobiographical memory recall: The Role of Mood and Perfectionism*

A series of ANOVAs were conducted to assess the relationship between perfectionism and mood in the recall of positive, negative and neutral autobiographical memories. For the purpose of this analysis groups of high and low perfectionism (self-oriented, socially prescribed, and other-oriented perfectionism) were established on the basis of median split data. In the examination of the relationship between self-oriented perfectionism and mood, the repeated measures ANOVA revealed a main effect of memory ( $F_{(2, 168)}=7.78, p<.001$ ), but not a main

effect of mood induction group ( $F_{(2, 84)}=1.67$ , ns). There was, however, an interaction between memory recall and self-oriented perfectionism ( $F_{(2, 168)}=3.38$ ,  $p<.05$ ), and a three-way interaction between memory recall, self-oriented perfectionism and mood induction group ( $F_{(4, 168)}=4.11$ ,  $P<.01$ ).

This complex interaction is shown in Figures 7.35 (positive), 7.36 (negative), and 7.37 (neutral), and can be seen to demonstrate that when experiencing increased positive mood, high levels of self-oriented perfectionism may actually be a very adaptive trait to have, as individuals who reported high levels of this perfectionism dimension, when compared to individuals who reported low levels, appeared to be much faster at recalling positive autobiographical memories. However, post-hoc analysis in the form of a t-test revealed that this difference was not statistically significant ( $t(1.69)$ ,  $df=28$ , ns), although it did show a trend towards significance. In addition, high levels of self-oriented perfectionism did appear to be associated with slower recall of negative and neutral memories in the positive mood manipulation group when compared to individual slow in self-oriented perfectionism (Figure 7.35). However, these differences were not significant (negative:  $t(-.89)$ ,  $df=28$ , ns); neutral:  $t(-1.40)$ ,  $df=28$ , ns).

In contrast, there did not appear to be any difference in the speed of recall of positive (and neutral) memories between low and high self-oriented perfectionists in the negative mood induction group. This is confirmed by follow-up t-tests (positive:  $t(-.12)$ ,  $df=28$ , ns); neutral:  $t(-1.08)$ ,  $df=28$ , ns). However, the high self-oriented perfectionists did appear to be slower at recalling negative memories than did the low self-oriented perfectionists ( $t(-1.91)$ ,  $df=28$ ,  $p=.07$ ); See Figure 7.36). Finally, in

the neutral group, high self-oriented perfectionism was associated with slower recall of both negative ( $t(-1.93)$ ,  $df=28$ ,  $p=.06$ ) and positive memories ( $t(-1.64)$ ,  $df=28$ , ns), when compared to low self-oriented perfectionism, but was associated with faster recall of neutral memories ( $t(1.10)$ ,  $df=28$ , ns); see Figure 7.37). However, it should be pointed out that these post-hoc tests only demonstrate trends as none of the tests were significant.

Figure 7.35 The effect of the positive mood manipulation on the relationship between high and low levels of self-oriented perfectionism and recall of positive, negative and neutral autobiographical memories.



Figure 7.36 The effect of the negative mood manipulation on the relationship between high and low levels of self-oriented perfectionism and recall of positive, negative and neutral autobiographical memories.



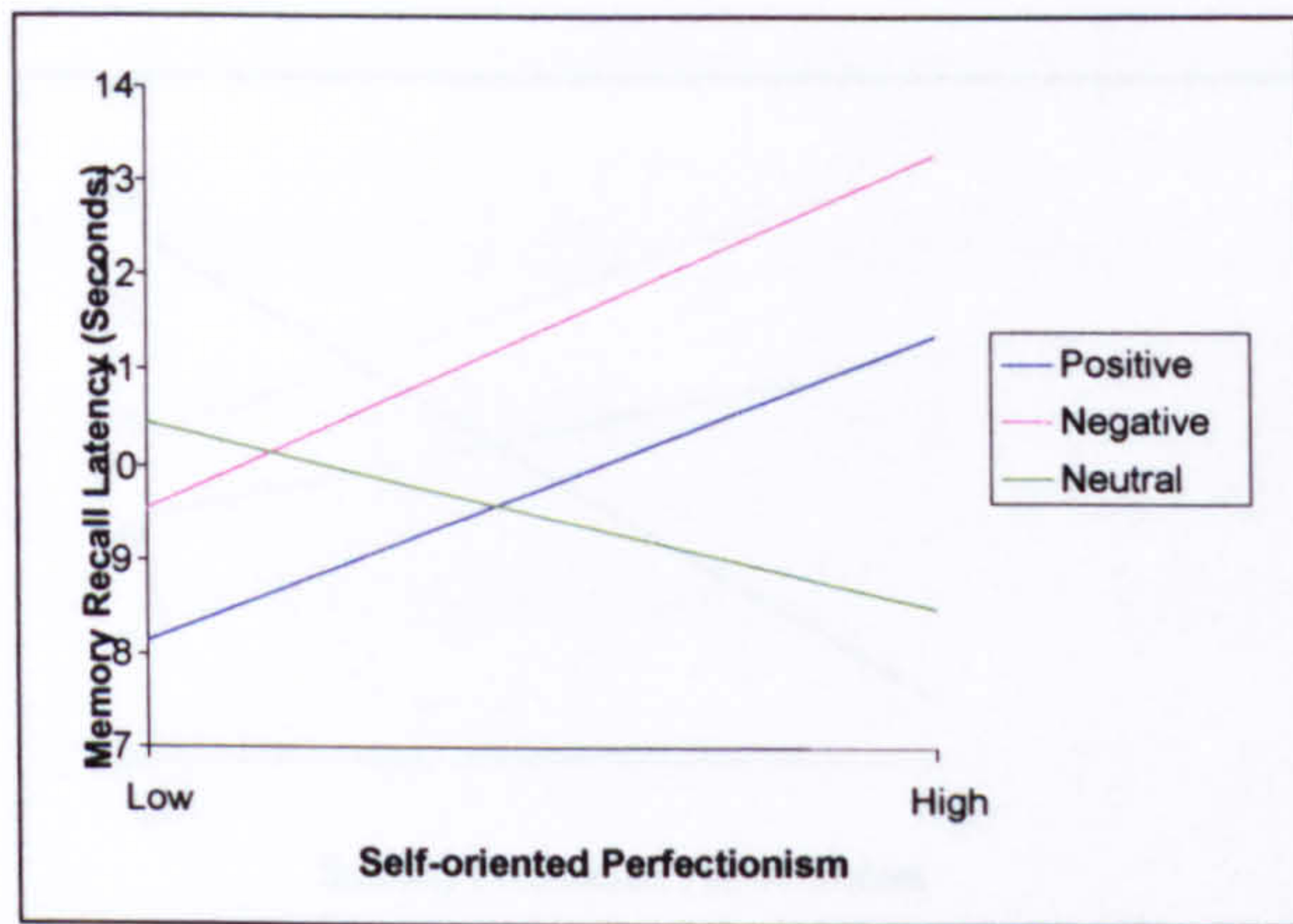


Figure 7.37 The effect of the neutral mood manipulation on the relationship between high and low levels of self-oriented perfectionism and recall of positive, negative and neutral autobiographical memories.

A similar pattern was observable in the interaction between socially prescribed perfectionism and mood in the prediction of speed of recall of autobiographical memories. Again, there was a significant main effect of memory recall ( $F_{(2, 168)}=9.18, p<.001$ ), and a significant mood manipulation x memory recall x social perfectionism interaction ( $F_{(4, 168)}=2.96, p<.05$ ). From Figure 7.38 it can be seen that high levels of social perfectionism, when combined with positive mood, is associated with faster recall of positive memories ( $t(2.25), df=28, p<.05$ ); whilst in the negative mood group, high levels of socially prescribed perfectionism was associated with slower recall of all three types of memories (See Figure 7.39). However, post-hoc t-tests established that none of these effects were significant (positive:  $t(-1.30), df=28, ns$ ); negative:  $t(-.86), df=28, ns$ ); neutral:  $t(-1.38), df=28, ns$ ). Finally, in the neutral group, whilst high social perfectionism was associated with slower recall of positive memories, it was also associated with faster recall of neutral memories (see Figure 7.40). Again, post-hoc tests revealed that none of these effects were statistically significant (positive:  $t(-.65), df=28, ns$ ); negative:  $t(-.38), df=28, ns$ ); neutral:  $t(.49), df=28, ns$ ).

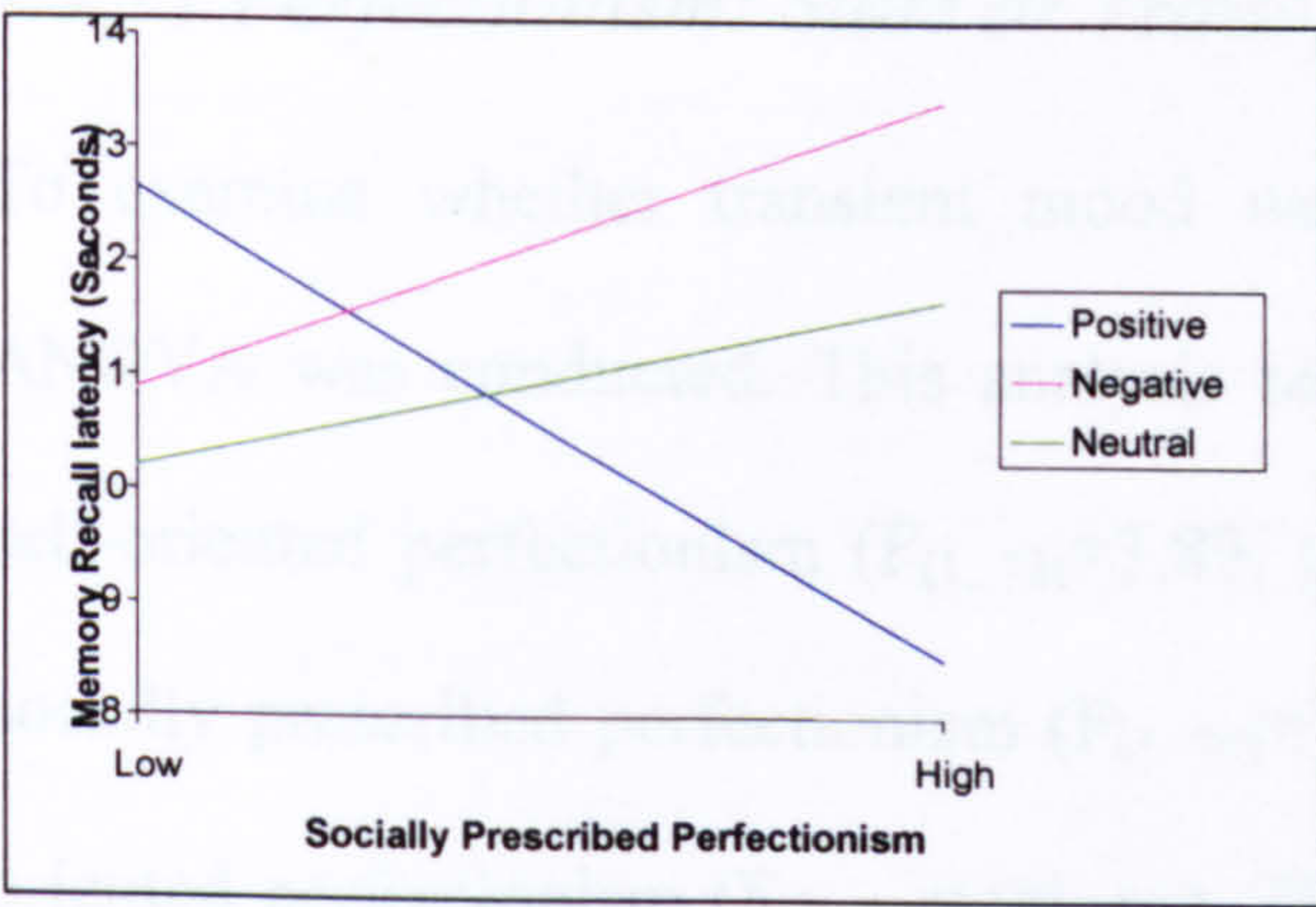


Figure 7.38 The effect of the positive mood manipulation on the relationship between high and low levels of socially prescribed perfectionism and recall of positive, negative and neutral

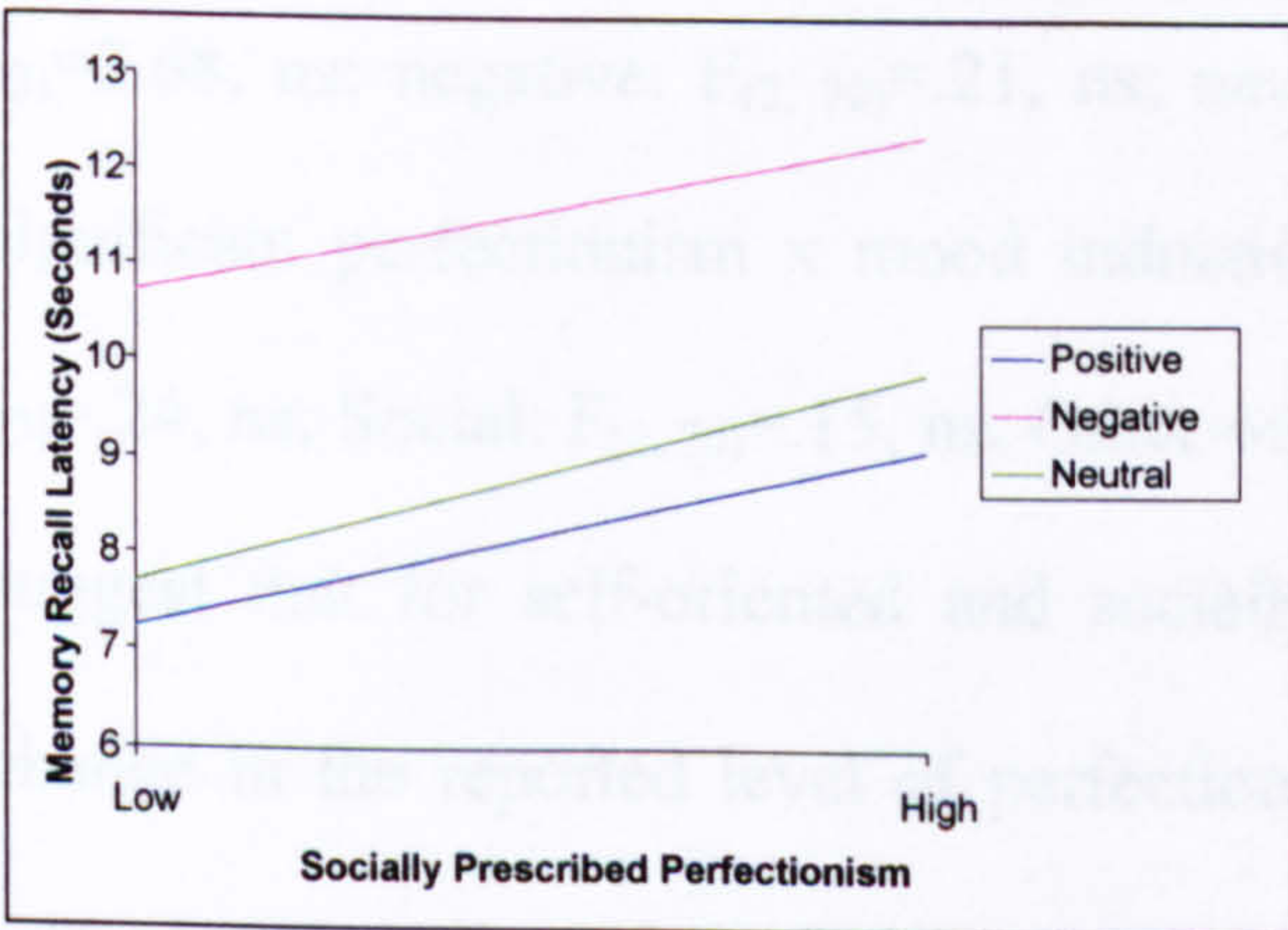


Figure 7.39 The effect of the negative mood manipulation on the relationship between high and low levels of socially prescribed perfectionism and recall of positive, negative and neutral autobiographical memories.

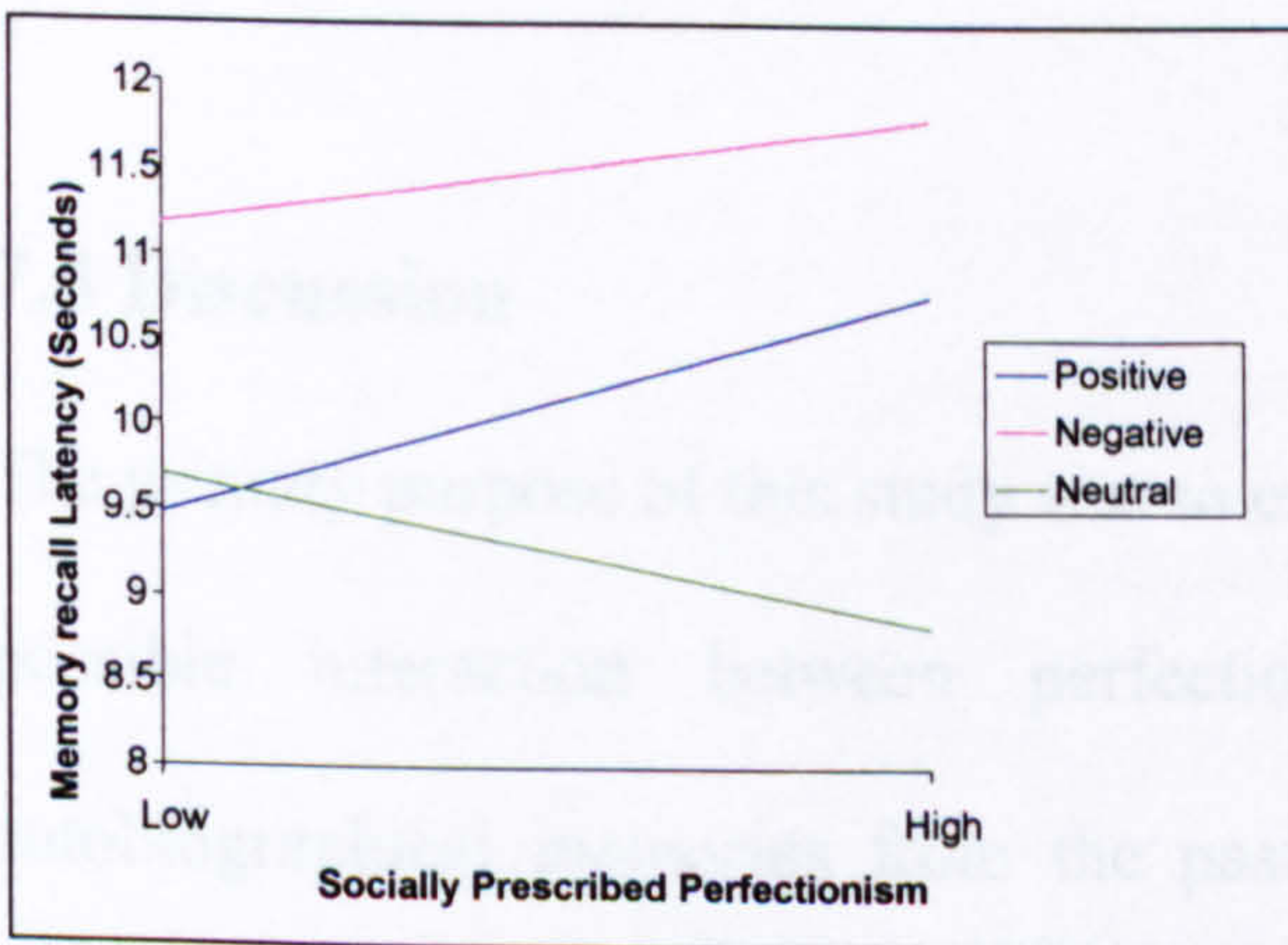


Figure 7.40 The effect of the neutral mood manipulation on the relationship between high and low levels of socially prescribed perfectionism and recall of positive, negative and neutral autobiographical memories.

### *7.3.11 Perfectionism: State or Trait?*

To examine whether transient mood would affect levels of perfectionism, an ANOVA was conducted. This analysis revealed a near significant main effect of self-oriented perfectionism ( $F_{(1, 73)}=3.89, p=.052$ ), and a significant main effect of socially prescribed perfectionism ( $F_{(1, 70)}=7.73, p<.01$ ), but no main effect of other oriented perfectionism ( $F_{(1, 76)}=.08, ns$ ). There was not a significant main effect of mood induction group in either of the perfectionism dimensions (positive:  $F_{(2, 73)}=2.68, ns$ ; negative:  $F_{(2, 70)}=.21, ns$ ; neutral:  $F_{(2, 76)}=.68, ns$ ); nor was there any significant perfectionism x mood induction group interactions (Self-oriented:  $F_{(2, 73)}=.24, ns$ ; Social:  $F_{(2, 70)}=.15, ns$ ; Other-oriented:  $F_{(2, 76)}=1.55, ns$ ). Thus, the results suggest that for self-oriented and socially prescribed perfectionism there was a change in the reported level of perfectionism; however, this did not appear to be related to the effect of the mood induction procedure.

## **7.4 Discussion**

The primary purpose of this study was to examine 4 main aims: (i) to investigate the possible interaction between perfectionism and mood in the recall of autobiographical memories from the past, (ii) to further elucidate the state-trait debate within the perfectionism literature, (iii) to examine the role of perceived mood regulation ability and coping strategies in the relationship between perfectionism and psychological distress, and (iv) to test the stress x perfectionism relationship in more detail. For this purpose a number of hypotheses were tested, and the extent to which they were either supported or not supported is shown in Table 7.3.

Table 7.3 Summary of hypotheses and the extent to which they were supported or not.

	HYPOTHESIS	SUPPORT
1.	Self-oriented and socially prescribed perfectionism, when combined with negative mood, will result in slow recall of autobiographical memories memories.	Partially supported
2.	Maladaptive coping/low perceived ability to regulate negative mood will mediate the relationship between perfectionism and psychological distress.	Supported
3.	Perfectionism will not change as a result of the mood manipulation procedure.	Partially supported
4.	Perfectionism will be associated with increased stress, and stress will mediate the relationship between perfectionism and psychological distress.	Supported

Consequently, in view of the findings reported in the results sections, it is the aim of this section to attempt to consider the outcomes of the analyses in relation to past research in the area.

#### *7.4.1 Correlational Analysis*

The correlational analysis highlighted some important associations between variables. Firstly, the analysis supported the findings from Study 1 that self-oriented and socially prescribed perfectionism are associated with psychological distress and suicidality. Furthermore, it was found that other-oriented perfectionism was only seen to be associated with depression but not any of the other outcome variables. Secondly, the perceived ability to regulate one's own mood was highlighted as an important variable in not reporting psychological distress, and was found to be negatively related to self and social perfectionism. What is more, the presence of an active task-focused coping style was found to indicate a negative relationship with psychological distress, while a more emotion-focused coping style was found to have a more detrimental effect. Interestingly, self-oriented and other-oriented perfectionism only correlated positively with emotion-focused coping, whilst socially prescribed perfectionism correlated negatively with task, avoidance and



social diversion focused coping styles, and positively with emotion focused coping style.

These findings can be seen to extend previous research as Hewitt et al. (1995) found that self-oriented perfectionism only correlated with the emotion-focused coping dimension in female participants, whereas other-oriented perfectionism was associated with a task-focused coping style. Similarly, Dunkley and Blankstein (2000) indicated a positive relationship between self-oriented perfectionism and task-focused coping. These finding has been used to indicate the adaptive quality of other-oriented, as sometimes self-oriented, perfectionism; however, this buffering effect was not found in the present study. Dunkley and Blankstein (2000) confirmed the present analysis which suggests that socially prescribed perfectionism is the perfectionism dimension which is most clearly associated with different coping styles.

#### *7.4.2 Mediation and Moderation of the Relationship between Perfectionism and Psychological Distress*

The study tested a mediational model derived from past research which suggested that coping and mood regulation might be key mechanisms in the relationship between perfectionism and psychological distress. Analyses of mediation were carried out according to the guidelines outlined by Kenny et al. (1998), and the data demonstrated overwhelming support for the notion that perfectionism which is associated with a fear of failure (i.e. self-oriented and socially prescribed perfectionism), is mediated by an individuals perceived ability to regulate their own

mood, as well as their choice in coping style (Hypothesis 2). Each of these results will be discussed in turn.

### Mood Regulation

There is much research to support the notion that a perceived ability to regulate mood, and to control affect in a positive manner, is important to being able to cope successfully with psychological distress (e.g. Taylor, Lichtman & Wood, 1984; Taylor & Brown, 1988). Indeed, if one accepts Henry Murray's (quoted by Shneidman, 1996) suggestion that suicide is "an effort to stop the unbearable flow of negative affect", then understanding suicidal behaviour could be condensed almost entirely to a problem of mood regulation ability (Catanzaro, 2000). Although, this suggestion is probably too simplistic, there is strong evidence to suggest a positive relationship between suicidal behaviour and limited ability to regulate negative mood (Bancroft, Hawton, Simkin, Kingston, Cumming & Whitwell, 1979; Williams, 1986; MacLeod, Williams & Linehan, 1992; Williams & Pollock, 1993).

The regression analyses carried out in this study provided strong support for this assertion. What is more, the data demonstrates that individuals who are highly concerned with achieving their own perfectionistic standards, or who are worried about their own ability to live up to the expectations they believe others have of them, are significantly more likely to have limited faith in their own ability to regulate their own negative mood. An unfortunate consequence of this mediating relationship is a significantly higher experience of psychological distress and suicidality.

This finding can be linked to previous research on perfectionism which suggests that trait perfectionism is associated with lower levels of constructive thinking (Flett, Russo & Hewitt, 1994), and a negative belief in their own problem-solving abilities (Flett, Hewitt, Blankstein, Solnik & Van Brunschot, 1996). Similarly, Flett, Madorsky, Hewitt and Heisel (2002) found that self-oriented and socially prescribed perfectionism was positively associated with a tendency to engage in ruminative thoughts of a perfectionistic nature. In line with Baumeister's (1990) Escape Model, it would be expected that emotional distress, which is increased in perfectionists, would be expected to prevent rational thought and, therefore, undermines the capacity to effectively regulate mood.

### Coping Strategies

It is well acknowledged that coping strategies play an important role in the physical as well as psychological well-being of an individual in the face of stress (e.g. Lazarus & Folkman, 1984; Endler & Parker, 1989). The coping literature is expansive and includes a number of theoretical frameworks and inventories which assess a diversity of coping strategies; however, it is generally agreed that coping behaviour in general comprises a relatively limited range of strategies (e.g. Carver et al., 1989; Endler & Parker, 1990). In the treatment of perfectionism it has been highlighted that the identification of which adaptive or maladaptive coping styles are associated with the various perfectionism forms, is crucial to dealing with the negative consequences of perfectionism (Rice et al., 2003). That is, the nature of the relationships between the various perfectionism dimensions and the different coping styles, is of importance to establishing the direction of therapeutic interventions.

However, surprisingly few studies have attempted to elucidate whether perfectionism actually promotes certain coping strategies.

The mediational analyses of the current study imply that individuals who demonstrate high levels of self-oriented and socially prescribed perfectionism employ maladaptive coping styles. In general, the research investigating link between perfectionism and coping styles has been ambiguous, in particular in relation to self-oriented perfectionism, as some studies have shown a positive link between this perfectionism trait and maladaptive coping (e.g. Hewitt, Flett & Endler, 1995), whilst others have shown a link to adaptive coping (e.g. Flett, Hewitt, Blankstein & O'Brien, 1991; Flett et al., 1996). The findings of the current study, however, purely suggested that self-oriented perfectionism promotes maladaptive emotion focused coping strategies, rather than active task-focused coping strategies. This finding is consistent with past research which has shown that emotion-focused coping is associated with a tendency to be highly self-focused and to exhibit high affective responses to stressful events (Flett, Blankstein & Obertynski, 1996).

In contrast, research has consistently shown a positive link between socially prescribed perfectionism and maladaptive coping styles (e.g. Flett, Russo & Hewitt, 1994; Flett, Hewitt, Blankstein, Solnik & Van Brunschot, 1996), and this association was supported in the present study. The mediational analyses indicated that social perfectionists appear to be more likely to engage in emotion focused coping styles which includes elements of self-blame. Interestingly, there was not found to be a mediating effect of avoidance coping on the relationship between

socially prescribed perfectionism and distress. Previous research has argued that individuals, who are highly concerned with the perceived harsh evaluations and criticisms of others, are more likely to display a helpless thinking style which leads them to believe they are unable to cope successfully with stressful situations, and therefore, engage in more avoidance-focused coping strategies (Flett et al., 1996). The results did, however, support research which suggests that social perfectionists are less likely to engage in active task-focused coping, which could possibly be the outcome of an all-or-none thinking style (Hewitt & Flett, 1993). It is possible that the reluctance to engage in such active coping styles may be the outcome of the individual's belief that they have less social support available to them in times of stress; this idea is supported by the positive correlation between socially prescribed perfectionism and social dysfunction found in this study.

### Stress

The current study found clear support for the research which suggests that perfectionism is associated with psychopathology through a complex relationship with stress (Hypothesis 4). More specifically, the results are in favour of viewing perfectionism as a personality orientation which is associated with increased exposure to stress, and this association renders these individuals vulnerable to distress (Hewitt & Flett, 2002). It is possible that this increased exposure to stressful or failure related events, is the outcome of, not only an excessive fear of failure, but also the tendency to evaluate life in relation to the impossible need to achieve perfection, which consequently results in a continuous focus on negative aspects of performance.

In particular, self-oriented perfectionism has been highlighted as a personality dimension which should be strongly mediated by stress. For example, Frost and Henderson (1991) and Flynn, Hewitt, Flett and Weinberg (2001), both illustrate the tendency for self-oriented perfectionists to report less satisfaction with their own performance on various tasks, when compared to individuals who were low in self-oriented perfectionism. Hewitt and Flett (2002) argued that it is the pursuit of excessively high standards, combined with a refusal or inability to reduce these standards, which contribute to stress generation.

According to this line of thinking, it would be expected that stress would also be a strong mediator of the relationship between socially prescribed perfectionism and psychological distress, and this was indeed the case. Researchers have consistently demonstrated that social perfectionism should be viewed as containing some component of hopelessness and helplessness which renders them convinced of the belief that failure is a certainty (Flett, Hewitt, Blankstein & Koledin, 1991).

All in all, the results do suggest that the presence of high levels of perfectionism does encourage a cognitive tendency to deal inappropriately with experiences of stress and failure which results in the development, perpetuation and maintenance of stress and consequent distress. Such findings have relevant treatment applications as they imply that treatment interventions might be more successfully directed at stress management than at attempts to change levels of actual perfectionism. This suggestion is consistent with the work by Williams and colleagues who through their work with mindfulness (e.g. Segal Teadale & Williams, 2002) by promoting

access to new perspectives and disengagement from habitual responses such as automatic thoughts.

#### *7.4.3 Perfectionism: State or Trait?*

Research on perfectionism, as a rule, treats perfectionism as a stable personality trait; however, with the growing understanding of the importance of perfectionism in developing and maintaining psychological distress, it has been suggested that it is necessary to investigate further the nature of perfectionism (Saboonchi & Lundh, 1999). The results of the current study appear to suggest that some forms of perfectionism are indeed open to change, although this change did not appear to be the specific outcome of the mood induction procedure (Hypothesis 3). Nonetheless, it is still of importance to attempt to understand factors which may cause this shift in perceived levels of perfectionism.

Previous research on the state-trait debate within perfectionism has argued that maladaptive dimensions of perfectionism, such as socially prescribed perfectionism, show evidence of state-trait characteristics, whereas adaptive dimensions of perfectionism are most commonly found to demonstrate pure trait stability (Cox & Enns, 2003). The results of this study would appear to show some support for these conclusions, as other-oriented perfectionism, which has on several occasions been shown to have some buffering effects (e.g. Hunter & O'Connor, 2003), was not found to change from Time 1 to Time 2. In contrast, socially prescribed perfectionism, which is the perfectionism dimension which is most often linked to psychological distress and maladjustment, was found to increase significantly

between Time 1 and Time 2, whilst self-oriented perfectionism demonstrated a trend in the same direction.

If a personality construct such as perfectionism is viewed from a cognitive standpoint then it would be expected that the presence of such a trait would affect the way an individual scans and interprets the surrounding world, and consequently, not only the activation but also the accessibility of the trait would differ as a function of different variables (Higgins & King, 1981; Higgins, 1987). Higgins, Rholes and Jones (1977), for example, found that it is possible to increase accessibility of a trait on a subsequent task through preceding exposure to verbal material relevant to the particular trait, i.e. priming. However, with the multidimensional nature of perfectionism, and in particular the importance of inter-personal aspects of social perfectionism, Saboonchi and Lundh (1999) set out to investigate other possible reasons for state-trait components of perfectionism. In particular, they wanted to investigate the role of the presence of others as a potential state component, keeping in mind the evidence of strong links between perfectionism and perceived lack of social skills, social anxiety, public self-consciousness (e.g. Flett, Hewitt & De Rosa, 1996; Saboonchi & Lundh, 1997), and the positive association between perfectionism and social dysfunction shown in Study 1 of this thesis. In other words, they wanted to investigate whether levels of perfectionism could be temporarily changed as a result of situational conditions.

Saboonchi and Lundh (1999) concluded that it is possible to produce transient changes in perfectionistic thinking through both verbal priming and being observed by others. They suggested the possibility that priming leads an individual to



associate being observed with being critically evaluated thereby increasing the perceived need to achieve perfection. Keeping this research in mind, it is thus possible to propose a similar explanation for the increase in social and self-oriented perfectionism witnessed in the current experiment. Prior to the mood induction participants were instructed to attempt to engage in a task to achieve a specific mood. Furthermore, they took part in a memory retrieval task which required them to recall specific memories from their lives, and to relay these memories to the experimenter whilst being timed. It is possible that the combined effect of these tasks and being observed by the experimenter, may have contributed to the increase in social (and self-oriented) perfectionism as these dimensions are characterised by an intense fear of failure. In hindsight, a final measure of perfectionism some time after the experiment would have been useful to determine whether there had been a subsequent return to previous levels of perfectionism.

#### *7.4.4 The Impact of Mood on Autobiographical memory: The Role of Perfectionism*

The difference in findings in the mood and memory literature attests to the complex nature of the relationship between these variables. In most research there is evidence of mood-congruency effect in the recall of autobiographical memories. That is to say, the induction of negative mood, when compared to induced positive or neutral mood, results in an increase in the recall of negative memories. This mood-congruency effect has been explained in terms of the current mood priming memories of a similar valence to be retrieved (Bower, 1981). In contrast, other research has demonstrated a mood-incongruency effect whereby individuals who have been negatively mood induced reported an increase in positive memories. A

possible explanation for this has been put forward which posits that these individuals are motivated to engage in a form of mood-repair in order to alleviate their negative mood state (Clark & Isen, 1982; Parrott & Sabini, 1990).

On the basis of these inconsistencies, researchers have suggested that the mood-memory relationship may be affected by other variables such as personality factors (e.g. Boden & Baumeister, 1997). As a result, one of the aims of this study was to investigate the effect of perfectionism in the mood-memory relationship. It was hypothesised that perfectionism when combined with negative mood would result in slow recall of autobiographical memories. The results demonstrate the complicated nature of, in particular, self-oriented and socially prescribed perfectionism. For both of these personality dimensions, there was a significant main effect of memory recall, and a significant memory x mood x perfectionism interaction. The results show that when individuals who exhibit high levels of self-oriented and socially prescribed perfectionism, have been induced into a positive mood, they are significantly faster at recalling positive memories, whilst being much slower at recalling negative and neutral memories. This result supports the argument that perfectionism may serve some buffering effect when combined with good mood.

Interestingly, however, self-oriented perfectionists only demonstrated a decrease in recall latency for negative memories. Recent research on self-focused attention and memory recall may offer a potential explanation for this finding. McFarland and Buehler (1998) proposed the idea that the manner in which negative mood affects memory recall is determined by the way in which a self-focused individual attends to their negative feelings. Keeping this in mind, and thinking about the research on

emotion-oriented coping (a maladaptive coping style found to be highly positively correlated with self-oriented perfectionism in this study) which shows that individuals with this coping style report higher experienced affect intensity and are more likely to engage in self-blame, as well as over-generalisations that involve “increased ego threats to the self” (Flett, Blankstein & Obertynski, 1996), it is possible to speculate that it is this process which results in the slower recall of negative memories in the negative mood group (Dritschel & Teasdale, 1991). In other words, when individuals who report high levels of self-oriented perfectionism, experience emotional distress, their inherent negative coping orientation cause them to experience high affect intensity and over-generality of memory recall.

This argument grows in importance when considered within the context of the outcome of the mood regulation analyses. It is commonsensical that the ability to regulate negative mood is essential to allow an individual to make use of positive task-focused coping skills; however, if this ability is lacking, or is believed to be lacking, then poor coping may result.

## **7.5 Limitations**

Several limitations temper the conclusions which may be made from this study. Firstly, the study is limited by the sample size and the unequal number of men and women. In particular within the coping literature, it has been found that there are distinct and important gender differences, but unfortunately, due to the unequal division of gender, it was not possible to investigate such effects within the current study. Secondly, although the data, in the main, supported the experimental

hypotheses, further research must be carried out to investigate whether the findings are generalisable to other populations (non-student, clinical). Similarly, it would be preferable to include a prospective dimension to the mediational and moderational models investigated in this study.

Finally, it must be mentioned that with the emergent acknowledgement of the importance of perfectionism in psychological distress, there has also been an augmentation in the development of perfectionism scales. Therefore, comparison between studies is limited in as far as results are the outcome of different theoretical approaches to the study. The increase in perfectionism scales has emphasised that at the heart of most debate about perfectionism lies the issue of definition. Recently, there have been a growing number of studies suggesting that it is possible that perfectionism is not always detrimental to psychological well-being (e.g. O'Connor & O'Connor, 2003). However, researchers such as Hewitt have argued that the suggestion that perfectionism may have some adaptive properties is misguided, and is the result of the conflation of two theoretically very different concepts: the desire to excel and the desire to be perfect.

This argument is ongoing within the literature, and is not likely to be solved in the near future. Only a careful examination and reworking of the measurements available to date would surely lead to an elucidation of this problem, as the ambiguous findings must be the outcome of the perfectionism scales being not sophisticated enough to distinguish between the desire to excel and the desire to be perfect. In other words, it is necessary to tackle the problem in terms of simple semantics, before the area as whole is able to move forward. This suggestion is

supported by Shafran and Mansell (2001) who argued that a major problem with perfectionism research at the moment is that perfectionism as a construct is defined in terms of the measures used. However, what is necessary is the development of a clear and agreed upon definition of perfectionism from which useful measurements can be devised.

## **7.6 Conclusions and Where Next**

To conclude, one particularly important finding of this study was the differential role of mood in the relationship between perfectionism and speed of memory recall. Certainly, this finding has implications for the way in which we consider the availability and accessibility of the perfectionism constructs. This study also demonstrated that self-oriented and socially prescribed perfectionism are related to psychological distress and suicidality through their interaction with a number of factors including coping and mood regulation. This study, furthermore, showed that the presence of perfectionism results in increased stress which consequently causes psychological distress. Of particular interest, was the unexpected finding that socially prescribed and self-oriented perfectionism did show some change over time. This finding is of particular importance to the consideration that perfectionism contains a cognitive component, and should therefore be investigated further.

The importance of perceived mood regulation ability highlighted in this study is consistent with past research suggesting that perfectionists doubt their own actions to perform a task (Enns & Cox, 2002), and thus, it would appear that perfectionists encounter problems with self-regulation. Indeed, on the basis of past research showing that rumination is associated with vulnerability to depression as well as a

tendency to recall negative autobiographical memories from the past, Flett, Madorsky, Hewitt and Heisel (2002) suggested that, it is possible that some perfectionists who engage in ruminative thoughts about their perfectionism, may show an identical tendency towards negative memory recall and depression. However, no research so far has investigated this potential link. Consequently, one of the aims of the third study is to include a measure of perfectionistic cognitions which will allow us to probe such a relationship.

Furthermore, we also wish to investigate the relationship between perfectionism and autobiographical memory further in a larger sample. The results of Study 1 demonstrated that self-oriented perfectionism when combined with slow recall of negative memories resulted in higher levels of reported psychological distress, and the outcome of the mood manipulation procedure in this study hinted towards an effect of mood on the way in which perfectionists self-regulate. We believe that it is possible that this effect could be the outcome of the motivational sensitivities which drive perfectionism: Research on behavioural inhibition and activation (BIS/BAS) sensitivities has shown that BIS motivation is associated with a sensitivity to signals of punishment and, therefore, is involved in the expectation and avoidance of negative outcomes (Gray, 1994). More recently, O'Connor & Forgan (in press) have indicated a link between perfectionism and BIS sensitivity, and it is thus possible that it is this sensitivity which results in slow recall of negative memories.

However, as pointed out by van Vreeswijk and de Wilde (2004) it is entirely possible that the results are the outcome of the manner in which the Autobiographical Memory Task (AMT; Williams & Broadbent, 1986) is conducted.

Consequently, we would like to include a written version of the AMT, to investigate whether the results reported in studies 1 and 2 are simply the product of the methodology. This possibility becomes even more likely when considering research which shows that some perfectionists are highly self-conscious of their perceived short-comings and failures, and therefore, have a strong desire to conceal these flaws from others (e.g. Lombardi, Florentino & Lombardi, 1998). In other words, it is possible that the results are affected by the need for perfectionists to conceal negative memories from the experimenter. The change in procedure would not only allow us to include a larger sample within a limited timeframe, which would allow us to investigate gender differences, but could also potentially alleviate any constraints felt by individuals in having to recount their memories to an unfamiliar person.

## **Chapter 8: Study 3**

*Understanding the motivational and cognitive basis of perfectionism: a prospective investigation in a university sample*



## *Summary*

This study was carried out to extend the perfectionism literature by investigating investigate a number of issues which to date have received little research attention, including the role of motivational sensitivities in the relationship between perfectionism and psychological distress and suicidality/suicide ideation. Furthermore, we also wanted to examine the possibility that perfectionism should be analysis was carried out to assess the existence of a cognitive component of perfectionism. Finally, to expand on the findings of Studies 1 and 2, a written version of the AMT was included to further investigate the relationship between perfectionism and autobiographical memory in our understanding of negative affectivity. Participants (n=150) completed a battery of self-report measures (perfectionism, perfectionism cognitions, motivation, autobiographical memory, hopelessness, depression, suicidality, suicide ideation, and stress) at two time points four weeks apart. Hierarchical regression analyses showed that self-oriented and socially prescribed perfectionism did interact with BIS to predict increased distress. Furthermore, the study indicated that a tendency to engage in automatic thoughts with a perfectionistic content, when associated with high levels of perfectionism, also predicted psychological distress and suicidality. Finally, although the study did not support a link between perfectionism and over-general recall of positive memories, it was found that when perfectionism was linked with an inability to recall positive memories, increased distress was reported. The findings are discussed in relation to past research.

## 8.1 Introduction

Perfectionism is often conceptualised as the chronic setting and striving for unrealistically high goals, and focussing on flaws in achieving these goals (e.g. Hewitt & Flett, 1991; Frost et al., 1990). The self-oriented perfectionist, who is characterised by the setting of high standards and stringent self-evaluation, is driven by a need to succeed and to avoid failure, whereas the socially prescribed perfectionist, who perceives themselves as being the subject of significant other's perfectionistic tendencies, is driven primarily by a fear of failure. Consequently, perfectionism can be thought of as a goal adoption construct which is strongly related to motivation (Hewitt & Flett, 1993).

Thompson, Davis and Davidson (1998) contend that “past failures rather than past successes form the basis for predicting future achievement outcomes” (p. 383). Indeed, fear of failure is a common attribute associated with perfectionism, in particular self-oriented and socially prescribed perfectionism, which can be seen to contribute to a heightened sense of self-blame (e.g. Hewitt & Flett, 1991; Hewitt, Flett, Turnbull-Donovan & Mikail, 1991), increased negative affectivity (e.g. Dean & Range, 1996), as well as a tendency to employ inappropriate coping mechanisms (e.g. O'Connor & O'Connor, 2003; Hewitt, Flett & Endler, 2003). Indeed, the findings from Studies 1 and 2 confirm these relationships as we found that both self-oriented and socially prescribed perfectionism were associated with low perceived negative mood regulation ability, and emotion-focused coping. However, although it is generally acknowledged that perfectionism is an achievement-based construct which is strongly influenced by sensitivity to reward and punishment, little research has investigated the motivational background to trait perfectionism.

### *8.1.1 Motivation*

A considerable body of research has demonstrated that innate motivational systems govern appetitive and aversive behaviours (e.g. Gray & McNaughton, 2000; Brenner, Beauchaine & Sylvers, 2005). Much of this research is based around the frameworks proposed by Gray (1982) and Fowels (1980) which suggest that we possess a behavioural activation or approach system (BAS) which controls our appetitive behaviours in response to signs of reward, and a behavioural inhibition system (BIS) which oversees risk assessment and defensive avoidance behaviours in response to competing motivational goals in the face of punishment and failure.

O'Connor and Forgan (in press) investigated the relationship between the behavioural inhibition and activation systems and perfectionism in the prediction of suicidality, and found a clear relationship between suicidality and behavioural inhibition. More specifically, they found that higher levels of behavioural inhibition, that is, sensitivity to signals of punishment was positively related to suicidal thinking. This finding confirms the importance of performance related motivations in social perfectionism: The habitual need to please others and to avoid punishment impairs constructive thinking and is the result of a motivational deficit and irrational beliefs (Deci & Ryan, 1985; Hewitt & Flett, 1991; Mills & Blankstein, 2000).

The relationship between BAS and psychological distress, however, is more unclear. In a study investigating the relationship between BIS/BAS and perfectionism, Hewitt et al. (2002) found that BIS motivation was associated with all three of the perfectionism dimensions. However, they also found that self-oriented perfectionism was associated with BAS sensitivity. Similarly, O'Connor &

Forgan (in press) also found self-oriented (and other-oriented) perfectionism to be associated with BAS. These findings are somewhat confusing, and indicate that the relationship between perfectionism and motivational sensitivities should be subjected to further investigation.

### *8.1.2 Perfectionism Cognitions*

The construct of perfectionism has evolved greatly since its early unidimensional conceptualisation. Not only has the construct been extended to include both intra personal and interpersonal aspects, but it has also been shown that perfectionism does not necessarily imply deleterious consequences for an individual's psychological wellbeing. Recent research contends that the psychological and behavioural consequences of perfectionism may depend, to a large degree, on the manner in which the perfectionist cogitates about their perfectionism. This is an important step forward for perfectionism research, and for personality research as a whole, as a significant shortcoming in this research is the examination of the possibility that personality traits contain cognitive components (Flett, Hewitt, Endler & Bagby, 1995).

Research on perfectionism cognitions suggests that there are individual differences within perfectionists, and that these centre on the extent to which people ruminate about the pursuit of perfectionistic standards and the failure to attain these standards (Flett, Hewitt, Blankstein & Gray, 1998). Flett et al. (1998) found that the frequency of perfectionistic thoughts accounted for unique variance in depression symptoms over and above the variance accounted for by trait measures of perfectionism and measures of negative automatic thoughts. They, therefore, concluded that a

cognitive component of perfectionism is integral to the relationship between perfectionism and psychological distress on the basis that perfectionism does have a cognitive component involving ruminative thoughts, which, when activated, contributes to the development of distress.

### *8.1.3 Autobiographical Memory*

The inability to recall specific autobiographical memory has consistently been linked to a number of psychological problems including suicide (Williams & Broadbent, 1986), poorer prognosis in the treatment of depression (Brittlebank et al., 1993), deficits in inter-personal problem solving (Goddard et al., 1996), and hopelessness which is related to a lack of ability to imagine the future in a specific manner (Williams et al., 1996). However, despite the consistent support for these relationships, the roles of positive and negative memories respectively remain unclear, as do explanations for why the relationship between memory and distress exists (van Vreeswijk & de Wilde, 2004). Van Vreeswijk and de Wilde argued that the confusing cue valance results may, in part, be due to methodological differences between studies, and, therefore, it seems logical to change the procedure of the Autobiographical Memory Task (AMT; Williams & Broadbent, 1986), to investigate whether any different results are observed.

With regard to possible explanations for the memory phenomenon, van Vreeswijk and de Wilde (2004) suggested that, to date, there are three possible explanations for the relationship: (i) over-general or slow recall of memories is the result of traumatic experiences causing a change in affect regulation systems at an early age (Kuyken & Brewin, 1995), (ii) the working memory capacity is reduced as a result

of, for example, ruminative self-focus (Williams, 1996) or intrusive memories (Williams et al., 1997), and over-riding the 'mnemonic interlock' is either too painful or too effortful a task, or (iii) over-general or slow memory recall results from an active attempt to escape negative affect, in effect, ruminative self-focus is counteracted by engaging in over-general recall of memories (Williams, 1996).

As demonstrated in Study 1, we found that slow recall of negative memories when combined with high levels of self-oriented and socially prescribed perfectionism was predictive of high levels of psychological distress. It has been suggested that such over-generality or slowness of memory recall is "associated with a chronic style of ruminative, analytical thinking about the self or the world, dynamically maintained in an attempt to resolve goal discrepancies or to make sense of past events" (p. 356; Watkins & Teasdale, 2001). This line of thinking is supportive of Williams's (1996) hierarchical model of autobiographical memory which proposes that over-general memories occur when the search for general descriptions is not inhibited to make way for more specific memories, and that this inhibition is the outcome of ruminative self-focus.

Despite the apparent similarities in the cognitive processing of perfectionistic thinking and the processing involved in the recall of specific autobiographical memories, i.e. a ruminative self-focus, no research to date has attempted to investigate whether there are any moderating or mediating relationships between these variables. However, on the basis of our finding that perfectionism, which is believed to have a ruminative component (i.e. a cognitive component), when combined with slow recall of autobiographical memories predicted distress, it seems

commonsensical to investigate further the link between memory recall and cognitive perfectionism. Furthermore, to date, only one study has highlighted the importance of motivational sensitivities to signals of punishment and non-reward in the relationship between perfectionism and suicidal behaviour. As the treatment of trait perfectionism has been shown to be a difficult task (e.g. Blatt & Zuroff, 2002), developing our understanding of the cognitive motivation and processing of perfectionistic thoughts, is of great importance to the improvement of current treatment strategies which are primarily conducted within a cognitive behavioural framework.

#### *8.1.4 Aims and Hypotheses*

This study set out to investigate four key research aims (see Figures 8.1 and 8.2): (i) to establish the mediating and moderating pathways between perfectionism, motivation and psychological distress and suicidality, (ii) to investigate the role of automatic perfectionistic thinking/cognitions in the relationship between perfectionism and distress, (iii) to investigate the relationship between perfectionism cognitions and autobiographical memory recall in the prediction of psychological distress/suicidality, and (iv) to further investigate the relationship between perfectionism and autobiographical memory recall by employing a different methodology: is the relationship between negative memory recall and perfectionism found in Study 1 robust, or is it affected by methodological issues.

Figure 8.1 Figure demonstrating the first interactive model being investigated in Study 3.

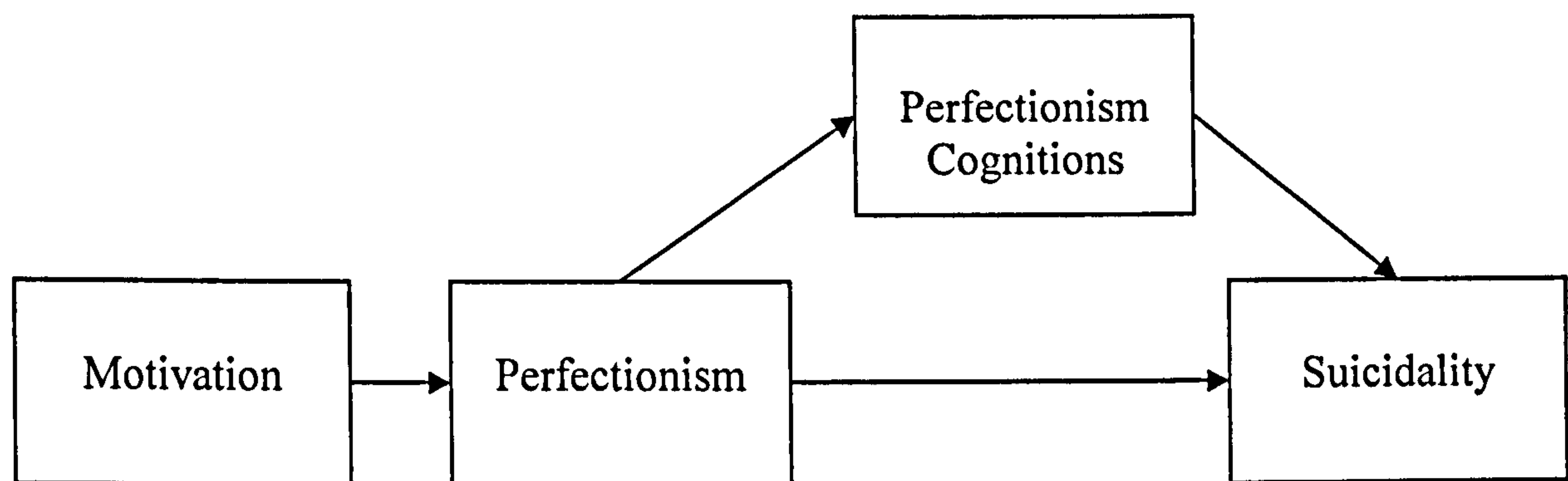
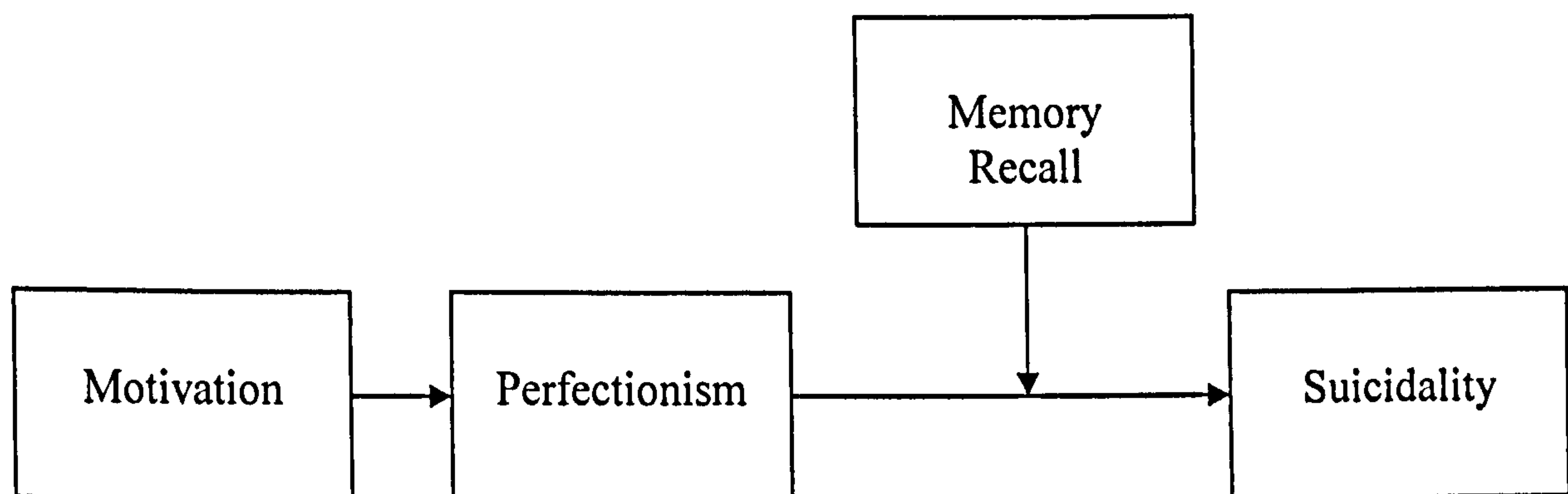


Figure 8.2 Figure demonstrating the second integrative model being tested in Study 3.



Hypotheses:

1. The relationship between self-oriented and socially prescribed perfectionism and psychological distress/suicidality will be mediated by perfectionism cognitions.
2. Perfectionism will mediate the relationship between motivational sensitivities (BIS/BAS) and psychological distress.



3. Self-oriented and socially prescribed perfectionism will interact with over-general negative memory recall to predict psychological distress and suicidality.

## **8.2 Methodology**

### *8.2.1 Design*

The current study employed a prospective correlational design.

### *8.2.2 Participants*

A total of 150 students from the University of Stirling and the University of Strathclyde, participated in the study. This sample size is adequate in terms of statistical power (G-power) and allows for attrition (e.g. Cohen, 1992; Sidley et al., 1999). The average age of the participants was 23 years (SD=6.20), and the gender composition of the sample was 74 males and 76 females. Participants from the University of Stirling were awarded course credits to participate in the study.

### *8.2.3 Measures and Procedure*

#### University of Stirling

Participants were recruited through posters at the University of Stirling and were offered class credits in return for participation. Once students had signed up to take part they received written information about the study by email or mail. The information was as follows:

“We are interested in understanding how personality, stress and different coping strategies might affect our memories from the

past. We would be grateful if you would fill in this questionnaire as honestly as possible. All responses are treated as confidential and in no case will responses from individuals be identified.

Please answer all the questions”.

### University of Strathclyde

Undergraduate engineering students were approached at the beginning of a lecture and asked to participate in the study. They were explained that participation was completely voluntary and confidential. The students who agreed to take part received the same questionnaire as the students from the University of Stirling; however, rather than completing the questionnaire at home, they completed it immediately in the lecture room. As it was felt that privacy was an important issue to contend with in this situation, classes were chosen which were conducted in lecture rooms which allowed students to complete the questionnaire without interference from other students. Thus, prior to testing students were asked to spread out across a room thereby permitting students to complete the study privately.

The questionnaire (Appendix 13) commenced with the written version of the Autobiographical Memory Test (Williams & Broadbent, 1986; Hargreaves, Gregory & Williams, 2002). This task was followed by the completion of a battery of self-report measures (see Chapter 5 for a detailed summary):

- Behavioural Inhibition/ Adaptation (BIS/BAS; Carver & White, 1994).
- Hopelessness (BHS; Beck, Weissman, Lester & Trexler, 1974).

- Perfectionism Cognitions (PCI; Flett, Hewitt, Blankstein & Gray, 1998). In addition to the measure of trait perfectionism (MPS-H), we also included a measure of perfectionism cognitions. This scale differs from the MPS-H in that it was developed to tap into the ongoing cognitive activity regarding the need to attain perfection. This measure was developed to aid the therapeutic modification of perfectionism, as the treatment of trait perfectionism has proved to be difficult.
- Suicidality (BDI (Suicidality item); Beck, Rush, Shaw & Emery, 1979).
- Severe Depression and Suicidality (GHQ-28 Severe Depression Subscale; Goldberg & Hillier, 1979).
- Perfectionism (MPS-H; Hewitt & Flett, 1991). The MPS-H includes three subscales: Self-oriented perfectionism (the need for personal perfectionism), other-oriented perfectionism (the need for others to achieve perfection), and socially prescribed perfectionism (the need to meet the perceived unrealistically high expectations of significant others).
- Perceived stress (Cohen & Williamson, 1988).

The internal consistency scores for the measures (except suicide ideation which is one item only) are presented in Table 8.1. Upon completion of the questionnaire participants were invited to take part in a follow-up component of the study; if this invitation was accepted, participants received a second questionnaire approximately 4 weeks later. This shorter questionnaire included the hopelessness (BHS), severe depression (GHQ-28 severe depression), suicide ideation (SPS suicide ideation),

and perceived stress (PSP) scales, and was always emailed to the participants (Appendix 14).

As the AMT was completed by the individual without the usual time restraints, a measure of recall latency was not included in the study. Rather the memories were coded in terms of being over-general or specific according to the guidelines provided by Williams and Dritschel (1992). Furthermore, we included a separate memory category based on observations from Studies 1 and 2 where it was found that quite often participants didn't report any memories at all. That is we counted the number of instances where participants did not generate any memories at all in response to cue words. We termed this category missing or unreported.

Table 8.1 Table showing the Cronbach's Alpha coefficient for all the measures at Time 1 and Time 2, except suicide ideation.

Measure	$\alpha$ (Time 1)	$\alpha$ (Time 2)
Hopelessness	.86	.82
Depression	.85	.88
Suicidality	.85	.86
Self-oriented perfectionism	.90	-
Socially prescribed Perfectionism	.83	-
Other-oriented Perfectionism	.79	-
Perfectionism Cognitions	.94	-
BIS	.85	-
BAS Drive	.72	-
BAS Fun	.78	-
BAS Reward	.88	-
Stress	.75	.73

## 8.3 Results

### 8.3.1 Aim of Analysis

In order to investigate the aims of this study we initially carried zero-order correlation analyses to investigate any relationships between the outcome variables and predictor variables. Furthermore, we conducted a number of hierarchical

multiple regressions to probe the mediating and moderating relationships between perfectionism, memory, perfectionism cognitions and psychological distress.

### *8.3.2 Correlational Analysis (Cross-sectional Data)*

Table 8.2 displays means, standard deviations for all the outcome and predictor variables, as well as zero-order correlations among these variables.

As expected, hopelessness was positively correlated with depression and suicidality and suicide ideation. In contrast to the previous two studies only socially prescribed perfectionism, and not self-oriented perfectionism, was associated with psychological distress (hopelessness and depression), and showed a trend towards a positive association with suicide ideation. In addition, perfectionism cognitions were positively correlated with all the outcome variables as well as the three perfectionism subscales.

With regard to autobiographical memory recall, the correlational analyses demonstrated that the inability to recall any positive memories at all was positively associated with perfectionism cognitions, suicidality and suicide ideation. It was further found that the total recall of specific autobiographical memories (positive + negative) was negatively correlated with behavioural inhibition. That is, the more concerned with the anticipation and avoidance of unfavourable outcomes, the fewer specific memories were recalled. However, rather surprisingly, the total number of specific memories recalled was also inversely correlated with BAS fun-seeking and reward-seeking. If the specific memories are considered independently in terms of their emotional valence, it can be seen that the more recalled specific positive

autobiographical memories, the higher the level of BAS fun-seeking reported, whereas the opposite can be seen for specific negative memory recall. Furthermore, recall of specific negative memories was also negatively correlated with BAS reward-seeking.

### *8.3.3 Gender Differences*

Finally, males and females were compared on each of the study measures. The application of independent t-tests revealed no differences on the perfectionism dimensions or perfectionism cognitions; however males did report significantly higher levels of BAS fun-seeking ( $M=9.72$ ,  $SD=2.74$  vs.  $M=8.34$ ,  $SD=2.79$ ;  $t(3.07)$ ,  $df=148$ ,  $p<.01$ ), BAS reward seeking ( $M=11.12$ ,  $SD=4.56$  vs.  $M=9.82$ ,  $SD=3.28$ ;  $t(1.99)$ ,  $df=148$ ,  $p<.05$ ), and a trend towards higher levels of BAS drive ( $M=9.74$ ,  $SD=2.38$  vs.  $M=9.08$ ,  $SD=2.06$ ;  $t(1.80)$ ,  $df=148$ ,  $p=.07$ ). Furthermore, males reported an almost significantly higher level of hopelessness ( $M=5.18$ ,  $SD=4.57$  vs.  $M=3.95$ ,  $SD=3.44$ ;  $t(1.86)$ ,  $df=148$ ,  $p=.06$ ), and significantly more over-general positive memories than females ( $M=1.30$ ,  $SD=1.19$  vs.  $M=.80$ ,  $SD=.95$ ;  $t(2.81)$ ,  $df=148$ ,  $p<.01$ ).

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
1. Hopelessness	-															
2. Depression	.515** *	-														
3. Suicidality	.398** *	.893** *	-													
4. Suicide Ideation	.283** *	.623** *	.743** *	-												
5. Self	-.029	.084	.013	-.006	-											
6. Other	.033	-.043	-.078	.015	.390** *	-										
7. Social	.227**	.239**	.111	.146	.547** *	.417** *	-									
8. BIS	.096	-.099	-.092	-.072	.129	.028	.149	-								
9. BAS Drive	-	-	-	-	.229	.179*	-.080	.097	-							
10. BAS Fun	.272** *	.278** *	.273** *	.237**	-.079	.053	-.159	.288** *	.447** *	-						
11. BAS Reward	-.141	-	-.191*	-.129	.055	.104	-.052	.732** *	.384** *	.599** *	-					
12. Cognitions	.231**	.297** *	.172*	.183*	.700** *	.242**	.551** *	.075	-.075	-.128	-.036	-				
13. General Positive	-.049	-.105	-.060	-.101	.043	-.024	-.117	.010	.043	.189*	.129	.049	-			
14. General Negative	.016	.086	.048	.090	.012	-.017	-.105	-.179*	-.038	-	-.183*	.034	-	-		
15. Missing Positive	.035	.126	.141	.185*	.063	.005	.045	.008	-.092	-.010	.055	.176*	432***	.368** *	-	
16. Missing Negative	-.048	.102	-.065	.029	-.049	-.076	-.111	-.005	-.048	-.113	.020	.099	.305** *	.454** *	.570** *	-
Mean	4.55	9.48	3.81	.167	60.93	55.74	49.71	14.16	9.41	9.04	10.48	44.89	1.05	1.35	.23	.31
SD	4.07	3.26	1.59	.37	17.14	12.56	13.97	4.48	2.24	2.84	4.02	20.49	1.10	1.46	.62	.71

Table 8.2 Zero-order correlations, means and standard deviations for all the predictor and outcome variables at Time 1.

### 8.3.4 Mediation Analysis (Cross-sectional Data)

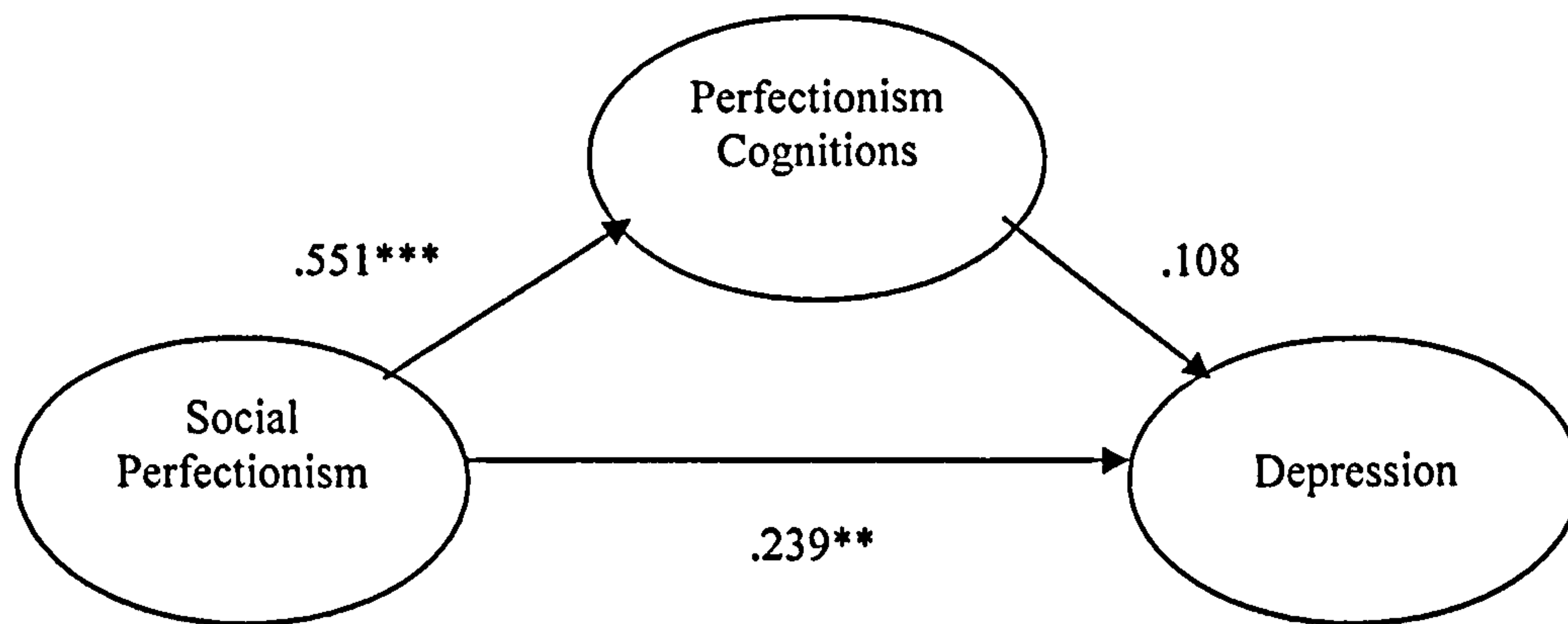
Hierarchical regressions were conducted to test for mediation. As previously, the procedure described by Baron and Kenny (1986) was followed to establish whether their four conditions hold (see Section 6.3.5 for an outline of the conditions). On the basis of our aims, we conducted three sets of mediation analyses: (1) The effect of perfectionism cognitions on the relationship between trait perfectionism (self-oriented and socially prescribed) and psychological distress/suicidality, (ii) the effect of autobiographical memory recall on the relationship between perfectionism cognitions and psychological distress/suicidality, and (iii) the effect of perfectionism (self-oriented and socially prescribed) on the relationship between motivational sensitivities (BIS/BAS) and psychological distress/suicidality.

#### Perfectionism Cognitions

Socially prescribed perfectionism predicted perfectionism cognitions ( $\beta=.55$ ,  $t(149)=8.04$ ,  $p<.001$ ), and was seen to account for 5.1% of the variance of depression ( $\beta=.24$ ,  $t(149)=2.99$ ,  $p<.01$ ). In addition, when perfectionism cognitions were entered into the equation, a further 3.3% of variance was accounted for, and the strength of the relationship between socially prescribed perfectionism and depression was reduced ( $\beta=.11$ ,  $t(149)=1.15$ , ns). A Sobel test indicated that perfectionism cognitions significantly mediated the relationship between socially prescribed perfectionism and depression ( $Z=2.42$ ,  $p<.05$ ). See Figure 8.3.



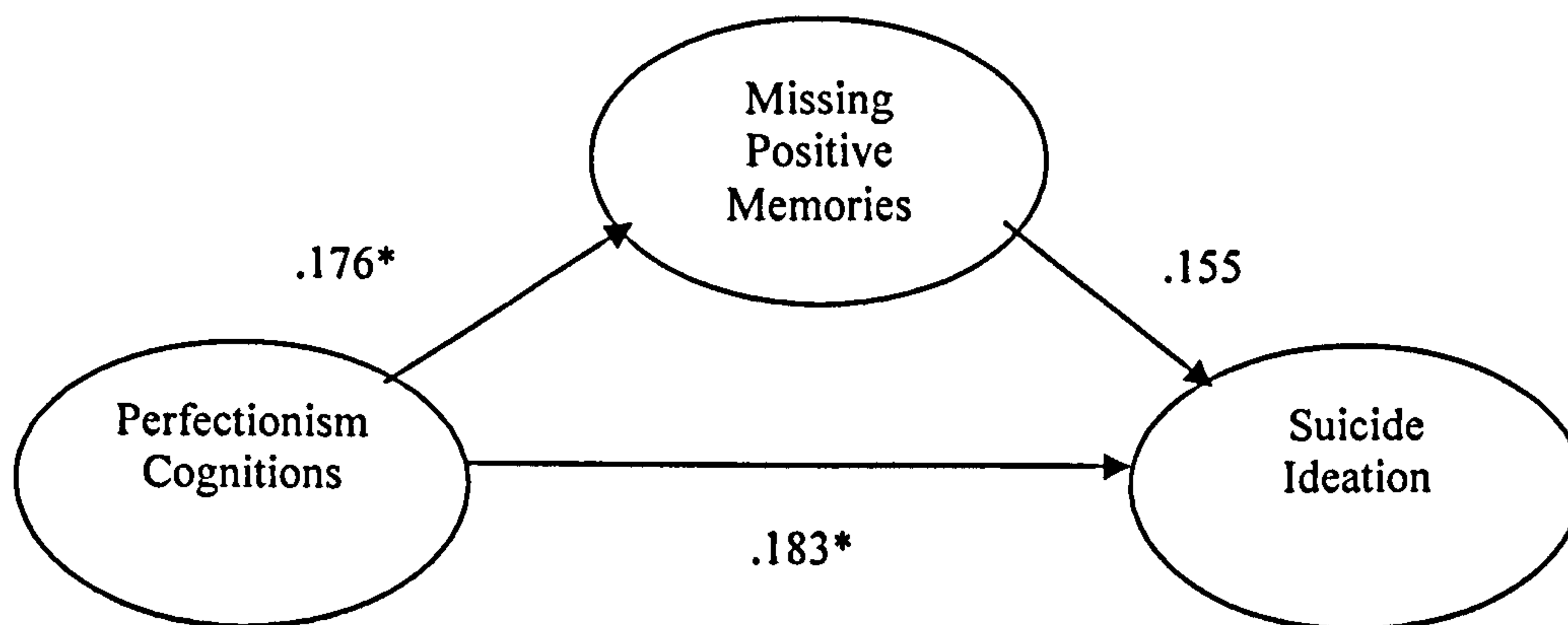
Figure 8.3 Perfectionism cognitions as a mediator of the effect of socially prescribed perfectionism on depression at Time 1.



Note. \*\*\*  $p < .001$ , \*\*  $p < .01$

Finally, the number of missing positive memories mediated the relationship between perfectionism cognitions and suicide ideation (See Figure 8.4). Perfectionism cognitions independently predicted missing positive memories ( $\beta = .18$ ,  $t(149) = 2.18$ ,  $p < .05$ ), and accounted for 2.7% of the variance of suicide ideation ( $\beta = .18$ ,  $t(149) = 2.26$ ,  $p < .05$ ). In addition, the strength of the relationship between perfectionism cognitions and suicide ideation was reduced when missing positive memories were controlled for, and an additional 2.8% of variance was accounted for ( $\beta = .16$ ,  $t(149) = 1.91$ , ns). The Sobel test confirmed that missing positive memories mediated the relationship between perfectionism cognitions and suicide ideation ( $z = 1.92$ ,  $p < .05$ ).

Figure 8.4 Number of missing positive memories as a mediator of the effect of perfectionism cognitions on suicide ideation at Time 1.



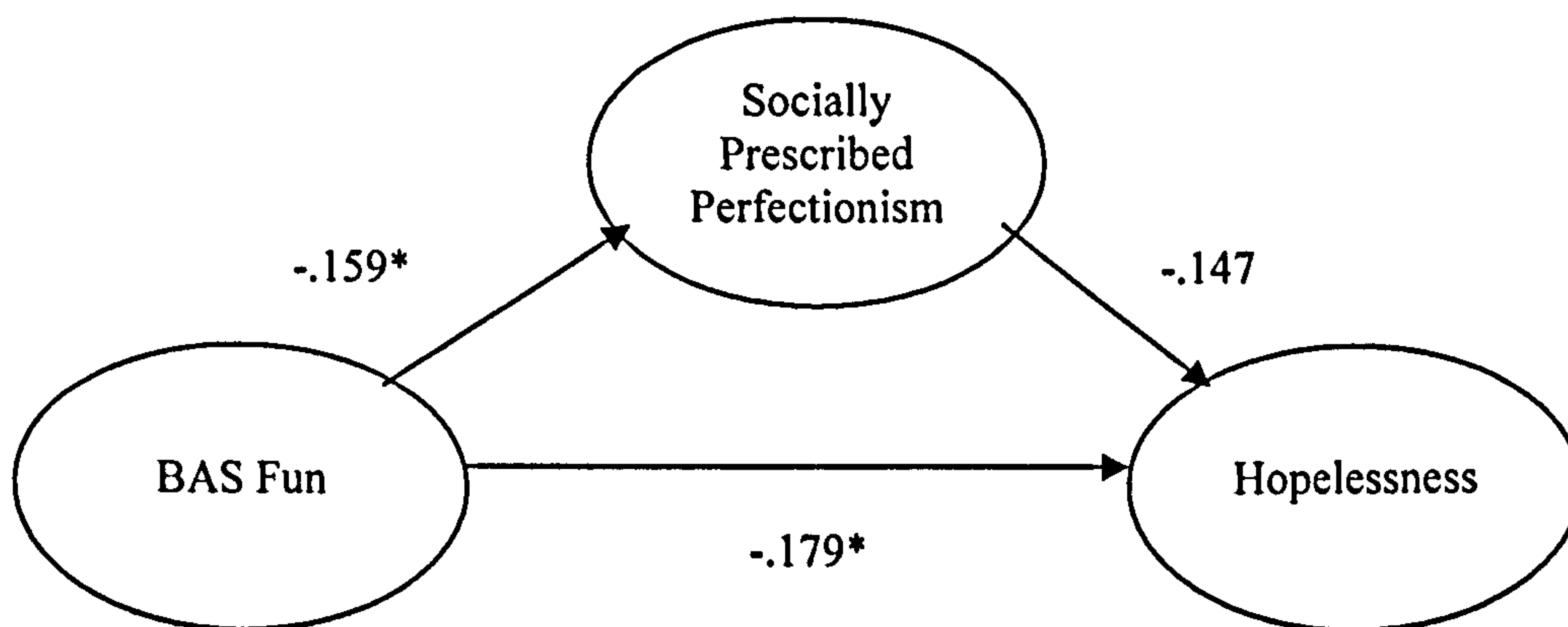
Note \*  $p < .05$

### Motivation

To investigate the final aim of the mediation analysis we conducted hierarchical regressions to test whether self-oriented and socially prescribed perfectionism mediated the relationship between BIS/BAS. These analyses revealed that when BIS and perfectionism were entered into the regression equation, the four conditions stipulated by Baron and Kenny (1986), were not met. However, we did find that socially prescribed perfectionism mediated the relationship between BAS and psychological distress.

For hopelessness (Figure 8.5), BAS Fun accounted for 2.6% of the variance ( $\beta = -.18$ ,  $t(149) = -2.22$ ,  $p < .05$ ), whilst socially prescribed perfectionism accounted for a further 3.4% of variance, and reduced the strength of BAS Fun to non-significance ( $\beta = -.15$ ,  $t(149) = -1.82$ , ns). The Sobel test did, however, not confirm mediation ( $Z = -1.55$ , ns).

Figure 8.5 Socially prescribed perfectionism as a mediator of the effect of BAS Fun on hopelessness at Time 1.



Note \*  $p < .05$

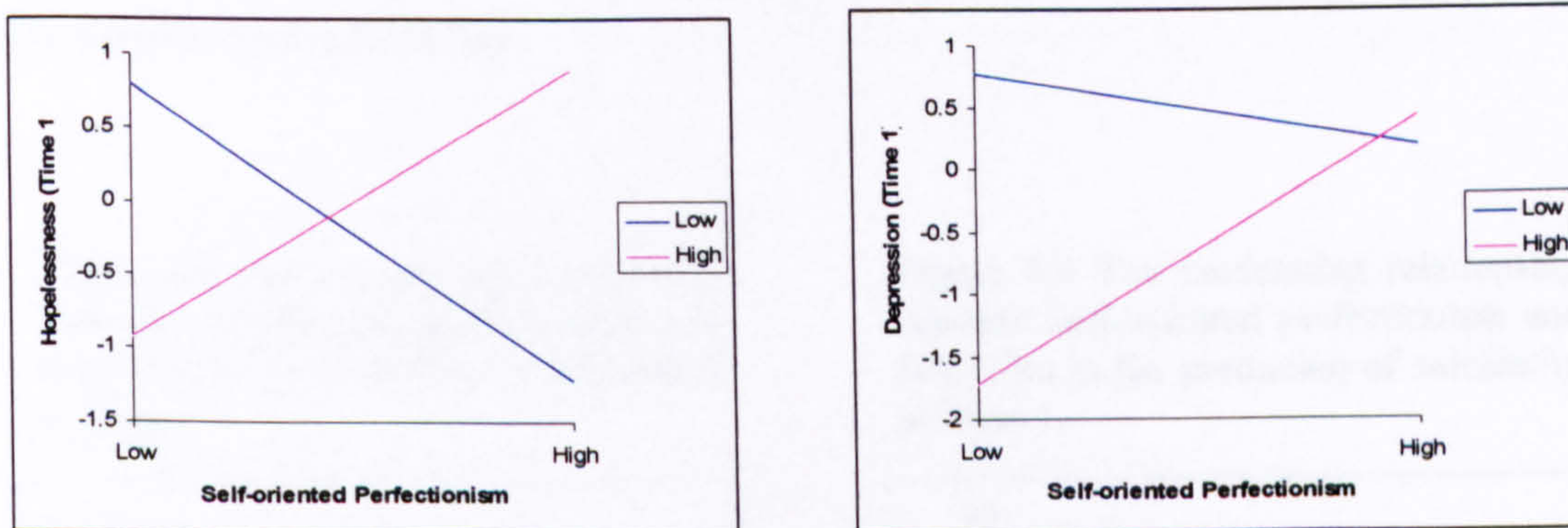
### 8.3.5 Moderation Analysis (Cross-sectional Data)

Hierarchical multiple regression analyses were carried out to examine the combined and interactive effects of perfectionism and motivation (inhibition and activation) in the prediction of psychological distress and suicidality. After centring the variables (Aiken & West, 1991) and calculating interaction terms, each of the analyses contained the following steps: In the first instance, in the first step, the main effects of either of the perfectionism dimensions was entered, in the second step either of the motivation subscales was entered, and in the final step the two-way interaction terms of interest were entered as a block.

#### Self-oriented Perfectionism x BIS

These analyses demonstrated that neither self-oriented perfectionism nor BIS were significant independent predictors of psychological distress or suicidality. However, there was found to be a significant interaction between these variables in the prediction of hopelessness, where the interaction accounted for a total of 5.3% of variance ( $\beta = .26$ ,  $t(149) = 3.10$ ,  $p < .01$ ) and depression, where the interaction accounted

for a total of 4.9% of variance ( $\beta=.23$ ,  $t(149)=2.75$ ,  $p<.01$ ). In accordance with Aiken and West (1991), the interaction was probed by plotting the regression lines of best fit at high (one standard deviation above the mean) and low (one standard deviation below the mean) levels of self-oriented perfectionism and BIS for both hopelessness (See Figure 8.6) and depression (See Figure 8.7). The Tables for the self-oriented x BIS regression analyses are shown in Appendix 15.



Consequently, further tests were carried out on each of the interaction lines to determine whether they differed significantly from zero. For hopelessness, these tests showed that the low ( $\beta=-.25$ ,  $t(149)=-2.41$ ,  $p<.05$ ), and almost the high ( $\beta=.23$ ,  $t(149)=1.93$ ,  $p=.06$ ), lines of the self-oriented perfectionism slopes differed significantly from zero. For depression the tests demonstrated that the high ( $\beta=.34$ ,  $t(149)=2.86$ ,  $p<.01$ ), but not the low ( $\beta=-.09$ ,  $t(149)=-.86$ , ns), slopes of the self-oriented perfectionism slopes differed significantly from zero. That is, those individuals who were high in self-oriented perfectionism and low in BIS reported significantly lower levels of hopelessness. For depression, however, those who were low in self-oriented perfectionism and high in BIS reported significantly lower levels of depression.

## Self-oriented Perfectionism x BAS

Analysis was also carried out for the BAS subscales (See Appendices 16 (BAS Drive), 17 (BAS Fun), and 18 (BAS Reward)). These analyses revealed a number of interactions. Firstly, self-oriented perfectionism was found to interact with BAS fun to account for 9.3% of the variance of depression ( $\beta=.23$ ,  $t(149)=2.86$ ,  $p<.01$ ; Figure 8.8), and to show a trend towards a significant interaction in the prediction of suicidality ( $\beta=.16$ ,  $t(149)=1.93$ ,  $p=.06$ ; Figure 8.9), thereby accounting for 1.5% of the variance of suicidality.

Figure 8.8 The moderating relationship between self-oriented perfectionism and BAS Fun in the prediction of depression at Time 1.

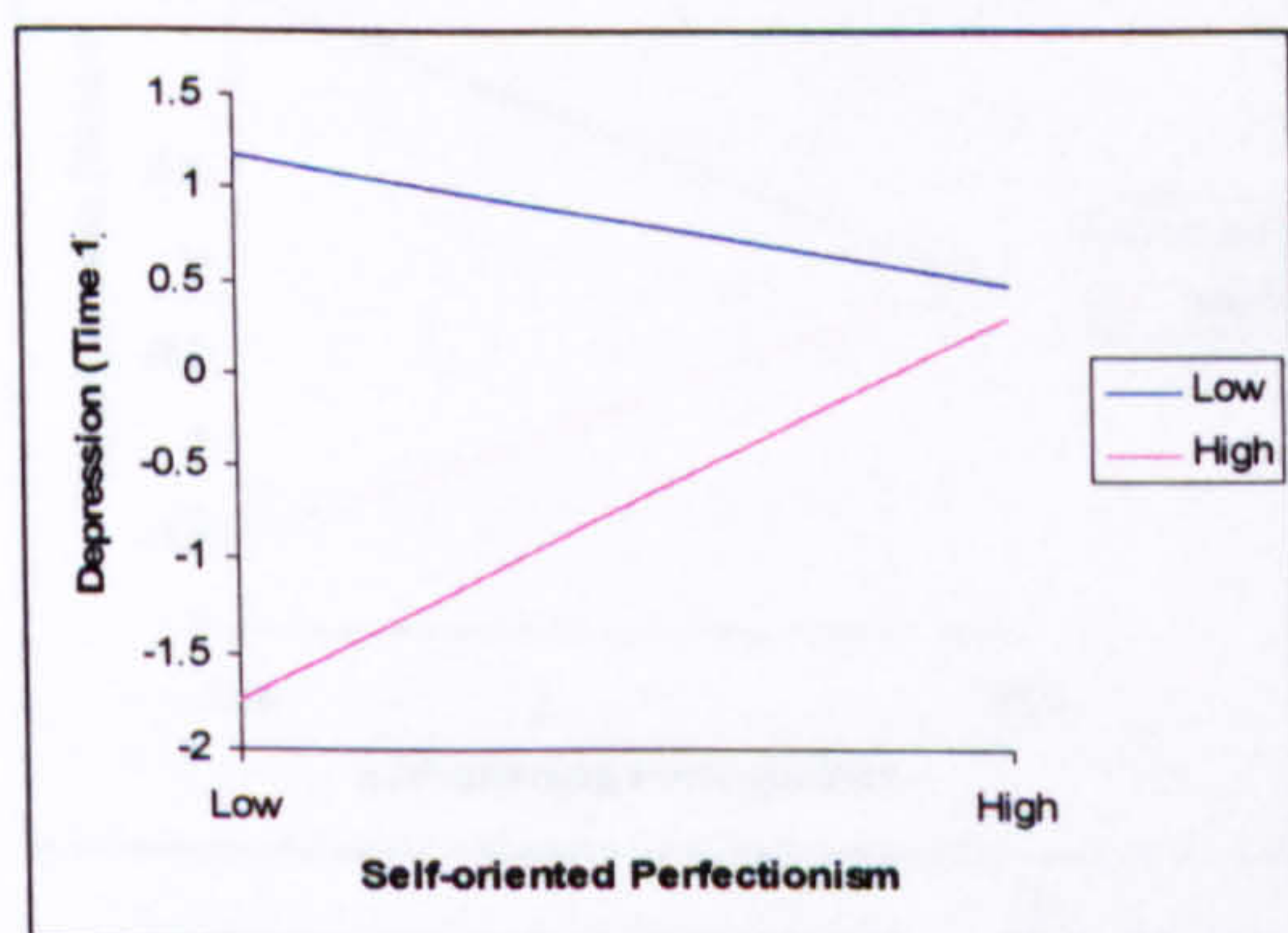
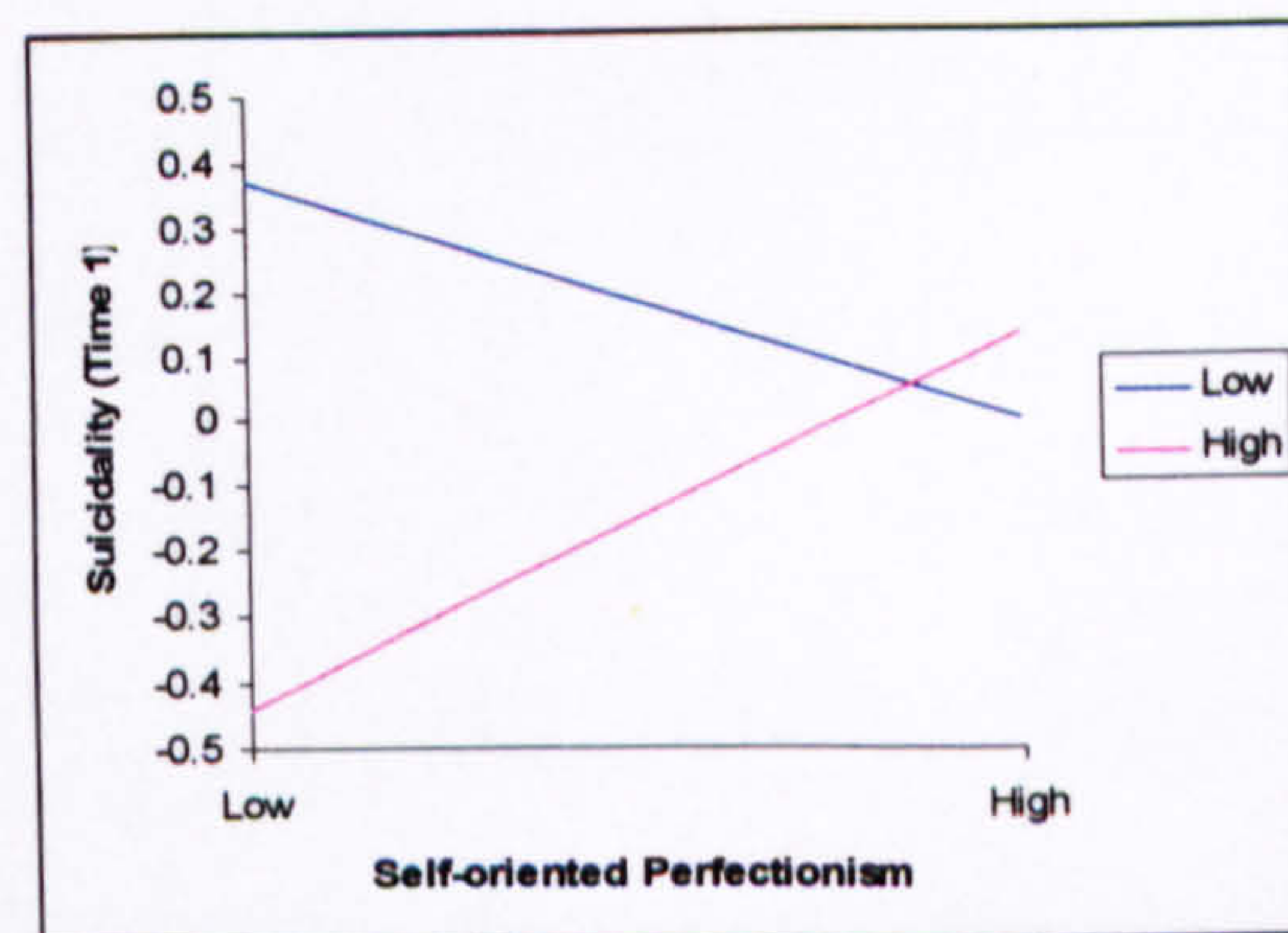


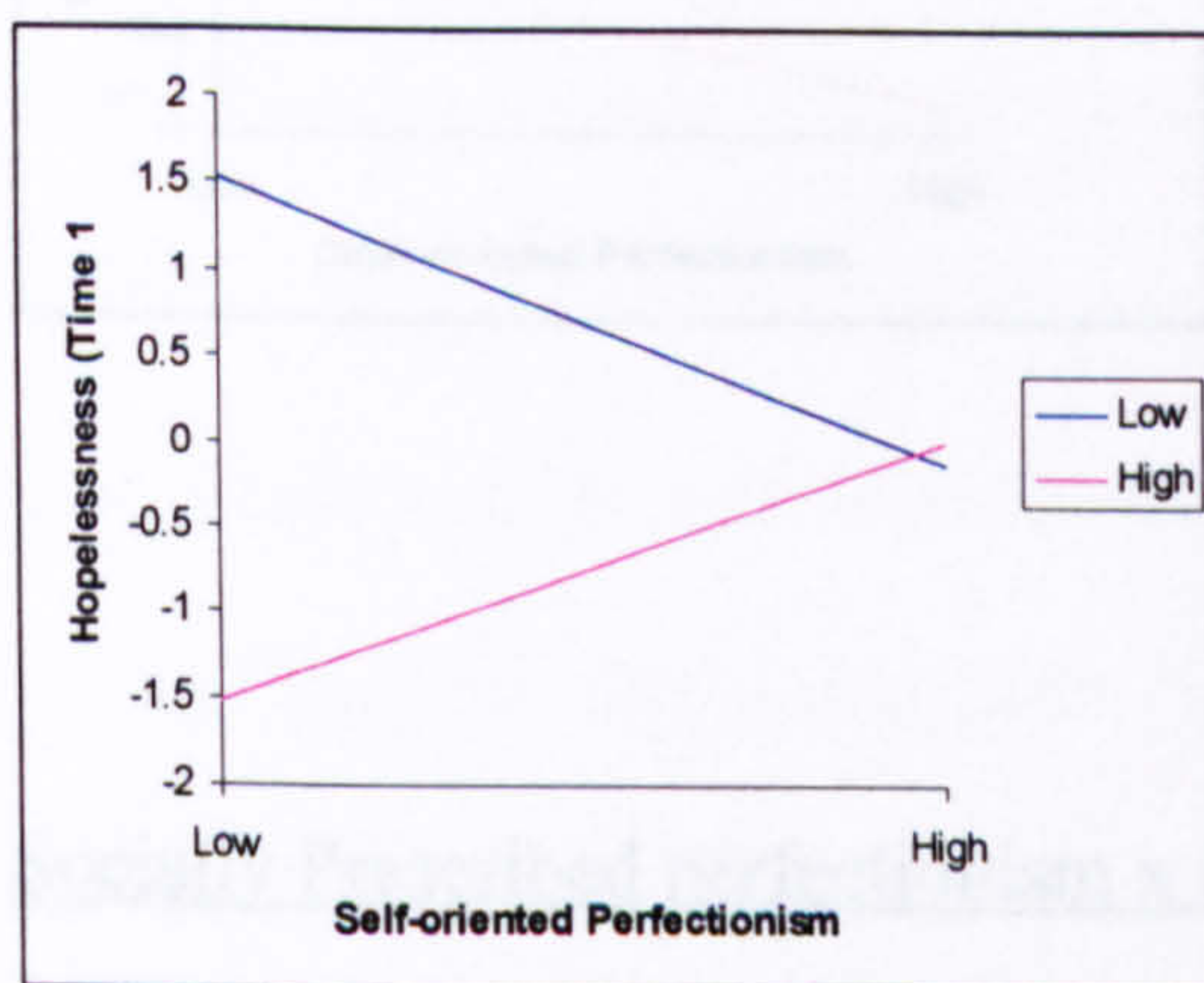
Figure 8.9 The moderating relationship between self-oriented perfectionism and BAS Fun in the prediction of suicidality at Time 1.



Further tests of the slopes of best fit indicated that, for depression, the high ( $\beta=.32$ ,  $t(149)=2.70$ ,  $p<.01$ ) but not the low ( $\beta=-.11$ ,  $t(149)=-1.11$ , ns), slopes of the self-oriented perfectionism slopes differed significantly from zero. For suicidality, however, neither the low ( $\beta=.19$ ,  $t(149)=1.50$ , ns) nor the high ( $\beta=-.12$ ,  $t(149)=-1.15$ , ns), slopes of the self-oriented perfectionism lines differed significantly from zero. Overall, this data suggests that levels of BAS fun are inconsequential to individuals who are high in self-oriented perfectionism, as these individuals are generally high in distress.

The hierarchical regressions also revealed a significant interaction between self-oriented perfectionism and BAS reward ( $\beta=.19$ ,  $t(149)=2.38$ ,  $p<.01$ ) but not the low ( $\beta=-.21$ ,  $t(149)=-1.87$ , ns) nor the high ( $\beta=.19$ ,  $t(149)=1.60$ , ns), lines of the self-oriented perfectionism slopes differed significantly from zero. However, there was a trend for the low slope to differ significantly from zero. These, tests demonstrate that individuals who reported low levels of self-oriented perfectionism and low levels of BAS reward showed a trend towards reporting higher levels of hopelessness.

Figure 8.10 The moderating relationship between self-oriented perfectionism and BAS Reward in the prediction of hopelessness at Time 1.



### Other-oriented Perfectionism x BAS

Hierarchical regression analyses (see Appendices 16, 17, and 18) demonstrated that although other-oriented perfectionism did not independently predict psychological distress or suicidality, it did interact with the BAS Reward subscale to predict hopelessness, and was found to account for 3.1% of the variance ( $\beta=-.170$ ,  $t(149)=-2.09$ ,  $p<.05$ ; Figure 8.11), and suicide ideation ( $\beta=-.170$ ,  $t(149)=-2.08$ ,  $p<.05$ ; Figure 8.12), where BAS Reward and other-oriented perfectionism interacted to account for 2.6% of variance. Subsequent tests were carried out to investigate whether the regression slopes of best fit differed significantly from zero. These tests revealed that

neither the low (hopelessness:  $\beta=.01$ ,  $t(149)=.16$ , ns; suicide ideation:  $\beta=.03$ ,  $t(149)=.39$ , ns) nor the high (hopelessness:  $\beta=.09$ ,  $t(149)=1.12$ , ns; suicide ideation:  $\beta=.029$ ,  $t(149)=.33$ , ns), lines of the other-oriented perfectionism slopes differed significantly from zero.

Figure 8.11 The moderating relationship between other-oriented perfectionism and BAS Reward in the prediction of hopelessness at Time 1.

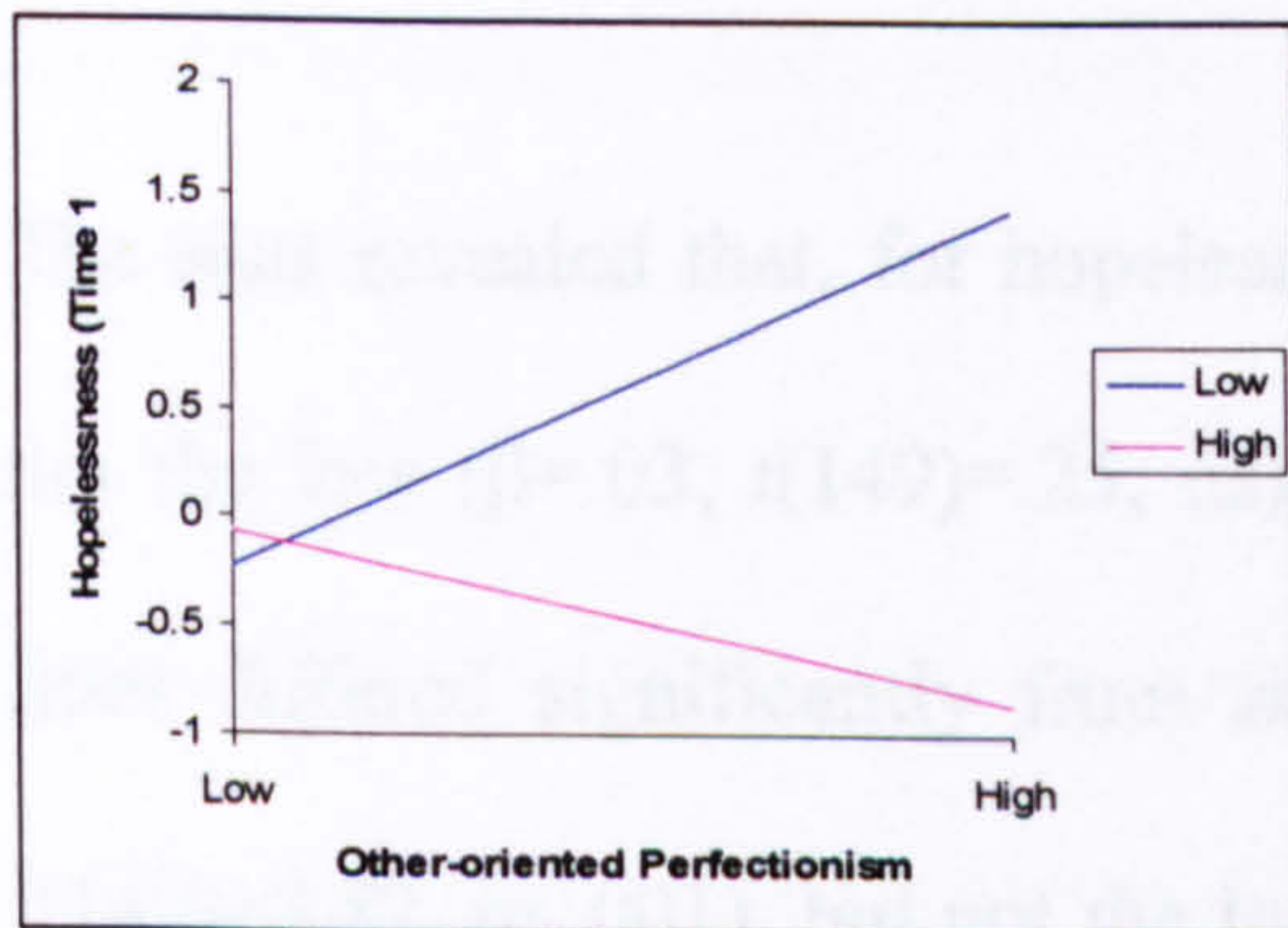
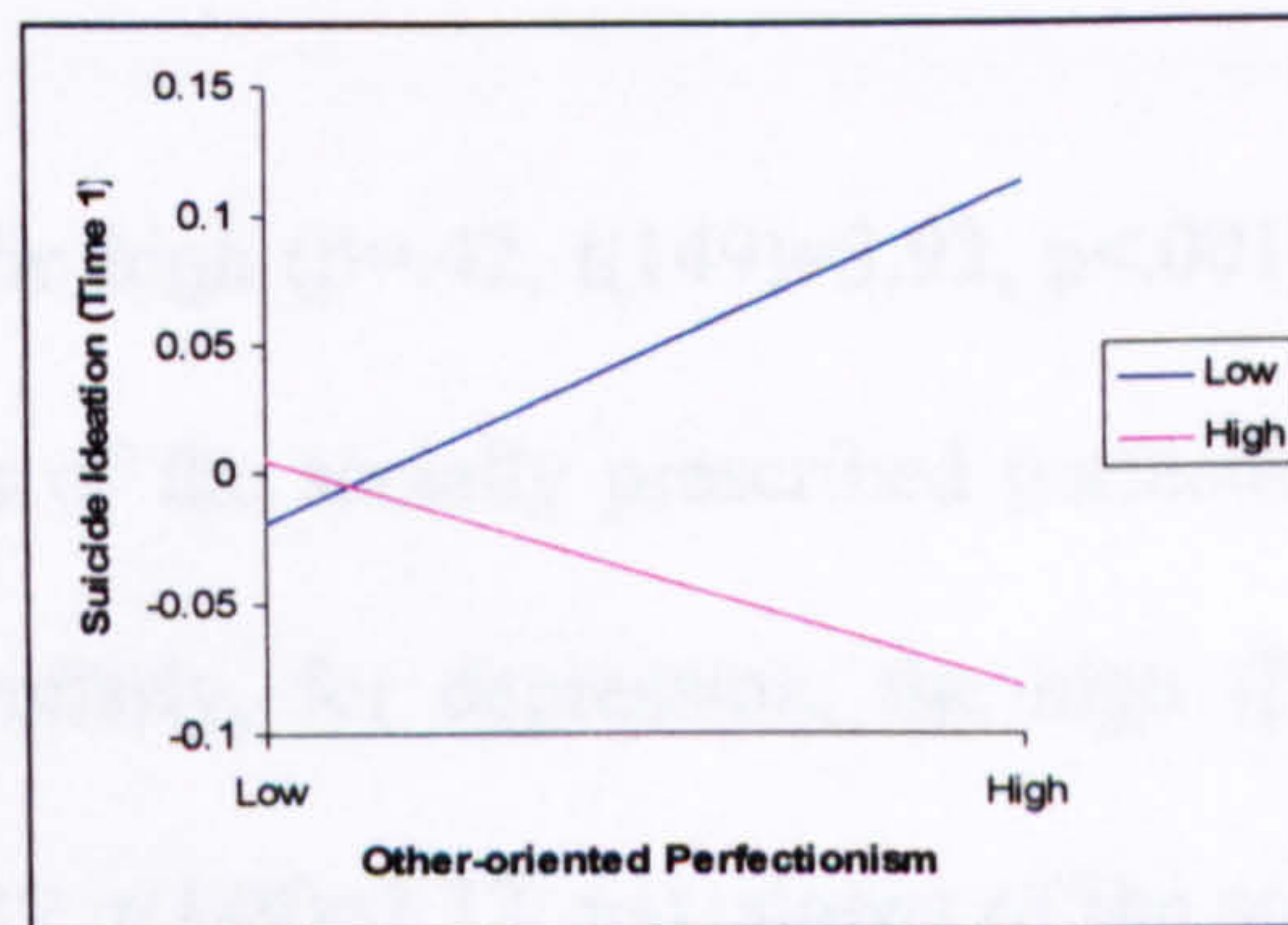


Figure 8.12 The moderating relationship between other-oriented perfectionism and BAS Reward in the prediction of suicide ideation at Time 1.



### Socially Prescribed perfectionism x BIS

Regression analyses indicated that socially prescribed perfectionism was a significant independent predictor of hopelessness, depression, and an almost significant predictor of suicide ideation (See Appendix 15). The outcome of the interaction model showed that, similar to self-oriented perfectionism, socially prescribed perfectionism interacted with BIS to predict hopelessness, and accounted for 8.6% of the variance ( $\beta=.23$ ,  $t(149)=2.81$ ,  $p<.01$ ; Figure 8.13), and accounted for 8.4% of the variance of depression ( $\beta=.17$ ,  $t(149)=2.08$ ,  $p<.05$ ; Figure 8.14). Again, in accordance with Aiken and West (1991) tests were conducted on each of the regression lines to determine whether they differed significantly from zero.

Figure 8.13 The moderating relationship between socially prescribed perfectionism and BIS in the prediction of hopelessness at Time 1.

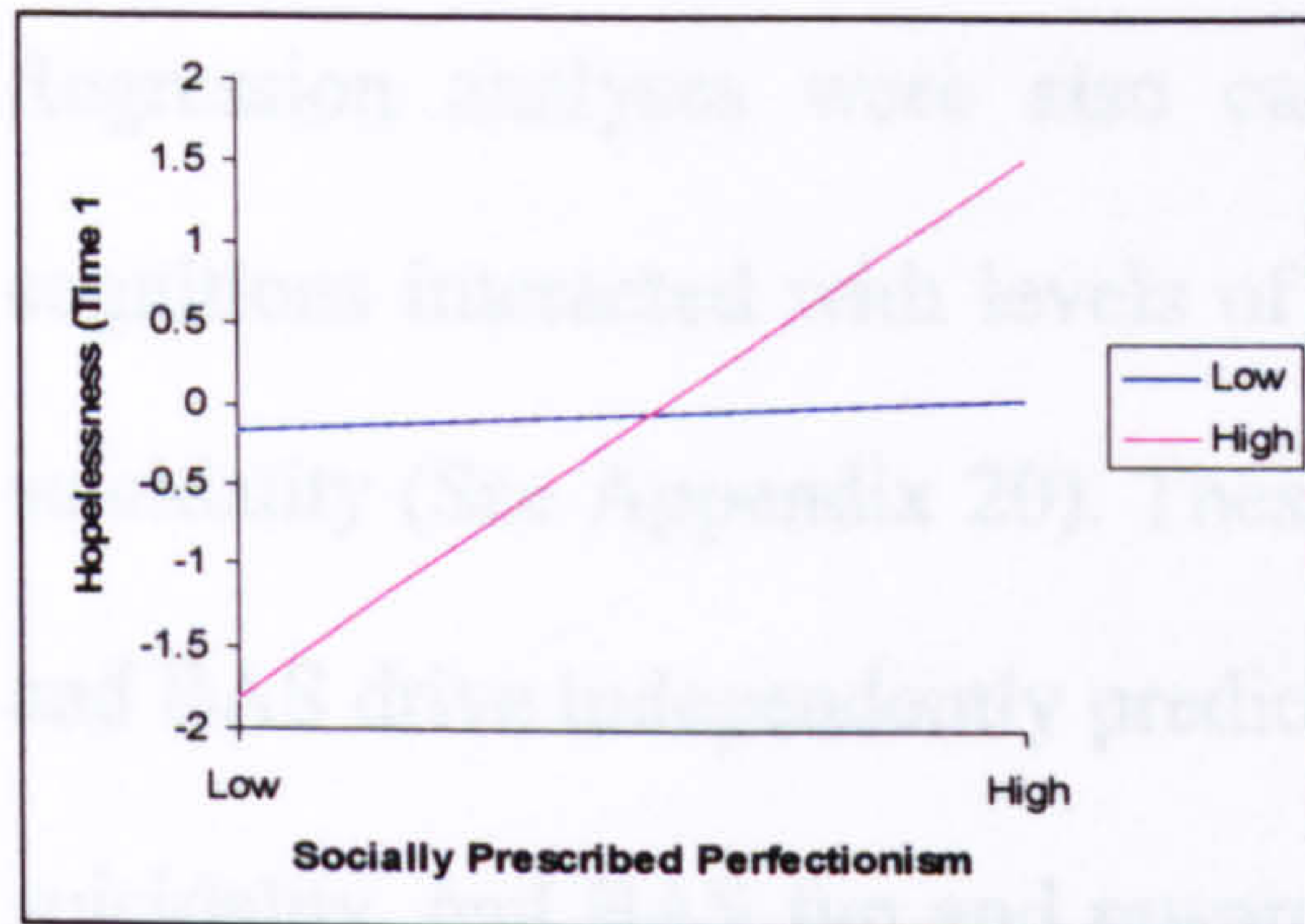
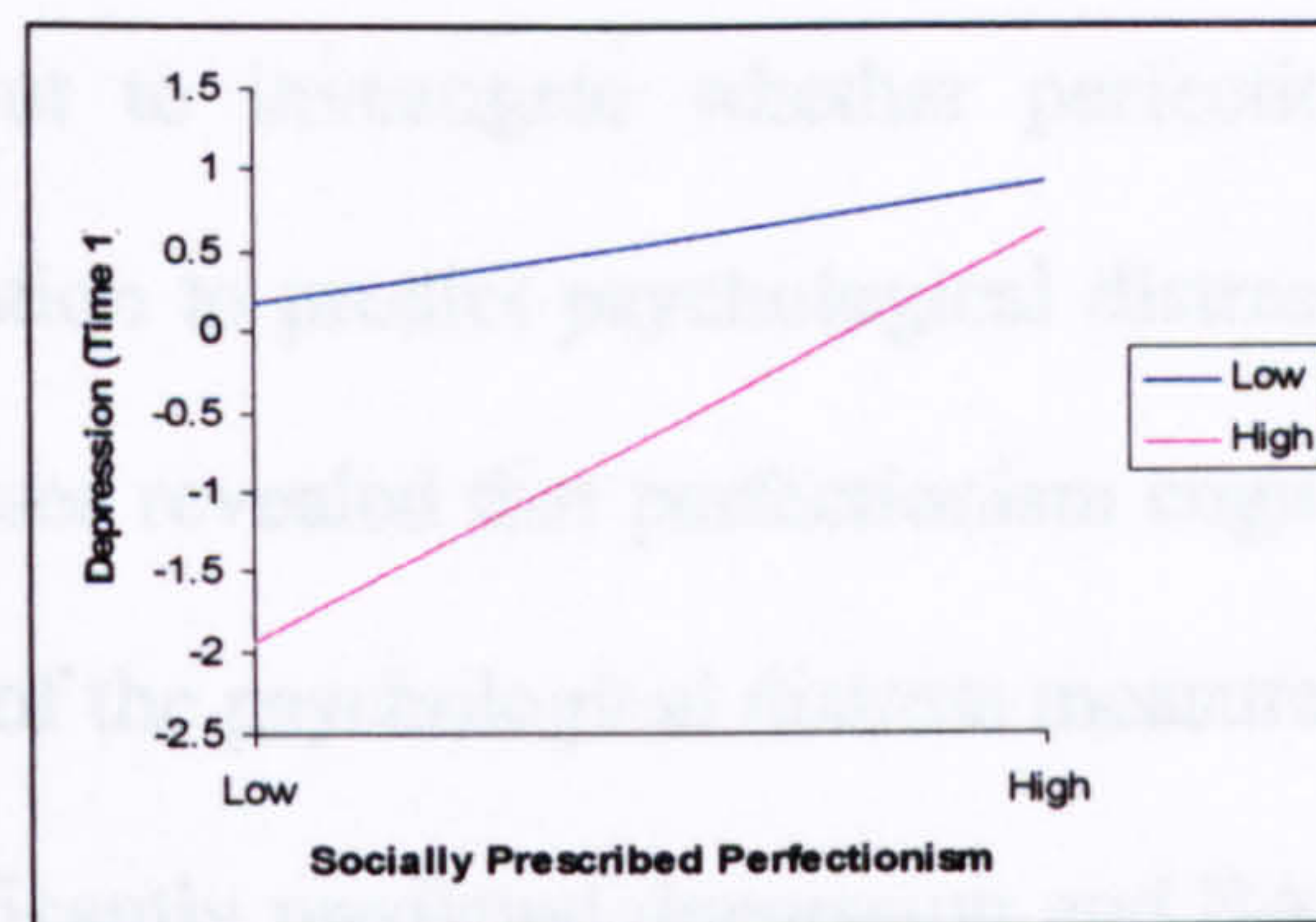


Figure 8.14 The moderating relationship between socially prescribed perfectionism and BIS in the prediction of depression at Time 1.



The tests revealed that, for hopelessness, the high ( $\beta=.42$ ,  $t(149)=3.93$ ,  $p<.001$ ), but not the low ( $\beta=.03$ ,  $t(149)=.25$ , ns), slopes of the socially prescribed perfectionism lines differed significantly from zero. Similarly, for depression, the high ( $\beta=.41$ ,  $t(149)=3.82$ ,  $p<.001$ ), but not the low ( $\beta=.12$ ,  $t(149)=1.12$ , ns), slopes of the socially prescribed perfectionism lines differed significantly from zero. In simple terms, these results suggest that individuals who report high levels of socially prescribed perfectionism and high levels of BIS reported significantly higher levels of hopelessness.

### Perfectionism x Perfectionism Cognitions

Secondly, regression analyses were conducted to investigate any potential interactions between the perfectionism dimensions and perfectionism cognitions. Either of the perfectionism dimensions was entered at step 1, followed by perfectionism cognitions at step 2, and the multiplicative term at step 3. The analysis established that perfectionism cognitions were a significant independent predictor of all the outcome measures; however, it did not interact with either of the perfectionism dimensions to predict psychological distress or suicidality (See Appendix 19).

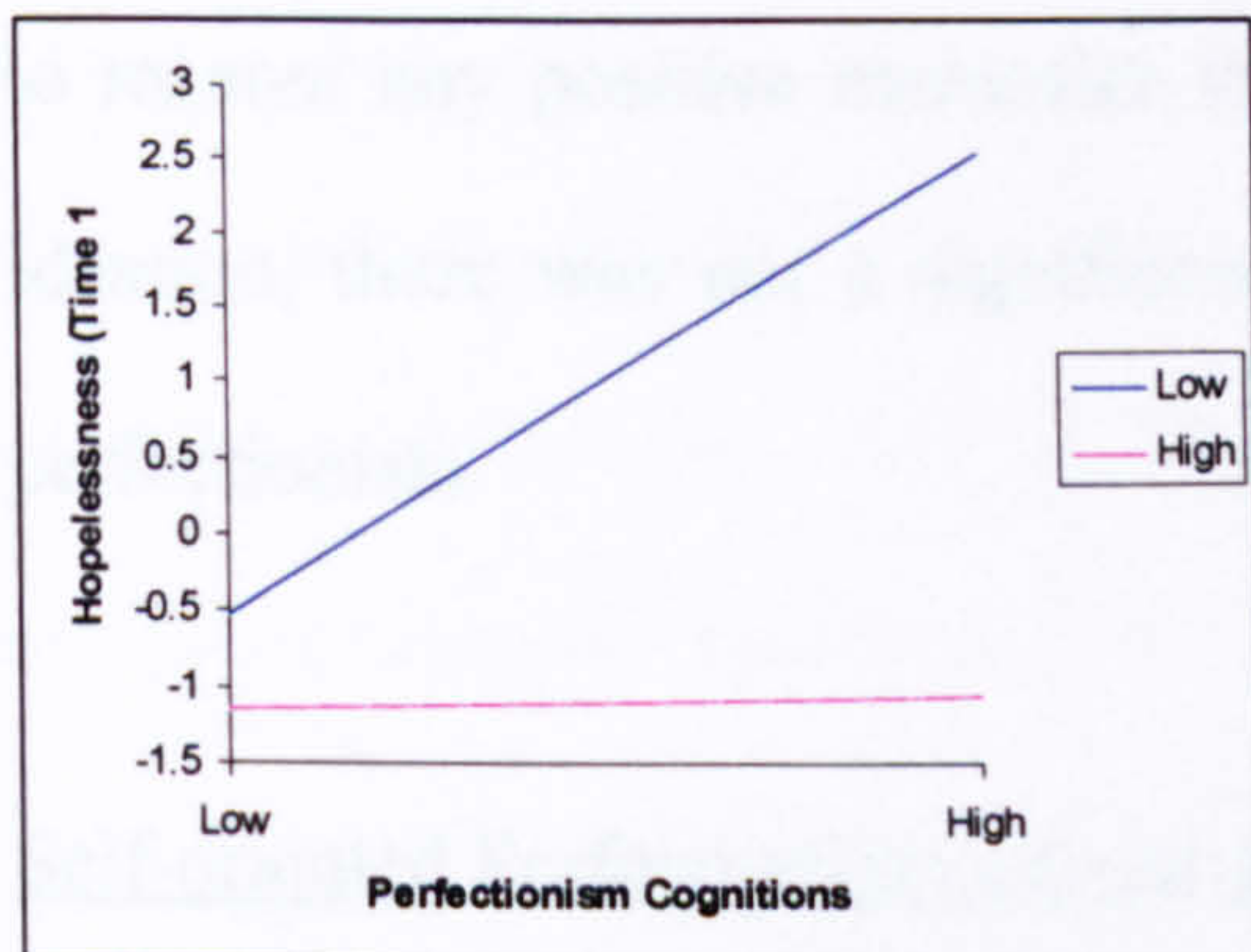


### Perfectionism Cognitions x BIS/BAS

Regression analyses were also carried out to investigate whether perfectionism cognitions interacted with levels of motivation to predict psychological distress and suicidality (See Appendix 20). These analyses revealed that perfectionism cognitions and BAS drive independently predicted all of the psychological distress measures and suicidality, and BAS fun and reward significantly predicted depression and BAS fun showed a trend towards predicting hopelessness, whereas BAS reward significantly predicted suicidality.

There was found to be one interaction between perfectionism cognitions and motivation: perfectionism cognitions and BAS Drive interacted to account for 12.8% of the variance of hopelessness ( $\beta = -.17$ ,  $t(149) = -2.16$ ,  $p < .05$ ); Figure 8.15). As required, further tests were carried out to probe the interaction by plotting the regression lines of best fit and thereby determining whether they differed significantly from zero. It was found that the low ( $\beta = .39$ ,  $t(149) = 3.47$ ,  $p < .001$ ) but not the high ( $\beta = .01$ ,  $t(149) = .07$ , ns), slopes of the perfectionism cognitions regression lines differed significantly from zero. Thus, these results demonstrate that individuals who think a lot about their need to be perfect and who also reported low levels of BAS drive reported significantly higher levels of hopelessness.

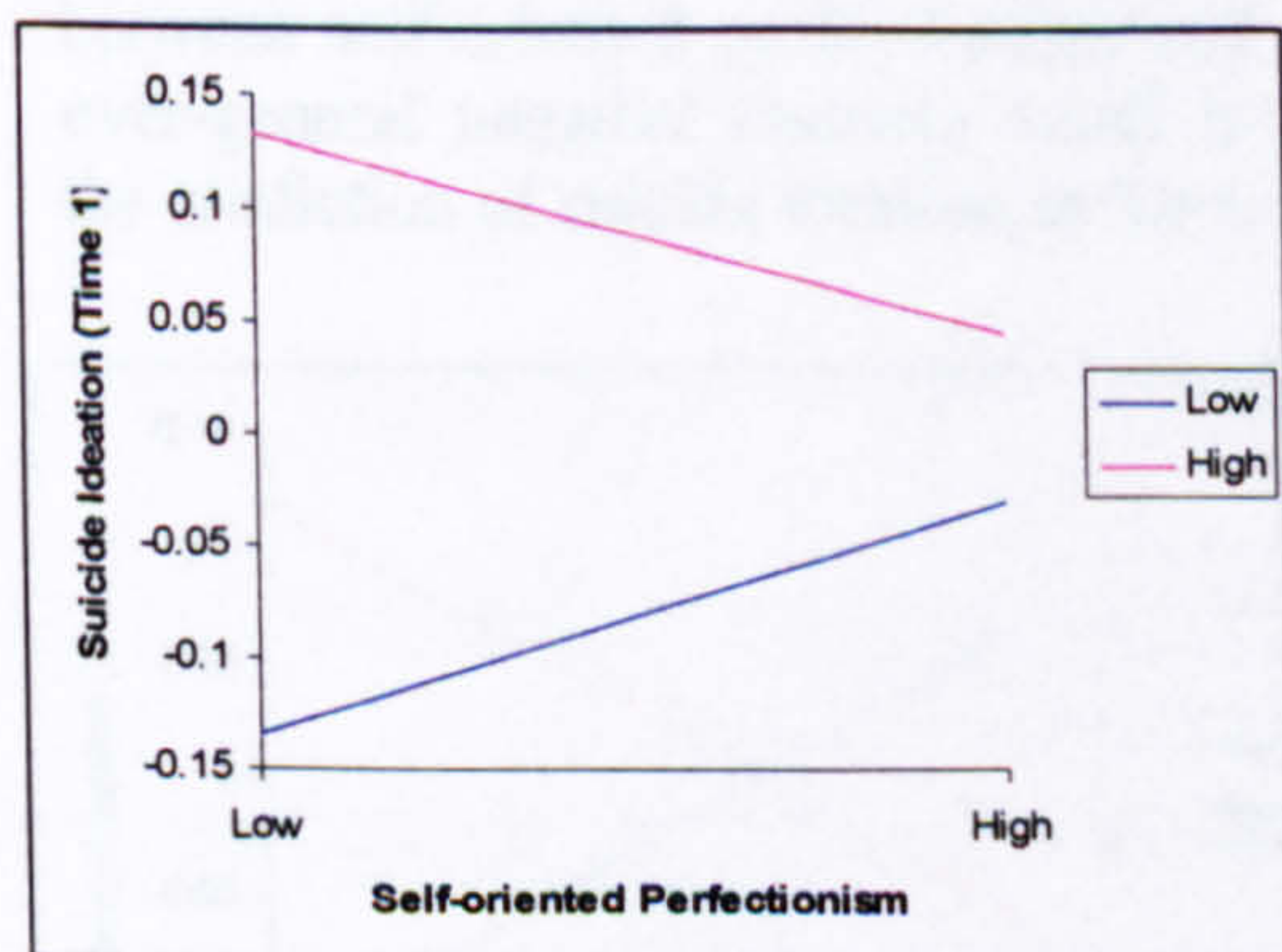
Figure 8.15 The moderating relationship between perfectionism cognitions and BAS Drive in the prediction of hopelessness at Time 1.



### Self-oriented Perfectionism x Missing Positive Memories

The application of hierarchical regression analyses demonstrated that the number of missing, positive memories was a significant predictor of suicidality and suicide ideation (See Appendix 21). Furthermore, missing positive memories interacted with self-oriented perfectionism to predict suicide ideation, thereby accounting for 4.3% of the variance of suicidality ( $\beta = -.18$ ,  $t(149) = -2.08$ ,  $p < .05$ ; Figure 8.16).

Figure 8.16 The moderating relationship between self-oriented perfectionism and number of missing positive memories in the prediction of suicide ideation at Time 1.

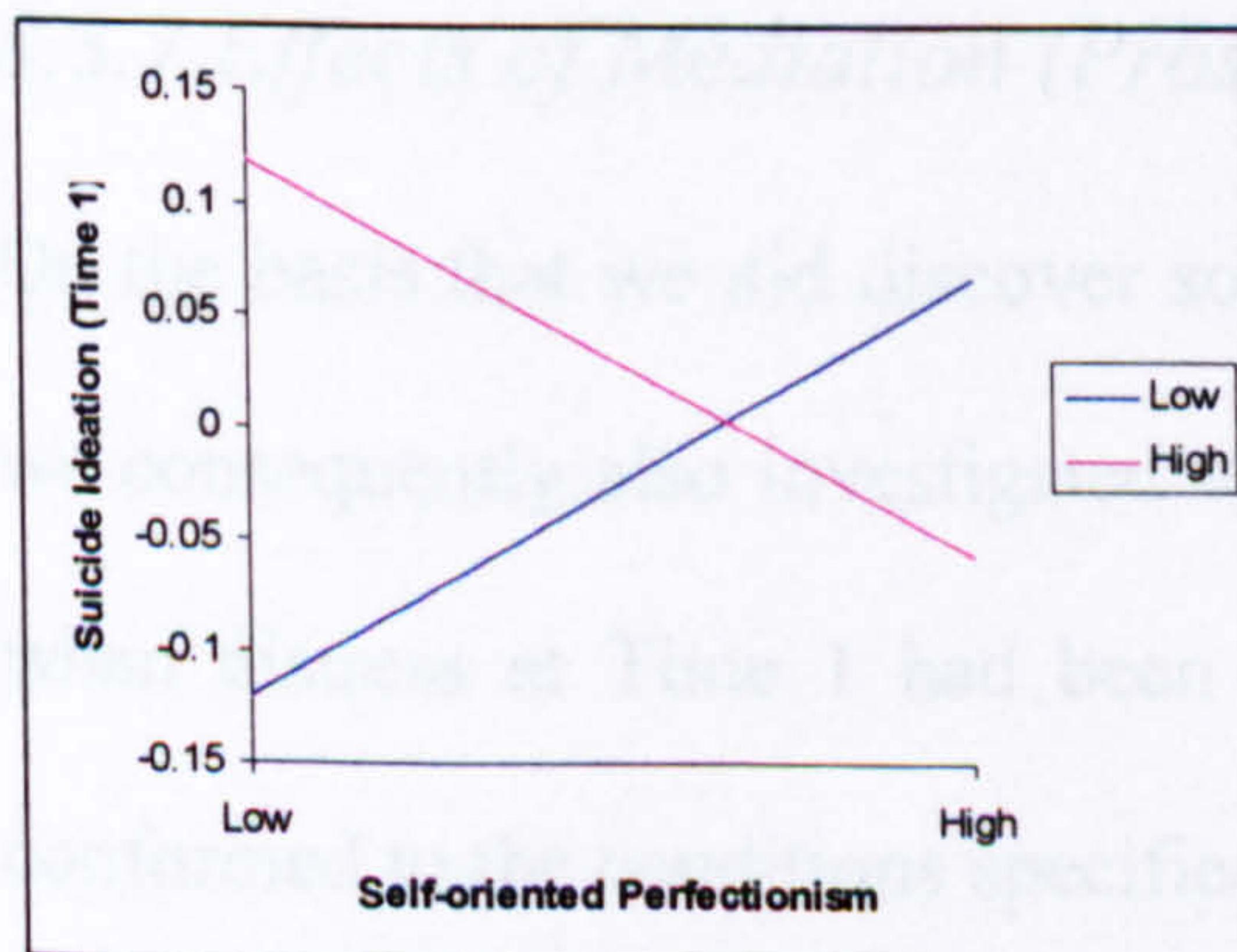


Tests of the lines of best fit demonstrated that neither the high ( $\beta=-.12$ ,  $t(149)=-1.28$ , ns), nor the low ( $\beta=.14$ ,  $t(149)=1.29$ , ns), slopes of the self-oriented perfectionism slopes differed significantly from zero. That is, although individuals who were unable to recount any positive memories from their past were more likely to report suicide ideation, there was not a significant difference between low and high self-oriented perfectionists.

### Self-oriented Perfectionism x Over-general Negative Memories

Hierarchical regression analysis was employed to probe whether perfectionism interacted with over-general memory recall to predict distress and suicidality (See Appendix 22). This analysis demonstrated that there were no main effects of any of the perfectionism dimensions, nor of over-general memory recall (positive or negative). However, self-oriented perfectionism was found to interact with over-general negative memory recall to predict suicide ideation ( $\beta=-.23$ ,  $t(149)=-2.86$ ,  $p<.01$ ; Figure 8.17). This interaction accounted for 4.2% of the variance of suicide ideation.

Figure 8.17 The moderating relationship between self-oriented perfectionism and over-general negative memory recall in the prediction of suicide ideation at Time 1.



In line with the recommendations of Aiken and West (1991) further tests were carried out to investigate whether the lines of best fit differed significantly from zero. These tests established that both the high ( $\beta=-.24$ ,  $t(149)=-2.11$ ,  $p<.05$ ) and the low ( $\beta=.26$ ,  $t(149)=2.10$ ,  $p<.05$ ), lines of the self-oriented perfectionism lines differed significantly from zero. This means that individuals who reported high levels of self-oriented perfectionism and a high number of over-general negative autobiographical memories reported significantly lower levels of suicide ideation, whereas individuals who reported high levels of self-oriented perfectionism and fewer over-general negative memories were significantly more likely to report increased levels of suicide ideation.

### *8.3.6 Prospective Findings*

A follow-up period of 4 weeks was included in the study to allow us to investigate the mediating and moderating relationships of the variables in the prediction of distress and suicidality over time. A four week period of time between the Time 1 and Time 2 measurements was deemed to be acceptable as it is a sufficient time interval to observe changes in distress level; however, it is also sufficiently short to minimise the rate of attrition

### *8.3.7 Effects of Mediation (Prospective Data)*

On the basis that we did discover some mediation effects in the cross-sectional data, we consequently also investigated whether these effects held in the prospective data when distress at Time 1 had been controlled for. However, none of the variables conformed to the conditions specified by Baron and Kenny (1986).

#### *8.4.8 Effects of Moderation (Prospective Data)*

##### Motivation

Firstly, the interactive relationship between perfectionism and motivation was investigated prospectively. Hierarchical regressions were conducted in which the outcome variable as measured at Time 1 was entered at step 1 to enable us to conclude that any interaction effects still held even when psychological distress and suicidality at Time 1 was controlled for. Secondly, one of the perfectionism dimensions was entered at step 2, followed by either of the BIS/BAS subscales at step 3, and finally, at step 5, the multiplicative term of perfectionism x motivation was entered. These analyses revealed that hopelessness, depression, suicidality and suicide ideation at Time 1 was always a significant predictor of distress a Time 2. However, perfectionism (self-oriented, other-oriented, and socially prescribed) did not interact with motivation sensitivities (BIS/BAS subscales) to predict psychological distress prospectively. The Tables for the hierarchical regression analyses for these variables are included in Appendices 23 (BIS), 24 (BAS Drive), 25 (BAS Fun), and 26 (BAS Reward).

##### Perfectionism x Over-general Memory Recall

The final moderation analyses were carried out to investigate the interaction between perfectionism and over-general memory recall (Appendix 27). These analyses revealed that self-oriented perfectionism interacted with recall of negative over-general memories in the prediction of hopelessness, after hopelessness at Time 1 had been controlled for, ( $\beta = -.09$ ,  $t(119) = -2.44$ ,  $p < .05$ ; Figure 8.18) four weeks later. Hopelessness at Time 1 accounted for 82.6% of the variance of hopelessness at Time

2, whilst the multiplicative term of self-oriented perfectionism and over-general recall of negative memories, accounted for a further 1.1% of the variance.

Figure 8.18 The moderating relationship between self-oriented perfectionism and over-general negative memory recall in the prediction of suicide ideation at Time 2.



On the basis of these interactions, further tests were conducted to establish whether the slopes of the regression lines differed significantly from zero. For hopelessness, the low ( $\beta=.16$ ,  $t(119)=2.69$ ,  $p<.01$ ) but not the high ( $\beta-.05$ ,  $t(119)=-.97$ , ns), slopes of the self-oriented perfectionism regression lines differed significantly from zero; thereby suggesting that individuals who are high in self-oriented perfectionism and who also reported a low number of over-general negative memories, reported significantly lower hopelessness four weeks later. Consequently, hierarchical analyses investigating the relationship between self-oriented perfectionism and over-general positive memory recall were also carried out. However, neither over-general memory recall on its own, nor the multiplicative term of memory x self-oriented perfectionism produced any significant results.

## 8.4 Discussion

This third study aimed to investigate a number of aims, namely, (i) the role of motivational inhibition/activation in the relationship between perfectionism and psychological distress and suicidality, (ii) the role of automatic perfectionistic thinking in the relationship between perfectionism and psychological distress and suicidality, and (iii) the relationship between perfectionism and autobiographical memory recall. To this end, a number of hypotheses were proposed and the extent to which each of these hypotheses were supported in the current study is shown in Table 8.3. The objective of this section is to discuss and interpret these results in relation to past research where possible.

Table 8.3 Summary of hypotheses and the extent to which they were supported.

	HYPOTHESIS	SUPPORT
1.	The relationship between self-oriented and socially prescribed perfectionism will be mediated by perfectionism cognitions.	Supported
2.	Perfectionism will mediate the relationship between BIS/BAS and psychological distress.	Partially supported
3.	Self-oriented and socially prescribed perfectionism will interact with over-general recall of negative memories to predict psychological distress.	Supported

### 8.4.1 *The Role of Motivation*

One of the key aims of this study was to examine the BIS and BAS sensitivity and its relation to perfectionism and psychological distress. Since the outset, research on perfectionism has argued that motivation plays an important role in perfectionism (e.g. Hewitt & Flett, 1991); however, very little research has attempted to elucidate the motivational systems underlying perfectionism. We hypothesised that BIS, that is, a motivational sensitivity to signals of punishment, would be positively associated with psychological distress and suicidality. Although this hypothesis was not

supported, BIS did show a trend towards a significant correlation with social perfectionism.

To date only two studies have investigated the particular role of motivational sensitivities in perfectionism. Flett, Hewitt, Oliver and Macdonald (2002) reported a study which found that all three of the MPS-H subscales were positively associated with BIS, whilst self-oriented perfectionism was also positively associated with BAS drive and BAS reward. They, therefore, argued that although perfectionism, through its fear of failure, is predominantly associated with a temperamental sensitivity to signals of punishment or non-reward, it is possible for perfectionists to display sensitivity involving both the BIS and the BAS. More recently, O'Connor and Forgan (in press) elaborated on this connection by replicating the relationship between BIS and perfectionism. Furthermore, they found that socially prescribed perfectionism fully mediated the relationship between BIS and suicidal thinking.

Consequently, this study set out to further test whether perfectionism mediated the relationship between motivation and distress, or whether it interacted with perfectionism to produce higher distress. Although there was not evidence to suggest that perfectionism mediates the relationship between motivation and suicidality as found by O'Connor and Forgan (in press), the analyses did highlight a moderating relationship between the two variables.

More specifically, the analyses suggested that both self-oriented and socially prescribed perfectionism interacted with BIS to predict hopelessness and depression, but not suicidality. For both of the perfectionism dimensions, the analyses showed



that perfectionists, who also reported a high level of sensitivity to punishment cues, were significantly more likely to report increased psychological distress. This suggests that when perfectionism is combined with a maladaptive motivational sensitivity, negative affect is significantly more likely to occur.

The study was also able to add to the understanding of the role of the BAS, although some of the findings were slightly confusing. Generally, the Bas is assumed to be associated with approach behaviour through the experience of hope, elation and happiness. Thus, in contrast to the BIS, the BAS is related to the experience of positive feeling (Gray, 1990; Carver, Sutton & Scheier, 2000). The current research demonstrated that BAS drive was inversely associated with all the outcome measures, whilst BAS fun was inversely associated with hopelessness and depression, and BAS reward was inversely associated with hopelessness, depression and suicidality. This finding supports research from neuropsychological studies which has demonstrated that BAS strength is associated with greater activity of the right prefrontal area, and that depressed individuals are characterised by hypoactivation of the left pre-frontal area (Henriques & Davidson, 1990; Sutton & Davidson, 1997). In other words, depression appears to be associated with a deficiency in approach motivation (i.e. low BAS strength).

One explanation for this association has been put forward which suggests that low BAS strength means that individuals are unmotivated to engage in activities, and, as a result, they may have little exposure to positive experiences. Furthermore, it is possible that this effect is exacerbated by a tendency for these individuals to not encode experiences as positive, simply because they are less emotionally responsive

to these experiences than individuals who have high BAS strength (Carver & White, 1994; Beevers & Meyer, 2002). Consequently, it would be expected that low BAS activation would be associated with low recall of positive experiences (rather than high recall of negative experiences). This hypothesis was only partially supported as the results showed that BAS fun was positively associated with over-general recall of positive memories, and BAS fun and BAS reward was also negatively related with over-general recall of negative memories. That is, high BAS strength was associated with less over-general recall of negative memories, and for BAS fun, high levels of BAS strength was also associated with more over-general recall of positive memories. There may be several reasons for this counter-intuitive finding.

Apart from the link between BAS and positive affectivity, we have very little knowledge about the various subscales, and their relationships with cognitive processing and recall of positive and negative experiences. Thus, explanations about the inverse relationship between BAS fun and BAS reward and over-general negative memory recall, can only be speculative. The fun seeking subscale is concerned with a desire for rewards and keenness towards spontaneous acts which are likely to be rewarding. Similarly, the reward responsiveness subscale is concerned with positive responses to the presence and anticipation of positive experiences. Drawing on script research from social psychology, it is thus possible that if an individual is predisposed towards positive rewarding experiences and they actively seek out such positive experiences, then negative experiences are likely to occur less frequently, and are, therefore, more likely to stand out. Similarly, because the individual who has high BAS strength is inclined towards positive experiences and positive responses to experiences, this individual is likely to have a considerable collection of positive

memories to draw upon which makes it likely that the task of choosing one particular memory for the autobiographical memory task may be slowed down. Thus, it is possible that the over-generality is not necessarily detrimental, but may simply reflect a processing issue.

Certainly, more research is needed to investigate the memory x BAS relationship, which incorporates the original measure of autobiographical memory recall. Seeing that the study made use of a written version of the autobiographical memory task, it is possible that the findings are confounded by issues surrounding this methodology. It is therefore desirable to investigate this relationship in another study; however, using the original memory task procedure. Furthermore, it would be helpful to include an element of qualitative analysis of the content of the memories, as it is possible that this might bring to light the potential mechanism of effect.

Consistent with the O'Connor and Forgan (in press) and the Flett et al. (2002) studies, BAS drive was positively associated with self-oriented and other-oriented perfectionism. Further analyses of the BAS x perfectionism relationship highlighted the complex nature of this association. For self-oriented perfectionism, the results showed that individuals who are highly concerned with achieving their own high standards, the level of BAS strength was irrelevant to the level of depression or suicidality reported. Only in individuals who reported low levels of self-oriented perfectionism was BAS-fun found to have an effect: low levels of self-oriented combined with high levels of BAS-fun resulted in significantly lower levels of depression. It is, thus, possible that high levels of perfectionism override the positive effect of approach motivation.

#### *8.4.2 A Cognitive Component of Perfectionism*

The hypothesis that high levels of perfectionism cognitions would be associated with increased psychological distress and suicidality was supported. Furthermore, the correlational analyses also demonstrated a significant positive relationship between perfectionism cognitions and all three perfectionism subscales. On the basis, of recent research suggesting that perfectionists, who experience frequent automatic perfectionistic thoughts, are more likely to report high levels of psychological distress in the form of dysphoria and anxiety (Hewitt et al., 1998), this study consequently examined mediating and moderating relationships between these variables in the prediction of distress and suicidality, both concurrently and prospectively.

The outcome of the hierarchical regression analysis was very revealing. Firstly, we found that socially prescribed perfectionism is associated with increased depression because perfectionistic individuals are characterised by a cognitive thinking style whereby they ruminate excessively about their perceived failure to meet the standards they believe others have of them. This finding is consistent with the early research of Beck (1967), who argued that depression is associated with a preponderance of negative automatic thoughts. Similarly, Nolen-Hoeksema has shown that a ruminative coping style plays a significant role in the perseverance of depression (e.g. Nolen-Hoeksema, Parker & Larson, 1994). The possibility that perfectionists are characterised by such automatic thoughts has long been alluded to; however, very little research has attempted to investigate the actual mechanism of effect. Given that perfectionism is a difficult personality trait to modify in a therapeutic setting, it is

vital to provide additional insight into the nature and role of the cognitive processes associated with perfectionism.

The relevance of perfectionistic cognitions was further demonstrated in the analyses investigating the link between such automatic thoughts and BIS/BAS, but also in the link with autobiographical memory recall. Interestingly, it was not the relationship with BIS which predicted psychological distress, but rather a debilitating interaction with BAS drive which caused increased hopelessness. Thus, although BAS was not significantly independently related to perfectionism cognitions, there was some evidence that high levels of automatic thinking with a perfectionistic content is maladaptive when the individual displays low BAS drive sensitivity. Our interpretation of this finding is that the motivational style is important to the manner in which the automatic thoughts are dealt with. This finding is consistent with the suggestion that repetitive thinking is not necessarily maladaptive per se, but is affected by the manner in which the processing of these thoughts is dealt with (Segerstrom, Stanton, Alden & Shortridge, 2003).

Furthermore, the mediating relationship between perfectionism cognitions and number of missing positive memories is also worth attention. This finding suggests that people who are high in perfectionistic automatic thoughts are characterised by an inability to produce any positive memories from their past, and it is this inability which causes increased experience of depression. This finding is very consistent with research on depression which has shown that individuals who are impaired in their ability to produce specific positive memories from their past (Williams & Broadbent,

1986), or to produce specific positive future thoughts (Andersen, Spielman & Bargh, 1992), are more likely to be depressed.

#### *8.4.3 Over-general Memory Recall*

The hypothesis that psychological distress and suicidality would be positively associated with over-general recall of positive memories was not supported. However, correlational analysis did suggest that suicide ideation was positively associated with the number of missing positive memories. That is, individuals who reported high levels of suicide ideation were more likely to be incapable of remembering any positive memories from their lives. There was not found to be any relationships between the perfectionism dimensions and recall of memories.

Of some interest though, was the relationship between BIS/BAS and over-general memory recall. There has recently been a call for research to investigate the mechanism by which BIS confers vulnerability to emotional distress, and it has been suggested that it might be particularly useful to conduct this research by looking at cognitive processing (Leen-Feldner, Zvolensky, Feldner & Lejuez, 2004). Our attempt to add to this research by investigating potential relationships between BIS/BAS and cognitive processing in the form of autobiographical memory recall did indeed deliver some interesting findings. BIS was negatively associated with over-general negative memory recall. That is, high BIS strength was associated with more specific recall of negative memories. This finding does not at first sight fit well with the BIS definition provided by Gray (1990). According to Gray (1990) BIS represents a sensitivity to signals of punishment and non-reward, which results in inhibition of behaviours which are perceived to lead to negative or painful outcomes. For that

reason, it would be expected that negative memories would be equally avoided as such memories would have no immediate reward and would be likely to lead to further negative thoughts.

However, at the same time, Gray also argued that BIS functioning is involved in the experience of negative feelings in response to punishment cues. Thus, BIS individuals are likely to be more prone to negative affect in general. Research on mood-congruency suggests that the relationship between mood and memory is reciprocal: the valence of the memories recalled or attended to is determined by the mood at the time of recall (Blaney, 1986; Setliff & Marmureck, 2002). However, this does not account for the similarly inverse relationship between over-general memory and BAS as described in Section 8.4.2.

Finally, a single moderating relationship between self-oriented perfectionism and over-general recall of negative memories was seen to predict suicide ideation. This interaction suggested that when low levels of self-oriented perfectionism was combined with less over-general recall of negative memories (i.e. more specificity), then participants were less likely to report suicide ideation, whereas low self-oriented perfectionism combined with high over-generality was predictive of increased suicide ideation. In contrast, high levels of self-oriented perfectionism when combined with few over-general negative memories led to increased suicide ideation, whilst when combined with high over-generality of negative memories was predictive of decreased suicide ideation. Such findings would suggest that we cannot simply conclude that one type of memory recall is more maladaptive than another; instead, it is the specific combination of personality disposition and cognitive processing of memories which is crucial to understanding psychological distress and suicidality.

There are several methodological considerations for this data. Obviously the slightly contradictory findings concerning the role of specific and over-general autobiographical memory recall suggests that it is necessary to consider the validity and reliability of this self-report version of the AMT. Henderson et al. (2002) first made use of this method as it increases levels of anonymity whilst also adds to speed of data collection as it allows the researcher to test groups of individuals simultaneously. They concluded that as their results were in support of previous studies, the self-report version of the AMT would appear to a reasonable method for collecting large sample sizes. However, no other studies, apart from the present study, have to my knowledge, made use of this methodology.

## **8.5 Limitations**

On the basis of the current findings, it seems appropriate to highlight a number of variables that may affect the validity and reliability of the results. The findings of this study would suggest that it is necessary to question the reliability of this method. For instance, some questionnaires were distributed and completed by students during a lecture, whilst others completed the questionnaire in their own time. Thus, it is possible that this difference in completion may have confounded the results as it is not known how some participants went about generating the memories: did they take a long time thinking about which memories to provide and possibly return to the questionnaire several times after having thought of a memory they believed to be suitable for the purpose? The memories presented may, therefore, reflect a well thought out collection of memories rather than an initial response.



A further issue concerns the measure of behavioural inhibition and approach. There is currently some debate regarding the extent to which self-report measures of BIS/BAS actually cover the concepts as they were originally framed within a biological framework. Heubeck, Wilkinson and Cologon (1998) found only mixed support for Carver and White's (1994) BIS/BAS scale as a measure of BIS/BAS as Gray's theory defined it. In addition, the fact that the BIS and BAS subscales were somewhat inter-correlated, it would suggest that there are still some measurement problems to address.

## **8.6 Conclusions and Where Next**

This study has addressed a number of issues pertaining to perfectionism and its relationship with psychological distress and suicidality. The results of this study can be summarised as follows. The study found that perfectionism when combined with high levels of behavioural inhibition (BIS) did predict increased distress. Furthermore, when perfectionism was associated with a tendency to engage in ruminative thoughts with a perfectionistic content, then psychological distress and suicidality was reported. These findings support the need to increase our knowledge about the motivational nature of perfectionism, and to consider perfectionism in terms of containing a cognitive component which may be of importance to attempts to modify perfectionism as a whole. Furthermore, there also appears to be an important relationship between the tendency to engage in perfectionism cognitions and motivation which requires further investigation in future research.

As pointed out in Study 2, there has been a plethora of research investigating the relationship between perfectionism and psychological distress; however, very few

studies have investigated perfectionism in individuals who have attempted suicide. There is, of course, much value in investigating whether the research findings from non-clinical student populations also hold in parasuicide patients, and, consequently, the main aim of the final study will be to test some of these findings in a sample of participants who have recently attempted suicide. Our primary aim is to investigate whether the moderating relationship between negative memories and self-oriented and socially prescribed perfectionism are also evident in these patients. Furthermore, we are interested in examining the findings from the current study (Study 3) which suggests that a reduced ability to recall any positive memories at all in response to positive cue words, when combined with perfectionism, predicted psychological distress.

Past research has demonstrated that parasuicidal patients are impaired in their ability to recall specific positive memories from their past (e.g. Williams & Broadbent, 1986), an ability which is important to success problem-solving. Furthermore, these patients are also impaired in their ability to produce specific positive thoughts about the future (e.g. MacLeod et al., 1993). MacLeod and colleagues (Vincent, Boddana & Macleod, 2004) recently extended this research by showing that parasuicidal patients are also impaired in their ability to generate specific goals for the future, in particular, they showed difficulties in generating specific strategies for achieving their goals. Dickson and MacLeod (2004) argued that it is useful to understand the role of future goals in the development of depression, in terms of Gray's (1982) motivational systems: A predisposition to expect failure results in attempts to generate approach goals (i.e. personally meaningful goals associated with the BAS motivational system), are judged to be futile. Therefore, on the basis of our results showing an adaptive link

between BAS motivation and perfectionism, we plan to extend this research in a parasuicidal population. Furthermore, we aim to, for the first time, include a future goals task to investigate the role of motivation in generating goals for the future.

## Chapter 9: Study 4

*Psychological Distress and Suicidality: Investigating the Role of Perfectionism and Autobiographical Memory in a Sample of Deliberate Self-harmers*

## *Summary*

A final study was carried out to investigate the key mediating and moderating relationships between perfectionism and autobiographical memory recall in a sample of parasuicide patients. The study had three aims: (i) to replicate the perfectionism x autobiographical memory findings in a clinical sample, (ii) to determine the motivational basis of perfectionism, and (iii) to explore the over-generality concept in the generation of goals for the future and goal achievement strategies. A sample of 40 patients who had been admitted to a Glasgow hospital following an episode of deliberate self-harm participated in the study and were followed up 6 weeks later. The patients completed the Autobiographical Memory Task and the Goals Task, and were assessed on measures of hopelessness, depression/anxiety, suicidality, perfectionism, and motivation. Hierarchical regression analyses showed that socially prescribed perfectionism interacted with over-general recall of both positive and negative memories to produce psychological distress/suicide ideation. In addition perfectionism both mediated and moderated the relationship between BIS and psychological distress. The results are discussed in relation to past research.

## 9.1 Introduction

Suicidal behaviour represents a social and health issue of prime importance in both the general and psychiatric populations, and as a result, the development of appropriate suicide prevention strategies has been made a priority in Great Britain (Scottish Executive, 2002; Department of Health, 2002). Research in this area often focuses on depression and hopelessness as powerful predictors of suicidality. However, with the recent interest in the role of personality and cognitive factors in the understanding of suicidality, research has indicated that existing cognitive theories of depression and hopelessness are inadequate in as far as they do not explain the co-occurrence of personality characteristics, nor do they consider that motivational factors may influence cognition. As a result, there has been a call for attempts to carry out research to enhance current theories by examining more inclusive models which acknowledge that personality and motivation informs our interpretation of negative events (cognitions), which in turn, contribute to suicidal risk.

Although psychological autopsy studies are generally found to be the most useful method of studying suicide, the investigation of survivors of suicide attempts may also hold tremendous value (Hawton, 2001). Such studies allow researchers to investigate a broader range of risk factors in a more detailed manner, with particular emphasis on the psychological state of mind of the suicidal individual. Furthermore, this method of study allows a prospective investigation to be utilised, and consequently such studies can be a powerful way of broadening our understanding of the suicidal mind as well as potential treatment methods and prevention strategies.

Therefore, the main aim of this final study is to extend our knowledge of important individual risk factors by investigating the relationship between personality and cognitions within an integrated model in a clinical sample, with the view to informing future preventative interventions. Specifically, the role of four factors in the suicidal process: perfectionism and behavioural inhibition/activation (personality), and autobiographical memory recall and goal formation and planning (cognitions), will be investigated.

### *8.1.1 Personality*

Psychological research (e.g. O'Connor & Sheehy, 2000; Abramson, Alloy, Hogan, Whitehouse, Gibb, Hankin & Cornette, 2000; Van Heeringen, Hawton & Williams, 2002) has highlighted that suicidal behaviour should not be viewed as an isolated incidence but rather as the outcome of a complex combination of circumstances, in which psychological variables are acknowledged to have a moderating effect on the need to escape from psychological distress (i.e. a suicide attempt). Research on perfectionism suggests that perfectionists tend to equate self-worth with performance, and consequently interruptions in meeting these standards are likely to be interpreted as failure (e.g. Hewitt & Flett, 1991). Thus, the non-attainment of self- or socially imposed standards may initiate a process of self-focus, negative affect and attempts to escape this self-awareness.

Our conclusions based on Studies 1, 2 and 3, certainly adds to this view as we found that self-oriented and socially prescribed perfectionism were associated with low perceived ability to regulate negative mood and poor coping strategies (Study 2). Furthermore, we found that perfectionism when combined with low motivational

sensitivity to signals of reward (BAS) also predicted psychological distress and suicidality. Most importantly, we found that slow recall of negative autobiographical memories moderated the relationship between perfectionism and distress (Study 1), and that the relationship between perfectionism cognitions, that is a tendency to ruminate about the need for perfection, and suicide ideation was mediated by the reduced ability to produce any positive memories at all. All-in-all, these findings have a number of implications: (i) that perfectionists actively attempt to avoid past memories which signal defeat and failure, and (ii) the memory impairment is further exacerbated or sustained by the tendency to engage in automatic thoughts with a perfectionistic contents, and (iii) the relationship between perfectionism and distress is mediated by a low motivational sensitivity to cues of reward.

### *8.1.2 Cognitions*

Research on autobiographical memory has shown that suicidal individuals are much worse at recalling specific memories from their past than are controls. It has been suggested that some individuals activate over-general memory strategies in an effort to avoid potentially emotional issues (e.g. escape) (e.g. Williams & Broadbent, 1986). However, this memory strategy has been found to be detrimental to psychological well-being as the ability to be specific in memory recall has been found to be an important aspect of social problem-solving (Evans, Williams, O'Loughlin & Howells, 1992; Pollock & Williams, 2001).

The specificity problem has also been found to exist in depressed individuals' formation of strategies for achieving goals for the future. Recent research suggests



that sensitivity to hopelessness, which is found in individuals who are predisposed to expect failure (i.e. perfectionists), may inhibit the generation of approach goals and plans. Based on Gray's (1983) motivational systems approach goals are defined as goals which are focused on achieving and maintaining positive outcomes (BAS), whereas avoidance goals are focused on avoiding negative outcomes (BIS). Dickson & MacLeod (2004) found that mood-disturbed individuals were (i) more likely to generate fewer approach goals and plans, and (ii) have difficulty in forming specific mental representations of these goals and plans. These findings suggest that these individuals become stuck at a general level of goal formulation and planning such that they continue to pursue vague goals thereby impeding the development of more defined and adaptive goals.

Based on the findings from these seemingly disparate research areas, the proposed study wishes to test a novel approach to understanding suicidality. To date, no research has investigated a link between perfectionism and autobiographical memory (however, see Studies 1-3), and although there is some research (O'Connor & Forgan, in press) to suggest a pathway to perfectionism through our motivational systems (i.e. sensitivity to reward/failure), this has only been examined in samples of young healthy adults, and therefore, it needs to be extended to suicidal individuals. Consequently, this final study will include a prospective investigation of the relationship between personality, cognitions, and motivation, in the prediction of suicidality and psychological distress over six weeks, in a sample of deliberate self-harm patients admitted to Glasgow Royal Infirmary. If it is determined that this integrated model is useful in predicting suicidality, then not only will the

clarification of the role of these factors inform theory, but it will also suggest a framework for developing interventions to reduce parasuicide.

### *9.1.3 Aims and Hypotheses*

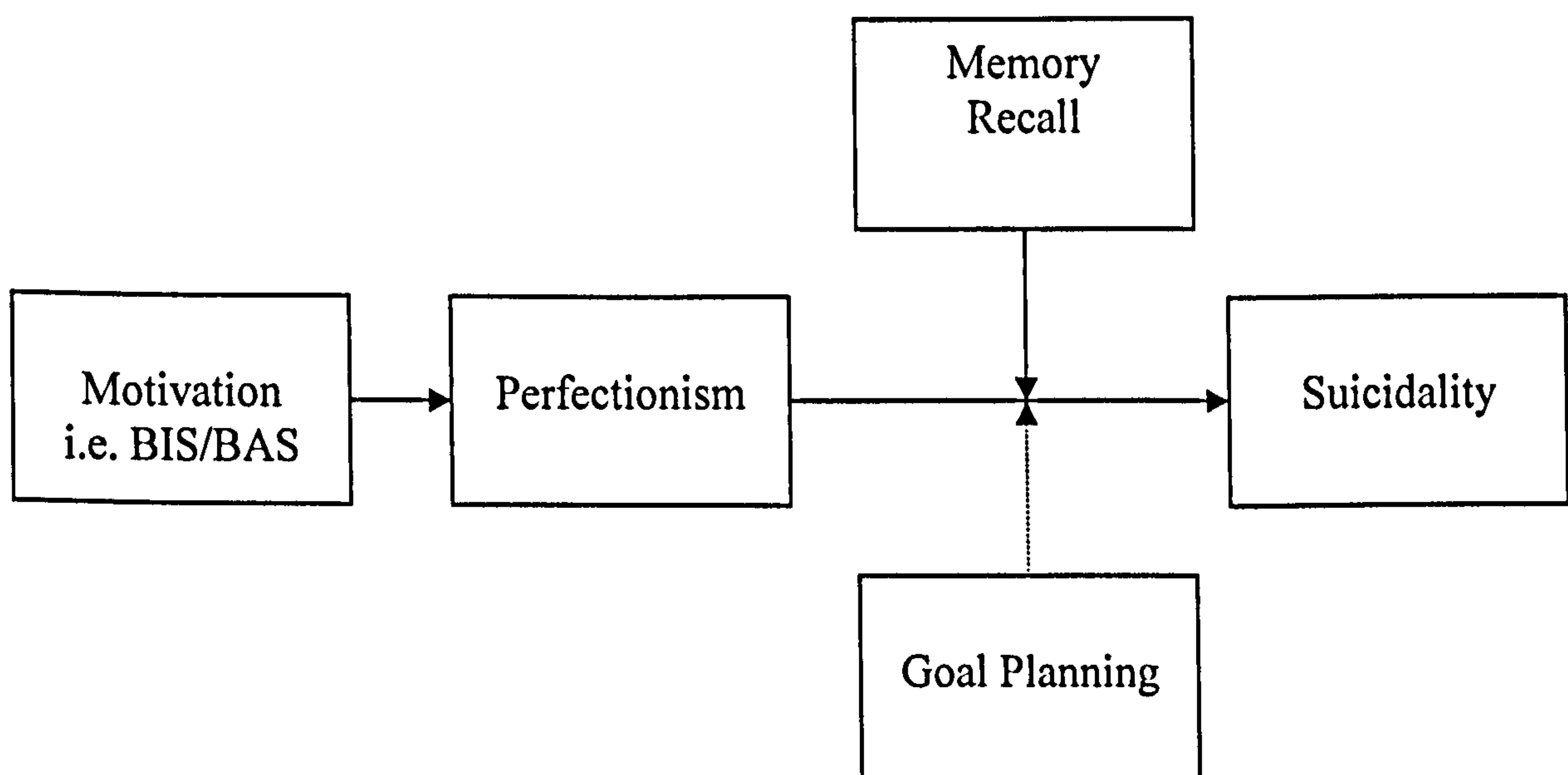
We set out to extend to extend the findings from the previous three studies in a sample of patients who had recently engaged in parasuicidal behaviour (i.e. deliberate self-harm; DSH). For that purpose we had four aims:

1. To investigate the moderating effect of autobiographical memory recall on the relationship between perfectionism (self-oriented and socially prescribed) and psychological distress (hopelessness, depression/anxiety, suicide ideation).
2. To investigate the mediating effect of perfectionism (self-oriented and socially prescribed) on the relationship between motivational sensitivities (BIS/BAS) and psychological distress (hopelessness, depression/anxiety, suicide ideation).
3. To investigate whether the over-generality phenomenon also extends to the ability to generate specific goals and strategies to achieve these goals in the future. More specifically we wish to examine whether there are differences between the generation of approach goals (BAS) and avoidance goals (BIS).
4. To investigate any differences between first-time and repeat attempts parasuicide patients on all measures.

Consequently, in the light of the findings from the past three studies (Studies 1, 2 and 3), and on the basis of previous research in the area, we hypothesised that:

- Self-oriented and socially prescribed perfectionism would interact with over-general/slow recall of memories to predict psychological distress (hopelessness, depression/anxiety) and suicide ideation.
- Self-oriented and socially prescribed perfectionism would mediate the relationship between BIS, and psychological distress, whilst BAS would act as a protective factor.
- BIS would correlate with the number of avoidance goals for the future, while BAS would be associated with the number of approach goals for the future.
- Repeat attempt parasuicide patients will score higher on the outcome measures and self-oriented and socially prescribed perfectionism, than will the first-time parasuicide patients.

Figure 9.1. Model being tested in study 4.



## 9.2 Methodology

### 9.2.1 Design and Measures

This study utilised a prospective between groups design. For the purposes of this study, DSH is defined as “an act with a non-fatal outcome, in which the individual deliberately initiates a non-habitual behavior that, without intervention from others will cause self-harm, or deliberately ingests a substance in excess of the prescribed or generally recognised therapeutic dosage, and which is aimed at realizing changes which the subject desired via the actual or expected physical consequences”. This definition is identical to the definition of parasuicide used in the WHO/Euro study (p. 98; Platt, Bille-Brahe, Kerkhof, Schmidtke, Bjerke, Crepet, De Leo, Haring, Lönnqvist, Michel, Philippe, Pommereau, Ouerejeta, Salander-Renberg, Temesváry, Wasserman & Sampaio Faria, 1992). The study included 4 outcome variables:

- Hopelessness (BHS; Beck et al., 1974).
- Depression and Anxiety (HADS; Zigmond & Snaith, 1983). This is a 14-item scale which measures depression and anxiety.
- Suicide Ideation (SPS suicide ideation subscale; Cull & Gill, 1988).

Furthermore, there were four predictor variables:

- Autobiographical memory recall (AMT; Williams & Broadbent, 1986). This requires participants to recall specific autobiographical memories in response to positive, negative and neutral cue words. The memories are subsequently coded according to the framework suggested by Williams and Dritschel (1992): (i) specific: Memories which describe a specific event which happened within the space of one day (e.g. beach: “I remember going for a walk on the beach with my boyfriend on my birthday”, or (ii) over-general: Memories which lack a temporal component and which happened over an extended period of time or which happened

often (e.g. beach: "I go for walks with my dog on the beach"). Furthermore, based on observations from the previous studies, we included a further category of memories which relate to the inability to produce any memories at all in response to a cue word (e.g. beach: "I have no memories of a beach").

- The Goals Task (Dickson & MacLeod, 2004) was designed to measure respondents' idiographic approach and avoidance goals (i.e. future experiences which the individual will be trying to achieve or avoid). The task makes use of goal prompts: "In the future it will be important for me to...." (approach) or "In the future it will be important for me to avoid...." (avoidance). Each individual is given 75 seconds to write down as many future goals that come to mind within each goal condition, and scores are calculated representing total number of goals for the approach and avoidance conditions. The Goals Task is followed by a Plans Task which entails the respondent thinking of strategies or ways to achieve the two most important approach and avoidance goals. Prompts in the Plans Task are "How can I accomplish this?" and "How can I avoid this?" for the approach and avoidance conditions respectively. For each prompt, the respondent is asked to commence each goal achievement or avoidance plan with the words 'by' or 'by not'. Respondents are given 75 seconds to generate as many plans that come to mind within each condition. Both goals and plans are coded in terms of total number of either approach or avoidance, whilst plans are also coded for specificity according to the Williams & Dritschel (1992) coding system of specific or over-general memory as described above.

- Perfectionism (MPS-H; Hewitt & Flett, 1991). The MPS-H is a multidimensional measure of perfectionism which includes three separate dimensions: self-oriented (excessively high personal standards), other-oriented

(exceedingly high standards for significant others), and socially prescribed perfectionism (perception of unrealistically high standards being imposed on the self).

- Behavioural inhibition and activation (BIS/BAS; Carver & White, 1994). This scale concerns the measurement of motivational sensitivities based on Gray's (1982) conceptualisation of a punishment driven (BIS) and a reward drives (BAS) motivational system. The scale includes four subscales: (i) global BIS, (ii) BAS Drive, (iii) BAS Fun, and (iv) BAS Punishment.

With the exception of the Goals Task (Dickson & MacLeod, 2004) all of the above mentioned measures have been administered to a clinical population previously.

At the time of follow up, approximately 6 weeks later, only the hopelessness (BHS), depression and anxiety (HADS) and the suicide ideation (SPS) scales were included. The internal consistency for each of the measures is shown in table 9.1.

Table 9.1 Measure of Cronbach's alpha internal consistency for all the measures at Time 1, and where measures were included, also at Time 2.

Measure	Time 1 ( $\alpha$ )	Time 2 ( $\alpha$ )
Depression	.69	.76
Anxiety	.71	.79
Hopelessness	.92	.92
Suicide ideation	.83	.86
Self-oriented perfectionism	.90	-
Other-oriented perfectionism	.79	-
Socially prescribed perfectionism	.88	-
BIS	.60	-
BAS drive	.76	-
BAS fun	.66	-
BAS reward	.80	-

### *9.2.2 Participants*

During the testing period (May to September, 2005) patients who presented to the Royal Infirmary in Glasgow with an episode of deliberate self-harm were approached and a total of 40 patients were recruited. Of these patients four declined to take part in the study, seven were deemed to be unsuitable to take part by the psychiatric liaison team, an unknown number of patients were not traceable within the hospital system or were discharged from the hospital before the psychiatric liaison team were able to assess them, and approximately 15 were unable to take part due to some physical after-effect of the self-harming episode (drowsiness, sickness). Twenty-five participants took part in the follow-up part of the study which amounts to an attrition rate of 37.5%. This sample size is inadequate in terms of statistical power (Cohen, 1992); however, due to recruitment difficulties within the hospital a larger sample was not obtainable within the time frame (see also Section 9.4.1).

We did not include a control in this study for two main reasons: (i) previous research has already carried out which established differences between parasuicide patients and controls on measures of autobiographical memory (e.g. Williams & Broadbent, 1986), and perfectionism (Hunter & O'Connor, 2003), and consequently we were not interested in replicating these findings. Rather, our focus was on identifying any mechanism/pathways between the variables which would help us understand the ways in which e.g. autobiographical memory and perfectionism have their effect on psychological distress, and (ii) as this study was carried out as part of a PhD we were under some time restraints which were

complicated by a difficulty in recruiting participants caused by the set-up at the hospital.

The inclusion and exclusion criteria for participation in the study were as follows:

Inclusion: All consecutive adult patients (aged 16 and over) admitted to the acute receiving wards, presenting with a parasuicide episode will be eligible for participation.

Exclusion: (i) Participants who are unfit for interviews, (ii) Those from which we could not get informed consent, (iii) prisoners, and (iv) those participants for whom English is not their first language as The Autobiographical Memory Task (AMT; Williams & Broadbent, 1986) was developed for use in English speaking participants.

### *9.2.3 Procedure*

Pre-interview. Ethical permission to carry out the experiment was obtained from the NHS, Local Ethics Committee, and from the University of Stirling, Department of Psychology ethical board, prior to commencing the study. Patients were admitted to an acute receiving ward within the Glasgow Royal Infirmary and were assessed by the psychiatric liaison team within approximately 18 hours of arriving at the hospital. However, the time period between arriving at the hospital and being seen by the psychiatric team could be longer depending on the physical state of the patient, and the level of medical care required. Patients were only approached by the researcher after they had been assessed by a member of the psychiatric liaison team and they were judged to be lucid enough to answer the questions.



Interview. Participants were approached and asked if they would be interested in taking part in a research study carried out by the University of Stirling. Furthermore, they were informed that participation was not part of their psychiatric assessment, that participation would be confidential, and that they could withdraw at any stage, without any effect on their further treatment. Participants were provided with an information sheet about the study (Appendix 28) and were asked to sign a consent form (Appendix 29). Before commencing the experimental tasks all participants were asked to provide general demographic information concerning method of self-harm, reason for self-harm, whether the episode was their first or was a repeat attempt, details of their home situation, relationship status, and work status. Missing information was also available from the respective patient's medical file. During the interview session, participants always completed the Autobiographical Memory Task and the Goals Task first, followed by the battery of self-report measures described in Section 9.3.1. Presentation of questionnaires was counter-balanced in alternate sessions. The aim of the self-report measures was explained to the participant and possible responses were presented to the participant on a piece of card. Each question was read to the participant by the researcher, and they were asked to indicate their response on the card. A copy of the questionnaire is included in Appendix 30. On completion of the test session participants were asked if they would be willing to take part in a short follow-up session a few weeks later. Furthermore, a letter was sent to the participant's general practitioner informing them of their participation in the study (Appendix 31).

Post-interview. Approximately six weeks after the interview, participants were contacted by telephone and they were asked to answer a few short questions

concerning their current well-being (hopelessness, depression/anxiety, suicidality; See Appendix 32). A six week follow-up period was chosen because our experience from the previous studies (Studies 1 & 3) showed us that this period is adequate for the investigation of changes in distress, but is also sufficiently short to minimise attrition.

## **9.3 Results**

### *9.3.1 Aims of Analysis*

Given that we during the course of the previous three studies found evidence to support both mediating and moderating pathways between the variables, we concluded that it would be wise to include both types of analyses in this final study as well. Thus, although we on the basis of Study 3, in the relationship between perfectionism, motivation (BIS/BAS) and psychological distress, are interested in mediating relationships, we are also going to carry out moderating analyses. Similarly, for the relationship between autobiographical memory, perfectionism and psychological distress are mainly interested in the existence of moderating relationships, we will also include mediating analyses of the variables.

### *9.3.2 Demographics*

Table 9.2 shows the demographic details for the participants according to whether they presented to the hospital following their first episode of deliberate self-harm or after a repeat episode of deliberate self-harm. The table illustrates a number of interesting findings. Firstly, there were more repeat attempt DSH patients (N=23) than first-time DSH patients (N=17). Interestingly, although there were more female patients in both patient groups (first time vs. repeat) this difference was not

significant ( $t=.14$ ,  $df=38$ , ns). In the reporting of reason for DSH ( $F_{(1, 39)}=.69$ , ns) or mode of DSH ( $F_{(1, 39)}=.43$ , ns), there were also no significant differences between the two groups; over-dosing was by far the preferred method of DSH, and the primary reason for engaging in suicidal behaviour was the combination of a number of factors/events rather than simply one underlying cause (the categories of reasons were classified by us and were subsequently cross-checked by an independent psychology post-graduate student. The inter-rated reliability was .91). Finally, as regards home demographics, there was a significant difference between first-timers and repeat self-harmers in their relationship status ( $t=2.08$ ,  $df=38$ ,  $p<.05$ ) and in their family status (i.e. children or no children;  $t=2.15$ ,  $df=38$ ,  $p<.05$ ). That is, repeat self-harmers were significantly more likely to be single, and to be childless. Work status did appear to have a significant effect ( $t=.22$ ,  $df=38$ , ns).

Table 9.2 Summary table showing gender, reason for self-harm, mode of self-harm, relationship, work, and family status for first time vs. repeat attempt parasuicides.

		First Time (N=17)	Repeat (N=23)
Gender	Female	10 (59%)	13 (56%)
	Male	7 (41%)	10 (44%)
Reason for Self-harm	Fed up with life	5 (29%)	5 (22%)
	Depression	1 (6%)	3 (13%)
	Relationship problems	2 (12%)	1 (4%)
	Financial problems	2 (12%)	0
	Don't know	1 (6%)	1 (4%)
	Bullying	0	2 (8%)
	Combination of problems	6 (35%)	11 (49%)
Mode of Self-harm	Over-dose	16 (94%)	22 (96%)
	Cutting	0	1 (4%)
	Burning	1 (6%)	0
Relationship status	Single	9 (53%)	19 (82%)
	Married/with partner	8 (47%)	4 (18%)
Work status	Working/college	8 (47%)	10 (43%)
	Unemployed	9 (53%)	13 (57%)
Family status	Children	13 (77%)	10 (43%)
	No children	4 (23%)	13 (57%)

### High vs. Low Perfectionism

Finally, analyses were conducted to examine whether there were any demographic differences between high and low perfectionism. High and low levels of perfectionism were established by way of median split. This analysis only showed one significant difference: individuals high in social perfectionism (Mean=.75, SD=.44) were significantly less likely to have children than were non-perfectionists (Mean=.40, SD=.50) ( $t=2.33$ ,  $df=38$ ,  $p<.05$ ).

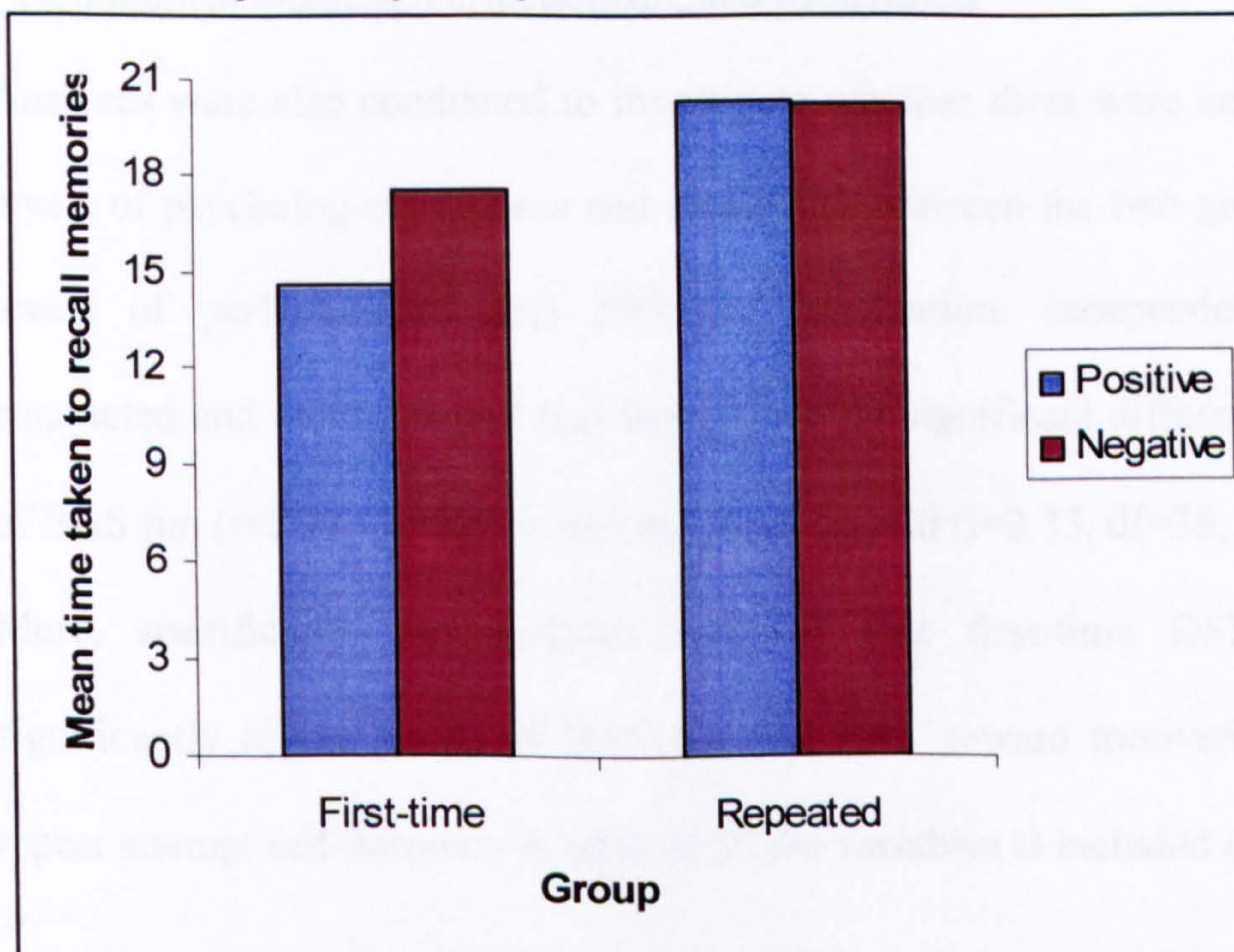
We furthermore, compared high and low perfectionists on the outcome and predictor variables. Independent t-tests showed that high self-oriented perfectionists ( $M=24.35$ ,  $SD=2.96$ ) were significantly higher on BIS motivation than were low self-oriented perfectionists ( $M=20.50$ ,  $SD=3.73$ ) ( $t(-3.61)$ ,  $df=38$ ,  $p<.001$ ). Furthermore, they were also significantly higher on BAS Drive (High: 11.15,  $SD=3.95$ ; Low:  $M=8.65$ ,  $SD=2.58$ ), and showed a trend towards reporting higher levels of depression (High:  $M=14.35$ ,  $SD=3.51$ ; Low:  $M=12.25$ ,  $SD=4.18$ ; ( $t(-1.72)$ ,  $df=38$ ,  $p=.09$ ), and BAS Reward (High:  $M=16.45$ ,  $SD=3.53$ ; Low:  $M=14.10$ ,  $SD=4.10$ ;  $t(-1.94)$ ,  $df=38$ ,  $p=.06$ ). High levels of socially prescribed perfectionism was equally associated with increased levels of depression (High: 14.50,  $SD=3.52$ ; Low:  $M=12.10$ ,  $SD=4.09$ ;  $t(-1.99)$ ,  $df=38$ ,  $p=.05$ ), and showed a trend towards higher levels of BAS Drive (High:  $M=10.90$ ,  $SD=3.58$ ; Low:  $M=8.90$ ,  $SD=3.18$ ;  $t(-1.87)$ ,  $df=38$ ,  $p=.07$ ).

### Memory Recall

A mixed ANOVA was conducted to determine whether there were any differences in recall latency of positive and negative memories between the first-time and repeat

attempt DSH patients. This analysis revealed that there was not a main effect of memory ( $F_{(1, 38)}=1.38$ , ns), nor was there a memory x group interaction ( $F_{(1, 38)}=7.77$ , ns); however, there was a significant main effect of group ( $F_{(1, 38)}=5.43$ ,  $p<.05$ ). That is, as shown in Figure 9.2, repeat attempt DSH patients were significantly slower at recalling memories than were first-time attempters.

Figure 9.2 Figure showing the time taken to recall positive and negative memories (in seconds) for first-time and repeat attempt DSH patients.



Analyses, in the form of mixed ANOVAS, were also conducted for over-general recall of memory. These tests showed that there was a main effect of memory valence ( $F_{(1, 38)}=5.93$ ,  $p<.05$ ), and a main effect of group (i.e. first-time vs. repeat attempt) ( $F_{(1, 38)}=5.16$ ,  $p<.05$ ); however, there was not a significant memory by group interaction ( $F_{(1, 38)}=.39$ , ns). As shown in Table 9.3, both first-time parasuicide patients and repeat attempts parasuicide patients recalled significantly more over-general negative memories than positive memories, and repeat attempt

patients reported significantly more over-general memories in general than did first-time patients.

Table 9.3 Table showing the mean time (in seconds) and standard deviations (in parentheses) taken to recall positive and negative memories, and mean number of over-general positive and negative memories, by group.

		First-time	Repeat
Memory Recall (mean latency in seconds)	Positive	14.59 (6.80)	20.37(5.88)
	Negative	17.59 (7.95)	20.19 (6.57)
Over-general Recall	Positive	2.12 (1.36)	3.09 (.99)
	Negative	2.76 (1.64)	3.39 (1.08)

### Psychological Distress, Perfectionism, and Motivation

Analyses were also conducted to investigate whether there were any differences in levels of psychological distress and suicidality between the two groups, as well as levels of perfectionism, and BIS/BAS motivation. Independent t-tests were conducted and demonstrated that there was only significant differences in the level of BAS fun ( $t=2.17$ ,  $df=38$ ,  $p<.05$ ) and BAS reward ( $t=2.33$ ,  $df=38$ ,  $p<.05$ ) reported. More, specifically, the analyses revealed that first-time DSH patients had significantly higher levels of BAS fun and BAS reward motivation than did the repeat attempt self-harmers. A table of all the variables is included in Table 9.4.

Table 9.4 Mean scores and standard deviations (in parentheses) for all variables by group.

Measure	First-time	Repeat	t.
Depression	13.06 (4.02)	13.48 (3.99)	-.33
Anxiety	12.59 (4.49)	14.43 (3.26)	-1.51
Hopelessness	10.71 (6.62)	13.70 (5.01)	-1.63
Suicide ideation	24.24 (8.98)	26.17 (8.26)	-.71
Self-oriented perfectionism	73.06 (19.51)	63.83 (21.50)	1.40
Other-oriented perfectionism	51.12 (16.80)	57.04 (15.89)	-1.14
Socially prescribed perfectionism	60.18 (21.61)	60.83 (15.30)	-.11
BIS	23.12 (2.93)	21.91 (4.41)	.98
BAS drive	10.94 (3.91)	9.13 (3.00)	1.66
BAS fun	12.53 (3.08)	10.43 (2.97)	2.17*
BAS reward	16.88 (3.69)	14.09 (3.80)	2.33*

\* $p<.05$

### *9.3.3 Correlational Analysis*

Zero-order correlations, means and standard deviations for all the variables are shown in Table 9.5. The correlation analyses demonstrated that depression, anxiety, hopelessness and suicide ideation were all significantly positively correlated. Only one association was found between the outcome variables and memory recall: Anxiety was positively associated with time taken to recall positive memories. Thus, the more anxious, the longer time was taken to recall specific positive memories. Anxiety was also positively associated with over-general recall of positive memories, whilst suicide ideation and hopelessness (a trend) were significantly positively correlated with the number of missing positive memories.

Of the perfectionism dimensions, only socially prescribed perfectionism was found to be associated with the outcome variables: This dimension was positively associated with both depression and anxiety. None of the perfectionism dimensions were associated with time taken to recall memories; however, socially prescribed perfectionism did demonstrate a trend towards a positive association with negative memory recall. Thus, the more socially prescribed, the longer taken to recall a specific negative autobiographical memory. This finding is of particular interest as it indicates a similar relationship between memory and perfectionism in a parasuicide population as was shown in the student populations (Study 1). In addition, both socially prescribed and other-oriented perfectionism were negatively associated with number of missing negative memories.

With regard to BIS/BAS motivation, BIS was found to be positively associated with each of the three perfectionism dimensions. Furthermore, BIS was also positively

associated with depression and showed a trend towards a positive relationship with suicide ideation. BIS also showed a trend towards a negative association with negative memory recall: the higher the BIS the faster the recall of specific negative memories. Finally, BIS also showed a trend towards a positive relationship with BAS reward. Of the three BAS subscales, both BAS drive and BAS reward were positively associated with self-oriented perfectionism. However, all of the BAS subscales were negatively correlated with hopelessness.

Over-general avoidance (BIS) goals and over-general avoidance (BIS) strategies both showed a trend towards a positive correlation with anxiety and self-oriented perfectionism. Specifically, individuals who were over-general in their generation of avoidance goals, as well as their avoidance strategies, reported higher levels of anxiety and they were also more (self-oriented) perfectionistic. Similarly, socially prescribed perfectionism was positively correlated with over-general approach (BAS) strategies. With regard to memory recall, there was a negative association between over-general goal generation and time taken to recall negative memories. That is, individuals who were over-general in their ability to generate approach (BAS) goals and avoidance (BIS) goals were also faster at recalling specific negative memories. In contrast, individuals who reported more specific approach (BAS) goal strategies also reported significantly less hopelessness. Furthermore, there was a trend towards a trend towards a positive association between BIS and over-general avoidance (BIS) goals. However, over-general avoidance (BIS) goals were also positively associated with BAS fun.



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
1 Depression	-																									
2 Anxiety	.767***	-																								
3 Hopelessness	.344*	.397*	-																							
4 Suicide	.572***	.534***	.421**	-																						
5 Self	.300	.184	-.058	.186	-																					
6 Other	.164	.039	.025	-.402	.483**	-																				
7 Social	.369*	.333*	.199	.168	.582***	.514***	-																			
8 BIS	.316*	.171	.051	.278	.506***	.315*	.341*	-																		
9 BAS drive	-.217	-.107	-.382*	-.191	.368*	.024	.151	.074	-																	
10 BAS fun	-.125	-.183	-.383*	-.109	.132	.072	-.047	.214	.538***	-																
11 BAS reward	-.300	-.217	-.405**	-.258	.365**	-.018	-.035	.304	.655***	.542***	-															
12 Positive	.235	.437**	.095	.165	-.102	-.035	.043	-.195	-.132	-.217	-.335*	-														
13 Negative	-.032	.093	.129	-.033	-.150	-.241	-.267	-.311	.049	-.026	-.063	.421**	-													
14 Negative general	-.059	.061	.218	-.037	-.118	-.171	-.163	-.093	-.051	-.075	-.026	.460**	.847***	-												
15 Positive general	.124	.362*	.205	.115	-.153	.020	.016	-.120	-.096	-.109	-.376*	.881***	.427**	.567***	-											
16 Positive missing	.264	.223	.290	.340*	-.079	-.157	.064	-.171	-.102	-.268	-.395*	.480**	.272	.210	.382*	-										
17 Negative missing	-.007	.061	.022	.095	-.178	-.390*	-.335*	-.202	-.115	-.114	-.049	.219	.394*	.250	.069	.284	-									
18 Approach goals specific	.136	.206	-.019	-.006	.164	-.085	.130	-.015	.110	-.032	.045	-.003	.252	.174	-.010	.103	-.061	-								
19 Approach goals general	-.085	-.177	-.041	.109	.056	.108	.149	.240	.129	.244	.224	-.248	-.432**	-.409**	-.268	-.256	-.163	-.424**	-							
20 Avoidance goals specific	.234	.265	.099	.184	.265	-.095	.148	.108	.098	-.171	.112	.101	.246	.223	.042	.175	-.086	.844***	-.215	-						
21 Avoidance goals general	-.097	.053	-.246	.069	.043	.145	.131	.266	.225	.418**	.298	-.105	-.316*	-.303	-.113	-.332*	-.007	-.189	.438**	-.282	-					
22 Approach strategy specific	.070	-.027	-.316*	.089	.149	.124	.130	.192	.098	.086	.112	-.197	-.273	-.372*	-.218	.019	-.086	-.064	.245	-.026	.198	-				
23 Approach strategy general	-.210	-.239	-.104	-.153	.132	.225	.329*	.132	.223	.202	.118	-.391*	-.384*	-.400*	-.370*	-.268	-.324*	-.112	.652***	-.205	.362*	-.019	-			
24 Avoidance strategy specific	.234	.265	.099	.1884	.265	-.095	.148	.108	.098	-.171	.112	.101	.246	.223	.042	.175	-.066	.844***	-.215	1.00***	-.282	-.026	-.205	-		
25 Avoidance strategy general	-.192	.014	-.074	.056	-.150	.004	.117	-.113	.215	.115	.010	.077	-.175	-.185	.171	-.173	-.239	-.167	.345*	-.198	.459**	.106	.353*	-.198	-	
Mean	13.30	13.65	12.43	25.35	67.75	54.53	60.55	22.43	9.90	11.33	15.28	17.91	19.08	3.13	2.68	.88	.30	.35	1.40	.03	1.18	.08	1.10	.03	.65	
SD	3.96	3.89	5.87	8.52	20.94	16.34	17.99	3.86	3.49	3.16	3.96	6.85	7.21	1.36	1.25	1.04	.56	.89	1.06	.16	.68	.47	.87	.16	.53	

Table 9.5 Zero-order correlations, means and standard deviations for all the variables.

### 9.3.4 Examination of Mediation

To test for mediation effects, hierarchical multiple regressions were conducted with each of the outcome variables. Separate regressions were consequently carried out to investigate whether (i) the independent variable affected the dependent variable, (ii) the independent variable affected the mediator variable, and (iii) the mediator variable affected the outcome variable when the independent variable has been controlled for, and whether this relationship has been reduced to non-significance. Finally, Sobel tests were used to confirm mediation. The relationships where either full or partial mediation were corroborated, are described below.

#### BIS

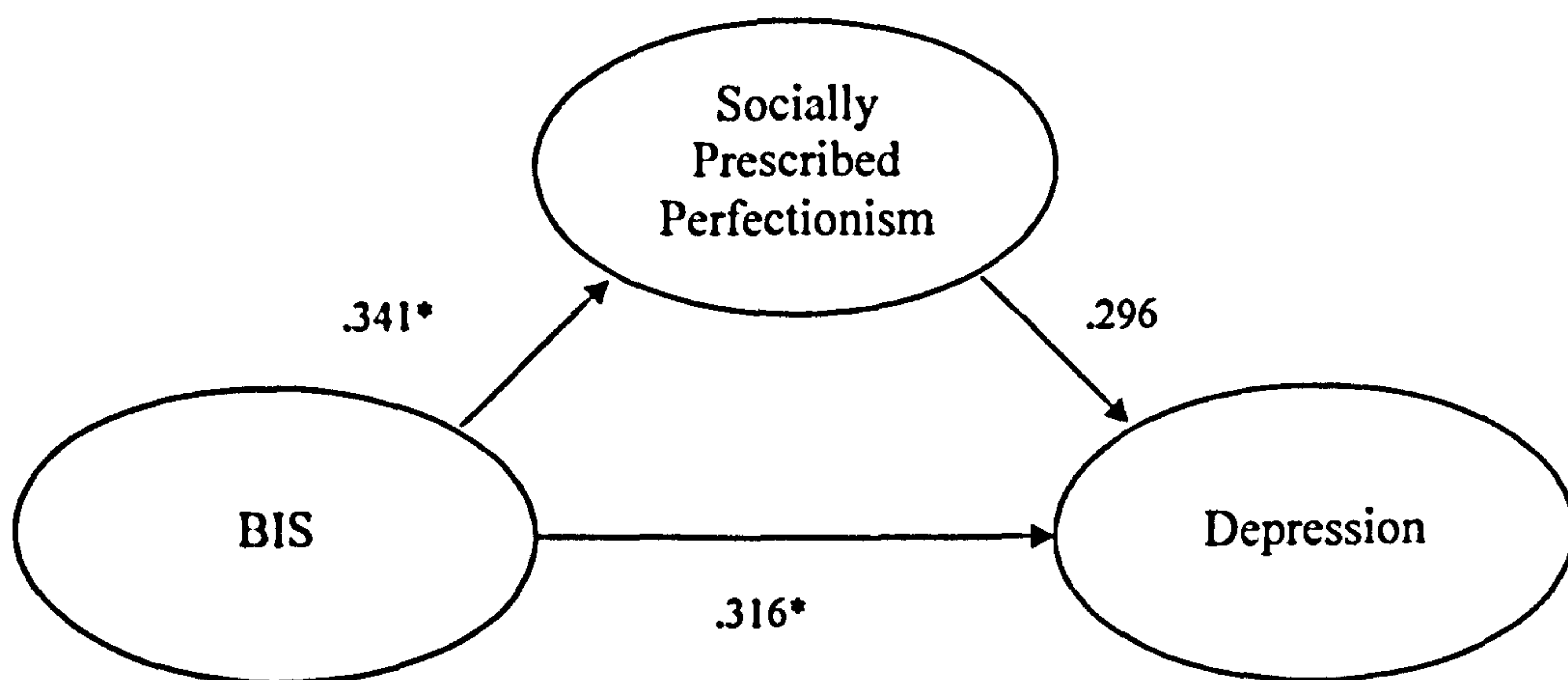
To test condition 1 for mediation, four regressions were conducted in which depression, anxiety, suicide ideation and hopelessness were regressed on BIS motivation. These tests revealed that BIS motivation was significantly associated with higher depression ( $\beta=.32$ ,  $p<.05$ ), and showed a trend towards being positively associated with suicide ideation ( $\beta=.28$ ,  $p=.08$ ). However, BIS was not significantly associated with anxiety ( $\beta=.17$ ,  $p<.ns$ ) and hopelessness ( $\beta=.05$ ,  $ns$ ), and, therefore, only the relationship between BIS and depression met the first condition for mediation.

To test condition two for mediation, regression analyses were performed in which either of the perfectionism dimensions, over-general memory recall, and over-general goal generation were regressed on BIS. The results showed that BIS was positively associated with all of the perfectionism dimensions (Self:  $\beta=.56$ ,  $p<.001$ ; Social:  $\beta=.34$ ,  $p<.031$ ; Other:  $\beta=.32$ ,  $p<.05$ ). Furthermore, BIS showed a trend towards a

positive association with over-general avoidance goals ( $\beta=.27, p=.09$ ), and a negative relationship with time taken to recall negative specific memories ( $\beta=-.31, p=.05$ ).

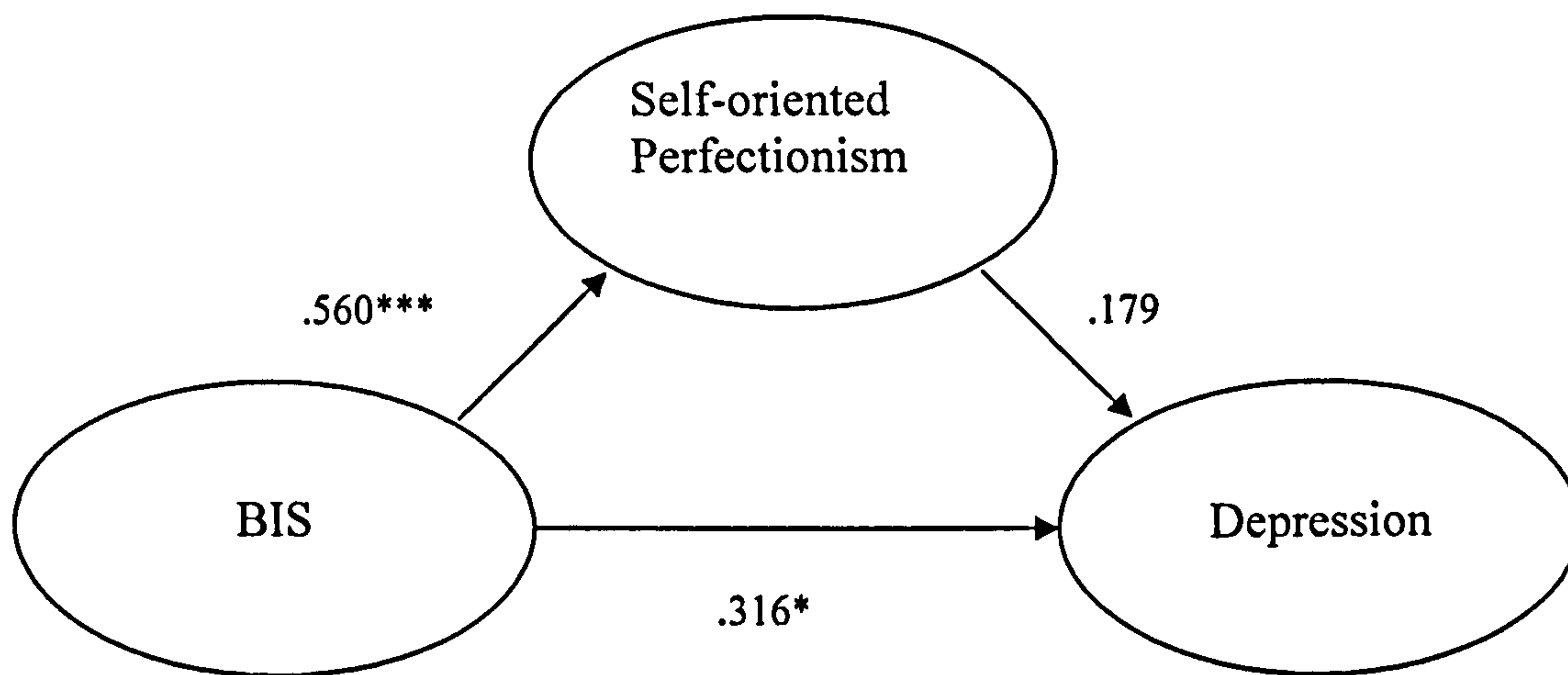
Given the significant results reported above, the third condition for mediation (e.g. does perfectionism significantly reduce the relationship between BIS and depression?) was tested in a further set of regression analyses. Overall the analyses revealed that, for depression, BIS accounted for 7.6% of the variance. When socially prescribed perfectionism entered the equation at step 2, it explained a further 5.7% of the variance ( $F(1, 39)=3.98, p<.05$ ), and reduced the beta weight for BIS to non-significance ( $\beta=.22, ns$ ; See Figure 9.3). The Sobel test did not confirm full mediation. When self-oriented perfectionism was entered at step 2, it explained a further 22% of the variance ( $F(1, 39)=2.56, p=.09$ ), and reduced the beta weight for BIS to non-significance ( $\beta=.22, ns$ ; See Figure 9.4). However, again the Sobel test did not confirm mediation.

Figure 9.3 Socially prescribed perfectionism as a mediator of the effect of BIS on depression at Time 1.



Note. \*  $p<.05$

Figure 9.4 Self-oriented perfectionism as a mediator on the effect of BIS on depression at Time 1.



Note. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

### 9.3.5 Examination of Moderation

#### Perfectionism x Memory Recall

The moderating model was again examined using hierarchical multiple regressions with interaction terms (Cohen & Cohen, 1983). In the perfectionism x memory recall analyses, participants' distress (depression, anxiety, suicide ideation, and hopelessness) scores at Time 1 served as the dependent variable. Prior to analyses the predictors were centred as recommended by Aiken and West (1991). The first block included either one of the perfectionism dimensions, whilst the mean time taken to recall the first specific positive or negative autobiographical memory was included in block two. Finally, block three was aimed at examining the interaction between these variables. The outcome of these analyses can be seen in Appendix 32.

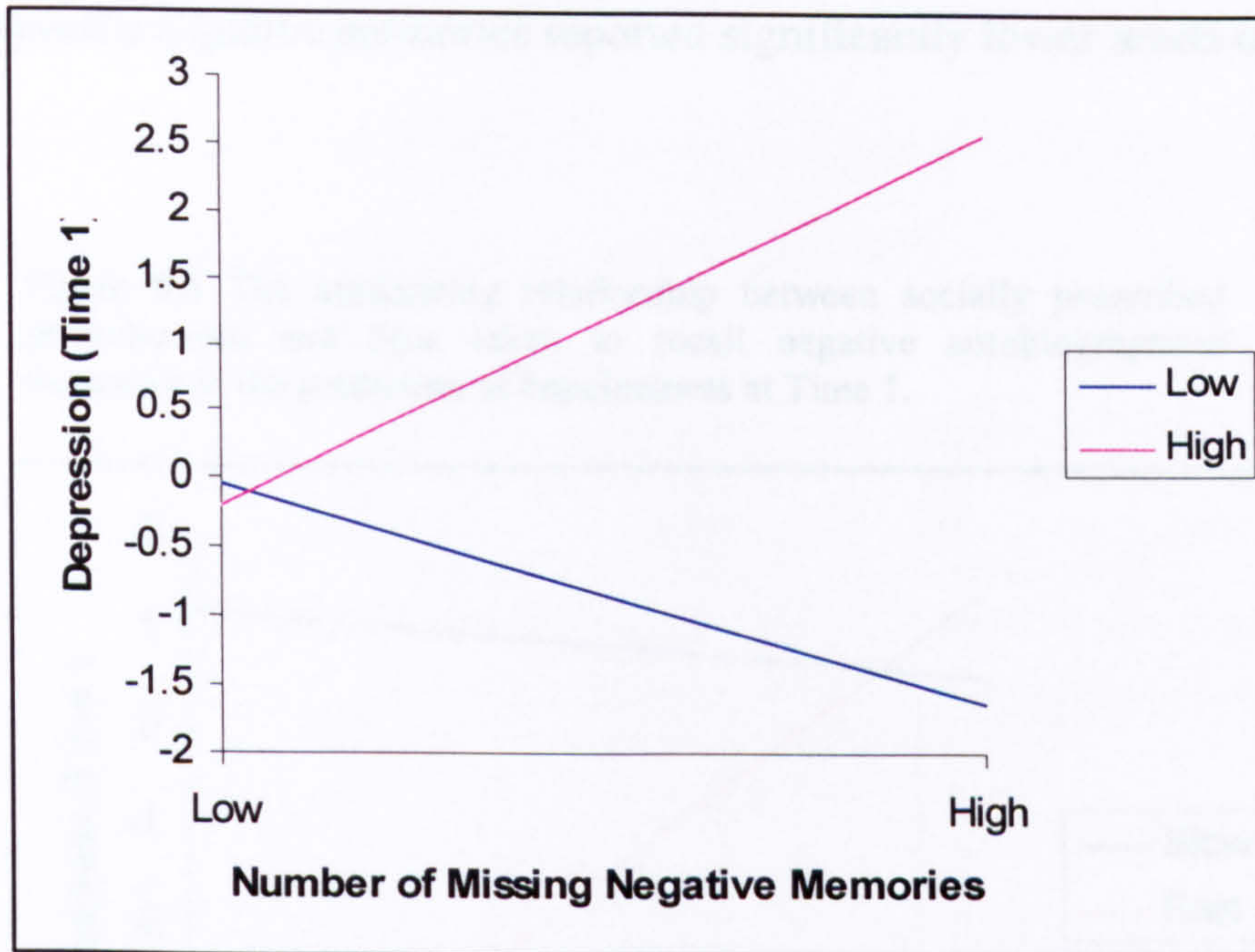
#### Self-oriented Perfectionism

A series of hierarchical regressions were performed to establish whether the time taken to recall positive or negative memories moderated the relationship between the perfectionism dimensions and psychological distress (depression/anxiety, hopelessness, and suicide ideation). Self-oriented perfectionism was entered at step 1,

followed by positive or negative memory recall latencies at step 2, and finally, in order to test the interaction between each pair of variables, the relevant multiplicative term was entered. This process was carried out with either depression, anxiety, suicide ideation or hopelessness (all as measured at Time 1) entered as the dependent variables.

These analyses initially revealed that positive memory recall significantly predicted anxiety ( $\beta=.46$ ,  $p<.01$ ), and showed a trend towards predicting depression ( $\beta=.27$ ,  $p=.08$ ). Negative memory recall, on the other hand, did not independently predict any of the outcome variables. Neither positive nor negative memory recall interacted with self-oriented perfectionism to predict psychological distress or suicide ideation.

Consequently, analyses were conducted to investigate the role of over-general memory recall as well as missing memories (Appendix 33). These analyses revealed that self-oriented perfectionism interacted with number of missing negative memories to predict depression (Figure 9.5). Further investigation of the interaction showed that neither the low ( $\beta=-.21$ ,  $t(39)=-1.05$ , ns) nor the high ( $\beta=.40$ ,  $t(39)=1.71$ ,  $p=.09$ ) lines of the regression slopes, differed significantly from zero; however, the low did show a trend towards a significant difference. These tests indicate that when self-oriented perfectionism is combined with a high number of missing negative memories then participants reported significantly higher levels of depression.



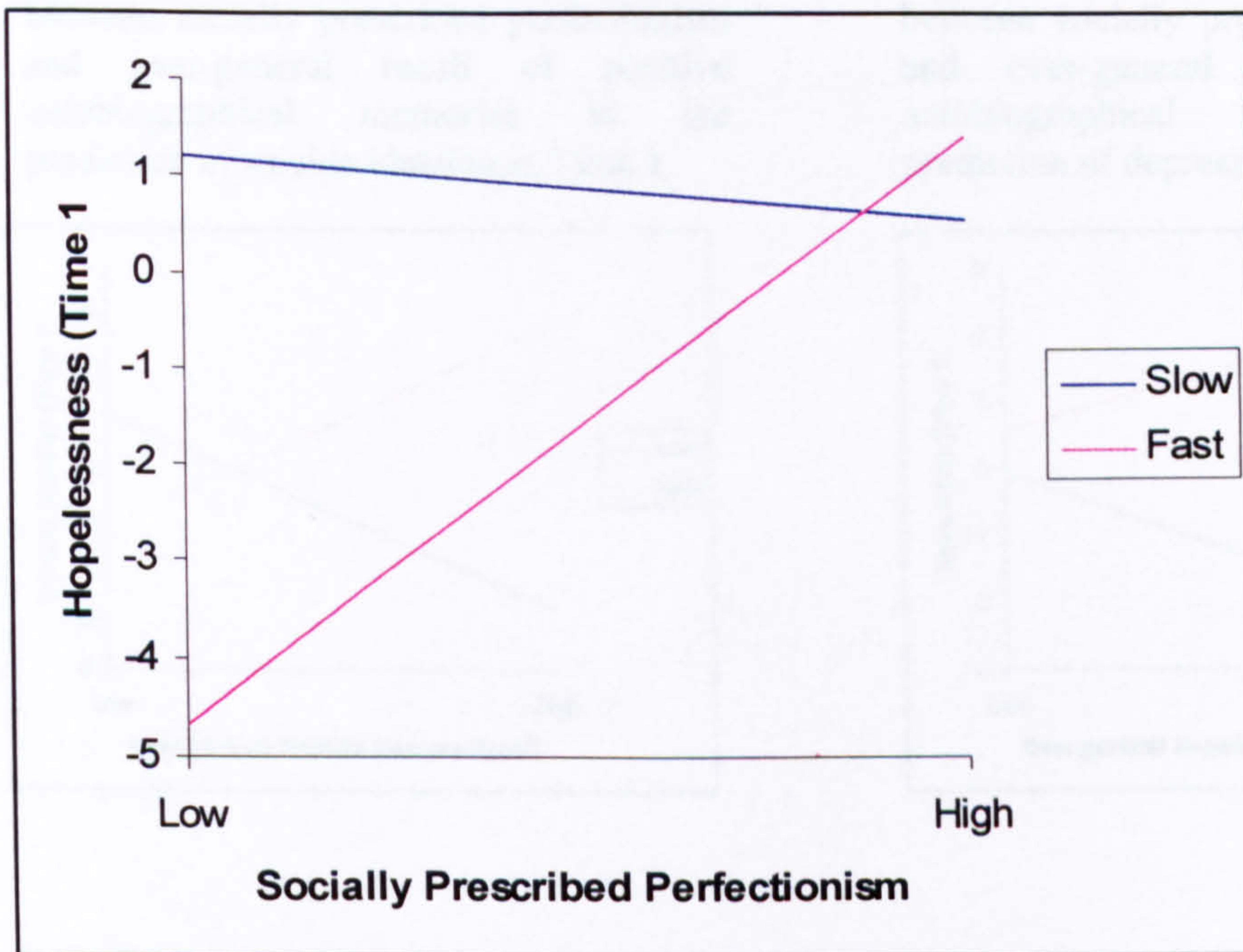
### Socially Prescribed Perfectionism

In the case of social perfectionism, the analyses revealed that this perfectionism dimension was a significant independent predictor of depression and anxiety and could be seen to account for approximately 11% of the variance. Furthermore, positive memory recall was also a significant predictor of anxiety.

There was one significant interaction between socially prescribed perfectionism and negative autobiographical memory recall ( $\beta = -.33$ ,  $p < .05$ ; Figure 9.6). In order to test the moderating relationship between the variables, additional post-hoc regression analyses were conducted (Aiken & West, 1991). These tests revealed that the low ( $\beta = .58$ ,  $t(39) = 2.65$ ,  $p < .05$ ) but not the high ( $\beta = -.06$ ,  $t(39) = -.28$ , ns), lines of the social perfectionism slopes differed significantly from zero. In other words, individuals who reported high levels of social perfectionism were high in hopelessness irrespective of whether they were fast or slow at recalling specific negative memories. However,

individuals who were low in social perfectionism and who were also fast at recalling specific negative memories reported significantly lower levels of hopelessness.

Figure 9.6 The moderating relationship between socially prescribed perfectionism and time taken to recall negative autobiographical memories in the prediction of hopelessness at Time 1.



Social perfectionism did not interact with positive memory recall to predict psychological distress or suicide ideation.

In the examination of social perfectionism and over-general recall of positive and negative autobiographical memories, the regression analyses revealed that over-general positive memories significantly predicted anxiety. Furthermore, over-general positive memories interacted with social perfectionism to predict suicide ideation at Time 1 ( $\beta=.43$ ,  $p<.01$ ). To follow up this interaction, two post-hoc regressions were conducted to establish whether the regression lines differed significantly from zero. These tests established that the high ( $\beta=.56$ ,  $t(39)=2.53$ ,  $p<.05$ ) but not the low ( $\beta=-$

.57,  $t(39)=-1.98$ , ns) line did indeed differ significantly from zero. Thus, the tests show that over-general recall of positive autobiographical memories when combined with high levels of social perfectionism did predict significantly high levels of suicide ideation in the parasuicide patients (Figure 9.7).

Figure 9.7 The moderating relationship between socially prescribed perfectionism and over-general recall of positive autobiographical memories in the prediction of suicide ideation at Time 1.

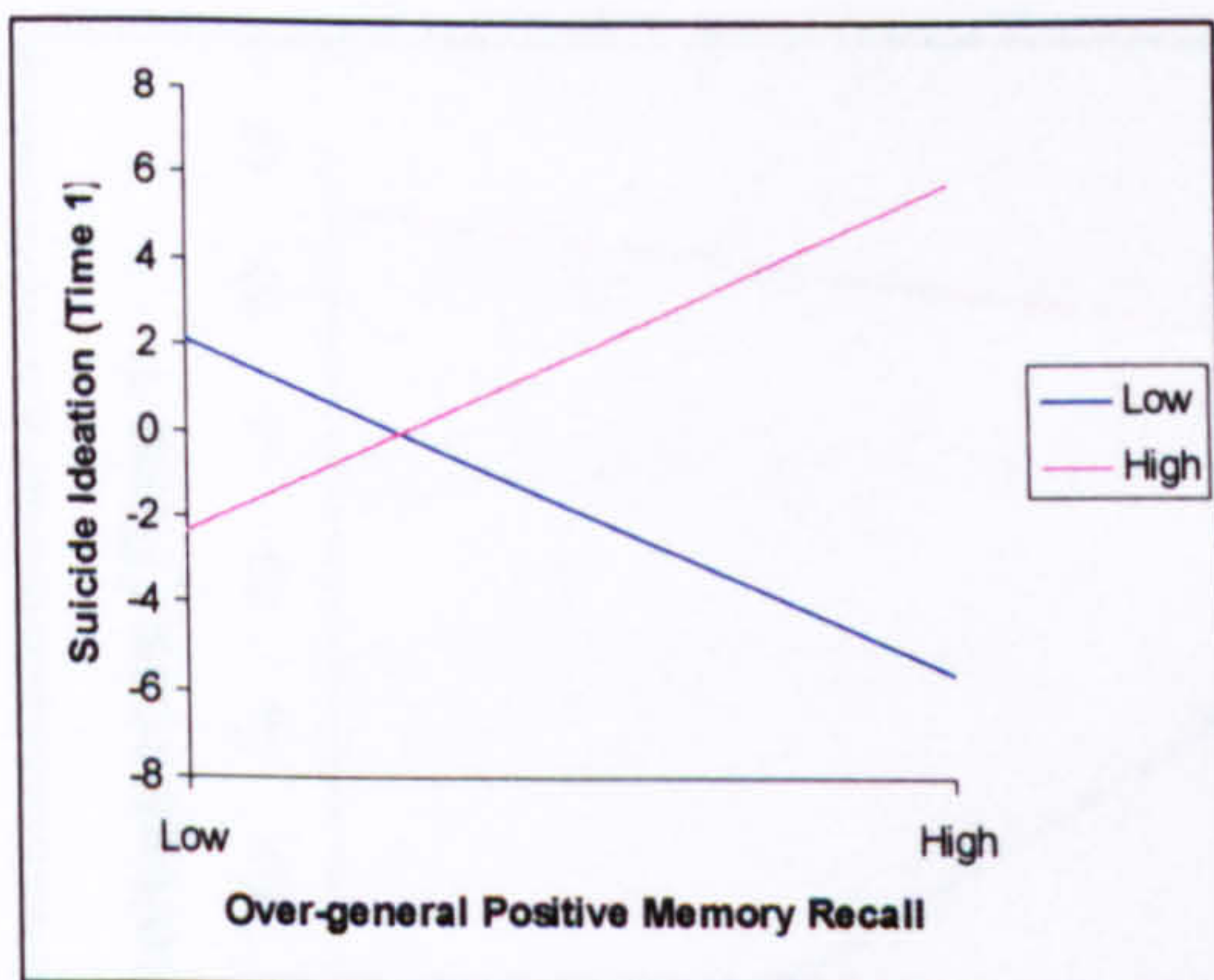
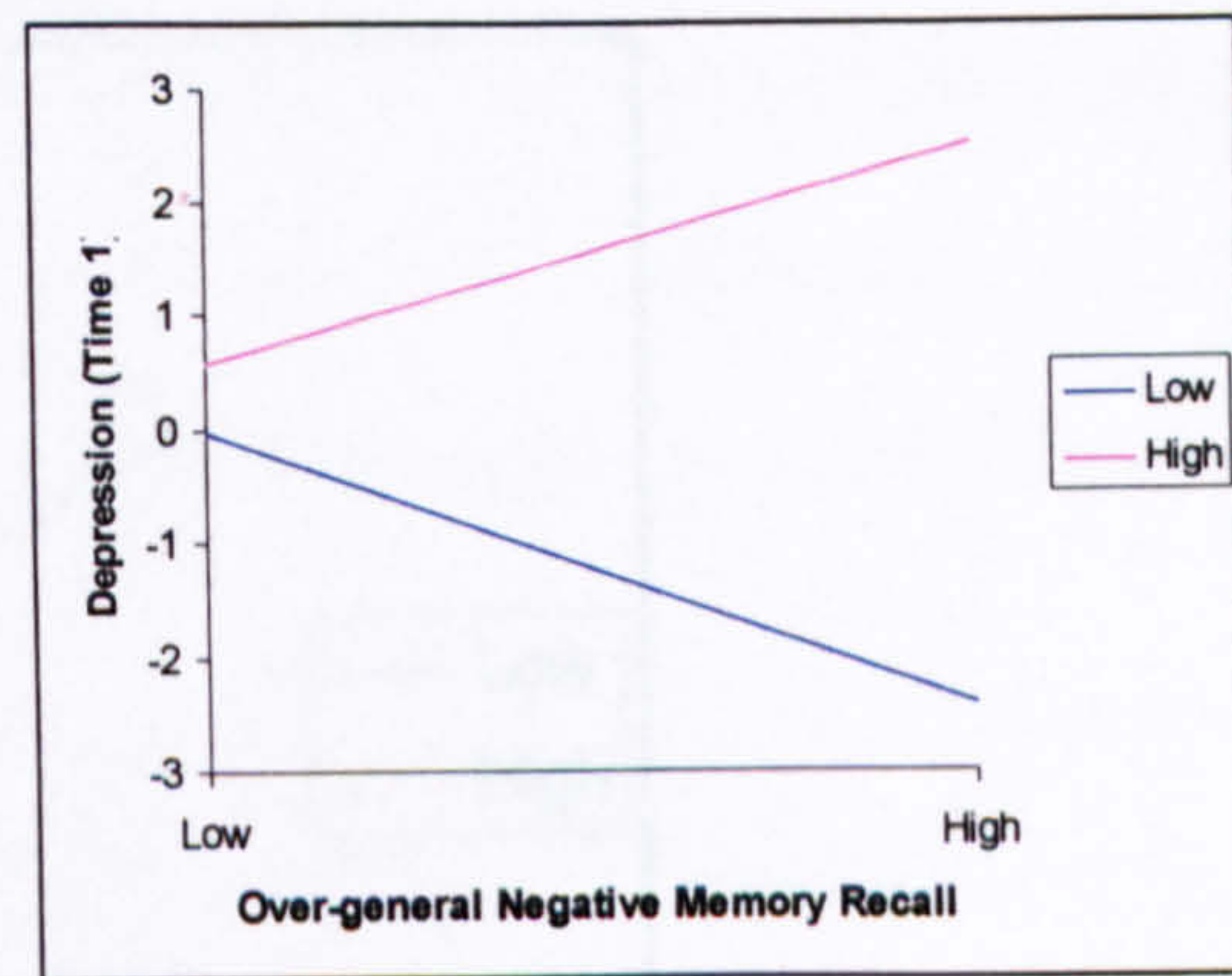


Figure 9.8 The moderating relationship between socially prescribed perfectionism and over-general recall of negative autobiographical memories in the prediction of depression at Time 1.



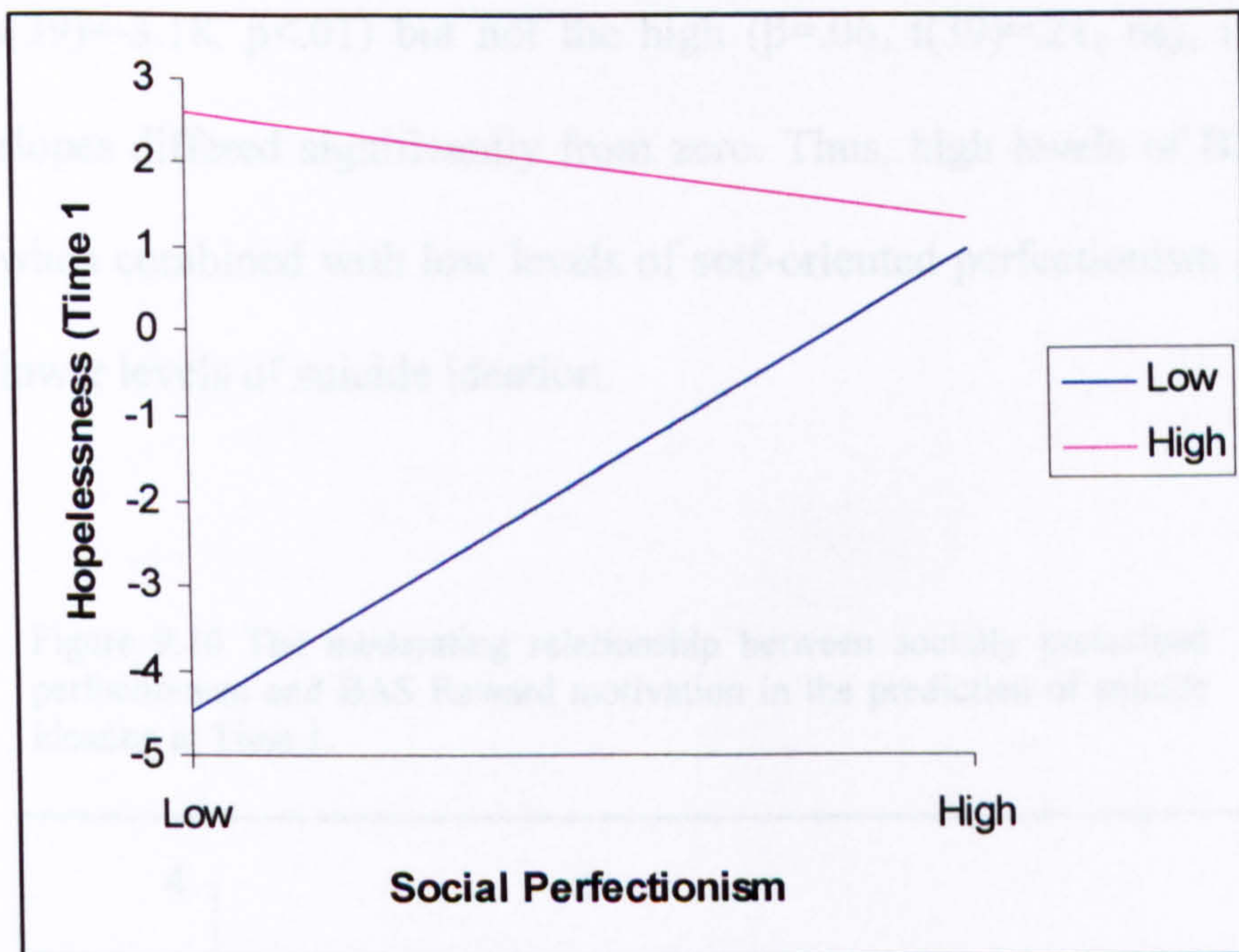
The detrimental effect of over-general memory recall was also evident for negative memories in the prediction of depression ( $\beta=.31$ ,  $p<.05$ ; Figure 9.8). Once again, to probe this interaction further, the regression slopes at high and low levels of social perfectionism were calculated to determine whether they differed significantly from zero. This analyses revealed that neither the high ( $\beta=.28$ ,  $t(39)=1.40$ , ns) nor the low ( $\beta=-.33$ ,  $t(39)=-1.52$ , ns) lines differed significantly from zero.

Finally, Social perfectionism showed a trend towards a significant interaction with number of missing positive memories ( $\beta=-.30$ ,  $p=.06$ ). The interaction was followed up by post-hoc regressions to determine whether the lines of the interaction slope differed significantly from zero. These tests showed that the low ( $\beta=.53$ ,  $t(39)=2.28$ ,



$p < .05$ ) but not the high ( $\beta = -.15$ ,  $t(39) = -.65$ , ns) social perfectionism lines differed significantly from zero. That is, low levels of social perfectionism when combined with low number of missing positive memories resulted in significantly lower levels of hopelessness at Time 1 (Figure 9.9).

Figure 9.9 The moderating relationship between socially prescribed perfectionism and number of unreported positive autobiographical memories (i.e. missing) in the prediction of hopelessness at Time 1.



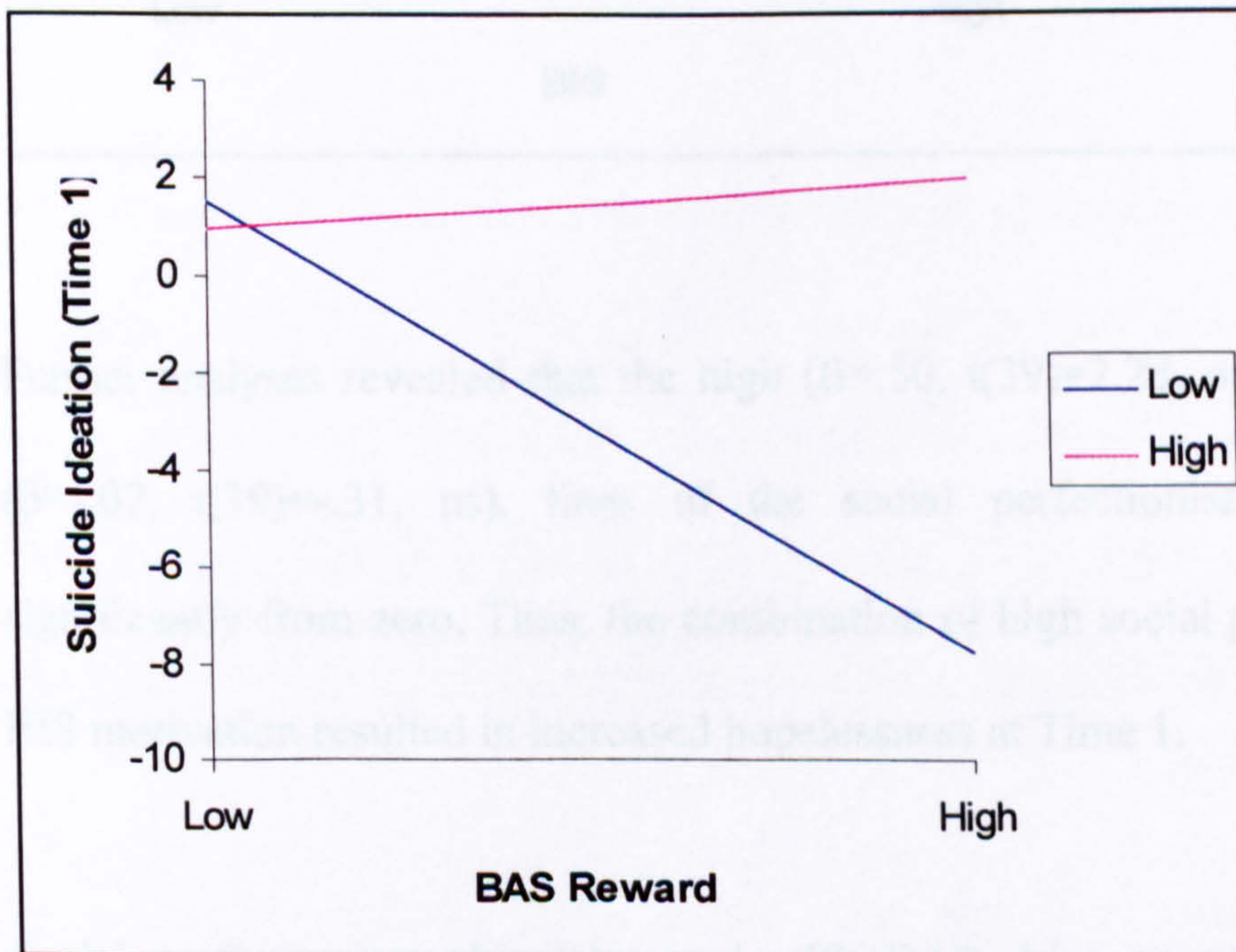
### Perfectionism x Motivation

Hierarchical multiple regressions were conducted in which either of the perfectionism dimensions, the BIS/BAS subscales, and perfectionism x motivation, were regressed on depression, anxiety, hopelessness, and suicide ideation (Appendices 34 (BIS), 35 (BAS Drive), 36 (BAS Fun), and 37 (BAS Reward)).

### Self-oriented Perfectionism

Self-oriented perfectionism interacted with BAS reward to predict suicide ideation. To probe the interaction the regression lines of best fit at high and low levels of self-oriented perfectionism and BAS reward motivation were plotted (Figure 9.10). Further tests, as specified by Aiken and West (1991), were consequently conducted on the slopes of the low and high BAS reward motivation to determine whether they were significantly different from zero. These tests showed that the low ( $\beta=-.61$ ,  $t(39)=-3.18$ ,  $p<.01$ ) but not the high ( $\beta=.06$ ,  $t(39)=.21$ , ns), lines of the regression slopes differed significantly from zero. Thus, high levels of BAS reward motivation when combined with low levels of self-oriented perfectionism predicted significantly lower levels of suicide ideation.

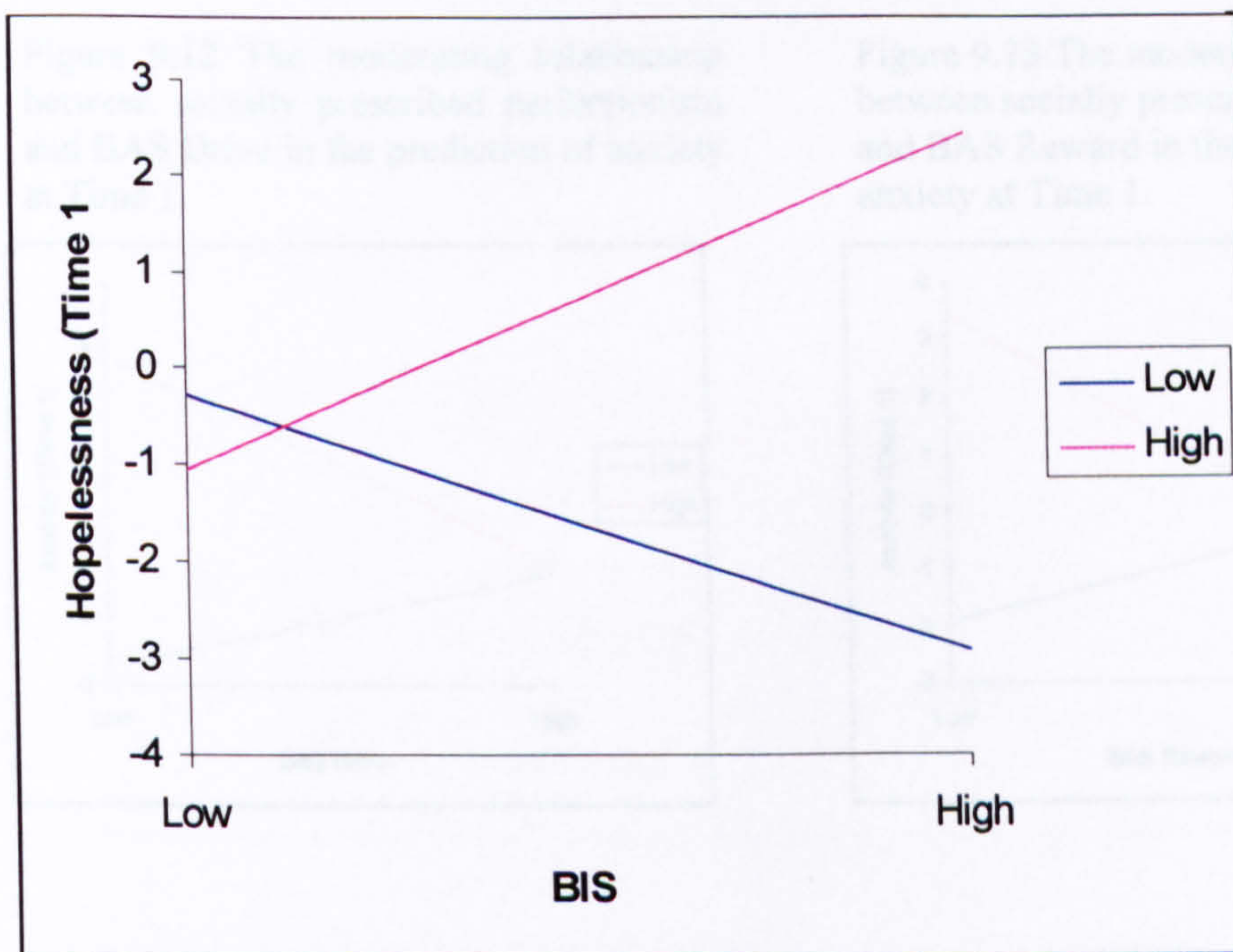
Figure 9.10 The moderating relationship between socially prescribed perfectionism and BAS Reward motivation in the prediction of suicide ideation at Time 1.



## Socially Prescribed Perfectionism

These analyses revealed that whereas neither socially prescribed perfectionism nor BIS independently predicted hopelessness, the multiplicative term did ( $\beta=.32, p<.05$ ; See Figure 9.11).

Figure 9.11 The moderating relationship between socially prescribed perfectionism BIS motivation in the prediction of hopelessness at Time 1.



Further analyses revealed that the high ( $\beta=.50, t(39)=2.28, p<.05$ ), but not the low ( $\beta=-.07, t(39)=-.31, ns$ ), lines of the social perfectionism regression differed significantly from zero. Thus, the combination of high social perfectionism and high BIS motivation resulted in increased hopelessness at Time 1.

Social perfectionism also interacted with BAS drive to predict anxiety ( $\beta=-.34, p<.05$ ). To probe the interaction, the regression slopes of high and low social perfectionism were calculated to determine whether they differed significantly from

zero. These analyses showed that the high ( $\beta=-.43$ ,  $t(39)=-2.29$ ,  $p<.05$ ) but not the low ( $\beta=.19$ ,  $t(39)=.88$ , ns), lines differed significantly from zero. Thus, as demonstrated in Figure 9.12, at high levels of BAS Drive motivation, social perfectionism does not affect the level of anxiety experienced. However, when low levels of BAS drive motivation is combined with high levels of social perfectionism, participants reported significantly higher levels of anxiety.

Figure 9.12 The moderating relationship between socially prescribed perfectionism and BAS Drive in the prediction of anxiety at Time 1.

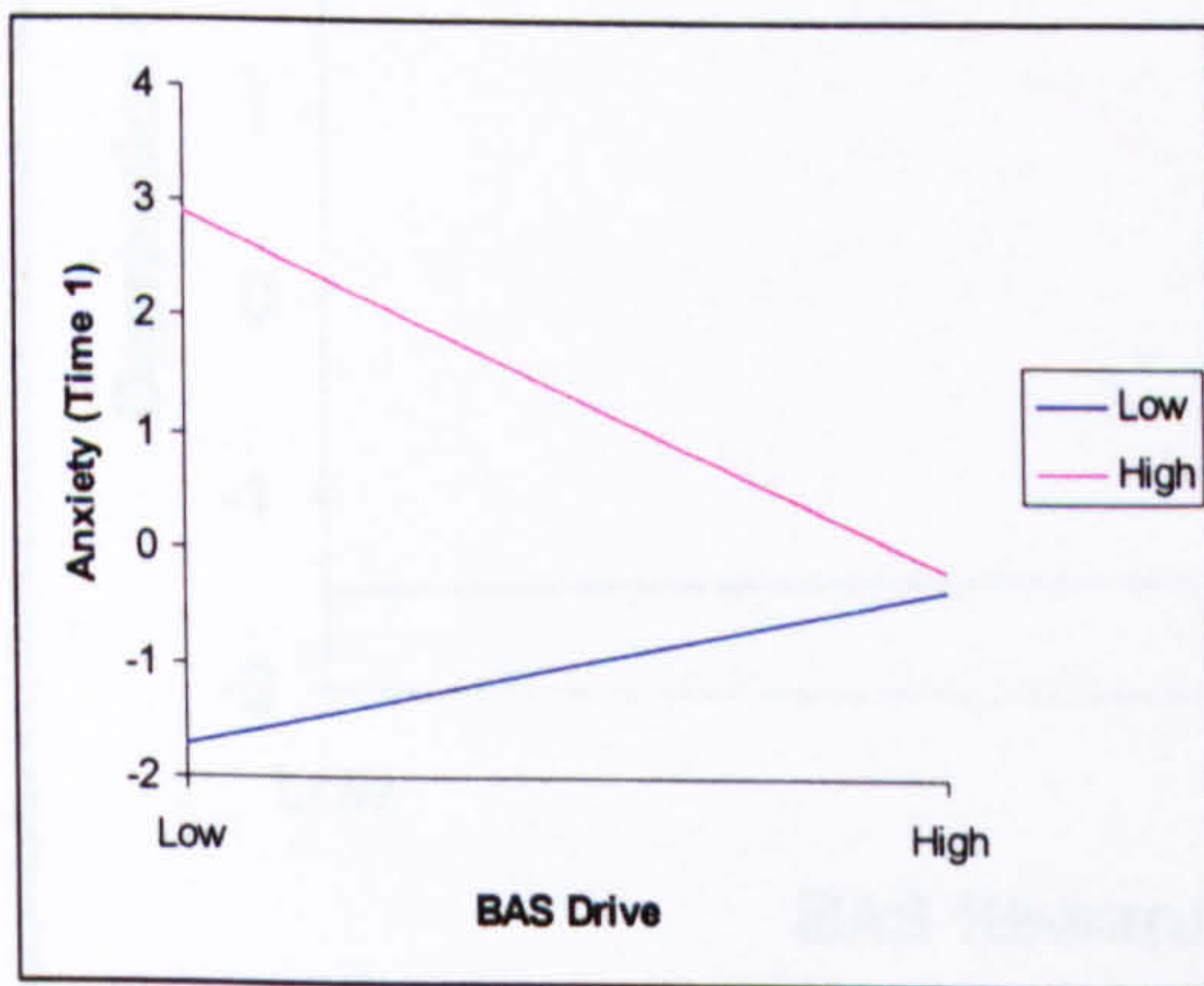
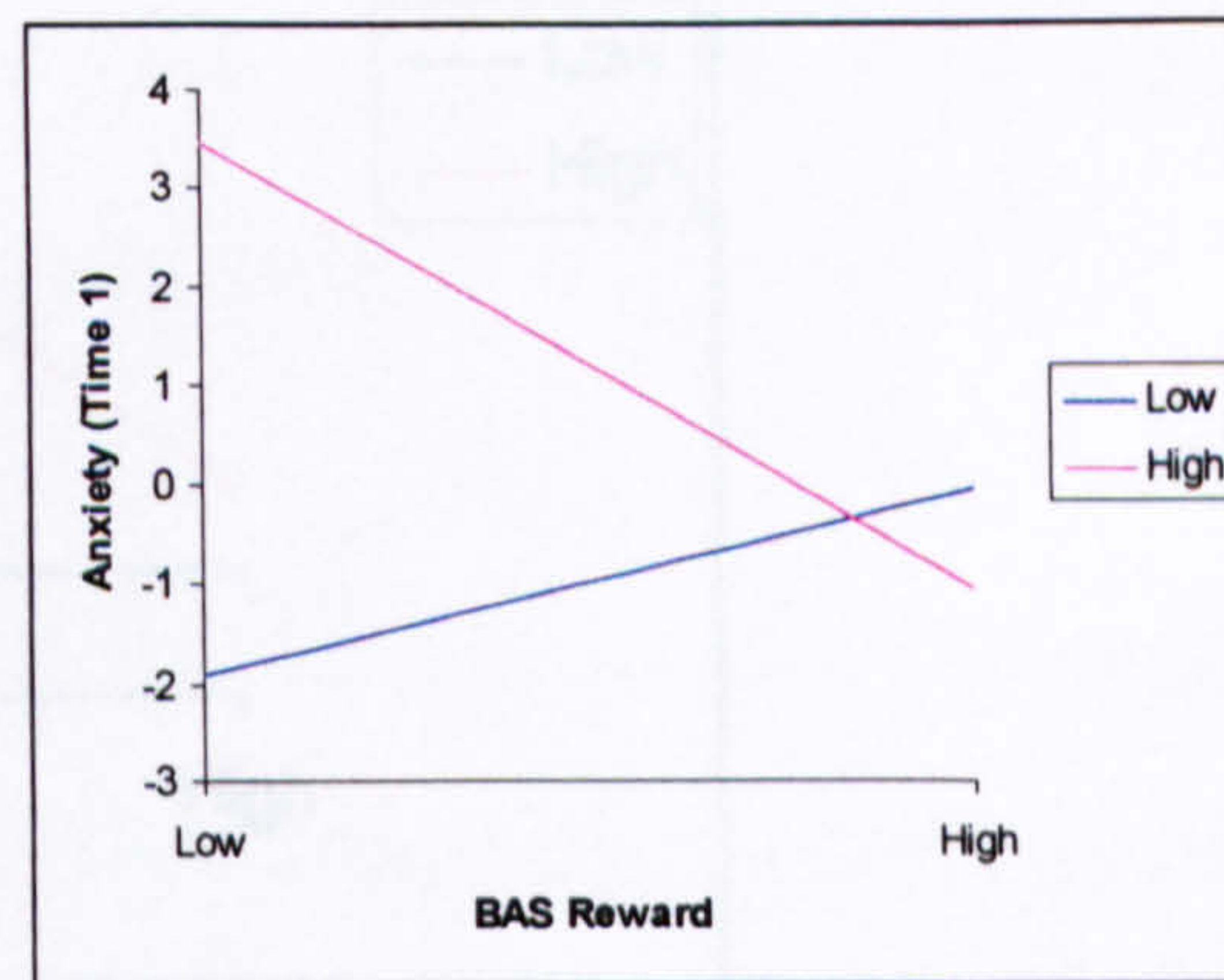


Figure 9.13 The moderating relationship between socially prescribed perfectionism and BAS Reward in the prediction of anxiety at Time 1.

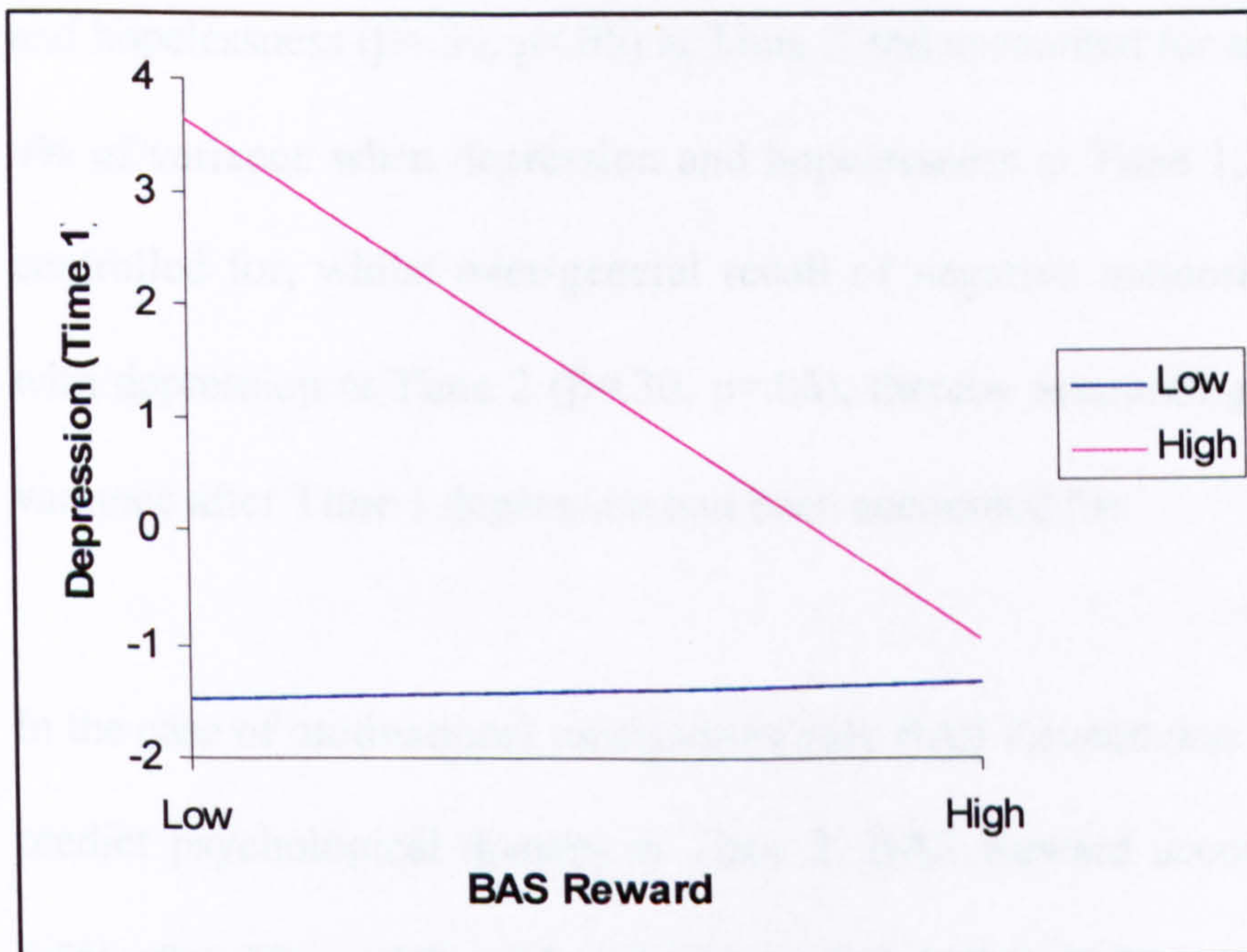


BAS reward also interacted with socially prescribed perfectionism to predict anxiety at Time 1 (See Figure 9.13). Again, the regression lines of best fit at high and low levels of BAS reward motivation and socially prescribed perfectionism were plotted. This analyses indicated that the high ( $\beta=-.66$ ,  $t(39)=-3.04$ ,  $p<.01$ ) but not the low ( $\beta=.18$ ,  $t(39)=.921$ , ns) social perfectionism lines differed significantly from zero.

In a similar fashion, BAS reward also interacted with socially prescribed perfectionism to predict depression at Time 1 (Figure 9.14). Again the post-hoc regression slopes of high ( $\beta=-.65$ ,  $t(39)=-3.08$ ,  $p<.01$ ) but not the low ( $\beta=.03$ ,

$t(39)=.15$ , ns), lines differed significantly from zero. Thus, low levels of BAS Drive motivation when combined with high levels of social perfectionism predicted significantly higher levels of anxiety.

Figure 9.14 The moderating relationship between socially prescribed perfectionism and BAS Reward in the prediction of depression at Time 1.



### 9.3.6 Prospective Analysis

In order to investigate whether the mediating and moderating relationships we found in the cross-sectional data, also applied to the prediction of psychological distress (hopelessness, depression/anxiety) and suicide ideation over time (6 weeks), we conducted the same set of analyses, however, this time using distress at Time 2 as the outcome variable and controlling for distress at Time 1.

The analyses revealed that recall latency of positive memories significantly predicted depression ( $\beta=.38$ ,  $p<.05$ ) and hopelessness ( $\beta=.37$ ,  $p<.05$ ) at Time 2, even when

depression and hopelessness at Time 1 had been accounted for. Slow recall of positive memories accounted for an additional 11.8% of variance of depression at Time 2, and 11.1% of variance of hopelessness at Time 2. In addition, slow recall of negative memories was seen to account for a further 7.4% of depression at Time 2 after depression at Time 1 had been accounted for ( $\beta=.31$ ,  $p=.05$ ). Finally, over-general recall of positive memories was positively associated with depression ( $\beta=.43$ ,  $p<.01$ ) and hopelessness ( $\beta=.34$ ,  $p<.05$ ) at Time 2 and accounted for an additional 17.4% and 9% of variance when depression and hopelessness at Time 1, respectively, had been controlled for, whilst over-general recall of negative memories was also associated with depression at Time 2 ( $\beta=.30$ ,  $p=.06$ ), thereby accounting for 6.8% of additional variance after Time 1 depression had been accounted for.

In the case of motivational sensitivities only BAS Reward was found to independently predict psychological distress at Time 2. BAS Reward accounted for an additional 6.5% ( $\beta=-.33$ ,  $p=.07$ ) of hopelessness and 5.5% of anxiety ( $\beta=-.29$ ,  $p=.09$ ), after hopelessness and anxiety at Time 1 had been accounted for. Finally, even after controlling for depression at Time 1, low number of specific approach (BAS) goals still accounted for 6.1% of the variance of depression at Time 2. The perfectionism dimensions (self-oriented, other-oriented or socially prescribed) did not independently predict either of the outcome variables, nor did BIS motivation independently predict distress (hopelessness, depression/anxiety, suicide ideation) at Time 2). Finally, there was not found to be any mediating or moderating relationships between the variables.

### *9.3.7 Two-group Analysis*

As we are aware that the lack follow-up data may have been confounded by reduced statistical power (N=25), we decided to include two-group analysis as this will enhance our ability to detect effect in smaller sample size. As with the Time 1 data, we, consequently, carried out a number of independent t-tests to compare the level of distress at Time 2 between high and low self-oriented and socially prescribed perfectionists (groups classified by way of median split), and first-time and repeat parasuicide patients.

#### First-time vs. Repeat

We conducted 4 independent t-tests to compare the level of distress reported at Time 2 by the first-time and repeat parasuicide patients. These analyses revealed that the repeat attempt parasuicide patients (M=25.27, SD=7.05) reported significantly higher levels of suicide ideation at Time 2 ( $t(-2.98)$ ,  $df=23$ ,  $p<.01$ ) than did the first-time parasuicide patients (M=16.50, SD=7.49). However, the repeat attempt parasuicide patients also revealed significantly higher levels of hopelessness ( $t(-3.69)$ ,  $df=23$ ,  $p<.001$ ) than did the first-time parasuicide patients (First-time: M=4.86, SD=4.17; Repeat: M=11.73, SD=5.16), and this was also the case for anxiety ( $t(-2.37)$ ,  $df=23$ ,  $p<.05$ ; First-time: 8.79, SD=3.12; Repeat: M=12.54, SD=3.11). There was no significant difference between the two groups on the measures of depression ( $t(-1.54)$ ,  $df=23$ , ns).

#### High vs. Low Perfectionism

We also carried out a number of independent t-test to compare distress at Time 2 between the high and low perfectionists for each perfectionism dimension. These

analyses revealed that high social perfectionists ( $M=23.33$ ,  $SD=7.77$ ) reported significantly higher levels of suicide ideation at Time 2 ( $t(-2.50)$ ,  $df=23$ ,  $p<.05$ ), than did low social perfectionists ( $M=16.69$ ,  $SD=7.48$ ). There were no differences between high and low self-oriented perfectionists for either of the measures of distress (depression:  $t(-1.55)$ ,  $df=23$ , ns); anxiety:  $t(-.801)$ ,  $df=23$ , ns; hopelessness:  $t(.58)$ ,  $df=23$ , ns); suicide ideation:  $t(-1.41)$ ,  $df=23$ , ns).

## 9.4 Discussion

The focal aim of this study was to investigate whether the findings of the previous three studies could be replicated in a sample of parasuicide patients. On this basis there were 4 main aims:

- To investigate the moderating effect of autobiographical memory recall on the relationship between perfectionism (self-oriented and socially prescribed) and psychological distress (hopelessness, depression/anxiety, and suicide ideation).
- To investigate the mediating effect of perfectionism (self-oriented and socially prescribed) on the relationship between motivational sensitivities (BIS/BAS) and psychological distress (hopelessness, depression/anxiety, and suicide ideation).
- To investigate whether the over-generality phenomenon also extends to the ability to generate specific goals, and strategies to achieve these goals, in the future. More specifically, we wish to investigate whether there are differences between the generation of approach goals (BAS) and avoidance goals (BIS).
- To investigate any differences between first-time and repeat attempts parasuicide patients on all the measures.



We derived our hypotheses from past research in the field and from the findings from the first three studies (Studies 1, 2 and 3). Our hypotheses and the extent to which they were supported are shown in Table 9.6. Below follows a discussion of the main aims in terms of their relation to past research and their implications for future research.

Table 9.6 Table of hypotheses and the extent to which they were supported.

	HYPOTHESIS/RESEARCH QUESTION	SUPPORT
1.	Self-oriented and socially prescribed perfectionism will interact with over-general recall of both positive and negative memories to predict psychological distress (hopelessness, depression/anxiety, suicidality).	Supported
2.	Self-oriented and socially prescribed perfectionism will mediate the relationship between BIS and psychological distress, while BAS would act as a protective factor.	Supported
3.	BIS will correlate with the number of avoidance goals for the future, while BAS will be associated with the number of approach goals for the future.	Not supported
4.	Repeat attempt parasuicide patients will score higher on the outcome measures and self-oriented and socially prescribed perfectionism, than will the first-time parasuicide patients.	Partial support

### *9.4.1 Autobiographical Memory*

#### Recall Latency

In the previous three studies, analyses which included memory recall latencies suggested that it was the slow recall of negative memories which, when combined with perfectionism, resulted in psychological distress. In the current study (Study 4), however, only one interaction between memory recall latencies and perfectionism was revealed: Low levels of socially prescribed perfectionism when combined with fast recall of negative memories, predicted significantly lower levels of hopelessness at Time 1. In contrast, high levels of socially prescribed perfectionism were associated with high levels of hopelessness irrespective of whether memory recall was fast or slow. This finding suggests that the ability to recall specific negative memories serves

some protective role in individuals who are not concerned with satisfying the perceived standards of others. Thus, it is possible that for these individuals, negative memories aren't associated with failure to the same degree that they are for perfectionists, and consequently they are able to draw on their past experiences to deal with present circumstances.

Although we did not find any interactions between perfectionism and memory recall latencies in the prediction of distress (hopelessness, depression/anxiety, suicide ideation) over time, it is worth pointing out that slow recall of both positive and negative memories were significant predictors of distress (hopelessness & depression) even after distress at Time 1 had been accounted for. These findings certainly confirm the debilitating effect of slowed recall of memories and are supportive of the assertion that individuals get caught up at the intermediate stage of memory retrieval (illustrated in Figure 3.2) thereby activating a network of summary self-descriptive memories. This impairment has consequences for problem-solving and exacerbates the presence of depression (Williams, 1997).

### Over-general Memory Recall

Over-general thinking is central to cognitive theories of depression (e.g. Beck, 1976), and this connection has consistently been shown to extend to autobiographical memory retrieval (e.g. Williams & Broadbent, 1986; Williams & Scott, 1988; Williams & Dritschel, 1988, 1992; Evans, Williams, O'Loughlin & Howell, 1992; Brittlebank et al., 1993; Goddard et al., 1996). More specifically, in relation to parasuicide, research suggests that parasuicide patients are poor at recalling specific autobiographical memories, and that this lack of specificity is a risk factor for

repetition of parasuicide (e.g. Evans et al., 1992, Kuyken & Brewin, 1995; Sidley, Wells, Hughes & Whitaker, 1999).

However, this over-general phenomenon has been consistently replicated, and therefore, an aim of this study was to shed light on potential pathways for explaining this link. We did not find that over-general memory mediated the relationship between perfectionism and psychological distress/suicide ideation as might be expected. That said, this lack of finding should not be accepted as definitive for a number of reasons: Firstly, the results are based on a minimum sample of 40 patients. Statistically speaking it would be sensible to rerun the analysis with a larger participant sample. At the outset of the study we carried out analysis to establish the number of participants required for a study with the number of variables we had included. However, unfortunately, data collection was hindered by unexpected problems at the hospital where we were collecting the data. The Department of Psychiatry is not run out of a particular ward, but rather is based at a central office from where the psychiatrists visit wards across the hospital as and when they are made aware that a patient has been admitted following an episode of deliberate self-harm. This means that at times, medical staff does not make the Department of Psychiatry aware of any patients, or that patients have been discharged by the time a psychiatrist is called out.

Secondly, it is unknown whether the findings are confounded by the fact that the sample consists of both first-time and repeat attempts parasuicide patients. It would, therefore, be of interest to increase the sample size to allow analysis to be conducted separately on the two patient groups. The two-group analysis carried out certainly does suggest that there are important differences between the first-time and repeat

parasuicide patients. In particular, the Time 2 data suggests significant differences in distress experienced six weeks after an episode of self-harm.

The moderating analyses, on the other hand, did give rise to a number of interesting findings. Of particular interest is the relationship between socially prescribed perfectionism and over-general recall of memories. The analyses showed that over-general recall of both positive and negative memories, when combined with high levels of social perfectionism, were predictive of psychological distress/suicide ideation. More specifically, we found that over-general recall of positive memories, when combined with high levels of socially prescribed perfectionism, was predictive of higher suicide ideation, whereas over-general recall of negative autobiographical memories, when combined with high levels of social perfectionism, was predictive of significantly higher depression.

Given the strong link between suicide ideation and attempted suicide (e.g. Howard-Pitney, LaFromboise, Basil, September & Johnson, 1992), the finding that social perfectionism when combined with over-general recall of positive memories, supports the assertion that a positive memory bias may have a precipitating role in suicidal attempts (Williams & Broadbent, 1986). What is more, it has been suggested that a deficiency in retrieval of specific memories is the factor that is underlying poor problem-solving (Williams & Broadbent, 1986; Evans et al., 1992; Goddard et al., 1996), as the lack of specific information in the memory database which is essential to the production of effective problem-solving strategies, results in only the 'upper layer' of the database being accessed, thereby compromising the quality of the strategies being generated (Kaviani, Rahimi-Darabad & Naghavi, 2005).

The finding that positive over-general memory when combined with high levels of social perfectionism results in increased suicide ideation, thus, seems logical on the basis that deficiencies in problem-solving are especially pivotal in the face of high stress and life crises, and in particular, in association with interpersonal relationship problems (e.g. McLeavey, Daly, Murray, O’Riordan & Taylor, 1987). As demonstrated in the previous three studies increased stress is an integral part of being a social perfectionist and previous research has shown social perfectionists to experience great difficulties functioning within interpersonal relationships (Flett, Hewitt, Garschowitz & Martin, 1997; Habke, Hewitt & Flett, 1999).

The other over-general memory finding was that over-general recall of negative memories when combined with socially prescribed perfectionism resulted in increased levels of depression. It is possible that this result reflects a tendency for some patients to engage in a reactive effort to avoid specific negative personal memories (Kuyken & Brewin, 1995; McNally et al., 1995; Mackinger, Pachinger, Leibetseder & Fatacek, 2000). Research has suggested that the normally directed search for a specific negative memory may be aborted when a “mnemonic cue activates categorical intermediate descriptions that begin to retrieve fragments of a particularly negative specific episode. The truncation of the search avoids the punishing consequences of recollection but leads to another iteration of the search process with other intermediate descriptions” (p. 1398; Jones, Heard, Startup, Swales, Williams & Jones, 1999).

This suggestion sits well with research showing a strong link between social perfectionism and depression (Hewitt & Flett, 1989, 1991; Flett, Hewitt, Blankstein &

Mosher, 1991; Flett, Hewitt, Blankstein & O'Brien, 1991). Socially prescribed perfectionism involves the perception that significant others are imposing unrealistic expectations and standards, and this belief results in excessive critical self-evaluation. It is, therefore, believed that social perfectionists engage in all-or-none thinking which focuses particularly on the negative aspects of events (Hewitt & Flett, 1993). In addition, the fear of social evaluation and need for approval by others, leads to control being attributed to external forces with learned helplessness being a common consequence of this perfectionism dimension (Dweck & Leggett, 1988; Hewitt & Flett, 1989, 1991). This thinking style and fear of failure, results in the adoption of a more avoidant coping style (Flett, Hewitt, Blankstein, Solnik & Van Brunschot, 1996). In short, it is possible that social perfectionists, in order to avoid being reminded of past failures, engage in a form of avoidant coping which involves over-general recall of negative memories. However, ultimately this attempt at coping has the opposite effect as it restricts access to the specific autobiographical memory database necessary for appropriate and effective solving of problems.

#### *9.4.2 Motivation*

A related goal of this study was to examine the roles of self-reported threat and reward sensitivities (i.e. BIS/BAS) in a sample of parasuicide patients on the basis that these motivational systems may control the intensity with which individuals respond behaviourally and affectively, and thus, and may be implicated in suicide behaviour. Although the initial correlation analyses did not find suicide ideation to be associated with either BIS or BAS, as found in previous research (O'Connor & Forgan, in press), we did find support for a positive association between depression

and BIS, and a negative association between hopelessness and the three BAS subscales.

Thus, high levels of BIS, which governs negative affect and the interruption of behaviour in response to cues of threat (Gray, 1989, 1990, 1991), were associated with higher levels of depression. This finding is consistent with past research: for example, Meyer, Johnson and Carver (1999) found BIS sensitivity to be related to symptoms of depression only, and not anxiety, in a sample of university students. The negative relationship between BAS and hopelessness, however, has not been reported previously. Nonetheless, this finding is not unexpected as BAS sensitivity facilitates goal-motivated behaviour in the face of cues of incentive, and is, thus, instrumental in the control of positive affect such as happiness and hope (Gray, 1991; Carver & White, 1994).

We, furthermore, investigated how BIS/BAS related to perfectionism, and examined potential mediating and moderating relationships between perfectionism, BIS/BAS and psychological distress/suicide ideation. In support of O'Connor and Forgan (in press) we found a positive association between BIS and all three of the perfectionism dimensions. In addition, we also found that self-oriented perfectionism, but not other-oriented and socially prescribed perfectionism, correlated positively with BAS drive and BAS reward. Again, this finding is consistent with past research: Flett et al. (2002) found similar relationships between self-oriented perfectionism and BAS drive and BAS reward, whilst O'Connor and Forgan (in press) also replicated the association with BAS drive (but not BAS reward).

The examination of potential mediating and moderating pathways between perfectionism and BIS/BAS highlighted a number of interesting results. Although perfectionism did not mediate the relationship between BIS and suicide ideation, as hypothesised, both self-oriented and socially prescribed perfectionism mediated the relationship between BIS and depression (although this finding was not supported by the Sobel test). O'Connor and Forgan (in press) contended that such a finding is consistent with developmental studies which have demonstrated that BIS primarily affects emotional affectivity indirectly through other factors. These findings are of importance as they strengthen the speculation that perfectionism may have a physiological motivational basis.

Flett et al. (2002) argued that it is possible for perfectionism to operate as both a mediating and a moderating influence, and this study further supports this supposition. The moderating analyses demonstrated that self-oriented and socially prescribed perfectionism interacted with both BIS and BAS to predict psychological distress and suicide ideation. More specifically, it was found that high levels of BAS reward when combined with low levels of self-oriented perfectionism resulted in significantly lower levels of suicide ideation. In contrast, high levels of socially prescribed perfectionism when combined with high levels of BIS predicted higher levels of hopelessness. Finally, low levels of BAS drive and BAS reward both interacted with socially prescribed perfectionism: low levels of these BAS subscales when combined with high levels of social perfectionism predicted significantly higher levels of anxiety.



Generally speaking these findings provide strong support for the differential roles of the two motivational systems in the development of psychological distress and suicide ideation. Furthermore, they highlight the importance of considering perfectionism in terms of the motivational foundation of an individual. Meyer et al. (1999) argued that it is possible that there are individual differences in the degree of responsiveness of the BIS/BAS sensitivities exhibited by individuals, and that excessive sensitivity to these systems may be implicated in increased risk of various psychopathologies. Consequently, it is possible that perfectionism may be one such individual differences factor.

#### *9.4.3 Approach and Avoidance Goals*

The importance of BIS/BAS motivational sensitivities have recently received renewed attention. As shown above, there is now research to suggest that reward and punishment driven motivational systems may play an important role in the relationship between perfectionism and psychological distress/suicide ideation (see also O'Connor & Forgan, in press). However, these affect-motivation systems have also recently been applied to the study of approach and avoidance goals (e.g. Dickson & Macleod, 2004). Thus, in accordance with the BIS/BAS distinction, avoidance goals are related to psychological distress whereas approach goals are associated with psychological well-being (Elliot, Sheldon & Church, 1997). Dweck and Leggett (1988) summarised why it is important to consider goal motivation in understanding psychological distress: "individuals adopting different goals can be seen as approaching a situation with different concerns, asking different questions and seeking different information". On the basis that researchers (e.g. Elliot & Sheldon, 1997) have argued that the motive to avoid failure is a primary precursor in avoidance

goal pursuit, which is linked to negative achievement related outcomes and negative well-being, we thought it would be interesting to include this thinking in our consideration of the link between perfectionism and psychological distress.

We found that there was a trend towards a positive association between anxiety and specific avoidance goals and avoidance strategies. Dickson and MacLeod (2004) argued that the link between anxiety and avoidance coping is probably the outcome of heightened vigilance and anticipation of potentially threatening and negative situations. On this basis, it might, therefore, also be expected that self-oriented and socially prescribed perfectionism would be associated with increased avoidance goal generation. The correlation analysis did show a trend towards a positive correlation between self-oriented perfectionism and avoidance goals and strategies, and, thus, present some support for this argument.

Socially prescribed perfectionism, however, which is the perfectionism dimension most strongly associated with a fear of failure, did not show such an association. Interestingly, though, it did correlate positively with over-general approach goals. This finding can still be fitted into the motivational perspective. Socially prescribed perfectionism is thought to be closely linked with BIS through its need to anticipate and avoid unfavourable outcomes, and, therefore, the inability to produce specific positive approach goals for the future is not surprising. Future research is necessary to investigate this finding in more detail in a larger sample.

The finding that hopelessness correlated negatively with ability to generate specific approach strategies (i.e. ways to achieve positive goals) fits well within the future

thinking literature. For example, MacLeod, Rose and Williams (1993) found that suicidal patients showed reduced ability to generate positive events in the future to look forward to, when compared to controls. On the basis of our finding that hopelessness was associated with less specific approach strategies, it could be argued that the future thinking problem is further exacerbated by the inability to think of specific ways of achieving possible goals. Certainly, this research supposition warrants further investigation.

## **9.5 Limitations**

Pollock and Williams (2001) argued that the over-general memory phenomenon has been replicated in a variety of psychiatric sub-groups (e.g. depression, acute stress disorder, post-traumatic stress disorder, and obsessive-compulsive disorder), and, consequently, there is an important need to readdress the issue of uniqueness of suicidal patients. However, to achieve this goal, it is necessary to incorporate 'a homogenous' sample of parasuicide patients which distinguishes between first-time and repeat attempt DSH patients. In addition, it is necessary to include a psychiatric control group (with no history of suicide behaviour), as well as a community control group with no history of suicide or psychiatric illness. Although we acknowledge the benefits of such an approach, it was, unfortunately, not possible to accommodate these conditions. However, that said, the findings of this study are still significant enough to warrant further investigation whilst keeping in mind these methodological requirements.

## 9.6 Conclusions

In conclusion, the findings reported here provide an important first step for understanding the relationship between perfectionism and motivation in a parasuicide population. Firstly, for the first time in a parasuicidal population, we demonstrated the moderating effect of over-general recall of autobiographical memories on the relationship between perfectionism and psychological distress (depression and suicide ideation). The study also provided evidence to suggest that the relationship between dispositional sensitivity to cues of threat (BIS) and reward (BAS) and psychological distress is mediated by perfectionism. Furthermore, we have shown that perfectionism also acts as a moderator in the relationship between motivation and psychological distress. The research was discussed in terms of past research.

## **Chapter 10: General Discussion**

### **10.0 Overview**

This final chapter summarises the findings of the four previous studies and places the results within the context of the Escape from Self Model (Baumeister, 1990) and Cry of Pain Model (Williams, 1997). Furthermore, the results are discussed in terms of their relevance to the development of therapeutic interventions.

### **10.1 Introduction**

The proliferation of research on suicide highlights the importance of developing our understanding of factors relevant to the identification and treatment of potentially suicidal individuals. The purpose of this thesis was to propose and to investigate an integrative model which posits that suicidal behaviours are usefully conceptualised by examining the relationship between personality and cognitive factors. To this end, a series of four related, but independent, studies were conducted which investigated six main aims within a self-regulatory framework:

1. Do perfectionism and autobiographical memory interact to predict psychological distress (hopelessness and depression/anxiety) and suicidality? And if so, what is the nature of this relationship (mediating/moderating)?
2. What is the motivational background of trait perfectionism? Can we understand the perfectionism dimensions via the BIS/BAS sensitivities?
3. Is it useful to consider trait perfectionism as including a cognitive component (i.e. perfectionism cognitions)?

4. Do the dimensions of perfectionism relate differentially to coping strategies/mood regulation and psychological distress/suicidality?
5. Is the relationship between perfectionism and psychological distress/suicidality mediated or moderated by perceived stress?
6. Are parasuicidal patients also over-general in their ability to generate goals for the future?

In brief, we found that the relationship between perfectionism and psychological distress was primarily moderated by the slow or over-general recall of negative (and positive) autobiographical memories (Studies 1, 3 & 4; Aim 1). We also concluded that self-oriented and socially prescribed perfectionism mediates the relationship between BIS motivation and psychological distress (Studies 3 & 4; Aim 2), whilst a tendency to engage in ruminative thoughts about the need to appear perfect (Study 3), maladaptive coping strategies and low perceived ability to regulate negative mood (Study 2) mediated the relationship between self-oriented and socially prescribed perfectionism and psychological distress (Aims 3 and 4). We also found evidence to support a mediating and moderating role for stress in the relationship between self-oriented and socially prescribed perfectionism and psychological distress (Studies 1 and 2; Aim 5). Finally, we did find tentative evidence for a relationship between over-general formulation of goals for the future and psychological distress (Study 4; Aim 6).

Consequently, the main focus of this final chapter is to try to bring together the findings of this thesis and to determine the extent to which they are consistent with the theoretical frameworks which are considered to be most useful in understanding

psychological distress and suicidality. That is, rather than simply regurgitate the comments made in the individual discussion sections, the aim of this general discussion is to elaborate upon the relatively atheoretical conclusions drawn previously by placing them within a theoretical context. Furthermore, this chapter will also attempt to address a number of more general issues which are pertinent to the areas covered within this thesis.

## **10.2 Theoretical Implications**

Above all, the findings from the four studies confirm the need to understand suicidal behaviour not only in terms of psychiatric diseases or disorders, but rather as the outcome of the combination of personal vulnerabilities, cognitive rigidity, and environmental stresses. In other words, the results provide support for a psychosocial approach to suicide (Engel, 1980). Consequently, the aim of the following section is to consider the findings within the theoretical frameworks provided by the Escape from Self Model (Baumeister, 1990) and the Cry of Pain Model (Williams, 1997).

The results of the four studies provide some insight into the complex relationship between perfectionism and psychological distress and suicidality. The data consistently yielded a maladaptive role for perfectionism, and, in addition, we found a number of mediating and moderating relationships. These relationships are important as they go some way towards increasing our understanding of how perfectionism is maladaptive. Thus, it was concluded that perfectionism is likely to predispose an individual to emotional distress and suicidality, and that there are

several mechanisms via which perfectionism, in particular self-oriented and socially prescribed perfectionism, might increase an individual's vulnerability to distress.

### *10.2.1 Escape from Self Model*

According to the Escape from Self Model of Suicide (Baumeister, 1990) the need to escape from negative self-awareness is motivated by an unfavourable comparison of the self against self- or other-imposed standards. Overall, the data presented in the previous chapters lend support to this view. According to this step-wise model, the suicidal process begins with the self-regulatory failure of meeting important standards. The studies carried out during the course of this thesis are supportive of this assertion.

Throughout the thesis we did not find strong correlations between perfectionism and psychological distress/suicidality/suicide ideation. However, we did find that the relationship between perfectionism and distress may depend on the presence of certain mediating or moderating variables such as autobiographical memory recall or stress. Thus, it has been shown that the experience of self-oriented and socially prescribed perfectionism can create a significant vulnerability to experiences of failure which result in an overwhelming sense of entrapment and no escape.

Baumeister's (1990) Escape Model is a diathesis-stress model because it specifies that individuals, who do not expect that their current circumstances will in some way fall short of their self- or other-imposed standards, will probably not engage in suicidal behaviours in the face of stress life events. There is growing evidence that suicidal behaviour is the result of an interaction between stressful situations (i.e.



state dependent) and trait like factors such as personality characteristics (e.g. Mann, Waternaux, Hass & Malone, 1999). Such findings are consistent with diathesis-stress models which posit that 'stress', i.e. a psychological or biological phenomenon resulting from exposure to a stressful event, interacts with a 'diathesis', i.e. a persistent vulnerability to suicidal behaviour, to produce suicidal behaviour.

The conclusions of the studies carried out as part of this thesis are very supportive of such models. Studies 1 and 2 highlighted both moderating and mediating roles for stress in the relationship between perfectionism and psychological distress/suicidality. These findings are supportive of Hewitt and Flett's (2002) argument that stress plays a number of roles in the exacerbation of perfectionism: (i) stress generation: the pursuit of perfection creates stressful circumstances, (ii) stress anticipation: perfectionists are preoccupied with potential stress indicators, (iii) stress perpetuation: there is a tendency to engage in maladaptive coping strategies, and (iv) stress enhancement: the over-generalisation of failure.

### *10.2.2 Cry of Pain Model*

Williams' (1997) Cry of Pain model suggests that suicidal behaviour is the reaction (i.e. the 'cry') to a situation which signals 'defeat', 'no escape', and 'no rescue'. In this way, individuals who are exposed to, or are sensitive to social indications of these three factors, are likely to be vulnerable to the helplessness script (see Figure 2.1 in Chapter 2). Not until this stage do other factors such as availability of means of committing suicide and other social factors become relevant (Pollock & Williams, 2002). Although we acknowledge that we did not include direct measures

of 'defeat and 'no escape', we believe that the variables included in the four studies are relevant to the theoretical framework of the Cry of Pain model. Below follows a summary of the findings of this thesis in terms of these three factors.

### Defeat

Our investigation of a psychological factor which renders an individual sensitive to signals of defeat centred on perfectionism, and particularly socially prescribed and self-oriented perfectionism: perfectionists are constantly aware of their own fear of failure. Socially prescribed perfectionists, in particular, engage in self-criticism, and self-blame stemming from an inability to meet the perceived standards of others or to control the circumstances in which these standards are being set (Hewitt & Flett, 1991, 1993).

This feeling of lack of control is reflected in our finding that perfectionists have limited belief in their own ability to regulate negative moods. Furthermore, other research on mood regulation expectancies (i.e. that some behaviour or cognition will alleviate a negative mood state) suggests that low levels of perceived beliefs that one can change a negative mood state, not only affects the choice of coping strategies one engages in, but it also affects the intensity and duration of negative mood states (Catanzaro & Greenwood, 1994). From a practical standpoint, such a finding suggests that attempts to modify the negative affect resulting from perfectionism may benefit from considering an individual's mood regulation expectations. The intervention which will be most useful for the perfectionist, is likely to be the one which the perfectionist perceives will be the most successful, i.e. it needs to have high 'face validity'. This suggestion is similar to the underlying

principle proposed by Beck et al. (1979) in the treatment of depression, in which he recommends that the successful application of behavioural interventions relies upon the setting of credible rationales.

### No Escape

Williams (1996) suggested that particular attention should be directed at individuals who are sensitive to feelings of failure, and (ii) who are likely to equate failure with a sense of entrapment. One of the main conclusions which can be drawn from this thesis is very supportive of this line of reasoning: Self-oriented and socially prescribed perfectionists, when combined with slow or over-general recall of autobiographical memories, are significantly more likely to report psychological distress and suicidality. Moreover, this finding holds for both student and parasuicide populations. This finding suggests that a particularly important escape mechanism is the ability to recall specific events from the past. Such a finding is of importance as past research has shown that a restricted ability to recall specific autobiographical memories may have detrimental effects on current problem-solving strategies (Evans et al., 1992; Goddard et al., 1996), whilst also affecting the ability to consider the future in positive terms (Williams, Ellis, Tyers, Healy, Rose & MacLeod, 1996; O'Connor, Connery & Cheyne, 2000). This line of thinking is similar to Baumeister's idea that to escape from these negative feelings, the perfectionistic individual may engage in efforts to create a cognitive shift in focus away from these thoughts (i.e. cognitive deconstruction).

The link between problem-solving and suicidal behaviour has long been acknowledged; however, Pollock and Williams (1998) argued that it is not problem-

solving difficulties per se which present the problem, but rather, the fact that these difficulties indicate no escape. That is, an inability to define a problem and generate possible solutions to it, will likely result in a feeling of entrapment. Research on autobiographical memory has shown that a critical aspect of the problem-solving process relates to the ability to recall specific autobiographical memories from the past.

A consistent finding within this research project was that autobiographical memory recall moderated, but did not mediate, the relationship between perfectionism and psychological distress/ suicidality. On the basis of Studies 1 and 2, it is particularly apparent that it is the slow recall of negative autobiographical memories which is associated with increased psychological distress and suicidality. This finding does not immediately fit contemporary research (e.g. Kaviani, Rahimi-Darabad & Naghavi, 2005) which suggests that it is the lack of positive memories which is most detrimental to psychological well-being. However, the findings can be made sense of on the basis of past autobiographical research: Horowitz (1986) described emotion regulation in terms of control over the manner in which themes are processed and recalled, as well as the way in which they are communicated to others. Horowitz argued that one particularly important control mechanism is the inhibition of memories for stressful or difficult events. In other words, a traumatic experience gives rise to changes in the way in which a memory is encoded and retrieved which consequently inhibits the individual's ability to recollect events with sufficient specificity to be useful in dealing with other negative events. In this way, the individual "deals with the topic at an abstract rather than a personal level to avoid excessive emotion" (Horowitz, 1986; p. 193).

Similarly, research on the mnemonic interlock (Williams, 1996) suggests that when attempting to retrieve a specific memory, the individual becomes stuck at an intermediate level and is not able to proceed to recall more specific events. Therefore, the individual only succeeds in generating other generic descriptions which give rise to rumination about general negative self-referent themes (Williams, Stiles & Shapiro, 1999). However, although this may, by the individual, be viewed as a beneficial way to cope with negative experiences from the past, this kind of safety behaviour actually appears to have detrimental effects instead. For the perfectionist who has an intense fear of failure, and in the case of the socially prescribed perfectionist, is very concerned with not falling short of the perceived perfectionistic expectations of others, it is, thus, likely that over-generality of recall is perceived to be a useful coping strategy. This conclusion is supported by the outcome of the final study (Study 4) which shows that self-oriented and socially prescribed perfectionism, when combined with over-generality of memory recall (both positive and negative), resulted in increased psychological distress and suicide ideation in a parasuicide sample.

All-in-all the outcomes of the four studies suggest that further attention should be directed at the relative roles of positive and negative cue words, as it is possible that a cue word which is conceptualised as being 'positively valenced' does not necessarily result in positive memories being generated. It might be that what was at one stage conceptualised as a positive memory is now no longer viewed in that way, i.e. it serves to remind a person and what they no longer have.

## No Rescue

A final component of the Cry of Pain model is the relevance of rescue factors, in effect, what is the likelihood that individuals will believe that their situation will change for the better? Williams and Pollock (2000) argued that when an individual feels defeated and trapped within their current situation, it is the lack of rescue factors which plays a significant role in prompting an individual to believe that suicide is an acceptable way of dealing with problems. Hopelessness, i.e. pessimism about the future has been highlighted as a primary factor in this process (e.g. Schotte & Clum, 1987; Rudd, Rajab & Dahm, 1994).

O'Connor (2003) concluded that the absence of rescue factors in the form of social support is an important contributing factor to suicidal behaviour. On the basis of Study 2 (Section 7.4.2), we similarly concluded that the tendency of perfectionists to engage in maladaptive emotion-focused coping strategies, and to avoid engaging in active task-focused coping, may reflect a belief that less social support is available in times of stress. The significance of this perceived lack of social support is mirrored in the finding that perfectionists also doubt their own ability to change a negative situation as shown by our research on perceived mood regulation ability (Section 7.4.2). Thus, the sense of a lack of rescue factors is heightened by the tendency of perfectionists to engage in constant self-evaluation to establish whether their performance matches their own or perceived other-imposed standards, whilst doubting the ability of one-self to make a positive change to a negative situation.

This conclusion is supportive of research which suggests that rumination and end-state thinking occurs because a salient goal is not achieved and the individual can't

engage in appropriate goal-directed behaviours which will result in the achievement of the goal (Martin & Tesser, 1989). Thus, when applied to perfectionism, it would be expected that rumination and end-state thinking will be a likely outcome when the perfectionist realises that their goal (i.e. perfection) will not be achieved. This suggestion is supported by the results of Study 3 which showed a strong moderating and mediating link between perfectionism and perfectionism cognitions in the prediction of psychological distress. The idea is further supported by the trend towards a positive relationship between social perfectionism and the over-general production of strategies to achieve positive goals in the future found in Study 4.

Above all, the findings summarised above, lead us to conclude that psychological distress (hopelessness, depression/anxiety/suicide ideation) and suicidal behaviour are the outcome of a failure to self-regulate; a view which is consistent with Carver and Scheier's (1998) suggestion that most human behaviour revolves around an attempt to create and maintain consistency to desired goal values. In relation to our research, this means that perfectionists work towards achieving the unrealistic goals which they either have of them selves (self-oriented perfectionism) or which they perceive others to have for them (socially prescribed perfectionism). As part of attempting to reach this unachievable goal, and to deal with the associated fear of failure, the perfectionist engages in concerted efforts to change the self (e.g. emotion-focused coping, over-general or slow recall of negative memories); however, the changes do not bring about the desired external outcome (Baumeister, 1997) because the contingencies have not been properly understood.

We began this thesis (Chapter 2) by describing two self-regulation theories (Escape from Self Model; Baumeister, 1990; Cry of Pain Model, Williams, 1997), and throughout the thesis we have demonstrated that they appear easily applicable to the investigation of interactions between personality and cognitive variables. In the following sections we wish to consider the findings in terms of their clinical implications as well as their place within future research..

### **10.3 Therapeutic Implications**

Shneidman (1998) argued that the only way to reduce the risk of suicide is by reducing the 'psychache' experienced by the suicidal individual. The outcome of this thesis suggests that to achieve this goal, there are a number of factors which can be addressed. In support of the research by Dean and Range (1999), we conclude that a clinical implication of all four of the studies is that by modifying the level of self-oriented and socially prescribed perfectionism experienced by an individual, it will be possible to decrease the vulnerability to negative affect, as well as decreasing the level of negative life stress experienced by perfectionists. Indeed, the finding that perfectionism, in our case socially prescribed perfectionism (Study 3), can fluctuate as a function of situation or some other influencing factor, has implications for therapeutic attempts at modification as it implies that individuals might not only differ in the availability of such perfectionism constructs, but may also vary in the temporal accessibility (Saboonchi & Lundh, 1999).

That said, the treatment of trait-perfectionism has proved to be a difficult task (e.g. Blatt, Zuroff, Bondi, Sanislow & Pilkonis, 1998), which requires long-term therapeutic input (Blatt, 1995). Indeed there have been no RCT-type interventions



evaluated to date. However, by directing attention away from the trait components of perfectionism, and on to more cognitive aspects of the trait, it might be possible to more easily modify distressing ruminative thoughts about imperfections through cognitive interventions (Flett, Madorsky, Hewitt & Heisel, 2002). This conclusion is consonant with recent research on perfectionism carried out on the Almost Perfect scale (Terry-Short, Owens, Slade & Dewey, 1995). Slaney, Rice and Ashby (2002) concluded that attempts to lower the standards of perfectionists do not improve psychological well-being. This means that it is not the impossibly high standards per se which are maladaptive, but rather the manner in which these standards are perceived by the perfectionist.

#### **10.4 Making Sense of Suicidal Behaviour**

Ruddell and Curwen (2002) argued that although suicide, to bystanders, may appear senseless, to the suicidal person, the act is the logical outcome of a series of events which have left them feeling trapped. The Health Strategies for the United Kingdom (Scottish Executive, 2002; Department of Health, 2002), both emphasise that the reduction of suicide, and the development of successful prevention strategies are dependent upon our knowledge of risk factors. Although demographic research can inform us of specific population groups who are vulnerable to suicide (e.g. young men), these factors are not sufficiently sensitive to allow us to identify individuals within these groups who are at most risk. However, the findings reported herein tentatively suggest that a number of trait and cognitive factors should be investigated further.

In Chapter 1 (Section 1.6) we argued that there is much value in conceptualising suicidal behaviour in terms of a motivation to escape feelings of entrapment brought about by uncontrollable stresses or maladaptive coping. The findings from the four studies carried out as part of this thesis consistently supported this assertion. By viewing suicide from a biopsychosocial, as opposed to a purely biomedical perspective, we have been able to suggest several mechanisms or pathways which appear to be activated in certain individuals, and which consequently lead to distress. In other words, our four studies contribute to the suggestion that defeat or 'no escape' can be triggered psychologically (Williams & Pollock, 2001). Although this thesis has focused on the examination of such pathways, we, of course, acknowledge that psychological processes should not be viewed without consideration of social and biological factors. However, as pointed out by Williams and Pollock (2001) "there is no situation that is so bad that it cannot be made worse by biased cognitive processing, with devastating consequences" (p. 91).

## **10.5 Directions for Future Research**

Emerging from the different lines of enquiry of this thesis, it seems increasingly clear that there are multiple mechanisms and processes which contribute to the relationship between perfectionism and psychological distress and suicidality. As a result, the findings of the studies summarised in this thesis, indicate a number of directions for future research.

The importance of autobiographical memory has primarily been established through studies using measures of over-generality/specificity of recall or memory recall latency. However, less frequently, research has investigated the self-referent tone of

the memories. Renneberg, Theobald, Nobs and Weisbrod (2005) argued that the inclusion of such data may be of relevance to understanding the mechanisms of emotion regulation. Thus, it would be of interest to conduct further research examining the content of the memories, with particular emphasis on discovering the role of perfectionism in these memories.

On a theoretical level, a further goal must be to evaluate the usefulness of self-report measures of motivation. BIS/BAS sensitivity was initially proposed within a biological setting and is, therefore, believed to have a biological basis. Although, there appears to be some correlations between self-report measures and physiological and behavioural measures of BIS/BAS, it is still somewhat uncertain whether these different measures have similar relations to psychopathology. There has been a call for research into the BAS scale in particular, as it “does not appear to be a unified construct in relation to psychopathology” (Johnson, Turner & Iwata, 2003), and consequently, the BAS subscales need further exploration.

### **10.6 Perfectionism Research: What Next?**

According to a number of researchers (e.g. Chang and Rand, 2000) self-oriented perfectionism and socially prescribed perfectionism should be particularly involved in psychological distress on the basis that they (unlike other-oriented perfectionism) place an explicit focus of perfectionistic expectations on the individual. Furthermore, more recent research has extended this research by suggesting that other-oriented perfectionism, through its lack of self-directed perfectionistic expectations, may actually have buffering effects (e.g. Hunter & O'Connor, 2003; O'Connor et al., 2004). That is, it is possible that there are positive as well as

negative manifestations of perfectionism which stem from variability in the way in which these perfectionistic beliefs are processed. Similarly, research on self-oriented perfectionism has been equivocal: some studies have reported a positive relationship between this perfectionism dimension and positive future thinking (Hunter & O'Connor, 2003; O'Connor et al., 2004), adaptive learning strategies (Klibert, 2005), and resourcefulness (Flett, et al., 1991).

Although this thesis does not, in general, show any support for an adaptive role of perfectionism, at least in relation to self-oriented and socially prescribed perfectionism, we did find that high levels of other-oriented perfectionism when combined with high levels of BAS motivation showed a trend towards a decrease in hopelessness and suicidality. However, at the same time, it was also found that when high levels of other-oriented perfectionism were associated with low levels of BAS motivation, then higher levels of hopelessness and suicidality were reported<sup>1</sup>. Thus, the role of other-oriented perfectionism remains ambiguous. We also found that the mood induction procedure included in Study 2 highlighted the possibility that self-oriented and socially prescribed perfectionism and memory recall interacted differently depending on the mood state, and that in a positive mood, high levels of these perfectionism dimensions actually aided the fast recall of positive memories.

This ambiguity concerning whether perfectionism may serve an adaptive role, has certainly not helped the current debate surrounding issues of definitions. Indeed, as mentioned in Chapter 7, one of the most interesting limitations of psychological

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<sup>1</sup> These findings were not significant, though (Study 3).

research on perfectionism surrounds the issue of definition (Rasmussen, 2004). Over the past years there has been much emphasis on conceptualising perfectionism as a multidimensional construct (e.g. Hewitt & Flett, 2002), and with the application of scales which acknowledge this feature, it is apparent that perfectionism includes both inter-personal and intra-personal aspects. From a theoretical point of view this finding is a tremendous value; however, in terms of its practical and clinical implications, the outcome is less clear.

Shafran, Cooper and Fairburn (2002), in an overview of clinical perfectionism, proposed that only the self-oriented perfectionism dimension assesses actual clinical perfectionism, whereas the additional dimensions measure issues pertaining to perfectionism, but not perfectionism per se. Shafran et al. (2002) went on to argue that this 'failure' to properly conceptualise perfectionism, has done little to further our theoretical understanding of the trait in relation to psychopathology. So where do we go from here and do we simply dismiss all the research relating to the interpersonal dimensions of perfectionism? Hewitt, Flett, Besser, Sherry and McGee (2003) argued that the consistency with which perfectionism with an interpersonal content has been related to clinical disorders and psychological distress cannot simply be disregarded, and that, indeed, it is these particular aspects of perfectionism which have the most therapeutic implications.

It is obvious that we still do not fully comprehend the complexity of perfectionism; however, returning to a unidimensional definition would certainly not do this construct justice. Above all, the findings of this thesis support a multidimensional view of perfectionism, and even if the definition does not comply fully with the

clinical view, socially prescribed perfectionism as we know it at present is certainly a maladaptive trait which has deleterious implications for the suicidal person.

## **10.7 Limitations**

The analyses left a number of questions unanswered, which can to some extent be attributed to interpretive caveats which must be considered. Firstly, the studies all made use of self-report measures of the various psychological variables. Although this is a useful way of gathering data from large numbers of participants within limited time frames, it does potentially mean that the observed results were affected by “shared method variance” (Leen-Felder, Zvolensky, Fledner & Leluez, 2004). In addition, as the studies primarily made use of quasi-experimental designs, it is more difficult to infer causal relations between variables. That said, the inclusion of prospective assessments of how the different variables relate to psychological distress and suicidality over time, did improve the interpretative strength of the studies.

I acknowledge that a limitation of the current research is found in the use of many multiple comparisons. However, although I did not correct for family wise error (i.e. the chance of false positives occurring), I am confident in the findings as they are often one-tailed as well as being repeated regressions across studies. Nonetheless, additional research focussing on a limited number of regressions is required in future research.

Attention must also be directed at the potential problem of social desirability (i.e. the tendency of a respondent to project a perceived desirable image to the

experimenter). Although it would have been possible to include a measure of social desirability in the studies, this was not done for two reasons. Firstly, it was important to limit the number of questionnaires included in the procedure, especially in the final clinical study, to minimise time and effort needed to complete the study. In addition, it was felt that the effects of social desirability were reduced by making completion of the measures anonymous by using codes, and that since moderating relationships were found in all four studies this is evidence that social desirability itself cannot account for the findings.

One of the main criticisms of suicide research has been that not enough studies are carried out within the confines of an appropriate theoretical framework (e.g. Lenaars et al., 1997), and consequently, we were very aware of not adding to this atheoretical research pool. However, this in itself could be argued to restrict the research as only psychological variables which were believed to be of relevance to the Escape from Self Model (Baumeister, 1990) and the Cry of Pain Model (Williams, 1997), were included. That is, we did not include a large number of the demographic variables which have also been highlighted as relevant risk factors. Although this shortcoming is acknowledged, it is necessary to accept that a model which encompasses all possible risk factors is not possible (O'Connor, 2003).

Finally, three out of four studies were conducted using a student population. Although such populations are convenient for the purpose of relatively easy access to large participant samples, it is now of importance to extend these findings to the wider populations, as well as clinically relevant groups. The addition of a final study based on a sample of parasuicide patients did, however, support the findings

from the previous studies, and suggests that some generalisation of outcomes is possible. Although the conclusions drawn from this study must be considered within the confines of a small sample size, the results, did, for the most part, show statistically meaningful relationships between the variables. Finally, it could be argued that only the examination of these factors in completed suicide would allow us to deduce causal links. However, such research is for obvious reasons not possible, and it should be kept in mind that research done on suicide notes also support the role of unbearable psychological pain in suicide (O'Connor, Sheehy & O'Connor, 1999; O'Connor & Leenaars, 2003).

### **10.8 What Did This Thesis Add: A Short Summary.**

The purpose of this chapter was to provide a final overview of some of the theoretical, treatment, and definitional issues which have been highlighted in the course of the four studies. With the hope of shedding light on the mechanisms and context with which perfectionism has its effect, and with particular emphasis on autobiographical memory recall, four studies were conducted. The results of this thesis confirmed that self-oriented and socially prescribed, but not other-oriented, perfectionism are important factors in the vulnerability to psychological distress and suicidality both in student and parasuicide populations. In particular, the thesis drew attention to the debilitating effect of over-general or slow recall of autobiographical memories on perfectionists, and it suggested that therapeutic interventions aimed at modifying the cognitive component of perfectionism may be more functional than tackling trait perfectionism. Furthermore, the thesis also attests to the usefulness of diathesis-stress models of perfectionism and autobiographical memory in the prediction of psychological distress, both concurrently and prospectively. Finally,



the importance of considering perfectionism in terms of its motivational grounding was highlighted as an area which deserves further research attention, as we demonstrated that self-oriented and socially prescribed perfectionism both act as mediators of the relationship between behavioural inhibition sensitivity (BIS; i.e. sensitivity to punishment and non-reward) and psychological distress.

Although more definitive conclusions on this issue will require larger samples of parasuicide patients, the findings of Study 4 certainly highlighted a need to conduct more research within this area. Our results have implications for two prominent theories of suicide (Escape from Self Theory, Baumeister, 1990; Cry of Pain Model, Williams, 1997), and for future research conducted on the basis of these theories. Above all, the findings suggest that a valuable aim for research is to understand the psychological processes implicated in suicidal behaviour, as a good understanding of the complexity of the relationships is essential to the development of successful psychological interventions for those at risk of suicide.

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## List of Appendices

Appendix No.	Study No.	Title
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Appendix I

Autobiographical memory cueing task Ref: \_\_\_\_\_

HAPPY

Latency: \_\_\_\_\_ secs G/S

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SORRY

Latency: \_\_\_\_\_ secs G/S

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAFE

Latency: \_\_\_\_\_ secs G/S

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

ANGRY

Latency: \_\_\_\_\_ secs G/S

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

INTERESTED

Latency: \_\_\_\_\_ secs G/S

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

CLUMSY

Latency: \_\_\_\_\_ secs G/S

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SUCCESSFUL

Latency: \_\_\_\_\_ secs G/S

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

HURT

Latency: \_\_\_\_\_ secs G/S

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SURPRISED

Latency: \_\_\_\_\_ secs G/S

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

LONELY

Latency: \_\_\_\_\_ secs G/S

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Today's Date: \_\_\_\_\_

Age: \_\_\_\_\_

Sex: Male or Female (please circle)

Name or chosen pseudonym \_\_\_\_\_

Telephone number or email address: \_\_\_\_\_

We would like to know if you have had any medical complaints, and how your health has been in general. OVER THE PAST FEW WEEKS. Please answer ALL the questions simply by circling the answer which you think most nearly applies to you. Remember that we want to know about present and recent complaints, not those that you had in the past.

**HAVE YOU RECENTLY:**

- |   | Better than usual  | Same than usual         | Worse than usual          | Much worse than usual  |
|---|--------------------|-------------------------|---------------------------|------------------------|
| A1. Been feeling perfectly well and in good health?               | Better than usual  | Same than usual         | Worse than usual          | Much worse than usual  |
| A2. Been feeling in need of a good tonic?                         | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| A3. Been feeling run down and out of sorts?                       | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| A4. Felt that you are ill?  | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| A5. Been getting any pains in your head?                          | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| A6. Been getting a feeling of tightness or pressure in your head? | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| A7. Been having hot or cold spells?                               | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| B1. Lost much sleep over worry?                                   | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| B2. Had difficulty in staying asleep once you are off?            | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| B3. Felt constantly under strain?                                 | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| B4. Been getting edgy and bad-tempered?                           | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| B5. Been getting scared and panicky?                              | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| B6. Found everything getting on top of you?                       | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| B7. Been feeling nervous and strung-up all the time?              | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| C1. Been managing to keep yourself busy and occupied?             | More so than usual | Same as usual           | Rather less than usual    | Much less than usual   |
| C2. Been taking longer over the things you do?                    | Quicker than usual | Same as usual           | Longer than usual         | Much longer than usual |
| C3. Felt on the whole you were doing things well?                 | Better than usual  | About the same          | Less well than usual      | Much less well         |
| C4. Been satisfied with the way you've carried out your task?     | More satisfied     | About the same as usual | Less satisfied than usual | Much less satisfied    |
| C5. Felt that you are playing a useful part in things?            | More so than usual | Same as usual           | Less so than usual        | Much less useful       |



C6. Felt capable of making decisions about things?	More so than usual	Same as usual	Less so than usual	Much less capable
C7. Been able to enjoy your normal day-to-day activities?	More so than usual	Same as usual	Less so than usual	Much less than usual
D1. Been thinking of yourself as a worthless person?	Not at all	No more than usual	Rather more than usual	Much more than usual
D2. Felt that life is entirely hopeless?	Not at all	No more than usual	Rather more than usual	Much more than usual
D3. Felt that life isn't worth living?	Not at all	No more than usual	Rather more than usual	Much more than usual
D4. Thought of the possibility that you might make away with yourself?	Definitely not	I don't think so	Has crossed my mind	Definitely have
D5. Found at times that you couldn't do anything because your nerves were too bad?	Not at all	No more than usual	Rather more than usual	Much more than usual
D6. Found yourself wishing you were dead and away from it all?	Not at all	No more than usual	Rather more than usual	Much more than usual
D7. Found that the idea of taking your own life kept coming into your mind?	Definitely not	I don't think so	Has crossed my mind	Definitely has

Please indicate by circling the appropriate response whether you think each of the following statements is TRUE or FALSE for you, at this moment in time.

1. I look forward to the future with hope and enthusiasm.	True	False
2. I might as well give up as I can't make things better for myself.	True	False
3. When things are going badly, I am helped by knowing that they can't stay that way forever.	True	False
4. I can't imagine what my life would be like in 10 years.	True	False
5. I have enough time to accomplish the things I most want to do.	True	False
6. In the future I expect to succeed in the things I most want to do.	True	False
7. My future seems dark to me.	True	False
8. I expect to get more of the good things in life than the average person.	True	False
9. I just don't have good luck and there is no reason to think that I will in the future.	True	False
10. My past experiences have prepared me well for my future.	True	False
11. All I can see ahead is unpleasantness rather than pleasantness.	True	False
12. I don't expect to get what I really want.	True	False
13. When I look ahead to the future, I expect I will be happier than I am now.	True	False
14. Things just don't work out the way I want them to.	True	False
15. I have great faith in the future.	True	False
16. I never get what I want so it is foolish to want anything.	True	False
17. It's very unlikely that I will get any real satisfaction in the future.	True	False
18. The future seems vague and uncertain to me.	True	False
19. I can look forward to more good times than bad times.	True	False
20. There's no use in really trying to get something I want because I probably won't get it.	True	False

Please indicate how often you have felt or thought a certain way during the last two weeks

	0=Never	1=Almost Never	2=Sometimes	3=Fairly Often	4=Very Often
In the last two weeks, how often have you.....					
1. Been upset because of something that happened unexpectedly?	0	1	2	3	4
2. Felt you were unable to control the unimportant things in your life?	0	1	2	3	4
3. Felt nervous and "stressed"?	0	1	2	3	4
4. Dealt successfully with irritating life hassles?	0	1	2	3	4
5. Felt that you were effectively coping with important changes that were occurring in your life?	0	1	2	3	4
6. Felt confident about your ability to handle your personal problems?	0	1	2	3	4
7. Felt that things were going your way?	0	1	2	3	4
8. Felt that you could not cope with all the things you had to do?	0	1	2	3	4
9. Been able to control irritation in your life?	0	1	2	3	4
10. Felt that you were on top of things?	0	1	2	3	4
11. Been angered because of things that happened that were outside of your control?	0	1	2	3	4
12. Found yourself thinking about things that you have to accomplish?	0	1	2	3	4
13. Been able to control the way you spend your life?	0	1	2	3	4
14. Felt difficulties were piling up so high that you could not overcome them?	0	1	2	3	4

Listed below are a number of statements concerning personal characteristics and traits. Read each item and decide whether you agree or disagree and to what extent. If you strongly agree, circle 7; if you strongly disagree, circle 1; if you feel somewhere in between, circle any one of the numbers between 1 and 7. If you feel neutral or undecided, the midpoint is 4.

	Disagree							Agree						
1. When I am working on something, I cannot relax until it is perfect.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
2. I am not likely to criticize someone for giving up too easily.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
3. It is not important that the people I am close to are successful.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
4. I seldom criticize my friends for accepting second best.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5. I find it difficult to meet others' expectations of me.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
6. One of my goals is to be perfect in everything I do.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
7. Everything that others do must be of top-notch quality.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
8. I never aim for perfection in my work.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
9. Those around me readily accept that I can make mistakes too.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
9. It doesn't matter when someone close to me does not do their absolute best.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
11. The better I do, the better I am expected to do.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
12. I seldom feel the need to be perfect.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
13. Anything I do that is less than excellent, will be seen as poor work by those around me.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
14. I strive to be as perfect as I can be.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
15. It is very important that I am perfect in everything I attempt.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
16. I have high expectations for the people who are important to me.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
17. I strive to be the best at everything I do.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
18. The people around me expect me to succeed at everything I do.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
19. I do not have very high standards for those around me.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
20. I demand nothing less than perfection of myself.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
21. Others will like me even if I don't excel at everything.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
22. I can't be bothered with people who won't strive to better themselves.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
23. It makes me uneasy to see an error in my work.	1	2	3	4	5	6	7	1	2	3	4	5	6	7

	Disagree							Agree						
24. I do not expect a lot from my friends.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
25. Success means that I must work even harder to please others.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
26. If I ask someone to do something, I expect it to be done flawlessly.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
27. I cannot stand to see people close to me make mistakes.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
28. I am perfectionistic in setting my goals.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
29. The people who matter to me should never let me down.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
30. Others think I am okay, even when I do not succeed.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
31. I feel that people are too demanding of me.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
32. I must work to my full potential at all times.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
33. Although they may not show it, other people get very upset with me when I slip up.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
34. I do not have to be the best at whatever I am doing.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
35. My family expects me to be perfect.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
36. I do not have very high goals for myself.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
37. My parents rarely expected me to excel in all aspects of my life.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
38. I respect people who are average.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
39. People expect nothing less than perfection from me.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
40. I set very high standards for myself.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
41. People expect more from me than I am capable of giving.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
42. I must always be successful at school or work.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
43. It does not matter to me when a close friend does not try their hardest.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
44. People around me think I am still competent even if I make a mistake.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
45. I seldom expect others to excel at whatever they do.	1	2	3	4	5	6	7	1	2	3	4	5	6	7

Below is a list of ways you have felt or behaved. Please tell us how often you have felt this way during the past WEEK by circling the appropriate answer.

1 = rarely or none of the time (less than 1 day)	2 = Some or little of the time (1-2 days)	3 = Occasional or a moderate amount of time (3-4 days)	4 = Most or all of the time (5-7 days)
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1. I was bothered by things that usually don't bother me.	1	2	3	4
2. I did not feel like eating; my appetite was poor.	1	2	3	4
3. I felt that I could not shake off the blues even with help from my family and friends.	1	2	3	4
4. I felt that I was just as good as other people.	1	2	3	4
5. I had trouble keeping my mind on what I was doing.	1	2	3	4
6. I felt depressed.	1	2	3	4
7. I felt that everything that I did was an effort.	1	2	3	4
8. I felt hopeful about the future.	1	2	3	4
9. I thought that my life had been a failure.	1	2	3	4
10. I felt fearful.	1	2	3	4
11. My sleep was restless.	1	2	3	4
12. I was happy.	1	2	3	4
13. I talked less than usual.	1	2	3	4
14. I felt lonely.	1	2	3	4
15. People were unfriendly.	1	2	3	4
16. I enjoyed life.	1	2	3	4
17. I had crying spells.	1	2	3	4
18. I felt sad.	1	2	3	4
19. I felt that people dislike me.	1	2	3	4
20. I could not get going.	1	2	3	4

## Appendix 2

*Cross-sectional Data. Hierarchical multiple regression analyses testing the moderating effects of negative memory recall on the relationship between self-oriented and socially prescribed perfectionism and psychological distress (hopelessness, depression, severe depression, suicidality)*

### Self-oriented Perfectionism

Table 1 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between self-oriented perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.058	.257	.005
Step 2 Negative	.059	.095	NS
Step 3 Self x Negative	.066	-.131	NS

Note: Self= Self-oriented perfectionism

Table 2 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between self-oriented perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.065	.270	.003
Step 2 Negative	.083	-.162	NS
Step 3 Self x Negative	.094	-.144	NS

Note: Self= Self-oriented perfectionism

Table 3 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between self-oriented perfectionism and severe depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.160	.408	.001
Step 2 Negative	.152	-.001	NS
Step 3 Self x Negative	.192	-.226	.012

Note: Self= Self-oriented perfectionism

Table 4 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between self-oriented perfectionism and suicidality at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.124	.363	.001
Step 2 Negative	.119	.044	NS
Step 3 Self x Negative	.133	-.157	NS

Note: Self= Self-oriented perfectionism

### Socially Prescribed Perfectionism

Table 5 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between socially prescribed perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.100	.328	.001
Step 2 Negative	.112	.144	NS
Step 3 Social x Negative	.105	.013	NS

Note: Social= Socially prescribed perfectionism

Table 6 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between socially prescribed perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.219	.475	.001
Step 2 Negative	.220	-.091	NS
Step 3 Social x Negative	.213	-.008	NS

Note: Social= Socially prescribed perfectionism

Table 7 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between socially prescribed perfectionism and severe depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.124	.363	.001
Step 2 Negative	.118	.033	NS
Step 3 Social x Negative	.132	-.149	NS

Note: Social= Socially prescribed perfectionism

Table 8 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between socially prescribed perfectionism and suicidality at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.172	.423	.001
Step 2 Negative	.174	.100	NS
Step 3 Social x Negative	.179	-.111	NS

Note: Social= Socially prescribed perfectionism

## Appendix 3

*Cross-sectional data. Hierarchical multiple regression analyses testing the moderating effect of stress on the relationship between self-oriented, other-oriented, and socially prescribed perfectionism and psychological distress (hopelessness, depression, severe depression, suicidality)*

### Self-oriented Perfectionism

Table 9 Hierarchical multiple regression analyses testing the moderating effects of stress on the relationship between self-oriented perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.058	.257	.005
Step 2 Stress	.277	.487	.001
Step 3 Self x Stress	.299	.191	.035

Note: Self= Self-oriented perfectionism

Table 10 Hierarchical multiple regression analyses testing the moderating effects of stress on the relationship between self-oriented perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.065	.270	.003
Step 2 Stress	.487	.662	.001
Step 3 Self x Stress	.503	.145	.059

Note: Self= Self-oriented perfectionism

Table 11 Hierarchical multiple regression analyses testing the moderating effects of stress on the relationship between self-oriented perfectionism and severe depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.167	.408	.001
Step 2 Stress	.473	.570	.001
Step 3 Self x Stress	.552	.322	.001

Note: Self= Self-oriented perfectionism

Table 12 Hierarchical multiple regression analyses testing the moderating effects of stress on the relationship between self-oriented perfectionism and suicidality at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.124	.363	.001
Step 2 Stress	.316	.456	.001
Step 3 Self x Stress	.383	.307	.001

Note: Self= Self-oriented perfectionism

### Socially Prescribed Perfectionism

Table 13 Hierarchical multiple regression analyses testing the moderating effects of stress on the relationship between socially prescribed perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.100	.328	.001
Step 2 Stress	.267	.469	.001
Step 3 Social x Stress	.303	.209	.010

Note: Social= Socially prescribed perfectionism

Table 14 Hierarchical multiple regression analyses testing the moderating effects of stress on the relationship between socially prescribed perfectionism and depression at time 1

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.219	.475	.001
Step 2 Stress	.496	.598	.001
Step 3 Social x Stress	.493	.037	NS

Note: Social= Socially prescribed perfectionism

Table 15 Hierarchical multiple regression analyses testing the moderating effects of stress on the relationship between socially prescribed perfectionism and severe depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.124	.363	.001
Step 2 Stress	.398	.594	.001
Step 3 Social x Stress	.527	.372	.001

Note: Social= Socially prescribed perfectionism

Table 16 Hierarchical multiple regression analyses testing the moderating effects of stress on the relationship between socially prescribed perfectionism and suicidality at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.172	.423	.001
Step 2 Stress	.297	.408	.001
Step 3 Social x Stress	.445	.399	.001

Note: Social= Socially prescribed perfectionism

### Other-oriented Perfectionism

Table 17 Hierarchical multiple regression analyses testing the moderating effects of stress on the relationship between other-oriented perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Other	.000	.092	NS
Step 2 Stress	.260	.516	.001
Step 3 Other x Stress	.255	.039	NS

Note: Other= Other-oriented perfectionism

Table 18 Hierarchical multiple regression analyses testing the moderating effects of stress on the relationship between other-oriented perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Other	.000	.093	NS
Step 2 Stress	.466	.686	.001
Step 3 Other x Stress	.464	.046	NS

Note: Other= Other-oriented perfectionism

Table 19 Hierarchical multiple regression analyses testing the moderating effects of stress on the relationship between other-oriented perfectionism and severe depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Other	-.009	.005	NS
Step 2 Stress	.395	.639	.001
Step 3 Other x Stress	.390	.007	NS

Note: Other= Other-oriented perfectionism

Table 20 Hierarchical multiple regression analyses testing the moderating effects of stress on the relationship between other-oriented perfectionism and suicidality at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Other	-.008	-.015	NS
Step 2 Stress	.258	.522	.001
Step 3 Other x Stress	.252	-.034	NS

Note: Other= Other-oriented perfectionism

## Appendix 4

*Prospective Data. Hierarchical multiple regression analyses testing the moderating effect of negative memory recall on the relationship between self-oriented and socially prescribed perfectionism and psychological distress at Time 2.*

Table 21 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between self-oriented perfectionism and hopelessness at time 2.

Step	Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1	Hopelessness (Time 1)	.288	.543	.001
Step 2	Self	.281	-.023	NS
Step 3	Negative	.302	.170	.047
Step 4	Self x Negative	.351	.245	.005

Note. Self= Self-oriented perfectionism; Negative= Negative autobiographical memory recall

Table 22 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between self-oriented perfectionism and depression at time 2.

Step	Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1	Depression (Time 1)	.347	.595	.001
Step 2	Self	.346	.080	NS
Step 3	Negative	.362	.150	.068
Step 4	Self x Negative	.383	.174	.040

Note. Self= Self-oriented perfectionism; Negative= Negative autobiographical memory recall

Table 23 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between self-oriented perfectionism and severe depression at time 2.

Step	Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1	Severe Depression (Time 1)	.253	.510	.001
Step 2	Self	.246	-.031	NS
Step 3	Negative	.257	.134	NS
Step 4	Self x Negative	.302	.243	.008

Note. Self= Self-oriented perfectionism; Negative= Negative autobiographical memory recall

Table 24 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between self-oriented perfectionism and suicidality at time 2.

Step	Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1	Suicidality (Time 1)	.314	.567	.001
Step 2	Self	.308	-.029	NS
Step 3	Negative	.310	.095	NS
Step 4	Self x Negative	.335	.187	.033

Note. Self= Self-oriented perfectionism; Negative= Negative autobiographical memory recall

## Socially Prescribed Perfectionism

Table 25 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between socially prescribed perfectionism and hopelessness at time 2.

Step	Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1	Hopelessness (Time 1)	.288	.543	.001
Step 2	Social	.288	.090	NS
Step 3	Negative	.319	.200	.021
Step 4	Social x Negative	.415	.321	.001

Note. Social= Socially prescribed perfectionism; Negative= Negative autobiographical memory recall

Table 26 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between socially prescribed perfectionism and depression at time 2.

Step	Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1	Depression (Time 1)	.347	.595	.001
Step 2	Social	.341	-.003	NS
Step 3	Negative	.355	.146	.078
Step 4	Social x Negative	.397	.221	.007

Note. Social= Socially prescribed perfectionism; Negative= Negative autobiographical memory recall

Table 27 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between socially prescribed perfectionism and severe depression at time 2.

Step	Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1	Severe Depression (Time 1)	.253	.510	.001
Step 2	Social	.257	-.115	NS
Step 3	Negative	.264	.120	NS
Step 4	Social x Negative	.365	.332	.001

Note. Social= Socially prescribed perfectionism; Negative= Negative autobiographical memory recall

Table 28 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between socially prescribed perfectionism and suicidality at time 2.

Step	Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1	Suicidality (Time 1)	.321	.567	.001
Step 2	Social	.320	-.123	NS
Step 3	Negative	.319	.078	NS
Step 4	Social x Negative	.394	.288	.001

Note. Social= Socially prescribed perfectionism; Negative= Negative autobiographical memory recall

## Appendix 5

*Prospective Data. Hierarchical multiple regression analyses testing the moderating effect of stress on the relationship between negative memory recall and psychological distress (hopelessness, depression, severe depression, suicidality) at Time 2.*

Table 29 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between stress and hopelessness at time 2.

Step	Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1	Hopelessness (Time 1)	.288	.543	.001
Step 2	Stress	.438	.419	.001
Step 3	Negative	.473	.201	.007
Step 4	Stress x Negative	.558	.309	.001

Note. Negative= Negative autobiographical memory recall

Table 30 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between stress and depression at time 2.

Step	Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1	Depression (Time 1)	.347	.595	.001
Step 2	Stress	.642	.650	.001
Step 3	Negative	.648	.100	NS
Step 4	Stress x Negative	.646	.037	NS

Note. Negative= Negative autobiographical memory recall

Table 31 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between stress and severe depression at time 2

Step	Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1	Severe Depression (Time 1)	.253	.510	.001
Step 2	Stress	.340	.347	.001
Step 3	Negative	.354	.140	.082
Step 4	Stress x Negative	.429	.291	.001

Note. Negative= Negative autobiographical memory recall

Table 32 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between stress and suicidality at time 2.

Step	Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1	Suicidality (Time 1)	.314	.567	.001
Step 2	Stress	.322	.133	NS
Step 3	Negative	.326	.101	NS
Step 4	Stress x Negative	.381	.253	.003

Note. Negative= Negative autobiographical memory recall

## Appendix 6

*Prospective Data. Hierarchical multiple regression analyses testing the moderating effects of negative memory recall on the relationship between self-oriented and socially prescribed perfectionism and psychological distress (hopelessness, depression, severe depression, suicidality; Time 1-Time2).*

### Self-oriented Perfectionism

Table 33 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between self-oriented perfectionism and change in hopelessness between time 1 and time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.013	.152	NS
Step 2 Negative	.011	-.089	NS
Step 3 Self x Negative	.077	-.286	.006

Note: Self= Self-oriented perfectionism; Negative= Negative autobiographical memory recall

Table 34 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between self-oriented perfectionism and change in depression between time 1 and time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.003	.054	NS
Step 2 Negative	.053	-.225	.025
Step 3 Self x Negative	.104	-.238	.021

Note: Self= Self-oriented perfectionism; Negative= Negative autobiographical memory recall

Table 35 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between self-oriented perfectionism and change in severe depression between time 1 and time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.071	.283	.004
Step 2 Negative	.073	-.110	NS
Step 3 Self x Negative	.167	-.334	.001

Note: Self= Self-oriented perfectionism; Negative= Negative autobiographical memory recall

Table 36 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between self-oriented perfectionism and change in suicidality between time 1 and time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.044	.232	.019
Step 2 Negative	.039	-.065	NS
Step 3 Self x Negative	.120	-.261	.010

Note: Self= Self-oriented perfectionism; Negative= Negative autobiographical memory recall

### Socially Prescribed Perfectionism

Table 37 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between socially prescribed perfectionism and change in hopelessness between time 1 and time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	-.006	.065	NS
Step 2 Negative	-.007	-.097	NS
Step 3 Social x Negative	.067	-.292	.004

Note: Social= Socially prescribed perfectionism; Negative= Negative autobiographical memory recall

Table 38 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between socially prescribed perfectionism and change in depression between time 1 and time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.036	.213	.032
Step 2 Negative	.064	-.197	.048
Step 3 Social x Negative	.119	-.255	.009

Note: Social= Socially prescribed perfectionism; Negative= Negative autobiographical memory recall

Table 39 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between socially prescribed perfectionism and change in severe depression between time 1 and time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.093	.319	.001
Step 2 Negative	.091	-.086	NS
Step 3 Social x Negative	.215	-.368	.001

Note: Social= Socially prescribed perfectionism; Negative= Negative autobiographical memory recall

Table 40 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between socially prescribed perfectionism and change in suicidality between time 1 and time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.113	.350	.001
Step 2 Negative	.105	-.029	NS
Step 3 Social x Negative	.203	-.329	.001

Note: Social= Socially prescribed perfectionism; Negative= Negative autobiographical memory recall

## Appendix 7

*Prospective Data. Hierarchical multiple regression analyses testing the moderating effect of stress the relationship between negative memory recall and psychological distress (hopelessness, depression, severe depression, suicidality; Time 1-Time 2).*

Table 41 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between stress and change in hopelessness between time 1 and time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Stress	.025	-.185	.063
Step 2 Negative	.027	-.111	NS
Step 3 Stress x Negative	.075	-.247	.015

*Note.* Negative= Negative autobiographical memory recall

Table 42 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between stress and change in depression between time 1 and time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Stress	.079	-.281	.004
Step 2 Negative	.116	-.235	.014
Step 3 Stress x Negative	.107	.000	NS

*Note.* Negative= Negative autobiographical memory recall

Table 43 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between stress and change in severe depression between time 1 and time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Stress	-.004	.074	NS
Step 2 Negative	.005	-.139	NS
Step 3 Stress x Negative	.055	-.250	.014

*Note.* Negative= Negative autobiographical memory recall

Table 44 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between stress and change in suicidality between time 1 and time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Stress	.012	.148	NS
Step 2 Negative	.010	-.087	NS
Step 3 Stress x Negative	.040	-.206	.045

*Note.* Negative= Negative autobiographical memory recall





We would like to know if you have had any medical complaints, and how your health has been in general, OVER THE PAST FEW WEEKS. Please answer ALL the questions simply by circling the answer which you think most nearly applies to you. Remember that we want to know about present and recent complaints, not those that you had in the past.

**HAVE YOU RECENTLY:**

- |   |                    |                         |                           |                        |
|---|--------------------|-------------------------|---------------------------|------------------------|
| A1. Been feeling perfectly well and in good health?               | Better than usual  | Same than usual         | Worse than usual          | Much worse than usual  |
| A2. Been feeling in need of a good tonic?                         | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| A3. Been feeling run down and out of sorts?                       | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| A4. Felt that you are ill?  | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| A5. Been getting any pains in your head?                          | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| A6. Been getting a feeling of tightness or pressure in your head? | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| A7. Been having hot or cold spells?                               | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| B1. Lost much sleep over worry?                                   | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| B2. Had difficulty in staying asleep once you are off?            | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| B3. Felt constantly under strain?                                 | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| B4. Been getting edgy and bad-tempered?                           | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| B5. Been getting scared and panicky?                              | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| B6. Found everything getting on top of you?                       | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| B7. Been feeling nervous and strung-up all the time?              | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| C1. Been managing to keep yourself busy and occupied?             | More so than usual | Same as usual           | Rather less than usual    | Much less than usual   |
| C2. Been taking longer over the things you do?                    | Quicker than usual | Same as usual           | Longer than usual         | Much longer than usual |
| C3. Felt on the whole you were doing things well?                 | Better than usual  | About the same          | Less well than usual      | Much less well         |
| C4. Been satisfied with the way you've carried out your task?     | More satisfied     | About the same as usual | Less satisfied than usual | Much less satisfied    |

- |  |                    |                    |                        |                      |
|--|--------------------|--------------------|------------------------|----------------------|
| C5. Felt that you are playing a useful part in things?                             | More so than usual | Same as usual      | Less so than usual     | Much less useful     |
| C6. Felt capable of making decisions about things?                                 | More so than usual | Same as usual      | Less so than usual     | Much less capable    |
| C7. Been able to enjoy your normal day-to-day activities?                          | More so than usual | Same as usual      | Less so than usual     | Much less than usual |
| D1. Been thinking of yourself as a worthless person?                               | Not at all         | No more than usual | Rather more than usual | Much more than usual |
| D2. Felt that life is entirely hopeless?   | Not at all         | No more than usual | Rather more than usual | Much more than usual |
| D3. Felt that life isn't worth living?   | Not at all         | No more than usual | Rather more than usual | Much more than usual |
| D4. Thought of the possibility that you might make away with yourself?             | Definitely not     | I don't think so   | Has crossed my mind    | Definitely have      |
| D5. Found at times that you couldn't do anything because your nerves were too bad? | Not at all         | No more than usual | Rather more than usual | Much more than usual |
| D6. Found yourself wishing you were dead and away from it all?                     | Not at all         | No more than usual | Rather more than usual | Much more than usual |
| D7. Found that the idea of taking your own life kept coming into your mind?        | Definitely not     | I don't think so   | Has crossed my mind    | Definitely has       |

Please indicate how often you have felt or thought a certain way during the last two weeks by circling the appropriate answer.

0=Never	1=Almost Never	2=Sometimes	3=Fairly Often	4=Very Often
---------	----------------	-------------	----------------	--------------

In the last two weeks, how often have you.....

- |   |   |   |   |   |   |
|---|---|---|---|---|---|
| 1. Been upset because of something that happened unexpectedly?                                    | 0 | 1 | 2 | 3 | 4 |
| 2. Felt that you were unable to control the unimportant things in your life?                      | 0 | 1 | 2 | 3 | 4 |
| 3. Felt nervous and "stressed"?   | 0 | 1 | 2 | 3 | 4 |
| 4. Dealt successfully with irritating life hassles?   | 0 | 1 | 2 | 3 | 4 |
| 5. Felt that you were effectively coping with important changes that were occurring in your life? | 0 | 1 | 2 | 3 | 4 |
| 6. Felt confident about your ability to handle your personal problems?                            | 0 | 1 | 2 | 3 | 4 |
| 7. Felt that things were going your way?  | 0 | 1 | 2 | 3 | 4 |
| 8. Found that you could not cope with all the things you had to do?                               | 0 | 1 | 2 | 3 | 4 |
| 9. Been able to control irritation in your life?  | 0 | 1 | 2 | 3 | 4 |
| 10. Felt that you were on top of things?  | 0 | 1 | 2 | 3 | 4 |
| 11. Been angered because of things that happened that were outside of your control?               | 0 | 1 | 2 | 3 | 4 |
| 12. Found yourself thinking about things that you have to accomplish?                             | 0 | 1 | 2 | 3 | 4 |
| 13. Been able to control the way you spend your time?   | 0 | 1 | 2 | 3 | 4 |
| 14. Felt difficulties were piling up so high that you could not overcome them?                    | 0 | 1 | 2 | 3 | 4 |

Please indicate by circling the appropriate response whether you think each of the following statements is TRUE or FALSE for you, at this moment in time.

- |   |      |       |
|---|------|-------|
| 1. I look forward to the future with hope and enthusiasm.                                     | True | False |
| 2. I might as well give up as I can't make things better for myself.                          | True | False |
| 3. When things are going badly, I am helped by knowing that they can't stay that way forever. | True | False |
| 4. I can't imagine what my life would be like in 10 years.                                    | True | False |
| 5. I have enough time to accomplish the things I most want to do.                             | True | False |
| 6. In the future I expect to succeed in the things I most want to do.                         | True | False |
| 7. My future seems dark to me.  | True | False |
| 8. I expect to get more of the good things in life than the average person.                   | True | False |
| 9. I just don't have good luck and there is no reason to think that I will in the future.     | True | False |
| 10. My past experiences have prepared me well for my future.                                  | True | False |
| 11. All I can see ahead is unpleasantness rather than pleasantness.                           | True | False |
| 12. I don't expect to get what I really want.   | True | False |
| 13. When I look ahead to the future, I expect I will be happier than I am now.                | True | False |
| 14. Things just don't work out the way I want them to.  | True | False |
| 15. I have great faith in the future.   | True | False |
| 16. I never get what I want so it is foolish to want anything.                                | True | False |
| 17. It's very unlikely that I will get any real satisfaction in the future.                   | True | False |
| 18. The future seems vague and uncertain to me.   | True | False |
| 19. I can look forward to more good times than bad times.                                     | True | False |
| 20. There's no use in really trying to get something I want because I probably won't get it.  | True | False |

Please indicate by circling the appropriate response whether you think each of the following statements is TRUE or FALSE for you.

- |  |      |       |
|--|------|-------|
| 1. In uncertain times, I usually expect the best.                | True | False |
| 2. It's easy for me to relax.                                    | True | False |
| 3. If something can go wrong for me, it will.                    | True | False |
| 4. I'm always optimistic about the future.                       | True | False |
| 5. I enjoy my friends a lot.                                     | True | False |
| 6. It's important for me to keep busy.                           | True | False |
| 7. I hardly ever expect things to go my way.                     | True | False |
| 8. I don't get upset too easily.                                 | True | False |
| 9. I rarely count on good things happening to me.                | True | False |
| 10. Overall, I expect more good things to happen to me than bad. | True | False |

Listed below are a number of statements concerning personal characteristics and traits. Read each item and decide whether you agree or disagree and to what extent. If you strongly agree, circle 7; if you strongly disagree, circle 1; if you feel somewhere in between, circle any one of the numbers between 1 and 7. If you feel neutral or undecided, the midpoint is 4.

- |  | Disagree |   | Agree |   |   |   |   |
|--|----------|---|-------|---|---|---|---|
| 1. When I am working on something, I cannot relax until it is perfect.                       | 1        | 2 | 3     | 4 | 5 | 6 | 7 |
| 2. I am not likely to criticize someone for giving up too easily.                            | 1        | 2 | 3     | 4 | 5 | 6 | 7 |
| 3. It is not important that the people I am close to are successful.                         | 1        | 2 | 3     | 4 | 5 | 6 | 7 |
| 4. I seldom criticize my friends for accepting second best.                                  | 1        | 2 | 3     | 4 | 5 | 6 | 7 |
| 5. I find it difficult to meet others' expectations of me.                                   | 1        | 2 | 3     | 4 | 5 | 6 | 7 |
| 6. One of my goals is to be perfect in everything I do.                                      | 1        | 2 | 3     | 4 | 5 | 6 | 7 |
| 7. Everything that others do must be of top-notch quality.                                   | 1        | 2 | 3     | 4 | 5 | 6 | 7 |
| 8. I never aim for perfection in my work.  | 1        | 2 | 3     | 4 | 5 | 6 | 7 |
| 9. Those around me readily accept that I can make mistakes too.                              | 1        | 2 | 3     | 4 | 5 | 6 | 7 |
| 9. It doesn't matter when someone close to me does not do their absolute best.               | 1        | 2 | 3     | 4 | 5 | 6 | 7 |
| 11. The better I do, the better I am expected to do.   | 1        | 2 | 3     | 4 | 5 | 6 | 7 |
| 12. I seldom feel the need to be perfect.  | 1        | 2 | 3     | 4 | 5 | 6 | 7 |
| 13. Anything I do that is less than excellent, will be seen as poor work by those around me. | 1        | 2 | 3     | 4 | 5 | 6 | 7 |
| 14. I strive to be as perfect as I can be.   | 1        | 2 | 3     | 4 | 5 | 6 | 7 |
| 15. It is very important that I am perfect in everything I attempt.                          | 1        | 2 | 3     | 4 | 5 | 6 | 7 |
| 16. I have high expectations for the people who are important to me.                         | 1        | 2 | 3     | 4 | 5 | 6 | 7 |
| 17. I strive to be the best at everything I do.  | 1        | 2 | 3     | 4 | 5 | 6 | 7 |
| 18. The people around me expect me to succeed at everything I do.                            | 1        | 2 | 3     | 4 | 5 | 6 | 7 |
| 19. I do not have very high standards for those around me.                                   | 1        | 2 | 3     | 4 | 5 | 6 | 7 |
| 20. I demand nothing less than perfection of myself.   | 1        | 2 | 3     | 4 | 5 | 6 | 7 |
| 21. Others will like me even if I don't excel at everything.                                 | 1        | 2 | 3     | 4 | 5 | 6 | 7 |
| 22. I can't be bothered with people who won't strive to better themselves.                   | 1        | 2 | 3     | 4 | 5 | 6 | 7 |
| 23. It makes me uneasy to see an error in my work.   | 1        | 2 | 3     | 4 | 5 | 6 | 7 |

	Disagree	1	2	3	4	5	6	7	Agree
24. I do not expect a lot from my friends.	1	2	3	4	5	6	7		
25. Success means that I must work even harder to please others.	1	2	3	4	5	6	7		
26. If I ask someone to do something, I expect it to be done flawlessly.	1	2	3	4	5	6	7		
27. I cannot stand to see people close to me make mistakes.	1	2	3	4	5	6	7		
28. I am perfectionistic in setting my goals.	1	2	3	4	5	6	7		
29. The people who matter to me should never let me down.	1	2	3	4	5	6	7		
30. Others think I am okay, even when I do not succeed.	1	2	3	4	5	6	7		
31. I feel that people are too demanding of me.	1	2	3	4	5	6	7		
32. I must work to my full potential at all times.	1	2	3	4	5	6	7		
33. Although they may not show it, other people get very upset with me when I slip up.	1	2	3	4	5	6	7		
34. I do not have to be the best at whatever I am doing.	1	2	3	4	5	6	7		
35. My family expects me to be perfect.	1	2	3	4	5	6	7		
36. I do not have very high goals for myself.	1	2	3	4	5	6	7		
37. My parents rarely expected me to excel in all aspects of my life.	1	2	3	4	5	6	7		
38. I respect people who are average.	1	2	3	4	5	6	7		
39. People expect nothing less than perfection from me.	1	2	3	4	5	6	7		
40. I set very high standards for myself.	1	2	3	4	5	6	7		
41. People expect more from me than I am capable of giving.	1	2	3	4	5	6	7		
42. I must always be successful at school or work.	1	2	3	4	5	6	7		
43. It does not matter to me when a close friend does not try their hardest.	1	2	3	4	5	6	7		
44. People around me think I am still competent even if I make a mistake.	1	2	3	4	5	6	7		
45. I seldom expect others to excel at whatever they do.	1	2	3	4	5	6	7		

This questionnaire consists of 21 groups of statements carefully, and pick out the one statement in each group that best describes the way you have been feeling during the past two weeks, including today. Circle the number beside the statement you have picked. If several statements in the group seem to apply equally well, circle the highest number for the group. Be sure that you do not choose more than one statement for any group, including item 16 (changes in sleeping pattern) or item 18 (changes in appetite).

- 1. Sadness**
  - 0 I do not feel sad.
  - 1 I feel sad much of the time.
  - 2 I am sad all the time.
  - 3 I am so sad or unhappy that I can't stand it.
- 2. Pessimism**
  - 0 I am not discouraged about my future.
  - 1 I feel more discouraged about my future than I used to be.
  - 2 I do not expect things to work out for me.
  - 3 I feel my future is hopeless and will only get worse.
- 3. Past Failure**
  - 0 I do not feel like a failure.
  - 1 I have failed more than I should have.
  - 2 As I look back, I see a lot of failures.
  - 3 I feel I am a total failure as a person.
- 4. Loss of Pleasure**
  - 0 I get as much pleasure as I ever did from the things I enjoy.
  - 1 I don't enjoy things as much as I used to.
  - 2 I get very little pleasure from the things I used to enjoy.
  - 3 I can't get any pleasure from the things I used to enjoy.
- 5. Guilty Feelings**
  - 0 I don't feel particularly guilty.
  - 1 I feel guilty over many things I have done or should have done.
  - 2 I feel quite guilty most of the time.
  - 3 I feel guilty most of the time.
- 6. Punishment Feelings**
  - 0 I don't feel like I am being punished.
  - 1 I feel I may be punished.
  - 2 I expect to be punished.
  - 3 I feel I am being punished.

- 7. Self-Dislike**
  - 0 I feel the same about myself as ever.
  - 1 I have lost confidence in myself.
  - 2 I am disappointed in myself.
  - 3 I dislike myself.
- 8. Self-Criticalness**
  - 0 I don't criticize or blame myself more than usual.
  - 1 I am more critical of myself than I used to be.
  - 2 I criticize myself for all of my faults.
  - 3 I blame myself for everything bad that happens.
- 9. Suicidal Thoughts or Wishes**
  - 0 I don't have any thoughts of killing myself.
  - 1 I have thought of killing myself, but I would not carry them out.
  - 2 I would like to kill myself.
  - 3 I would kill myself if I had the chance.
- 10. Crying**
  - 0 I don't cry any more than I used to.
  - 1 I cry more than I used to.
  - 2 I cry over every little thing.
  - 3 I feel like crying, but I can't.
- 11. Agitation**
  - 0 I am no more restless or wound up than usual.
  - 1 I feel more restless or wound up than usual.
  - 2 I am so restless or agitated that it's hard to stay still.
  - 3 I am so restless or agitated that I have to keep moving or doing something.
- 12. Loss of Interest**
  - 0 I have not lost interest in other people or activities.
  - 1 I am less interested in other people or things than before.
  - 2 I have lost most of my interest in other people or things.
  - 3 It's hard to get interested in anything.
- 13. Indecisiveness**
  - 0 I make decisions about as well as ever.
  - 1 I find it more difficult to make decisions than usual.
  - 2 I have much greater difficulty in making decisions than I used to.
  - 3 I have trouble making any decisions.
- 14. Worthlessness**
  - 0 I do not feel I am worthless.
  - 1 I don't consider myself as worthwhile and useful as I used to.
  - 2 I feel more worthless as compared to other people.
  - 3 I feel utterly worthless.
- 15. Loss of Energy**
  - 0 I have as much energy as ever.
  - 1 I have less energy than I used to have.
  - 2 I don't have enough energy to do very much.
  - 3 I don't have enough energy to do anything.
- 16. Changes in Sleeping Pattern**
  - 0 I have not experienced any change in my sleeping pattern.
  - 1a I sleep somewhat more than usual.
  - 1b I sleep somewhat less than usual.
  - 2a I sleep a lot more than usual.
  - 2b I sleep a lot less than usual.
  - 3a I sleep most of the day.
  - 3b I wake up 1-2 hours early and can't get back to sleep.
- 17. Irritability**
  - 0 I am no more irritable than usual.
  - 1 I am more irritable than usual.
  - 2 I am much more irritable than usual.
  - 3 I am irritable all the time.
- 18. Changes in Appetite**
  - 0 I have not experienced any changes in my appetite.
  - 1a My appetite is somewhat less than usual.
  - 1b My appetite is somewhat more than usual.
  - 2a My appetite is much less than before.
  - 2b My appetite is much greater than usual.
  - 3a I have no appetite at all.
  - 3b I crave food all the time.
- 19. Concentration Difficulty**
  - 0 I can concentrate as well as ever.
  - 1 I can't concentrate as well as usual.
  - 2 It's hard to keep my mind on anything for very long.
  - 3 I find I can't concentrate on anything.
- 20. Tiredness or Fatigue**
  - 0 I am no more tired or fatigued than usual.
  - 1 I get more tired or fatigued more easily than usual.
  - 2 I am too tired or fatigued to do a lot of the things I used to do.
  - 3 I am too tired or fatigued to do most of the things I used to do.
- 21. Loss of Interest in Sex**
  - 0 I have not noticed any recent change in my interest in sex.
  - 1 I am less interested in sex than I used to be.
  - 2 I am much less interested in sex now.
  - 3 I have lost interest in sex completely.

This is a questionnaire to find out what people believe they can do about upsetting emotions and feelings. Please answer the statements by giving as true a picture of your own beliefs as possible. Of course, there are no right or wrong answers. Remember the questionnaire is about what you BELIEVE you can do, not what you actually or usually do. Be sure to read each item carefully and show your beliefs by circling the appropriate number for each question.

	1. Strongly disagree	2. Mildly disagree	3. Agree and disagree equally	4. Mildly agree	5. Strongly agree
When I'm upset, I believe that...					
1. I can usually find some way to cheer myself up.	1	2	3	4	5
2. I can do something to feel better.	1	2	3	4	5
3. Wallowing in it is all I can do.	1	2	3	4	5
4. I'll feel okay if I think about more pleasant things.	1	2	3	4	5
5. Being with other people will be a drag.	1	2	3	4	5
6. I can feel better by treating myself to something I like.	1	2	3	4	5
7. I'll feel better when I understand why I feel bad.	1	2	3	4	5
8. I won't be able to get myself to do anything about it.	1	2	3	4	5
9. I won't feel much better by trying to find something good about the situation.	1	2	3	4	5
10. It won't be long before I can calm myself down.	1	2	3	4	5
11. It will be hard to find someone who really understands.	1	2	3	4	5
12. Telling myself it will pass will help me calm down.	1	2	3	4	5
13. Doing something nice for someone else will cheer me up.	1	2	3	4	5
14. I'll probably end up feeling really depressed.	1	2	3	4	5
15. Planning how I'll deal with things will help.	1	2	3	4	5
16. I can forget about what is upsetting me pretty easily.	1	2	3	4	5
17. Catching up with work will help me calm down.	1	2	3	4	5
18. The advice friend's give won't help me feel better.	1	2	3	4	5
19. I won't be able to enjoy things I usually enjoy.	1	2	3	4	5
20. I can find a way to relax.	1	2	3	4	5
21. Trying to work the problem out in my head will only make it seem worse.	1	2	3	4	5
22. Seeing a movie won't help me feel better.	1	2	3	4	5
23. Going out to dinner with friends will help.	1	2	3	4	5
24. I'll be upset for a long time.	1	2	3	4	5
25. I won't be able to put it out of my head.	1	2	3	4	5
26. I can feel better by doing something creative.	1	2	3	4	5
27. I'll start to feel really down about myself.	1	2	3	4	5
28. Thinking that things will eventually be better won't help me feel any better.	1	2	3	4	5
29. I can find some humour in the situation and feel better.	1	2	3	4	5
30. If I'm with a group of people, I'll feel "alone in a crowd".	1	2	3	4	5

The following are ways people react to various difficult, stressful, or upsetting situations. Please circle a number from 1 to 5 for each item. Indicate how much engage in these types of activities when you encounter a difficult, stressful, or upsetting situation.

When I encounter a difficult, stressful, or upsetting situation I.....	Not at All	Very Much
1. Schedule my time better.	1	5
2. Focus on the problem and see how I can solve it.	1	5
3. Think about the good times I've had.	1	5
4. Try to be with other people.	1	5
5. Blame myself for procrastinating.	1	5
6. Do what I think is best.	1	5
7. Become preoccupied with aches and pains.	1	5
8. Blame myself for having gotten into this situation.	1	5
9. Window shop.	1	5
10. Outline my priorities.	1	5
11. Try to go to sleep.	1	5
12. Treat myself to my favourite food or snack.	1	5

When I encounter a difficult, stressful, or upsetting situation I...	Not at all	Very Much
13. Feel anxious about not being able to cope.	1	5
14. Become very tense.	1	5
15. Think about how I solved similar problems.	1	5
16. Tell myself that it is really not happening to me.	1	5
17. Blame myself for being too emotional about the situation.	1	5
18. Go out for a snack or meal.	1	5
19. Become very upset.	1	5
20. Buy myself something.	1	5
21. Determine a course of action and follow it.	1	5
22. Blame myself for not knowing what to do.	1	5
23. Go to a party.	1	5
24. Work to understand the situation.	1	5
25. "Freeze" and not know what to do.	1	5
26. Take corrective action immediately.	1	5
27. Think about the event and learn from my mistakes.	1	5
28. Wish that I could change what had happened or how I felt.	1	5
29. Visit a friend.	1	5
30. Worry about what I am going to do.	1	5
31. Spend time with a special person.	1	5
32. Go for a walk.	1	5
33. Tell myself that it will never happen again.	1	5
34. Focus on my general inadequacies.	1	5
35. Talk to someone whose advice I value.	1	5
36. Analyse the problem before reacting.	1	5
37. Phone a friend.	1	5
38. Get angry.	1	5
39. Adjust my priorities.	1	5
40. See a movie.	1	5
41. Get control of the situation.	1	5
42. Make an extra effort to get things done.	1	5
43. Come up with several different solutions to the problem.	1	5
44. Take some time off and get away from the situation.	1	5
45. Take it out on other people.	1	5
46. Use the situation to prove that I can do it.	1	5
47. Try to be organised so I can be on top of the situation.	1	5
48. Watch TV.	1	5

Appendix 9

Autobiographical memory cueing task Ref: \_\_\_\_\_

HAPPY

Latency: \_\_\_\_\_ secs

G / S

Memory: \_\_\_\_\_

Memory: \_\_\_\_\_

FAILURE

Latency: \_\_\_\_\_ secs

G / S

Memory: \_\_\_\_\_

Memory: \_\_\_\_\_

GRASS

Latency: \_\_\_\_\_ secs

G / S

Memory: \_\_\_\_\_

Memory: \_\_\_\_\_

EXCITED

Latency: \_\_\_\_\_ secs

G / S

Memory: \_\_\_\_\_

Memory: \_\_\_\_\_

REJECTED

Latency: \_\_\_\_\_ secs

G / S

Memory: \_\_\_\_\_

Memory: \_\_\_\_\_

POTTERY

Latency: \_\_\_\_\_ secs

G / S

Memory: \_\_\_\_\_

Memory: \_\_\_\_\_

PLEASED

Latency: \_\_\_\_\_ secs

G / S

Memory: \_\_\_\_\_

Memory: \_\_\_\_\_

SAD

Latency: \_\_\_\_\_ secs

G / S

Memory: \_\_\_\_\_

Memory: \_\_\_\_\_

BREAD

Latency: \_\_\_\_\_ secs

G / S

Memory: \_\_\_\_\_

Memory: \_\_\_\_\_

SMILE

Latency: \_\_\_\_\_ secs

G / S

Memory: \_\_\_\_\_

Memory: \_\_\_\_\_

**HOPELESS**

Latency: \_\_\_\_\_secs

G / S

Memory: \_\_\_\_\_

Memory: \_\_\_\_\_

**SEARCH**

Latency: \_\_\_\_\_secs

G / S

Memory: \_\_\_\_\_

Memory: \_\_\_\_\_

**GLORIOUS**

Latency: \_\_\_\_\_secs

G / S

Memory: \_\_\_\_\_

Memory: \_\_\_\_\_

**GRIEF**

Latency: \_\_\_\_\_secs

G / S

Memory: \_\_\_\_\_

Memory: \_\_\_\_\_

**OCCASION**

Latency: \_\_\_\_\_secs

G / S

Memory: \_\_\_\_\_

Memory: \_\_\_\_\_

Today's Date: \_\_\_\_\_

Age: \_\_\_\_\_

Sex: Male or Female (please circle)

Name or chosen pseudonym \_\_\_\_\_

Telephone number or email address: \_\_\_\_\_

We would like to know if you have had any medical complaints, and how your health has been in general, OVER THE PAST FEW WEEKS. Please answer ALL the questions simply by circling the answer which you think most nearly applies to you. Remember that we want to know about present and recent complaints, not those that you had in the past.

**HAVE YOU RECENTLY:**

- |   |                    |                         |                           |                        |
|---|--------------------|-------------------------|---------------------------|------------------------|
| A1. Been feeling perfectly well and in good health?               | Better than usual  | Same than usual         | Worse than usual          | Much worse than usual  |
| A2. Been feeling in need of a good tonic?                         | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| A3. Been feeling run down and out of sorts?                       | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| A4. Felt that you are ill?  | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| A5. Been getting any pains in your head?                          | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| A6. Been getting a feeling of tightness or pressure in your head? | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| A7. Been having hot or cold spells?                               | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| B1. Lost much sleep over worry?                                   | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| B2. Had difficulty in staying asleep once you are off?            | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| B3. Felt constantly under strain?                                 | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| B4. Been getting edgy and bad-tempered?                           | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| B5. Been getting scared and panicky?                              | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| B6. Found everything getting on top of you?                       | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| B7. Been feeling nervous and strung-up all the time?              | Not at all         | No more than usual      | Rather more than usual    | Much more than usual   |
| C1. Been managing to keep yourself busy and occupied?             | More so than usual | Same as usual           | Rather less than usual    | Much less than usual   |
| C2. Been taking longer over the things you do?                    | Quicker than usual | Same as usual           | Longer than usual         | Much longer than usual |
| C3. Felt on the whole you were doing things well?                 | Better than usual  | About the same          | Less well than usual      | Much less well         |
| C4. Been satisfied with the way you've carried out your task?     | More satisfied     | About the same as usual | Less satisfied than usual | Much less satisfied    |

C5. Felt that you are playing a useful part in things?

- |  |                    |                    |                        |                      |
|--|--------------------|--------------------|------------------------|----------------------|
| C5. Felt that you are playing a useful part in things?                             | More so than usual | Same as usual      | Less so than usual     | Much less useful     |
| C6. Felt capable of making decisions about things?                                 | More so than usual | Same as usual      | Less so than usual     | Much less capable    |
| C7. Been able to enjoy your normal day-to-day activities?                          | More so than usual | Same as usual      | Less so than usual     | Much less than usual |
| D1. Been thinking of yourself as a worthless person?                               | Not at all         | No more than usual | Rather more than usual | Much more than usual |
| D2. Felt that life is entirely hopeless?   | Not at all         | No more than usual | Rather more than usual | Much more than usual |
| D3. Felt that life isn't worth living?   | Not at all         | No more than usual | Rather more than usual | Much more than usual |
| D4. Thought of the possibility that you might make away with yourself?             | Definitely not     | I don't think so   | Has crossed my mind    | Definitely have      |
| D5. Found at times that you couldn't do anything because your nerves were too bad? | Not at all         | No more than usual | Rather more than usual | Much more than usual |
| D6. Found yourself wishing you were dead and away from it all?                     | Not at all         | No more than usual | Rather more than usual | Much more than usual |
| D7. Found that the idea of taking your own life kept coming into your mind?        | Definitely not     | I don't think so   | Has crossed my mind    | Definitely has       |



Please indicate how often you have felt or thought a certain way during the last two weeks by circling the appropriate answer.

	0=Never	1=Almost Never	2=Sometimes	3=Fairly Often	4=Very Often
<b>In the last two weeks, how often have you....</b>					
1. Been upset because of something that happened unexpectedly?	0	1	2	3	4
2. Felt that you were unable to control the unimportant things in your life?	0	1	2	3	4
3. Felt nervous and "stressed"?	0	1	2	3	4
4. Dealt successfully with irritating life hassles?	0	1	2	3	4
5. Felt that you were effectively coping with important changes that were occurring in your life?	0	1	2	3	4
6. Felt confident about your ability to handle your personal problems?	0	1	2	3	4
7. Felt that things were going your way?	0	1	2	3	4
8. Found that you could not cope with all the things you had to do?	0	1	2	3	4
9. Been able to control irritation in your life?	0	1	2	3	4
10. Felt that you were on top of things?	0	1	2	3	4
11. Been angered because of things that happened that were outside of your control?	0	1	2	3	4
12. Found yourself thinking about things that you have to accomplish?	0	1	2	3	4
13. Been able to control the way you spend your time?	0	1	2	3	4
14. Felt difficulties were piling up so high that you could not overcome them?	0	1	2	3	4

Please indicate by circling the appropriate response whether you think each of the following statements is TRUE or FALSE for you, at this moment in time.

1. I look forward to the future with hope and enthusiasm.	True	False
2. I might as well give up as I can't make things better for myself.	True	False
3. When things are going badly, I am helped by knowing that they can't stay that way forever.	True	False
4. I can't imagine what my life would be like in 10 years.	True	False
5. I have enough time to accomplish the things I most want to do.	True	False
6. In the future I expect to succeed in the things I most want to do.	True	False
7. My future seems dark to me.	True	False
8. I expect to get more of the good things in life than the average person.	True	False
9. I just don't have good luck and there is no reason to think that I will in the future.	True	False
10. My past experiences have prepared me well for my future.	True	False
11. All I can see ahead is unpleasantness rather than pleasantness.	True	False
12. I don't expect to get what I really want.	True	False
13. When I look ahead to the future, I expect I will be happier than I am now.	True	False
14. Things just don't work out the way I want them to.	True	False
15. I have great faith in the future.	True	False
16. I never get what I want so it is foolish to want anything.	True	False
17. It's very unlikely that I will get any real satisfaction in the future.	True	False
18. The future seems vague and uncertain to me.	True	False
19. I can look forward to more good times than bad times.	True	False
20. There's no use in really trying to get something I want because I probably won't get it.	True	False

Please indicate by circling the appropriate response whether you think each of the following statements is TRUE or FALSE for you.

1. In uncertain times, I usually expect the best.	0	1	2	3	4
2. It's easy for me to relax.	0	1	2	3	4
3. If something can go wrong for me, it will.	0	1	2	3	4
4. I'm always optimistic about the future.	0	1	2	3	4
5. I enjoy my friends a lot.	0	1	2	3	4
6. It's important for me to keep busy.	0	1	2	3	4
7. I hardly ever expect things to go my way.	0	1	2	3	4
8. I don't get upset too easily.	0	1	2	3	4
9. I rarely count on good things happening to me.	0	1	2	3	4
10. Overall, I expect more good things to happen to me than bad.	0	1	2	3	4

Listed below are a number of statements concerning personal characteristics and traits. Read each item and decide whether you agree or disagree and to what extent. If you strongly agree, circle 7; if you strongly disagree, circle 1; if you feel somewhere in between, circle any one of the numbers between 1 and 7. If you feel neutral or undecided, the midpoint is 4.

	Disagree	1	2	3	4	5	6	7	Agree
1. When I am working on something, I cannot relax until it is perfect.	1	2	3	4	5	6	7		
2. I am not likely to criticise someone for giving up too easily.	1	2	3	4	5	6	7		
3. It is not important that the people I am close to are successful.	1	2	3	4	5	6	7		
4. I seldom criticise my friends for accepting second best.	1	2	3	4	5	6	7		
5. I find it difficult to meet others' expectations of me.	1	2	3	4	5	6	7		
6. One of my goals is to be perfect in everything I do.	1	2	3	4	5	6	7		
7. Everything that others do must be of top-notch quality.	1	2	3	4	5	6	7		
8. I never aim for perfection in my work.	1	2	3	4	5	6	7		
9. Those around me readily accept that I can make mistakes too.	1	2	3	4	5	6	7		
9. It doesn't matter when someone close to me does not do their absolute best.	1	2	3	4	5	6	7		
11. The better I do, the better I am expected to do.	1	2	3	4	5	6	7		
12. I seldom feel the need to be perfect.	1	2	3	4	5	6	7		
13. Anything I do that is less than excellent, will be seen as poor work by those around me.	1	2	3	4	5	6	7		
14. I strive to be as perfect as I can be.	1	2	3	4	5	6	7		
15. It is very important that I am perfect in everything I attempt.	1	2	3	4	5	6	7		
16. I have high expectations for the people who are important to me.	1	2	3	4	5	6	7		
17. I strive to be the best at everything I do.	1	2	3	4	5	6	7		
18. The people around me expect me to succeed at everything I do.	1	2	3	4	5	6	7		
19. I do not have very high standards for those around me.	1	2	3	4	5	6	7		
20. I demand nothing less than perfection of myself.	1	2	3	4	5	6	7		
21. Others will like me even if I don't excel at everything.	1	2	3	4	5	6	7		
22. I can't be bothered with people who won't strive to better themselves.	1	2	3	4	5	6	7		
23. It makes me uneasy to see an error in my work.	1	2	3	4	5	6	7		

	Disagree	1	2	3	4	5	6	7	Agree
24. I do not expect a lot from my friends.	1	2	3	4	5	6	7		
25. Success means that I must work even harder to please others.	1	2	3	4	5	6	7		
26. If I ask someone to do something, I expect it to be done flawlessly.	1	2	3	4	5	6	7		
27. I cannot stand to see people close to me make mistakes.	1	2	3	4	5	6	7		
28. I am perfectionistic in setting my goals.	1	2	3	4	5	6	7		
29. The people who matter to me should never let me down.	1	2	3	4	5	6	7		
30. Others think I am okay, even when I do not succeed.	1	2	3	4	5	6	7		
31. I feel that people are too demanding of me.	1	2	3	4	5	6	7		
32. I must work to my full potential at all times.	1	2	3	4	5	6	7		
33. Although they may not show it, other people get very upset with me when I slip up.	1	2	3	4	5	6	7		
34. I do not have to be the best at whatever I am doing.	1	2	3	4	5	6	7		
35. My family expects me to be perfect.	1	2	3	4	5	6	7		
36. I do not have very high goals for myself.	1	2	3	4	5	6	7		
37. My parents rarely expected me to excel in all aspects of my life.	1	2	3	4	5	6	7		
38. I respect people who are average.	1	2	3	4	5	6	7		
39. People expect nothing less than perfection from me.	1	2	3	4	5	6	7		
40. I set very high standards for myself.	1	2	3	4	5	6	7		
41. People expect more from me than I am capable of giving.	1	2	3	4	5	6	7		
42. I must always be successful at school or work.	1	2	3	4	5	6	7		
43. It does not matter to me when a close friend does not try their hardest.	1	2	3	4	5	6	7		
44. People around me think I am still competent even if I make a mistake.	1	2	3	4	5	6	7		
45. I seldom expect others to excel at whatever they do.	1	2	3	4	5	6	7		

This questionnaire consists of 21 groups of statements. Please read each group of statements carefully, and pick out the one statement in each group that best describes the way you have been feeling during the past two weeks, including today. Circle the number beside the statement you have picked. If several statements in the group seem to apply equally well, circle the highest number for the group. Be sure that you do not choose more than one statement for any group, including item 16 (changes in sleeping pattern) or item 18 (changes in appetite).

1. **Sadness**
  - 0 I do not feel sad.
  - 1 I feel sad much of the time.
  - 2 I am sad all the time.
  - 3 I am so sad or unhappy that I can't stand it.
2. **Pessimism**
  - 0 I am not discouraged about my future.
  - 1 I feel more discouraged about my future than I used to be.
  - 2 I do not expect things to work out for me.
  - 3 I feel my future is hopeless and will only get worse.
3. **Past Failure**
  - 0 I do not feel like a failure.
  - 1 I have failed more than I should have.
  - 2 As I look back, I see a lot of failures.
  - 3 I feel I am a total failure as a person.
4. **Loss of Pleasure**
  - 0 I get as much pleasure as I ever did from the things I enjoy.
  - 1 I don't enjoy things as much as I used to.
  - 2 I get very little pleasure from the things I used to enjoy.
  - 3 I can't get any pleasure from the things I used to enjoy.
5. **Guiltily Feelings**
  - 0 I don't feel particularly guilty.
  - 1 I feel guilty over many things I have done or should have done.
  - 2 I feel quite guilty most of the time.
  - 3 I feel guilty most of the time.
6. **Punishment Feelings**
  - 0 I don't feel like I am being punished.
  - 1 I feel I may be punished.
  - 2 I expect to be punished.
  - 3 I feel I am being punished.

7. **Self-Dislike**
  - 0 I feel the same about myself as ever.
  - 1 I have lost confidence in myself.
  - 2 I am disappointed in myself.
  - 3 I dislike myself.
8. **Self-Criticalness**
  - 0 I don't criticize or blame myself more than usual.
  - 1 I am more critical of myself than I used to be.
  - 2 I criticize myself for all of my faults.
  - 3 I blame myself for everything bad that happens.
9. **Suicidal Thoughts or Wishes**
  - 0 I don't have any thoughts of killing myself.
  - 1 I have thought of killing myself, but I would not carry them out.
  - 2 I would like to kill myself.
  - 3 I would kill myself if I had the chance.
10. **Crying**
  - 0 I don't cry any more than I used to.
  - 1 I cry more than I used to.
  - 2 I cry over every little thing.
  - 3 I feel like crying, but I can't.
11. **Agitation**
  - 0 I am no more restless or wound up than usual.
  - 1 I feel more restless or wound up than usual.
  - 2 I am so restless or agitated that I have to keep moving or doing something.
12. **Loss of Interest**
  - 0 I have not lost interest in other people or activities.
  - 1 I am less interested in other people or things than before.
  - 2 I have lost most of my interest in other people or things.
  - 3 It's hard to get interested in anything.
13. **Indecisiveness**
  - 0 I make decisions about as well as ever.
  - 1 I find it more difficult to make decisions than usual.
  - 2 I have much greater difficulty in making decisions than I used to.
  - 3 I have trouble making any decisions.
14. **Worthlessness**
  - 0 I do not feel I am worthless.
  - 1 I don't consider myself as worthwhile and useful as I used to.
  - 2 I feel more worthless as compared to other people.
  - 3 I feel utterly worthless.
15. **Loss of Energy**
  - 0 I have as much energy as ever.
  - 1 I have less energy than I used to have.
  - 2 I don't have enough energy to do very much.
  - 3 I don't have enough energy to do anything.
16. **Changes in Sleeping Pattern**
  - 0 I have not experienced any change in my sleeping pattern.
    - 1a I sleep somewhat more than usual.
    - 1b I sleep somewhat less than usual.
    - 2a I sleep a lot more than usual.
    - 2b I sleep a lot less than usual.
    - 3a I sleep most of the day.
    - 3b I wake up 1-2 hours early and can't get back to sleep.
17. **Irritability**
  - 0 I am no more irritable than usual.
  - 1 I am more irritable than usual.
  - 2 I am much more irritable than usual.
  - 3 I am irritable all the time.
18. **Changes in Appetite**
  - 0 I have not experienced any changes in my appetite.
    - 1a My appetite is somewhat less than usual.
    - 1b My appetite is somewhat more than usual.
    - 2a My appetite is much less than before.
    - 2b My appetite is much greater than usual.
    - 3a I have no appetite at all.
    - 3b I crave food all the time.
19. **Concentration Difficulty**
  - 0 I can concentrate as well as ever.
  - 1 I can't concentrate as well as usual.
  - 2 It's hard to keep my mind on anything for very long.
  - 3 I find I can't concentrate on anything.
20. **Tiredness or fatigue**
  - 0 I am no more tired or fatigued than usual.
  - 1 I get more tired or fatigued more easily than usual.
  - 2 I am too tired or fatigued to do a lot of the things I used to do.
  - 3 I am too tired or fatigued to do most of the things I used to do.
21. **Loss of Interest in Sex**
  - 0 I have not noticed any recent change in my interest in sex.
  - 1 I am less interested in sex than I used to be.
  - 2 I am much less interested in sex now.
  - 3 I have lost interest in sex completely.

This is a questionnaire to find out what people believe they can do about upsetting emotions and feelings. Please answer the statements by giving as true a picture of your own beliefs as possible. Of course, there are no right or wrong answers. Remember the questionnaire is about what you BELIEVE you can do, not what you actually or usually do. Be sure to read each item carefully and show your beliefs by circling the appropriate number for each question.

	1. Strongly disagree	2. Mildly disagree	3. Agree and disagree equally	4. Mildly agree	5. Strongly agree
When I'm upset, I believe that...					
1. I can usually find some way to cheer myself up.	1	2	3	4	5
2. I can do something to feel better.	1	2	3	4	5
3. Wallowing in it is all I can do.	1	2	3	4	5
4. I'll feel okay if I think about more pleasant things.	1	2	3	4	5
5. Being with other people will be a drag.	1	2	3	4	5
6. I can feel better by treating myself to something I like.	1	2	3	4	5
7. I'll feel better when I understand why I feel bad.	1	2	3	4	5
8. I won't be able to get myself to do anything about it.	1	2	3	4	5
9. I won't feel much better by trying to find something good about the situation.	1	2	3	4	5
10. It won't be long before I can calm myself down.	1	2	3	4	5
11. It will be hard to find someone who really understands.	1	2	3	4	5
12. Telling myself it will pass will help me calm down.	1	2	3	4	5
13. Doing something nice for someone else will cheer me up.	1	2	3	4	5
14. I'll probably end up feeling really depressed.	1	2	3	4	5
15. Planning how I'll deal with things will help.	1	2	3	4	5
16. I can forget about what is upsetting me pretty easily.	1	2	3	4	5
17. Catching up with work will help me calm down.	1	2	3	4	5
18. The advice friend's give won't help me feel better.	1	2	3	4	5
19. I won't be able to enjoy things I usually enjoy.	1	2	3	4	5
20. I can find a way to relax.	1	2	3	4	5
21. Trying to work the problem out in my head will only make it seem worse.	1	2	3	4	5
22. Seeing a movie won't help me feel better.	1	2	3	4	5
23. Going out to dinner with friends will help.	1	2	3	4	5
24. I'll be upset for a long time.	1	2	3	4	5
25. I won't be able to put it out of my head.	1	2	3	4	5
26. I can feel better by doing something creative.	1	2	3	4	5
27. I'll start to feel really down about myself.	1	2	3	4	5
28. Thinking that things will eventually be better won't help me feel any better.	1	2	3	4	5
29. I can find some humour in the situation and feel better.	1	2	3	4	5
30. If I'm with a group of people, I'll feel "alone in a crowd".	1	2	3	4	5

Please indicate how often you have felt or thought a certain way during the last FOUR weeks by circling the appropriate response.

	0= Never	1= Almost never	2= Sometimes	3= Fairly often	4= Very often
--	----------	-----------------	--------------	-----------------	---------------

In the last four weeks, how often have you....

1. Felt you were unable to control the important things in your life?	1	2	3	4
2. Felt confident about your ability to handle your personal problems?	1	2	3	4
3. Felt that things were going your way?	1	2	3	4
4. Felt difficulties were piling up so high that you could not overcome them?	1	2	3	4

## Appendix 10

*Cross-sectional Data. The moderating effect of perceived mood regulation ability on the relationship between self-oriented and socially prescribed perfectionism and psychological distress (hopelessness, depression, severe depression, suicidality).*

### Self-oriented Perfectionism

**Table 45** Hierarchical multiple regression analyses testing the moderating effect of mood regulation on the relationship between self-oriented perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.031	.209	.070
Step 2 Mood Regulation	.418	-.639	.001
Step 3 Self x Mood Regulation	.431	-.151	NS

*Note.* Self= Self-oriented perfectionism

**Table 46** Hierarchical multiple regression analyses testing the moderating effects of mood regulation on the relationship between self-oriented perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.106	.343	.002
Step 2 Mood Regulation	.532	-.669	.001
Step 3 Self x Mood Regulation	.526	-.021	NS

*Note.* Self= Self-oriented perfectionism

**Table 47** Hierarchical multiple regression analyses testing the moderating effects of mood regulation on the relationship between self-oriented perfectionism and severe depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.049	.248	.033
Step 2 Mood Regulation	.370	-.587	.011
Step 3 Self x Mood Regulation	.402	-.207	.033

*Note.* Self= Self-oriented perfectionism

**Table 48** Hierarchical multiple regression analyses testing the moderating effects of mood regulation on the relationship between self-oriented perfectionism and suicidality at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.040	.231	.045
Step 2 Mood Regulation	.234	-.461	.001
Step 3 Self x Mood Regulation	.294	-.273	.009

*Note.* Self= Self-oriented perfectionism

### Socially Prescribed Perfectionism

**Table 49** Hierarchical multiple regression analyses testing the moderating effects of mood regulation on the relationship between socially prescribed perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.061	.270	.016
Step 2 Mood Regulation	.381	-.634	.001
Step 3 Social x Mood Regulation	.385	-.112	NS

*Note.* Social= Socially prescribed perfectionism

**Table 50** Hierarchical multiple regression analyses testing the moderating effects of mood regulation on the relationship between socially prescribed perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.310	.564	.001
Step 2 Mood Regulation	.572	-.572	.001
Step 3 Social x Mood Regulation	.650	-.289	.001

*Note.* Social= Socially prescribed perfectionism

**Table 51** Hierarchical multiple regression analyses testing the moderating effects of mood regulation on the relationship between socially prescribed perfectionism and severe depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.196	.454	.001
Step 2 Mood Regulation	.373	-.483	.001
Step 3 Social x Mood Regulation	.536	-.414	.001

*Note.* Social= Socially prescribed perfectionism

**Table 52** Hierarchical multiple regression analyses testing the moderating effects of mood regulation on the relationship between socially prescribed perfectionism and suicidality at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.159	.412	.001
Step 2 Mood Regulation	.260	-.372	.001
Step 3 Social x Mood Regulation	.404	-.393	.001

*Note.* Social= Socially prescribed perfectionism

## Appendix 11

*Cross-sectional Data. The moderating effect of task-focused coping strategies on the relationship between self-oriented and socially prescribed perfectionism and psychological distress (hopelessness, depression, severe depression, suicidality).*

### Self-oriented Perfectionism

Table 53 Hierarchical multiple regression analyses testing the moderating effects of task-focused coping on the relationship between self-oriented perfectionism and hopelessness at time 1

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.034	.219	.067
Step 2 Task Coping	.328	-.549	.001
Step 3 Self x Task Coping	.358	-.226	.044

Note: Self= Self-oriented perfectionism

Table 54 Hierarchical multiple regression analyses testing the moderating effects of task-focused coping on the relationship between self-oriented perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.128	.375	.011
Step 2 Task Coping	.402	-.529	.001
Step 3 Self x Task Coping	.401	-.101	NS

Note: Self= Self-oriented perfectionism

Table 55 Hierarchical multiple regression analyses testing the moderating effects of task-focused coping on the relationship between self-oriented perfectionism and severe depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.052	.256	.033
Step 2 Task Coping	.155	-.338	.003
Step 3 Self x Task Coping	.174	-.202	NS

Note: Self= Self-oriented perfectionism

Table 56 Hierarchical multiple regression analyses testing the moderating effects of task-focused coping on the relationship between self-oriented perfectionism and suicidality at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.050	.252	.034
Step 2 Task Coping	.069	-.179	NS
Step 3 Self x Task Coping	.082	-.185	NS

Note: Self= Self-oriented perfectionism

### Socially Prescribed Perfectionism

Table 57 Hierarchical multiple regression analyses testing the moderating effects of task-focused coping on the relationship between socially prescribed perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.061	.272	.018
Step 2 Task Coping	.288	-.505	.001
Step 3 Social x Task Coping	.330	-.229	.021

Note: Social= Socially prescribed perfectionism

Table 58 Hierarchical multiple regression analyses testing the moderating effects of task-focused coping on the relationship between socially prescribed perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.295	.552	.001
Step 2 Task Coping	.372	-.303	.002
Step 3 Social x Task Coping	.407	-.208	.023

Note: Social= Socially prescribed perfectionism

Table 59 Hierarchical multiple regression analyses testing the moderating effects of task-focused coping on the relationship between socially prescribed perfectionism and severe depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.213	.473	.001
Step 2 Task Coping	.247	-.218	.040
Step 3 Social x Task Coping	.279	-.205	.042

Note: Social= Socially prescribed perfectionism

Table 60 Hierarchical multiple regression analyses testing the moderating effects of task-focused coping on the relationship between socially prescribed perfectionism and suicidality at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.147	.398	.001
Step 2 Task Coping	.143	-.085	NS
Step 3 Social x Task Coping	.152	-.146	NS

Note: Social= Socially prescribed perfectionism

## Appendix 12

*Cross-sectional Data. The moderating effect of emotion-focused coping strategies on the relationship between self-oriented and socially prescribed perfectionism and psychological distress (hopelessness, depression, severe depression, suicidality).*

### Self-oriented Perfectionism

Table 61 Hierarchical multiple regression analyses testing the moderating effects of emotion-focused coping on the relationship between self-oriented perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.035	.220	.064
Step 2 Emotion Coping	.133	.364	.004
Step 3 Self x Emotion Coping	.121	.032	NS

*Note.* Self= Self-oriented perfectionism

Table 62 Hierarchical multiple regression analyses testing the moderating effects of emotion-focused coping on the relationship between self-oriented perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.133	.381	.001
Step 2 Emotion Coping	.422	.597	.001
Step 3 Self x Emotion Coping	.417	.052	NS

*Note.* Self= Self-oriented perfectionism

Table 63 Hierarchical multiple regression analyses testing the moderating effects of emotion-focused coping on the relationship between self-oriented perfectionism and severe depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.055	.261	.028
Step 2 Emotion Coping	.121	.309	.015
Step 3 Self x Emotion Coping	.110	-.045	NS

*Note.* Self= Self-oriented perfectionism

Table 64 Hierarchical multiple regression analyses testing the moderating effects of emotion-focused coping on the relationship between self-oriented perfectionism and suicidality at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.042	.235	.047
Step 2 Emotion Coping	.053	.174	NS
Step 3 Self x Emotion Coping	.042	-.053	NS

*Note.* Self= Self-oriented perfectionism

### Socially Prescribed Perfectionism

Table 65 Hierarchical multiple regression analyses testing the moderating effects of emotion-focused coping on the relationship between socially prescribed perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.078	.300	.008
Step 2 Emotion Coping	.137	.283	.016
Step 3 Social x Emotion Coping	.141	.124	NS

*Note.* Social= Socially prescribed perfectionism

Table 66 Hierarchical multiple regression analyses testing the moderating effects of emotion-focused coping on the relationship between socially prescribed perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.329	.581	.001
Step 2 Emotion Coping	.578	.535	.001
Step 3 Social x Emotion Coping	.629	.237	.001

*Note.* Social= Socially prescribed perfectionism

Table 67 Hierarchical multiple regression analyses testing the moderating effects of emotion-focused coping on the relationship between socially prescribed perfectionism and severe depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.195	.454	.001
Step 2 Emotion Coping	.244	.259	.020
Step 3 Social x Emotion Coping	.314	.282	.005

*Note.* Social= Socially prescribed perfectionism

Table 68 Hierarchical multiple regression analyses testing the moderating effects of emotion-focused coping on the relationship between socially prescribed perfectionism and suicidality at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.158	.411	.001
Step 2 Emotion Coping	.165	.147	NS
Step 3 Social x Emotion Coping	.186	.179	.095

*Note.* Social= Socially prescribed perfectionism

Appendix 13

Autobiographical memory cueing task

**Instructions:** We are interested in your memory for events that have happened in your life. Below is a list of 18 words. For each one, we want you to remember an event from your life that the word reminds you of. The event can have occurred at **any time** in your life and may be **trivial or important**. However, the event should be a **SPECIFIC** event and have occurred on a particular occasion. By that we mean that it has to be an event which happened within the space of one day; it can't be something which happened over an extended period of time. For example, in response to the word "party", you could NOT say 'I always enjoy a good party' or 'I have been to many good parties in the past' because these memories are very general. But you could say 'I went to a party in the student union on Monday' or 'I had a good time at Jane's party last month', because that would be talking about a very specific event.

\_\_\_\_\_

**JOY**

Memory: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**GUILTY**

Memory: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**RELIEVED**

Memory: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

We are interested in understanding how personality, stress and different coping strategies might affect our memories from the past. We would be grateful if you would fill in this questionnaire as honestly as possible. All responses are treated as confidential and in no case will responses from individuals be identified.

Please answer all the questions.

**1 CREDIT**

**HOPELESS**

Memory: \_\_\_\_\_

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**PROUD**

Memory: \_\_\_\_\_

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**FAILURE**

Memory: \_\_\_\_\_

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**EAGER**

Memory: \_\_\_\_\_

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**GRAVE**

Memory: \_\_\_\_\_

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**GLORIOUS**

Memory: \_\_\_\_\_

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**UGLY**

Memory: \_\_\_\_\_

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**SUNNY**

Memory: \_\_\_\_\_

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**WORSE**

Memory: \_\_\_\_\_

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Each item in this section is a statement that a person may either agree with or disagree with. For each item, indicate how much you agree or disagree with what the item says. Please respond to all the items; do not leave any blank. Choose only one response to each item. That is, don't worry about being "consistent" in your responses. Choose from the following four response options:

	1= very true for me	2= somewhat true for me	3= somewhat false for me	4= very false for me
1. A person's family is the most important thing in life.	1	2	3	4
2. Even if something bad is about to happen to me, I rarely experience fear or nervousness.	1	2	3	4
3. I go out of my way to get things I want.	1	2	3	4
4. When I'm doing well at something I love to keep at it.	1	2	3	4
5. I'm always willing to try something new if I think it will be fun.	1	2	3	4
6. How I dress is important to me.	1	2	3	4
7. When I get something I want, I feel excited and energised.	1	2	3	4
8. Criticism or scolding hurts me quite a bit.	1	2	3	4
9. When I want something I usually go all-out to get it.	1	2	3	4
10. I will often do things for no other reason than they might be fun.	1	2	3	4
11. It's hard for me to find the time to do things such as get a haircut.	1	2	3	4
12. If I see a chance to get something I want I move on it right away.	1	2	3	4
13. I feel pretty worried or upset when I think I know somebody is angry at me.	1	2	3	4
14. When I see an opportunity for something I like I get excited right away.	1	2	3	4
15. I often act on the spur of the moment.	1	2	3	4
16. If I think something unpleasant is going to happen I usually get pretty "worked up".	1	2	3	4
17. I often wonder why people act the way they do.	1	2	3	4
18. When good things happen to me, it affects me strongly.	1	2	3	4
19. I feel worried when I think I have done poorly at something important.	1	2	3	4
20. I crave excitement and new sensations.	1	2	3	4
21. When I go after something I use a "no holds barred" approach.	1	2	3	4
22. I have very few fears compared to my friends.	1	2	3	4
23. It would excite me to win a contest.	1	2	3	4
24. I worry about making mistakes.	1	2	3	4

Please indicate by circling the appropriate response whether you think each of the following statements is TRUE or FALSE for you, at this moment in time.

1. I look forward to the future with hope and enthusiasm.	True	False
2. I might as well give up as I can't make things better for myself.	True	False
3. When things are going badly, I am helped by knowing that they can't stay that way forever.	True	False
4. I can't imagine what my life would be like in 10 years.	True	False
5. I have enough time to accomplish the things I most want to do.	True	False
6. In the future I expect to succeed in the things I most want to do.	True	False
7. My future seems dark to me.	True	False
8. I expect to get more of the good things in life than the average person.	True	False
9. I just don't have good luck and there is no reason to think that I will in the future.	True	False
10. My past experiences have prepared me well for the future.	True	False
11. All I can see ahead is unpleasantness rather than pleasantness.	True	False
12. I don't expect to get what I really want.	True	False
13. When I look ahead to the future, I expect I will be happier than I am now.	True	False
14. Things just don't work out the way I want them to.	True	False
15. I have great faith in the future.	True	False
16. I never get what I want so it is foolish to want anything.	True	False
17. It's very unlikely that I will get any real satisfaction in the future.	True	False
18. The future seems vague and uncertain to me.	True	False
19. I can look forward to more good times than bad times.	True	False
20. There is no use in really trying to get something I want because I probably won't get it.	True	False

Listed below are a variety of thoughts about perfectionism that sometimes pop into people's head. Please read each thought and indicate how frequently, if at all, the thought occurred to you over the last week. Please read each item carefully and circle the appropriate number, using the scale below.

	0= not at all	1= almost never	2= sometimes	3= quite often	4= all of the time
1. Why can't I be perfect?	0	1	2	3	4
2. I need to do better.	0	1	2	3	4
3. I should be perfect.	0	1	2	3	4
4. I should never make the same mistake twice.	0	1	2	3	4
5. I've got to keep working on my goals.	0	1	2	3	4
6. I have to be the best.	0	1	2	3	4
7. I should be doing more.	0	1	2	3	4
8. I can't stand to make mistakes.	0	1	2	3	4
9. I have to work hard all the time.	0	1	2	3	4
10. No matter how much I do, it's never enough.	0	1	2	3	4
11. People expect me to be perfect.	0	1	2	3	4
12. I must be efficient at all times.	0	1	2	3	4
13. My goals are very high.	0	1	2	3	4
14. I can always do better, even if things are almost perfect.	0	1	2	3	4
15. I expect to be perfect.	0	1	2	3	4
16. Why can't things be perfect?	0	1	2	3	4
17. My work has to be superior.	0	1	2	3	4
18. It would be great if everything in my life were perfect.	0	1	2	3	4
19. My work should be flawless.	0	1	2	3	4
20. Things are seldom ideal.	0	1	2	3	4
21. How well am I doing?	0	1	2	3	4
22. I can't do this perfectly.	0	1	2	3	4
23. I certainly have high standards.	0	1	2	3	4
24. Maybe I should lower my goals.	0	1	2	3	4
25. I am too much of a perfectionist.	0	1	2	3	4

We would like to know how you have been feeling over the last couple of weeks. Please answer all the questions simply by circling the answer which you think most nearly applies to you. Remember that we want to know about present and recent complaints, not those that you had in the past.

Have you recently....

- |   |                |                    |                        |                      |
|---|----------------|--------------------|------------------------|----------------------|
| 1. Been thinking of yourself as a worthless person?                               | Not At all     | No more than usual | Rather more than usual | Much more than usual |
| 2. Felt that life is entirely hopeless?   | Not at all     | No more than usual | Rather more than usual | Much more than usual |
| 3. Felt that life isn't worth living?   | Not at all     | No more than usual | Rather more than usual | Much more than usual |
| 4. Thought of the possibility that you might make away with yourself?             | Definitely Not | I don't think so   | Has crossed my mind    | Definitely have      |
| 5. Found at times that you couldn't do anything because your nerves were too bad? | Not at all     | No more than usual | Rather more than usual | Much more than usual |
| 6. Found yourself wishing that you were dead and away from it all?                | Not At all     | No more than usual | Rather more than usual | Much more than usual |
| 7. Found that the idea of taking your own life kept coming into your mind?        | definitely Not | I don't think so   | Has crossed my mind    | Definitely has       |

Listed below are a number of statements concerning personal characteristics and traits. Read each item and decide whether you agree or disagree and to what extent. If you strongly agree, circle 7; if you strongly disagree, circle 1; if you feel somewhere in between, circle any one of the numbers between 1 and 7. If you feel neutral or undecided, the midpoint is 4.

- |  | Disagree |   |   | Agree |   |   |   |
|--|----------|---|---|-------|---|---|---|
| 4. When I am working on something, I cannot relax until it is perfect.                       | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 5. I am not likely to criticise someone for giving up too easily.                            | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 6. It is not important that the people I am close to are successful.                         | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 4. I seldom criticise my friends for accepting second best.                                  | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 5. I find it difficult to meet others' expectations of me.                                   | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 6. One of my goals is to be perfect in everything I do.                                      | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 7. Everything that others do must be of top-notch quality.                                   | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 8. I never aim for perfection in my work.  | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 9. Those around me readily accept that I can make mistakes too.                              | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 10. It doesn't matter when someone close to me does not do their absolute best.              | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 11. The better I do, the better I am expected to do.   | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 12. I seldom feel the need to be perfect.  | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 13. Anything I do that is less than excellent, will be seen as poor work by those around me. | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 14. I strive to be as perfect as I can be.   | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 15. It is very important that I am perfect in everything I attempt.                          | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 16. I have high expectations for the people who are important to me.                         | 1        | 2 | 3 | 4     | 5 | 6 | 7 |

- |  | Disagree |   |   | Agree |   |   |   |
|--|----------|---|---|-------|---|---|---|
| 17. I strive to be the best at everything I do.  | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 18. The people around me expect me to succeed at everything I do.                      | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 19. I do not have very high standards for those around me.                             | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 20. I demand nothing less than perfection of myself.                                   | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 21. Others will like me even if I don't excel at everything.                           | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 22. I can't be bothered with people who won't strive to better themselves.             | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 23. It makes me uneasy to see an error in my work.                                     | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 24. I do not expect a lot from my friends.   | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 25. Success means that I must work even harder to please others.                       | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 26. If I ask someone to do something, I expect it to be done flawlessly.               | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 27. I cannot stand to see people close to me make mistakes.                            | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 28. I am perfectionistic in setting my goals.  | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 29. The people who matter to me should never let me down.                              | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 30. Others think I am okay, even when I do not succeed.                                | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 31. I feel that people are too demanding of me.  | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 32. I must work to my full potential at all times.                                     | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 33. Although they may not show it, other people get very upset with me when I slip up. | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 34. I do not have to be the best at whatever I am doing.                               | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 35. My family expects me to be perfect.  | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 36. I do not have very high goals for myself.  | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 37. My parents rarely expected me to excel in all aspects of my life.                  | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 38. I respect people who are average.  | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 39. People expect nothing less than perfection from me.                                | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 40. I set very high standards for myself.  | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 41. People expect more from me than I am capable of giving.                            | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 42. I must always be successful at school or work.                                     | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 43. It does not matter to me when a close friend does not try their hardest.           | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 44. People around me think I am still competent even if I make a mistake.              | 1        | 2 | 3 | 4     | 5 | 6 | 7 |
| 45. I seldom expect others to excel at whatever they do.                               | 1        | 2 | 3 | 4     | 5 | 6 | 7 |

Please indicate how often you have felt or thought a certain way during the last four weeks.

- |   | 0= never | 1= almost never | 2= sometimes | 3= fairly often | 4= very often |
|---|----------|-----------------|--------------|-----------------|---------------|
| In the last four weeks, how often have you....                                |          |                 |              |                 |               |
| 1. felt that you were unable to control the important things in your life?    | 0        | 1               | 2            | 3               | 4             |
| 2. felt confident about your ability to handle your personal problems?        | 0        | 1               | 2            | 3               | 4             |
| 3. felt that things were going your way?                                      | 0        | 1               | 2            | 3               | 4             |
| 4. felt difficulties were piling up so high that you could not overcome them? | 0        | 1               | 2            | 3               | 4             |

Please pick out and circle the ONE statement below which best describes the way you have been feeling about suicidal thoughts or wishes during the past two weeks including today.

0. I don't have any thoughts of killing myself.
1. I have thought of killing myself, but I would not carry them out.
2. I would like to kill myself.
3. I would kill myself if I had the chance.

It is important that you complete a short questionnaire in couple of week's time which we will email to you so please fill in the details below. Everybody who completes this follow-up questionnaire will be included in a draw for £50. Please email this back to me ([sar3@stir.ac.uk](mailto:sar3@stir.ac.uk)) or return to the box outside room 3A00.

Today's Date: \_\_\_\_\_

Age: \_\_\_\_\_

Sex: Male or Female (please circle)

Name \_\_\_\_\_

Telephone number: \_\_\_\_\_

Email address: \_\_\_\_\_

**THANK YOU FOR YOUR HELP**

Appendix 14

Please take the time to fill in this final questionnaire in the memory and personality study. We would be grateful if you would once again answer the questions as honestly as possible based on how you feel right now or over the past couple of weeks; do not try to remember what you said in the last questionnaire. All responses are treated as confidential and in no case will responses from individuals be identified.

Please answer all the questions.

In order for us to be able to match up your questionnaires please provide your name and email address again. These will later be removed to allow anonymity.

Name: \_\_\_\_\_  
 Email address: \_\_\_\_\_

Please indicate by circling the appropriate response whether you think each of the following statements is TRUE or FALSE for you, at this moment in time.

1. I look forward to the future with hope and enthusiasm. True      False
2. I might as well give up as I can't make things better for myself. True      False
3. When things are going badly, I am helped by knowing that they can't stay that way forever. True      False
4. I can't imagine what my life would be like in 10 years. True      False
5. I have enough time to accomplish the things I most want to do. True      False
6. In the future I expect to succeed in the things I most want to do. True      False
7. My future seems dark to me. True      False
8. I expect to get more of the good things in life than the average person. True      False
9. I just don't have good luck and there is no reason to think that I will in the future. True      False
10. My past experiences have prepared me well for the future. True      False
11. All I can see ahead is unpleasantness rather than pleasantness. True      False
12. I don't expect to get what I really want. True      False
13. When I look ahead to the future, I expect I will be happier than I am now. True      False
14. Things just don't work out the way I want them to. True      False
15. I have great faith in the future. True      False
16. I never get what I want so it is foolish to want anything. True      False
17. It's very unlikely that I will get any real satisfaction in the future. True      False
18. The future seems vague and uncertain to me. True      False
19. I can look forward to more good times than bad times. True      False
20. There is no use in really trying to get something I want because I probably won't get it. True      False

We would like to know how you have been feeling over the last couple of weeks. Please answer all the questions simply by circling the answer which you think most nearly applies to you. Remember that we want to know about present and recent complaints, not those that you had in the past.

Have you recently....

1. Been thinking of yourself as a worthless person? Not      No more      Rather more      Much more  
At all      than usual      than usual      than usual
2. Felt that life is entirely hopeless? Not      No more      Rather more      Much more  
at all      than usual      than usual      than usual
3. Felt that life isn't worth living? Not      No more      Rather more      Much more  
at all      than usual      than usual      than usual
4. Thought of the possibility that you might make away with yourself? Definitely      I don't      Has crossed      Definitely  
Not      think so      my mind      have
5. Found at times that you couldn't do anything because your nerves were too bad? Not      No more      Rather more      Much more  
at all      than usual      than usual      than usual
6. Found yourself wishing that you were dead and away from it all? Not      No more      Rather more      Much more  
At all      than usual      than usual      than usual
8. Found that the idea of taking your own life kept coming into your mind? definitely      I don't      Has crossed      Definitely  
Not      think so      my mind      has

Please pick out and circle the ONE statement below which best describes the way that you have been feeling about suicidal thoughts or wishes during the past two weeks including today.

0. I don't have any thoughts of killing myself.
1. I have thought of killing myself, but I would not carry them out.
2. I would like to kill myself.
3. I would kill myself if I had the chance.

Please indicate how often you have felt or thought a certain way in the last four weeks.

	0= never	1=al- ost never	2=sometimes	3=fairly often	4=very often
In the last four weeks, how often have you.....					
1. felt that you were unable to control the important things in your life?	0	1	2	3	4
2. felt confident about your ability to handle your personal problems?	0	1	2	3	4
3. felt that things were going your way?	0	1	2	3	4
4. felt difficulties were piling up so high that you could not overcome them?	0	1	2	3	4

Please be as honest and accurate as you can throughout. Try not to let your response to one statement influence your responses to other statements. There are no "correct" or "incorrect" answers. Answer according to your own feelings, rather than how you think "most people" would answer.

	1=agree a lot	2=agree a little	3=neither agree nor disagree	4=disagree a little	5=disagree a lot
1. In uncertain times, I usually expect the best.					
2. It's easy for me to relax.	1	2	3	4	5
3. If something can go wrong for me, it will.	1	2	3	4	5
4. I'm always optimistic about my future.	1	2	3	4	5
5. I enjoy my friends a lot.	1	2	3	4	5
6. It's important for me to keep busy.	1	2	3	4	5
7. I hardly ever expect things to go my way.	1	2	3	4	5
8. I don't get upset too easily.	1	2	3	4	5
9. I rarely count on good things happening to me.	1	2	3	4	5
10. Overall, I expect more good things to happen to me than bad.	1	2	3	4	5

Please return this questionnaire to sar3@stir.ac.uk or if you are a student at Stirling University you can return it via internal mail to Susan Rasmussen, Psychology. If you are interested in finding out what the study is about or want to know the final results of the study then please do not hesitate to email me at the above address.

**THANK YOU FOR YOUR HELP**

## Appendix 15

*Cross-sectional Data. Hierarchical multiple regression analyses testing the moderating relationship between BIS and self-oriented and socially prescribed perfectionism in the prediction of psychological distress (hopelessness, depression, suicidality, suicide ideation).*

### Self-oriented Perfectionism

Table 69 Hierarchical multiple regression analyses testing the moderating effects of BIS on the relationship between self-oriented perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	-.006	-.029	NS
Step 2 BIS	-.002	.102	NS
Step 3 Self x BIS	.053	.260	.002

*Note.* Self= Self-oriented perfectionism

Table 70 Hierarchical multiple regression analyses testing the moderating effects of BIS on the relationship between self-oriented perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.000	.084	NS
Step 2 BIS	.006	-.111	NS
Step 3 Self x BIS	.049	.233	.006

*Note.* Self= Self-oriented perfectionism

Table 71 Hierarchical multiple regression analyses testing the moderating effects of BIS on the relationship between self-oriented perfectionism and suicidality at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	-.007	.013	NS
Step 2 BIS	-.004	-.095	NS
Step 3 Self x BIS	-.004	.086	NS

*Note.* Self= Self-oriented perfectionism

Table 72 Hierarchical multiple regression analyses testing the moderating effects of BIS on the relationship between self-oriented perfectionism and suicide ideation at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	-.007	-.006	NS
Step 2 BIS	-.008	-.073	NS
Step 3 Self x BIS	-.012	.055	NS

*Note.* Self= Self-oriented perfectionism

### Socially Prescribed Perfectionism

Table 73 Hierarchical multiple regression analyses testing the moderating effects of BIS on the relationship between socially prescribed perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.045	.227	.005
Step 2 BIS	.043	.064	NS
Step 3 Social x BIS	.086	.233	.006

*Note.* Social= Socially prescribed perfectionism

Table 74 Hierarchical multiple regression analyses testing the moderating effects of BIS on the relationship between socially prescribed perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.051	.239	.003
Step 2 BIS	.063	-.137	.089
Step 3 Social x BIS	.084	.172	.039

*Note.* Social= Socially prescribed perfectionism

Table 75 Hierarchical multiple regression analyses testing the moderating effects of BIS on the relationship between socially prescribed perfectionism and suicidality at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.006	.111	NS
Step 2 BIS	.011	-.111	NS
Step 3 Social x BIS	.020	.133	NS

*Note.* Social= Socially prescribed perfectionism

Table 78 Hierarchical multiple regression analyses testing the moderating effects of BIS on the relationship between socially prescribed perfectionism and suicide ideation at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.015	.146	.075
Step 2 BIS	.017	-.096	NS
Step 3 Social x BIS	.017	.085	NS

*Note.* Social= Socially prescribed perfectionism

## Appendix 16

*Cross-sectional Data. Hierarchical multiple regression analyses testing the moderating relationship between BAS drive and self-oriented, other-oriented, and socially prescribed perfectionism in the prediction of psychological distress (hopelessness, depression, suicidality, suicide ideation).*

### Self-oriented Perfectionism

Table 79 Hierarchical multiple regression analyses testing the moderating effects of BAS drive on the relationship between self-oriented perfectionism and hopelessness at time 1.

Variable	Adj. R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	-.006	-.029	NS
Step 2 BAS drive	.075	-.280	.001
Step 3 Self x BAS drive	.062	-.081	NS

*Note.* Self= Self-oriented perfectionism

Table 80 Hierarchical multiple regression analyses testing the moderating effects of BAS drive on the relationship between self-oriented perfectionism and depression at time 1.

Variable	Adj. R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.000	.084	NS
Step 2 BAS drive	.088	-.314	.001
Step 3 Self x BAS drive	.088	.080	NS

*Note.* Self= Self-oriented perfectionism

Table 81 Hierarchical multiple regression analyses testing the moderating effects of BAS drive on the relationship between self-oriented perfectionism and suicidality at time 1.

Variable	Adj. R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	-.007	.013	NS
Step 2 BAS drive	.068	-.291	.001
Step 3 Self x BAS drive	.067	.075	NS

*Note.* Self= Self-oriented perfectionism

Table 82 Hierarchical multiple regression analyses testing the moderating effects of BAS drive on the relationship between self-oriented perfectionism and suicide ideation at time 1.

Variable	Adj. R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	-.007	-.006	NS
Step 2 BAS drive	.046	-.249	.003
Step 3 Self x BAS drive	.039	-.002	NS

*Note.* Self= Self-oriented perfectionism

### Socially Prescribed Perfectionism

Table 83 Hierarchical multiple regression analyses testing the moderating effects of BAS drive on the relationship between socially prescribed perfectionism and hopelessness at time 1.

Variable	Adj. R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.045	.227	.005
Step 2 BAS drive	.104	-.255	.001
Step 3 Social x BAS drive	.099	.027	NS

*Note.* Social= Socially prescribed perfectionism

Table 84 Hierarchical multiple regression analyses testing the moderating effects of BAS drive on the relationship between socially prescribed perfectionism and depression at time 1.

Variable	Adj. R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.051	.239	.003
Step 2 BAS drive	.113	-.261	.001
Step 3 Social x BAS drive	.115	.092	NS

*Note.* Social= Socially prescribed perfectionism

Table 85 Hierarchical multiple regression analyses testing the moderating effects of BAS drive on the relationship between socially prescribed perfectionism and suicidality at time 1.

Variable	Adj. R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.006	.111	NS
Step 2 BAS drive	.070	-.265	.001
Step 3 Social x BAS drive	.075	.108	NS

*Note.* Social= Socially prescribed perfectionism

Table 86 Hierarchical multiple regression analyses testing the moderating effects of BAS drive on the relationship between socially prescribed perfectionism and suicide ideation at time 1.

Variable	Adj. R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.015	.146	.075
Step 2 BAS drive	.060	-.227	.005
Step 3 Social x BAS drive	.070	.128	NS

*Note.* Social= Socially prescribed perfectionism

### Other-oriented Perfectionism

Table 87 Hierarchical multiple regression analyses testing the moderating effects of BAS drive on the relationship between other-oriented perfectionism and hopelessness at time 1.

Variable	Adj. R <sup>2</sup>	Final Beta	Sig.
Step 1 Other	-.006	.033	NS
Step 2 BAS drive	.068	-.287	.001
Step 3 Other x BAS drive	.063	-.038	NS

*Note.* Other= Other-oriented perfectionism

Table 88 Hierarchical multiple regression analyses testing the moderating effects of BAS drive on the relationship between other-oriented perfectionism and depression at time 1.

Variable	Adj. R <sup>2</sup>	Final Beta	Sig.
Step 1 Other	-.005	-.043	NS
Step 2 BAS drive	.065	-.280	.001
Step 3 Other x BAS drive	.062	.058	NS

*Note.* Other= Other-oriented perfectionism

Table 89 Hierarchical multiple regression analyses testing the moderating effects of BAS drive on the relationship between other-oriented perfectionism and suicide ideation at time 1.

Variable	Adj. R <sup>2</sup>	Final Beta	Sig.
Step 1 Other	-.001	-.078	NS
Step 2 BAS drive	.063	-.267	.001
Step 3 Other x BAS drive	.058	.046	NS

*Note.* Other= Other-oriented perfectionism

Table 90 Hierarchical multiple regression analyses testing the moderating effects of BAS drive on the relationship between other-oriented perfectionism and suicide ideation at time 1.

Variable	Adj. R <sup>2</sup>	Final Beta	Sig.
Step 1 Other	-.007	.015	NS
Step 2 BAS drive	.047	-.248	.003
Step 3 Other x BAS drive	.060	-.014	NS

*Note.* Other= Other-oriented perfectionism

## Appendix 17

*Cross-sectional Data Hierarchical multiple regression analyses testing the moderating relationships between BAS Fun and self-oriented, other-oriented, and socially prescribed perfectionism in the prediction of psychological distress (hopelessness, depression, suicidality, suicide ideation).*

### Self-oriented Perfectionism

Table 91 Hierarchical multiple regression analyses testing the moderating effects of BAS fun on the relationship between self-oriented perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	-.006	-.029	NS
Step 2 BAS fun	.021	-.183	.026
Step 3 Self x BAS fun	.019	.067	NS

*Note.* Self= Self-oriented perfectionism

Table 92 Hierarchical multiple regression analyses testing the moderating effects of BAS fun on the relationship between self-oriented perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.000	.084	NS
Step 2 BAS fun	.048	-.233	.004
Step 3 Self x BAS fun	.093	.227	.005

*Note.* Self= Self-oriented perfectionism

Table 93 Hierarchical multiple regression analyses testing the moderating effects of BAS fun on the relationship between self-oriented perfectionism and suicidality at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	-.007	.013	NS
Step 2 BAS fun	-.003	-.103	NS
Step 3 Self x BAS fun	.015	.160	.055

*Note.* Self= Self-oriented perfectionism

Table 94 Hierarchical multiple regression analyses testing the moderating effects of BAS fun on the relationship between self-oriented perfectionism and suicide ideation at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	-.007	-.006	NS
Step 2 BAS fun	.008	-.147	.075
Step 3 Self x BAS fun	.005	.065	NS

*Note.* Self= Self-oriented perfectionism

### Socially Prescribed Perfectionism

Table 95 Hierarchical multiple regression analyses testing the moderating effects of BAS fun on the relationship between socially prescribed perfectionism and hopelessness at time 1

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.045	.227	.005
Step 2 BAS fun	.060	-.147	.070
Step 3 Social x BAS fun	.056	.045	NS

*Note.* Social= Socially prescribed perfectionism

Table 96 Hierarchical multiple regression analyses testing the moderating effects of BAS fun on the relationship between socially prescribed perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.051	.239	.003
Step 2 BAS fun	.086	-.206	.010
Step 3 Social x BAS fun	.085	.071	NS

*Note.* Social= Socially prescribed perfectionism

Table 97 Hierarchical multiple regression analyses testing the moderating effects of BAS fun on the relationship between socially prescribed perfectionism and suicidality at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.006	.111	NS
Step 2 BAS fun	.006	-.087	NS
Step 3 Social x BAS fun	.005	.073	NS

*Note.* Social= Socially prescribed perfectionism

Table 98 Hierarchical multiple regression analyses testing the moderating effects of BAS fun on the relationship between socially prescribed perfectionism and suicide ideation at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.015	.146	.075
Step 2 BAS fun	.023	-.125	NS
Step 3 Social x BAS fun	.017	-.012	NS

*Note.* Social= Socially prescribed perfectionism

### Other-oriented Perfectionism

Table 99 Hierarchical multiple regression analyses testing the moderating effects of BAS fun on the relationship between other-oriented perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Other	-.006	.033	NS
Step 2 BAS fun	.021	-.181	.027
Step 3 Other x BAS fun	.015	-.027	NS

*Note.* Other= Other-oriented perfectionism

Table 100 Hierarchical multiple regression analyses testing the moderating effects of BAS fun on the relationship between other-oriented perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Other	-.005	-.43	NS
Step 2 BAS fun	.045	-.237	.004
Step 3 Other x BAS fun	.042	.062	NS

*Note.* Other= Other-oriented perfectionism

Table 101 Hierarchical multiple regression analyses testing the moderating effects of BAS fun on the relationship between other-oriented perfectionism and suicidality at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Other	-.001	-.078	NS
Step 2 BAS fun	.002	-.099	NS
Step 3 Other x BAS fun	-.004	.006	NS

*Note.* Other= Other-oriented perfectionism

Table 102 Hierarchical multiple regression analyses testing the moderating effects of BAS fun on the relationship between other-oriented perfectionism and suicide ideation at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Other	-.007	.015	NS
Step 2 BAS fun	.008	-.146	.075
Step 3 Other x BAS fun	.017	-.127	NS

*Note.* Other= Other-oriented perfectionism



## Appendix 18

*Cross-sectional Data. Hierarchical multiple regression analyses testing the moderating relationship between BAS Reward and self-oriented, other-oriented, and socially prescribed perfectionism in the prediction of psychological distress (hopelessness, depression, suicidality, suicide ideation).*

### Self-oriented Perfectionism

Table 103 Hierarchical multiple regression analyses testing the moderating effects of BAS reward on the relationship between self-oriented perfectionism and hopelessness at time 1.

Variable	Adj. R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	-.006	-.029	NS
Step 2 BAS reward	.007	-.140	.090
Step 3 Self x BAS reward	.038	.198	.018

*Note.* Self= Self-oriented perfectionism

Table 104 Hierarchical multiple regression analyses testing the moderating effects of BAS reward on the relationship between self-oriented perfectionism and depression at time 1.

Variable	Adj. R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.000	.084	NS
Step 2 BAS reward	.056	-.249	.002
Step 3 Self x BAS reward	.068	.138	.092

*Note.* Self= Self-oriented perfectionism

Table 105 Hierarchical multiple regression analyses testing the moderating effects of BAS reward on the relationship between self-oriented perfectionism and suicidality at time 1.

Variable	Adj. R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	-.007	.013	NS
Step 2 BAS reward	.024	-.192	.019
Step 3 Self x BAS reward	.019	.045	NS

*Note.* Self= Self-oriented perfectionism

Table 106 Hierarchical multiple regression analyses testing the moderating effects of BAS reward on the relationship between self-oriented perfectionism and suicide ideation at time 1.

Variable	Adj. R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	-.007	-.006	NS
Step 2 BAS reward	.003	-.130	NS
Step 3 Self x BAS reward	-.003	-.012	NS

*Note.* Self= Self-oriented perfectionism

### Socially Prescribed Perfectionism

Table 107 Hierarchical multiple regression analyses testing the moderating effects of BAS reward on the relationship between socially prescribed perfectionism and hopelessness at time 1.

Variable	Adj. R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.045	.227	.005
Step 2 BAS reward	.056	-.129	NS
Step 3 Social x BAS reward	.055	.076	NS

*Note.* Social= Socially prescribed perfectionism

Table 108 Hierarchical multiple regression analyses testing the moderating effects of BAS reward on the relationship between socially prescribed perfectionism and depression at time 1.

Variable	Adj. R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.051	.239	.003
Step 2 BAS reward	.099	-.232	.003
Step 3 Social x BAS reward	.096	.061	NS

*Note.* Social= Socially prescribed perfectionism

Table 109 Hierarchical multiple regression analyses testing the moderating effects of BAS reward on the relationship between socially prescribed perfectionism and suicidality at time 1.

Variable	Adj. R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.006	.111	NS
Step 2 BAS reward	.034	-.186	.023
Step 3 Social x BAS reward	.031	.063	NS

*Note.* Social= Socially prescribed perfectionism

Table 110 Hierarchical multiple regression analyses testing the moderating effects of BAS reward on the relationship between socially prescribed perfectionism and suicide ideation at time 1.

Variable	Adj. R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.015	.146	.075
Step 2 BAS reward	.023	-.122	NS
Step 3 Social x BAS reward	0.16	.012	NS

*Note.* Social= Socially prescribed perfectionism

### Other-oriented Perfectionism

Table 111 Hierarchical multiple regression analyses testing the moderating effects of BAS reward on the relationship between other-oriented perfectionism and hopelessness at time 1.

Variable	Adj. R <sup>2</sup>	Final Beta	Sig.
Step 1 Other	-.006	.033	NS
Step 2 BAS reward	.009	-.146	.077
Step 3 Other x BAS reward	.031	-.169	.038

*Note.* Other= Other-oriented perfectionism

Table 112 Hierarchical multiple regression analyses testing the moderating effects of BAS reward on the relationship between other-oriented perfectionism and depression at time 1.

Variable	Adj. R <sup>2</sup>	Final Beta	Sig.
Step 1 Other	-.005	-.043	NS
Step 2 BAS reward	.047	-.242	.003
Step 3 Other x BAS reward	.044	-.058	NS

*Note.* Other= Other-oriented perfectionism

Table 113 Hierarchical multiple regression analyses testing the moderating effects of BAS reward on the relationship between other-oriented perfectionism and suicidality at time 1.

Variable	Adj. R <sup>2</sup>	Final Beta	Sig.
Step 1 Other	-.001	-.078	NS
Step 2 BAS reward	.027	-.185	.024
Step 3 Other x BAS reward	.023	-.055	NS

*Note.* Other= Other-oriented perfectionism

Table 114 Hierarchical multiple regression analyses testing the moderating effects of BAS reward on the relationship between other-oriented perfectionism and suicide ideation at time 1.

Variable	Adj. R <sup>2</sup>	Final Beta	Sig.
Step 1 Other	-.007	.015	NS
Step 2 BAS reward	.004	-.132	NS
Step 3 Other x BAS reward	.026	-.169	.039

*Note.* Other= Other-oriented perfectionism

## Appendix 19

*Cross-sectional Data. Hierarchical multiple regression analyses testing the moderating relationship between perfectionism cognitions and self-oriented, other-oriented, and socially prescribed perfectionism in the prediction of psychological distress (hopelessness, depression, suicidality, suicide ideation).*

### Self-oriented Perfectionism

Table 115 Hierarchical multiple regression analyses testing the moderating effects of perfectionism cognitions on the relationship between self-oriented perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.006	-.029	NS
Step 2 Cognitions	.113	.493	.001
Step 3 Self x Cognitions	.108	-.037	NS

Note. Self= Self-oriented perfectionism; Cognitions= Perfectionism cognitions

Table 116 Hierarchical multiple regression analyses testing the moderating effects of perfectionism cognitions on the relationship between self-oriented perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.000	.084	NS
Step 2 Cognitions	.107	.468	.001
Step 3 Self x Cognitions	.102	.047	NS

Note. Self= Self-oriented perfectionism; Cognitions= Perfectionism cognitions

Table 117 Hierarchical multiple regression analyses testing the moderating effects of perfectionism cognitions on the relationship between self-oriented perfectionism and suicidality at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	-.007	.013	NS
Step 2 Cognitions	.040	.321	.005
Step 3 Self x Cognitions	.035	.048	NS

Note. Self= Self-oriented perfectionism; Cognitions= Perfectionism cognitions

Table 228 Hierarchical multiple regression analyses testing the moderating effects of perfectionism cognitions on the relationship between self-oriented perfectionism and suicide ideation at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	-.007	-.006	NS
Step 2 Cognitions	.056	.367	.001
Step 3 Self x Cognitions	.050	.018	NS

Note. Self= Self-oriented perfectionism; Cognitions= Perfectionism cognitions

### Socially Prescribed Perfectionism

Table 119 Hierarchical multiple regression analyses testing the moderating effects of perfectionism cognitions on the relationship between socially prescribed perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.045	.227	.005
Step 2 Cognitions	.055	.152	NS
Step 3 Social x Cognitions	.049	-.023	NS

Note. Social= Socially prescribed perfectionism; Cognitions= Perfectionism cognitions

Table 120 Hierarchical multiple regression analyses testing the moderating effects of perfectionism cognitions on the relationship between socially prescribed perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.051	.239	.003
Step 2 Cognitions	.084	.238	.013
Step 3 Social x Cognitions	.082	-.066	NS

Note. Social= Socially prescribed perfectionism; Cognitions= Perfectionism cognitions

Table 121 Hierarchical multiple regression analyses testing the moderating effects of perfectionism cognitions on the relationship between socially prescribed perfectionism and suicidality at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.006	.111	NS
Step 2 Cognitions	.017	.159	NS
Step 3 Social x Cognitions	.023	-.116	NS

Note. Social= Socially prescribed perfectionism; Cognitions= Perfectionism cognitions

Table 122 Hierarchical multiple regression analyses testing the moderating effects of perfectionism cognitions on the relationship between socially prescribed perfectionism and suicide ideation at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.015	.146	.075
Step 2 Cognitions	.023	.147	NS
Step 3 Social x Cognitions	.034	-.135	NS

Note. Social= Socially prescribed perfectionism; Cognitions= Perfectionism cognitions

### Other-oriented Perfectionism

Table 123 Hierarchical multiple regression analyses testing the moderating effects of perfectionism cognitions on the relationship between other-oriented perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Other	-.006	.033	NS
Step 2 Cognitions	.041	.237	.005
Step 3 Other x Cognitions	.034	.003	NS

Note. Other= Other-oriented perfectionism; Cognitions= Perfectionism cognitions

Table 124 Hierarchical multiple regression analyses testing the moderating effects of perfectionism cognitions on the relationship between other-oriented perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Other	-.005	-.043	NS
Step 2 Cognitions	.090	.327	.001
Step 3 Other x Cognitions	.085	-.032	NS

Note. Other= Other-oriented perfectionism; Cognitions= Perfectionism cognitions

Table 125 Hierarchical multiple regression analyses testing the moderating effects of perfectionism cognitions on the relationship between other-oriented perfectionism and suicidality at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Other	-.001	-.078	NS
Step 2 Cognitions	.032	.203	.016
Step 3 Other x Cognitions	.032	-.080	NS

Note. Other= Other-oriented perfectionism; Cognitions= Perfectionism cognitions

Table 126 Hierarchical multiple regression analyses testing the moderating effects of perfectionism cognitions on the relationship between other-oriented perfectionism and suicide ideation at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Other	-.007	.015	NS
Step 2 Cognitions	.021	.190	.024
Step 3 Other x Cognitions	.016	-.042	NS

Note. Other= Other-oriented perfectionism; Cognitions= Perfectionism cognitions

## Appendix 20

*Cross-sectional Data. Hierarchical multiple regression analyses testing the moderating relationship between motivation (BIS/BAS) and perfectionism cognitions in the prediction of psychological distress (hopelessness, depression, suicidality, suicide ideation).*

### BIS

Table 127 Hierarchical multiple regression analyses testing the moderating effects of BIS on the relationship between Perfectionism cognitions and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Cognitions	.047	.231	.004
Step 2 BIS	.047	.080	NS
Step 3 Cognitions x BIS	.054	.125	NS

Note: Cognitions= Perfectionism cognitions

Table 128 Hierarchical multiple regression analyses testing the moderating effects of BIS on the relationship between perfectionism cognitions and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Cognitions	.082	.297	.001
Step 2 BIS	.091	-.121	NS
Step 3 Cognitions x BIS	.084	.004	NS

Note: Cognitions= Perfectionism cognitions

Table 129 Hierarchical multiple regression analyses testing the moderating effects of BIS on the relationship between perfectionism cognitions and suicidality at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Cognitions	.023	.172	.035
Step 2 BIS	.028	-.105	NS
Step 3 Cognitions x BIS	.021	-.020	NS

Note: Cognitions= Perfectionism cognitions

Table 130 Hierarchical multiple regression analyses testing the moderating effects of BIS on the relationship between perfectionism cognitions and suicide ideation at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Cognitions	.027	.183	.025
Step 2 BIS	.028	-.086	NS
Step 3 Cognitions x BIS	.023	-.044	NS

Note: Cognitions= Perfectionism cognitions

### BAS Drive

Table 131 Hierarchical multiple regression analyses testing the moderating effects of BAS drive on the relationship between perfectionism cognitions and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Cognitions	.047	.231	.004
Step 2 BAS drive	.106	-.256	.001
Step 3 Cognitions x BAS drive	.128	-.166	.032

Note: Cognitions= Perfectionism cognitions

Table 132 Hierarchical multiple regression analyses testing the moderating effects of BAS drive on the relationship between perfectionism cognitions and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Cognitions	.082	.297	.001
Step 2 BAS drive	.143	-.258	.001
Step 3 Cognitions x BAS drive	.138	.029	NS

Note: Cognitions= Perfectionism cognitions

Table 133 Hierarchical multiple regression analyses testing the moderating effects of BAS drive on the relationship between perfectionism cognitions and suicidality at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Cognitions	.023	.172	.035
Step 2 BAS drive	.085	-.261	.001
Step 3 Cognitions x BAS drive	.079	-.006	NS

Note: Cognitions= Perfectionism cognitions

Table 134 Hierarchical multiple regression analyses testing the moderating effects of BAS drive on the relationship between perfectionism cognitions and suicide ideation at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Cognitions	.027	.183	.025
Step 2 BAS drive	.071	-.225	.005
Step 3 Cognitions x BAS drive	.075	-.102	NS

Note: Cognitions= Perfectionism cognitions

### BAS Fun

Table 135 Hierarchical multiple regression analyses testing the moderating effects of BAS fun on the relationship between perfectionism cognitions and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Cognitions	.047	.231	.004
Step 2 BAS fun	.063	-.152	.059
Step 3 Cognitions x BAS fun	.063	.078	NS

Note: Cognitions= Perfectionism cognitions

Table 136 Hierarchical multiple regression analyses testing the moderating effects of BAS fun on the relationship between perfectionism cognitions and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Cognitions	.082	.297	.001
Step 2 BAS fun	.117	-.204	.009
Step 3 Cognitions x BAS fun	.121	.099	NS

Note: Cognitions= Perfectionism cognitions

Table 137 Hierarchical multiple regression analyses testing the moderating effects of BAS fun on the relationship between perfectionism cognitions and suicidality at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Cognitions	.023	.172	.035
Step 2 BAS fun	.023	-.082	NS
Step 3 Cognitions x BAS fun	.022	.072	NS

Note: Cognitions= Perfectionism cognitions

Table 138 Hierarchical multiple regression analyses testing the moderating effects of BAS fun on the relationship between perfectionism cognitions and suicide ideation at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Cognitions	.027	.183	.025
Step 2 BAS fun	.036	-.124	NS
Step 3 Cognitions x BAS fun	.035	.076	NS

Note: Cognitions= Perfectionism cognitions

### BAS Reward

Table 139 Hierarchical multiple regression analyses testing the moderating effects of BAS reward on the relationship between perfectionism cognitions and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Cognitions	.047	.231	.004
Step 2 BAS reward	.058	-.133	.097
Step 3 Cognitions x BAS reward	.063	.107	NS

Note: Cognitions= Perfectionism cognitions

Table 140 Hierarchical multiple regression analyses testing the moderating effects of BAS reward on the relationship between perfectionism cognitions and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Cognitions	.082	.297	.001
Step 2 BAS reward	.131	-.233	.003
Step 3 Cognitions x BAS reward	.125	.007	NS

Note: Cognitions= Perfectionism cognitions

Table 141 Hierarchical multiple regression analyses testing the moderating effects of BAS reward on the relationship between perfectionism cognitions and suicidality at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Cognitions	.023	.172	.035
Step 2 BAS reward	.051	-.182	.022
Step 3 Cognitions x BAS reward	.046	-.042	NS

Note: Cognitions= Perfectionism cognitions

Table 142 Hierarchical multiple regression analyses testing the moderating effects of BAS reward on the relationship between perfectionism cognitions and suicide ideation at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Cognitions	.027	.183	.025
Step 2 BAS reward	.036	-.123	NS
Step 3 Cognitions x BAS reward	.033	-.066	NS

Note: Cognitions= Perfectionism cognitions

## Appendix 21

*Cross-sectional Data Hierarchical multiple regression analyses testing the moderating relationship between missing positive memories and self-oriented perfectionism in the prediction of distress (hopelessness, depression, suicidality, suicide ideation).*

### Self-oriented Perfectionism

Table 143 Hierarchical multiple regression analyses testing the moderating effects of missing positive memories on the relationship between self-oriented perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	-.006	-.029	NS
Step 2 Memories	-.011	.037	NS
Step 3 Self x Memories	-.017	-.033	NS

Note: Self= Self-oriented perfectionism; Memories= Missing positive memories

Table 144 Hierarchical multiple regression analyses testing the moderating effects of missing positive memories on the relationship between self-oriented perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.000	.084	NS
Step 2 Memories	.008	.122	NS
Step 3 Self x Memories	.006	.070	NS

Note: Self= Self-oriented perfectionism; Memories= Missing positive memories

Table 145 Hierarchical multiple regression analyses testing the moderating effects of missing positive memories on the relationship between self-oriented perfectionism and suicidality at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	-.007	.013	NS
Step 2 Memories	.025	.195	.017
Step 3 Self x Memories	.023	.075	NS

Note: Self= Self-oriented perfectionism; Memories= Missing positive memories

Table 146 Hierarchical multiple regression analyses testing the moderating effects of missing positive memories on the relationship between self-oriented perfectionism and suicide ideation at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	-.007	-.006	NS
Step 2 Memories	.021	.186	.023
Step 3 Self x Memories	.043	-.177	.039

Note: Self= Self-oriented perfectionism; Memories= Missing positive memories

## Appendix 22

*Cross-sectional Data Hierarchical multiple regression analyses testing the moderating relationship between over-general negative memory recall and self-oriented Perfectionism in the prediction of psychological distress (hopelessness, depression, suicidality, suicide ideation).*

### Self-oriented Perfectionism

Table 147 Hierarchical multiple regression analyses testing the moderating effects of over-general negative memories on the relationship between self-oriented perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	-.006	-.029	NS
Step 2 Memories	-.012	.016	NS
Step 3 Self x Memories	-.017	-.047	NS

*Note:* Self= Self-oriented perfectionism; Memories= Over-general negative memories

Table 148 Hierarchical multiple regression analyses testing the moderating effects of over-general negative memories on the relationship between self-oriented perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.000	.084	NS
Step 2 Memories	.001	.085	NS
Step 3 Self x Memories	-.003	-.056	NS

*Note:* Self= Self-oriented perfectionism; Memories= Over-general negative memories

Table 149 Hierarchical multiple regression analyses testing the moderating effects of over-general negative memories on the relationship between self-oriented perfectionism and suicidality at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	-.007	.013	NS
Step 2 Memories	-.011	.048	NS
Step 3 Self x Memories	-.015	-.057	NS

*Note:* Self= Self-oriented perfectionism; Memories= Over-general negative memories

Table 150 Hierarchical multiple regression analyses testing the moderating effects of over-general negative memories on the relationship between self-oriented perfectionism and suicide ideation at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	-.007	-.006	NS
Step 2 Memories	-.005	.090	NS
Step 3 Self x Memories	.042	-.230	.005

*Note:* Self= Self-oriented perfectionism; Memories= Over-general negative memories

## Appendix 23

*Prospective Data. Hierarchical multiple regression analyses testing the moderating relationship between BIS and self-oriented perfectionism and socially prescribed perfectionism in the prediction of psychological distress (hopelessness, depression, suicidality, suicide ideation) over time.*

### Self-oriented Perfectionism

Table 151 Hierarchical multiple regression analyses testing the moderating effects of BIS on the relationship between self-oriented perfectionism and hopelessness at time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Hopelessness Time 1	.826	.910	.001
Step 2 Self	.826	.042	NS
Step 3 BIS	.832	-.083	.031
Step 4 Self x BIS	.831	-.036	NS

Note. Self= Self-oriented perfectionism

Table 152 Hierarchical multiple regression analyses testing the moderating effects of BIS on the relationship between self-oriented perfectionism and depression at time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Depression Time 1	.744	.864	.001
Step 2 Self	.748	.075	NS
Step 3 BIS	.749	-.057	NS
Step 4 Self x BIS	.748	.038	NS

Note. Self= Self-oriented perfectionism

Table 153 Hierarchical multiple regression analyses testing the moderating effects of BIS on the relationship between self-oriented perfectionism and suicidality at time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Suicidality Time 1	.809	.900	.001
Step 2 Self	.811	.057	NS
Step 3 BIS	.814	-.070	.080
Step 4 Self x BIS	.814	.042	NS

Note. Self= Self-oriented perfectionism

Table 154 Hierarchical multiple regression analyses testing the moderating effects of BIS on the relationship between self-oriented perfectionism and suicide ideation at time 2

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Suicide ideation Time 1	.858	.927	.001
Step 2 Self	.857	-.007	NS
Step 3 BIS	.856	.022	NS
Step 4 Self x BIS	.855	-.011	NS

Note. Self= Self-oriented perfectionism

### Socially Prescribed Perfectionism

Table 155 Hierarchical multiple regression analyses testing the moderating effects of BIS on the relationship between socially prescribed perfectionism and hopelessness at time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Hopelessness Time 1	.826	.910	.001
Step 2 Social	.826	-.035	NS
Step 3 BIS	.829	-.073	.063
Step 4 Social x BIS	.831	-.059	NS

Note. Social= Socially prescribed perfectionism

Table 156 Hierarchical multiple regression analyses testing the moderating effects of BIS on the relationship between socially prescribed perfectionism and depression at time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Depression Time 1	.744	.864	.001
Step 2 Social	.742	.004	NS
Step 3 BIS	.742	-.050	NS
Step 4 Social x BIS	.742	-.044	NS

Note. Social= Socially prescribed perfectionism

Table 157 Hierarchical multiple regression analyses testing the moderating effects of BIS on the relationship between socially prescribed perfectionism and suicidality at time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Suicidality Time 1	.809	.900	.001
Step 2 Social	.807	.000	NS
Step 3 BIS	.810	-.066	NS
Step 4 Social x BIS	.808	.010	NS

Note. Social= Socially prescribed perfectionism

Table 158 Hierarchical multiple regression analyses testing the moderating effects of BIS on the relationship between socially prescribed perfectionism and suicide ideation at time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Suicide ideation Time 1	.858	.927	.001
Step 2 Social	.858	.032	NS
Step 3 BIS	.857	.015	NS
Step 4 Social x BIS	.857	.040	NS

Note. Social= Socially prescribed perfectionism

## Appendix 24

*Prospective Data. Hierarchical multiple regression analyses testing the moderating relationship between BAS Drive and self-oriented perfectionism and socially prescribed perfectionism in the prediction of psychological distress (hopelessness, depression, suicidality, suicide ideation) over time.*

### Self-oriented Perfectionism

Table 159 Hierarchical multiple regression analyses testing the moderating effects of BAS Drive on the relationship between self-oriented perfectionism and hopelessness at time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Hopelessness Time 1	.826	.910	.001
Step 2 Self	.826	.042	NS
Step 3 BAS Drive	.829	.068	.099
Step 4 Self x BAS Drive	.826	-.023	NS

Note. Self= Self-oriented perfectionism

Table 160 Hierarchical multiple regression analyses testing the moderating effects of BAS Drive on the relationship between self-oriented perfectionism and depression at time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Depression Time 1	.744	.864	.001
Step 2 Self	.748	.075	NS
Step 3 BAS Drive	.764	-.144	.03
Step 4 Self x BAS Drive	.764	-.044	NS

Note. Self= Self-oriented perfectionism

Table 161 Hierarchical multiple regression analyses testing the moderating effects of BAS Drive on the relationship between self-oriented perfectionism and suicidality at time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Suicidality Time 1	.809	.900	.001
Step 2 Self	.811	.057	NS
Step 3 BAS Drive	.811	-.043	NS
Step 4 Self x BAS Drive	.810	-.032	NS

Note. Self= Self-oriented perfectionism

Table 162 Hierarchical multiple regression analyses testing the moderating effects of BAS Drive on the relationship between self-oriented perfectionism and suicide ideation at time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Suicide ideation Time 1	.858	.927	.001
Step 2 Self	.857	-.007	NS
Step 3 BAS Drive	.858	.046	NS
Step 4 Self x BAS Drive	.858	.048	NS

Note. Self= Self-oriented perfectionism

### Socially Prescribed Perfectionism

Table 163 Hierarchical multiple regression analyses testing the moderating effects of BAS Drive on the relationship between socially prescribed perfectionism and hopelessness at time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Hopelessness Time 1	.826	.910	.001
Step 2 Social	.826	-.035	NS
Step 3 BAS Drive	.830	.076	.054
Step 4 Social x BAS Drive	.831	.054	NS

Note. Social= Socially prescribed perfectionism

Table 164 Hierarchical multiple regression analyses testing the moderating effects of BAS Drive on the relationship between socially prescribed perfectionism and depression at time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Depression Time 1	.744	.864	.001
Step 2 Social	.742	.004	NS
Step 3 BAS Drive	.751	-.106	.022
Step 4 Social x BAS Drive	.750	-.028	NS

Note. Social= Socially prescribed perfectionism

Table 165 Hierarchical multiple regression analyses testing the moderating effects of BAS Drive on the relationship between socially prescribed perfectionism and suicidality at time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Suicidality Time 1	.809	.900	.001
Step 2 Social	.807	.000	NS
Step 3 BAS Drive	.806	-.023	NS
Step 4 Social x BAS Drive	.806	.005	NS

Note. Social= Socially prescribed perfectionism

Table 167 Hierarchical multiple regression analyses testing the moderating effects of BAS Drive on the relationship between socially prescribed perfectionism and suicide ideation at time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Suicide ideation Time 1	.858	.927	.001
Step 2 Social	.858	.032	NS
Step 3 BAS Drive	.858	.041	NS
Step 4 Social x BAS Drive	.858	.028	NS

Note. Social= Socially prescribed perfectionism



## Appendix 25

*Prospective Data. Hierarchical multiple regression analyses testing the moderating relationship between BAS Fun and self-oriented perfectionism and socially prescribed perfectionism in the prediction of psychological distress (Hopelessness, depression, suicidality, suicide ideation) over time.*

### Self-oriented Perfectionism

Table 168 Hierarchical multiple regression analyses testing the moderating effects of BAS Fun on the relationship between self-oriented perfectionism and hopelessness at time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Hopelessness Time 1	.826	.910	.001
Step 2 Self	.826	.042	NS
Step 3 BAS Fun	.825	.023	NS
Step 4 Self x BAS Fun	.829	.072	.073

Note. Self= Self-oriented perfectionism

Table 169 Hierarchical multiple regression analyses testing the moderating effects of BAS Fun on the relationship between self-oriented perfectionism and depression at time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Depression Time 1	.744	.864	.001
Step 2 Self	.748	.075	NS
Step 3 BAS Fun	.746	-.024	NS
Step 4 Self x BAS Fun	.749	.078	NS

Note. Self= Self-oriented perfectionism

Table 170 Hierarchical multiple regression analyses testing the moderating effects of BAS Fun on the relationship between self-oriented perfectionism and suicidality at time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Suicidality Time 1	.809	.900	.001
Step 2 Self	.811	.057	NS
Step 3 BAS Fun	.811	-.048	NS
Step 4 Self x BAS Fun	.816	.081	NS

Note. Self= Self-oriented perfectionism

Table 171 Hierarchical multiple regression analyses testing the moderating effects of BAS Fun on the relationship between self-oriented perfectionism and suicide ideation at time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Suicide ideation Time 1	.858	.927	.001
Step 2 Self	.857	-.007	NS
Step 3 BAS Fun	.861	.071	.041
Step 4 Self x BAS Fun	.863	.051	NS

Note. Self= Self-oriented perfectionism

### Socially Prescribed Perfectionism

Table 172 Hierarchical multiple regression analyses testing the moderating effects of BAS Fun on the relationship between socially prescribed perfectionism and hopelessness at time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Hopelessness Time 1	.826	.910	.001
Step 2 Social	.826	-.035	NS
Step 3 BAS Fun	.824	.016	NS
Step 4 Social x BAS Fun	.826	.061	NS

Note. Social= Socially prescribed perfectionism

Table 173 Hierarchical multiple regression analyses testing the moderating effects of BAS Fun on the relationship between socially prescribed perfectionism and depression at time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Depression Time 1	.744	.864	.001
Step 2 Social	.742	.004	NS
Step 3 BAS Fun	.741	-.029	NS
Step 4 Social x BAS Fun	.744	.076	NS

Note. Social= Socially prescribed perfectionism

Table 174 Hierarchical multiple regression analyses testing the moderating effects of BAS Fun on the relationship between socially prescribed perfectionism and suicidality at time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Suicidality Time 1	.809	.900	.001
Step 2 Social	.807	.000	NS
Step 3 BAS Fun	.809	-.053	NS
Step 4 Social x BAS Fun	.809	.046	NS

Note. Social= Socially prescribed perfectionism

Table 175 Hierarchical multiple regression analyses testing the moderating effects of BAS Fun on the relationship between socially prescribed perfectionism and suicide ideation at time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Suicide ideation Time 1	.858	.937	.001
Step 2 Social	.858	.032	NS
Step 3 BAS Fun	.862	.075	.031
Step 4 Social x BAS Fun	.862	.039	NS

Note. Social= Socially prescribed perfectionism

## Appendix 26

*Prospective Data. Hierarchical multiple regression analyses testing the moderating relationship between BAS Reward and self-oriented perfectionism and socially prescribed perfectionism in the prediction of psychological distress (hopelessness, depression, suicidality, suicide ideation) over time.*

### Self-oriented Perfectionism

Table 176 Hierarchical multiple regression analyses testing the moderating effects of BAS Reward on the relationship between self-oriented perfectionism and hopelessness at time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Hopelessness Time 1	.826	.910	.001
Step 2 Self	.826	.042	NS
Step 3 BAS Reward	.827	-.049	NS
Step 4 Self x BAS Reward	.826	-.009	NS

*Note.* Self= Self-oriented perfectionism

Table 177 Hierarchical multiple regression analyses testing the moderating effects of BAS Reward on the relationship between self-oriented perfectionism and depression at time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Depression Time 1	.744	.864	.001
Step 2 Self	.748	.075	NS
Step 3 BAS Reward	.746	-.019	NS
Step 4 Self x BAS Reward	.744	.022	NS

*Note.* Self= Self-oriented perfectionism

Table 178 Hierarchical multiple regression analyses testing the moderating effects of BAS Reward on the relationship between self-oriented perfectionism and suicidality at time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Suicidality Time 1	.809	.900	.001
Step 2 Self	.811	.057	NS
Step 3 BAS Reward	.817	-.92	.022
Step 4 Self x BAS Reward	.816	.023	NS

*Note.* Self= Self-oriented perfectionism

Table 179 Hierarchical multiple regression analyses testing the moderating effects of BAS Reward on the relationship between self-oriented perfectionism and suicide ideation at time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Suicide ideation Time 1	.858	.927	.001
Step 2 Self	.857	-.007	NS
Step 3 BAS Reward	.856	.027	NS
Step 4 Self x BAS Reward	.855	-.006	NS

*Note.* Self= Self-oriented perfectionism

### Socially Prescribed Perfectionism

Table 180 Hierarchical multiple regression analyses testing the moderating effects of BAS Reward on the relationship between socially prescribed perfectionism and hopelessness at time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Hopelessness Time 1	.826	.910	.001
Step 2 Social	.826	-.035	NS
Step 3 BAS Reward	.825	-.047	NS
Step 4 Social x BAS Reward	.826	-.017	NS

*Note.* Social= Socially prescribed perfectionism

Table 181 Hierarchical multiple regression analyses testing the moderating effects of BAS Reward on the relationship between socially prescribed perfectionism and depression at time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Depression Time 1	.744	.864	.001
Step 2 Social	.742	.004	NS
Step 3 BAS Reward	.740	-.014	NS
Step 4 Social x BAS Reward	.739	-.037	NS

*Note.* Social= Socially prescribed perfectionism

Table 182 Hierarchical multiple regression analyses testing the moderating effects of BAS Reward on the relationship between socially prescribed perfectionism and suicidality at time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Suicidality Time 1	.809	.900	.001
Step 2 Social	.807	.000	NS
Step 3 BAS Reward	.814	-.089	.028
Step 4 Social x BAS Reward	.812	-.007	NS

*Note.* Social= Socially prescribed perfectionism

Table 183 Hierarchical multiple regression analyses testing the moderating effects of BAS Reward on the relationship between socially prescribed perfectionism and suicide ideation at time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Suicide ideation Time 1	.858	.927	.001
Step 2 Social	.858	.032	NS
Step 3 BAS Reward	.857	.027	NS
Step 4 Social x BAS Reward	.858	.038	NS

*Note.* Social= Socially prescribed perfectionism

## Appendix 27

*Prospective Data. Hierarchical multiple regression analyses testing the moderating relationship between over-general negative memory recall and self-oriented perfectionism in the prediction of psychological distress (hopelessness, depression, suicidality, suicide ideation) over time.*

### Self-oriented Perfectionism

Table 184 Hierarchical multiple regression analyses testing the moderating effects of over-general negative memory recall on the relationship between self-oriented perfectionism and hopelessness at time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Hopelessness Time 1	.826	.910	.001
Step 2 Self	.826	.042	Ns
Step 3 Memory	.830	-.067	.078
Step 4 Self x Memory	.837	-.090	.016

Note: Self= Self-oriented perfectionism; Memory= Over-general negative memory recall

Table 185 Hierarchical multiple regression analyses testing the moderating effects of over-general negative memory recall on the relationship between self-oriented perfectionism and depression at time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Depression Time 1	.744	.864	.001
Step 2 Self	.748	.075	NS
Step 3 Memory	.746	.006	NS
Step 4 Self x Memory	.745	-.044	NS

Note: Self= Self-oriented perfectionism; Memory= Over-general negative memory recall

Table 186 Hierarchical multiple regression analyses testing the moderating effects of over-general negative memory recall on the relationship between self-oriented perfectionism and suicidality at time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Suicidality Time 1	.809	.900	.001
Step 2 Self	.811	.057	NS
Step 3 Memory	.809	-.003	NS
Step 4 Self x Memory	.808	-.012	NS

Note: Self= Self-oriented perfectionism; Memory= Over-general negative memory recall

Table 187 Hierarchical multiple regression analyses testing the moderating effects of over-general negative memory recall on the relationship between self-oriented perfectionism and suicide ideation at time 2.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Suicide ideation Time 1	.858	.927	.001
Step 2 Self	.857	-.007	NS
Step 3 Memory	.856	.010	NS
Step 4 Self x Memory	.855	.028	NS

Note: Self= Self-oriented perfectionism; Memory= Over-general negative memory recall

## Appendix 28

### **PATIENT INFORMATION SHEET (Version 2 07/03/05)**

#### **Study title: Understanding Suicidality: An Integrative Model of Personality and Cognition**

You are being invited to take part in a research study. Before you decide it is important that you understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part. Thank you for reading this.

#### **What is the purpose of the study?**

The aim of the study is to look at some of the psychological factors which are thought to be associated with deliberate self-harm. With information gained from this study, we hope to have a better understanding of why people self-harm, and we will therefore be in a better position to help them. The study will last about 6 months.

#### **Why have I been chosen?**

Patients who have self-harmed and who have been admitted to this ward are being asked to participate.

#### **Do I have to take part?**

It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time and without giving any reason. A decision to withdraw at any time, or a decision to not take part, will not affect the standard of care you receive.

#### **What will happen to me if I take part?**

If you agree to participate, I will then ask you a series of questions which would take about 45 minutes. The questions may relate to how you are feeling, what stress you have been under recently, what expectations you have of yourself and others, your memory for things that have happened in the past, and your goals for the future and how you thing you might achieve these goals. You can write the answers down yourself or I can write them down for you; it is entirely up to you. In a couple of weeks I would like to contact you again to see how you are feeling. This part of the study should only take 15 minutes.

We understand that some people might find it distressing talking about their experiences, but please keep in mind that you are free to withdraw from the study at any time and that help will always be at hand should you experience any stress. Your participation is much appreciated and would be of great benefit to helping us understand deliberate self-harm.

#### **Will my participation be kept confidential?**

All information which is collected about you during the course of the research will be kept strictly confidential.

**What will happen to the results of the study?**  
The results will be analysed and published in scientific journals.

**Who is organising and funding the research?**  
The research is organised by the department of Psychology, University of Stirling, and is being funded by the Economic and Social Research Council (ESRC). The study will be carried out by Miss Susan Rasmussen, a PhD student at the University of Stirling.

**Contact for further information**  
If you would like further information about the research, contact Dr Rory O'Connor or one of the consultants in the ward.

Contact:  
Dr Rory O'Connor  
Department of Psychology  
University of Stirling  
Cottrell Building  
Stirling FK9 4LA  
Telephone: 01786 467 673  
Email: [ro2@stir.ac.uk](mailto:ro2@stir.ac.uk)

Thank you again for taking the time to read this information sheet.

**You will be given a copy of this Patient Information Sheet and a signed Consent Form to keep**

Appendix 29

*(Form to be on headed paper)*

Centre Number:  
Study Number:  
Patient identification Number for this trial:

**CONSENT FORM**  
(Version 2 07/03/2005)

**Title of Project: Understanding Suicidality: An Integrative Model of Personality and Cognitions**

Name of Researcher: Miss Susan Rasmussen

Initials

1. I confirm that I have read and understand the information sheet dated.....
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, without my medical care or legal rights being affected.
3. I understand that sections of any of my medical notes may be looked at by responsible individuals from the University of Stirling or from regulatory authorities where it is relevant to me taking part in the research. I give permission for these individuals to have access to my records.
4. I agree to take part in the above study.

Name of Patient \_\_\_\_\_ Date \_\_\_\_\_ Signature \_\_\_\_\_

Name of person taking consent \_\_\_\_\_ Date \_\_\_\_\_ Signature \_\_\_\_\_  
(if different from researcher)

1 for patient; 1 for researcher; 1 to be kept with hospital notes

Appendix 30

Autobiographical memory cueing task \_\_\_\_\_ Ref: \_\_\_\_\_

HAPPY

Latency: \_\_\_\_\_ secs

G / S

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

FAILURE

Latency: \_\_\_\_\_ secs

G / S

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

EXITED

Latency: \_\_\_\_\_ secs

G / S

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

REJECTED

Latency: \_\_\_\_\_ secs

G / S

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

PLEASED

Latency: \_\_\_\_\_ secs

G / S

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAD

Latency: \_\_\_\_\_ secs

G / S

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SMILE

Latency: \_\_\_\_\_ secs

G / S

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

HOPELESS

Latency: \_\_\_\_\_ secs

G / S

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

GLORIOUS

Latency: \_\_\_\_\_ secs

G / S

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

GRIEF

Latency: \_\_\_\_\_ secs

G / S

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Memory: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**GOALS TASK**

**HOW CAN I ACCOMPLISH THIS?**

**IN THE FUTURE IT WILL BE IMPORTANT FOR ME TO.....**

**HOW CAN I AVOID THIS?**

**IN THE FUTURE IT WILL BE IMPORTANT FOR ME TO AVOID.....**

Please indicate by circling the appropriate response whether you think each of the following statements is TRUE or FALSE for you, at this moment in time.

- |   |      |       |
|---|------|-------|
| 1. I look forward to the future with hope and enthusiasm.                                     | True | False |
| 2. I might as well give up as I can't make things better for myself.                          | True | False |
| 3. When things are going badly, I am helped by knowing that they can't stay that way forever. | True | False |
| 4. I can't imagine what my life would be like in 10 years.                                    | True | False |
| 5. I have enough time to accomplish the things I most want to do.                             | True | False |
| 6. In the future I expect to succeed in the things I most want to do.                         | True | False |
| 7. My future seems dark to me.  | True | False |
| 8. I expect to get more of the good things in life than the average person.                   | True | False |
| 9. I just don't have good luck and there is no reason to think that I will in the future.     | True | False |
| 10. My past experiences have prepared me well for my future.                                  | True | False |
| 11. All I can see ahead is unpleasantness rather than pleasantness.                           | True | False |
| 12. I don't expect to get what I really want.   | True | False |
| 13. When I look ahead to the future, I expect I will be happier than I am now.                | True | False |
| 14. Things just don't work out the way I want them to.  | True | False |
| 15. I have great faith in the future.   | True | False |
| 16. I never get what I want so it is foolish to want anything.                                | True | False |
| 17. It's very unlikely that I will get any real satisfaction in the future.                   | True | False |
| 18. The future seems vague and uncertain to me.   | True | False |
| 19. I can look forward to more good times than bad times.                                     | True | False |
| 20. There's no use in really trying to get something I want because I probably won't get it.  | True | False |

These questions are designed to help identify how you feel. Read each item and place a tick opposite the reply which is closest to how you have been feeling in the past few weeks. Don't take too long over your replies: Your immediate reaction to each item will probably be more accurate than a long thought out response.

- |   |   |
|---|---|
| I feel tense or 'wound up':   | I feel as if I'm slowed down:   |
| 1. Most of the time _____   | 1. Nearly all of the time _____                                       |
| 2. A lot of the time _____  | 2. Very often _____   |
| 3. Time to time, occasionally _____   | 3. Sometimes _____  |
| 4. Not at all _____   | 4. Not at all _____   |
| I still enjoy the things I used to enjoy:                                   | I get a sort of frightened feeling like 'butterflies in the stomach': |
| 1. Definitely as much _____   | 1. Not at all _____   |
| 2. Not quite so much _____  | 2. Occasionally _____   |
| 3. Only a little _____  | 3. Quite often _____  |
| 4. Not at all _____   | 4. Very often _____   |
| I get a sort of frightened feeling like something awful is about to happen: | I have lost interest in my appearance:                                |
| 1. Very definitely and quite badly _____                                    | 1. Definitely _____   |
| 2. Yes, but not too badly _____   | 2. I don't take as much care as I should _____                        |
| 3. A little but it doesn't worry me _____                                   | 3. I may not take quite as much care _____                            |
| 4. Not at all _____   | 4. I take just as much care as ever _____                             |
| I can laugh and see the funny side of things:                               | I feel restless as if I have to be on the move:                       |
| 1. As much as I always could _____  | 1. Very much indeed _____   |
| 2. Not quite as much now _____  | 2. Quite a lot _____  |
| 3. Definitely not so much now _____   | 3. Not very much _____  |
| 4. Not at all _____   | 4. Not at all _____   |

Worrying thoughts go through my mind:

- A great deal of the time \_\_\_\_\_
- A lot of the time \_\_\_\_\_
- From time to time but not too often \_\_\_\_\_
- Only occasionally \_\_\_\_\_

I look forward with enjoyment to things:

- As much as I ever did \_\_\_\_\_
- Rather less than I used to \_\_\_\_\_
- Definitely less than I used to \_\_\_\_\_
- Hardly at all \_\_\_\_\_

I feel cheerful:

- Not at all \_\_\_\_\_
- Not often \_\_\_\_\_
- Sometimes \_\_\_\_\_
- Most of the time \_\_\_\_\_

I get sudden feelings of panic:

- Very often indeed \_\_\_\_\_
- Quite often \_\_\_\_\_
- Not very often \_\_\_\_\_
- Not at all \_\_\_\_\_

I can sit at ease and feel relaxed:

- Definitely \_\_\_\_\_
- Usually \_\_\_\_\_
- Not often \_\_\_\_\_
- Not at all \_\_\_\_\_

I can enjoy a good book or radio or TV programme:

- Often \_\_\_\_\_
- Sometimes \_\_\_\_\_
- Not often \_\_\_\_\_
- Very seldom \_\_\_\_\_

For each of the following items, please indicate how much you agree or disagree with what the item says. Please respond to all the items; do not leave any blank. Please be as accurate and honest as you can be. Respond to each item as if it were the only item. That is, don't worry about being "consistent" in your responses. Choose from the following four response options:

- |  |                         |                          |                      |   |
|--|-------------------------|--------------------------|----------------------|---|
| 1. Very true for me  | 2. Somewhat true for me | 3. Somewhat false for me | 4. Very false for me |   |
| 1. A person's family is the most important thing in life. Even if something bad is about to happen to me, I rarely experience fear or nervousness. | 1                       | 2                        | 3                    | 4 |
| 2. I go out of my way to get things I want.  | 1                       | 2                        | 3                    | 4 |
| 3. When I'm doing well at something I love to keep at it.  | 1                       | 2                        | 3                    | 4 |
| 4. I'm always willing to try something new if I think it will be fun.  | 1                       | 2                        | 3                    | 4 |
| 5. How I dress is important to me.   | 1                       | 2                        | 3                    | 4 |
| 6. When I get something I want, I feel excited and energized.  | 1                       | 2                        | 3                    | 4 |
| 7. Criticism or scolding hurts me quite a bit.   | 1                       | 2                        | 3                    | 4 |
| 8. When I want something, I usually go all out to get it.  | 1                       | 2                        | 3                    | 4 |
| 9. I will often do things for no other reason than that it might be fun.   | 1                       | 2                        | 3                    | 4 |
| 10. It's hard for me to find the time to do things such as get a haircut.  | 1                       | 2                        | 3                    | 4 |
| 11. If I see a chance to get something I want I move on it right away.   | 1                       | 2                        | 3                    | 4 |
| 12. I feel pretty worried or upset when I think or know somebody is angry at me.   | 1                       | 2                        | 3                    | 4 |
| 13. When I see an opportunity for something I like I get excited right away.   | 1                       | 2                        | 3                    | 4 |
| 14. I often act on the spur of the moment.   | 1                       | 2                        | 3                    | 4 |
| 15. If I think something unpleasant is going to happen I usually get pretty "worked up".   | 1                       | 2                        | 3                    | 4 |
| 16. I often wonder why people act the way they do.   | 1                       | 2                        | 3                    | 4 |
| 17. When good things happen to me, it affects me strongly.   | 1                       | 2                        | 3                    | 4 |
| 18. I feel worried when I think I have done poorly at something important.   | 1                       | 2                        | 3                    | 4 |
| 19. I crave excitement and new sensations.   | 1                       | 2                        | 3                    | 4 |
| 20. When I go after something I hold a "no holds barred" approach.   | 1                       | 2                        | 3                    | 4 |
| 21. I have very few fears compared to my friends.  | 1                       | 2                        | 3                    | 4 |
| 22. It would excite me to win a contest.   | 1                       | 2                        | 3                    | 4 |
| 23. I worry about making mistakes.   | 1                       | 2                        | 3                    | 4 |
| 24.  | 1                       | 2                        | 3                    | 4 |



Listed below are a series of statements that some people might use to describe their feelings and behaviours. Please read each statement and determine how often the statement is true for you. Then tick the appropriate box to indicate how often you feel the statement applies to you.

	None or little of the time	Some of the time	Good part of the time	Most or all of the time
1. I think of things too bad to share with others.				
2. In order to punish others I think of suicide.				
3. I feel I need to punish myself for things I have done and thought.				
4. I feel the world is not worth living in.				
5. I feel people would be better off if I were dead.				
6. I feel it would be less painful to die than to keep living the way things are.				
7. I have thought of how to do myself in.				
8. I think of suicide.				

Listed below are a number of statements concerning personal characteristics and traits. Read each item and decide whether you agree or disagree and to what extent. If you strongly agree, circle 7; if you strongly disagree circle 1; if you feel somewhere in between, circle any one of the numbers between 1 and 7. If you feel neutral or undecided, the midpoint is 4.

	Disagree					Agree								
	1	2	3	4	5	6	7	7	6	5	4	3	2	1
1. When I'm working on something, I cannot relax until it is perfect.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
2. I am not likely to criticize someone for giving up too easily.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
3. It is not important that people I am close to are successful.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
4. I seldom criticize my friends for accepting second best.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
5. I find it difficult to meet others' expectations of me.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
6. One of my goals is to be perfect in everything I do.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
7. Everything that others do must be of top-notch quality.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
8. I never aim for perfection in my work.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
9. Those around me readily accept that I can make mistakes too.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
10. It doesn't matter when someone close to me does not do their absolute best.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
11. The better I do, the better I am expected to do.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
12. I seldom feel the need to be perfect.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
13. Anything I do that is less than excellent will be seen as poor work by those around me.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
14. I strive to be as perfect as I can be.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
15. It is very important that I am perfect in everything I attempt.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
16. I have high expectations for the people who are important to me.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
17. I strive to be the best at everything I do.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
18. The people around me expect me to succeed at everything I do.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
19. I do not have very high standards for those around me.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
20. I demand nothing less than perfection of myself.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
21. Others will like me even if I don't excel at everything.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
22. I can't be bothered with people who won't strive to better themselves.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
23. It makes me uneasy to see an error in my work.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
24. I do not expect a lot from my friends.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
25. Success means I must work even harder to please others.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
26. If I ask someone to do something, I expect it to be done flawlessly.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
27. I cannot stand to see people close to me make mistakes.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
28. I am perfectionistic in setting my goals.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
29. The people who matter to me should never let me down.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
30. Others think I'm okay, even when I do not succeed.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
31. I feel that people are too demanding of me.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
32. I must work to my full potential at all times.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
33. Although the may not show it, other people get very upset with me when I slip up.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
34. I do not have to be the best at whatever I am doing.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
35. My family expects me to be perfect.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
36. I do not have very high goals for myself.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
37. My parents rarely expected me to excel in all aspects of my life.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
38. I respect people who are average.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
39. People expect nothing less than perfection of me.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
40. I set very high standards for myself.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
41. People expect more from me than I am capable of giving.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
42. I must always be successful at school or at work.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
43. It does not matter to me when a close friend does not try their hardest.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
44. People around me think I am still competent even if I make a mistake.	1	2	3	4	5	6	7	7	6	5	4	3	2	1
45. I seldom expect others to excel at whatever they do.	1	2	3	4	5	6	7	7	6	5	4	3	2	1

STIRLING UNIVERSITY HEADED NOTE PAPER

<<Date>>

Dear Dr << >>

**Research Project: Understanding Suicidality: An Integrative Model of Personality and Cognitions**

Together with Dr Dallas Brodie, Consultant Psychiatrist at the Glasgow Royal Infirmary, I am conducting the above research project on deliberate self-harm (DSH) at the Royal Infirmary.

In my capacity as chief investigator I am writing to you, to let you know that a patient of yours, <<Name of Patient>>, has participated in the study. Their participation involved completing a number of psychological inventories (i) whilst they were inpatients at the Royal Infirmary being treated for a DSH episode (including measures of perfectionism, autobiographical memory, and suicidality) and, (ii) six weeks later when they completed measures of mood and well-being.

The project is entirely research-based, there was no therapeutic component to the study. There are a number of objectives of the study, however, the primary objective is to investigate an integrative model personality and cognitive factors in predicting suicidal thinking over time. I have enclosed the research protocol and the patient information sheet for your perusal; this provides further details of the study. However, if you have any additional information please do not hesitate to contact me.

Yours sincerely

Dr Rory C O'Connor PhD CPsychol AFBPSS  
Senior Lecturer in Psychology

Enc. Research Protocol, Patient Information Sheet

## Appendix 32

Listed below are a series of statements that some people might use to describe their feelings and behaviours. Please read each statement and determine how often the statement is true for you. Then tick the appropriate box to indicate how often you feel the statement applies to you.

	None or little of the time	Some of the time	Good part of the time	Most or all of the time
1. I think of things too bad to share with others.				
2. In order to punish others I think of suicide.				
3. I feel I need to punish myself for things I have done and thought.				
4. I feel the world is not worth living in.				
5. I feel people would be better off if I were dead.				
6. I feel it would be less painful to die than to keep living the way things are.				
7. I have thought of how to do myself in.				
8. I think of suicide.				

Please indicate by circling the appropriate response whether you think each of the following statements is TRUE or FALSE for you, at this moment in time.

- |   |      |       |
|---|------|-------|
| 1. I look forward to the future with hope and enthusiasm.                                     | True | False |
| 2. I might as well give up as I can't make things better for myself.                          | True | False |
| 3. When things are going badly, I am helped by knowing that they can't stay that way forever. | True | False |
| 4. I can't imagine what my life would be like in 10 years.                                    | True | False |
| 5. I have enough time to accomplish the things I most want to do.                             | True | False |
| 6. In the future I expect to succeed in the things I most want to do.                         | True | False |
| 7. My future seems dark to me.  | True | False |
| 8. I expect to get more of the good things in life than the average person.                   | True | False |
| 9. I just don't have good luck and there is no reason to think that I will in the future.     | True | False |
| 10. My past experiences have prepared me well for my future.                                  | True | False |
| 11. All I can see ahead is unpleasantness rather than pleasantness.                           | True | False |
| 12. I don't expect to get what I really want.   | True | False |
| 13. When I look ahead to the future, I expect I will be happier than I am now.                | True | False |
| 14. Things just don't work out the way I want them to.  | True | False |
| 15. I have great faith in the future.   | True | False |
| 16. I never get what I want so it is foolish to want anything.                                | True | False |
| 17. It's very unlikely that I will get any real satisfaction in the future.                   | True | False |
| 18. The future seems vague and uncertain to me.   | True | False |
| 19. I can look forward to more good times than bad times.                                     | True | False |
| 20. There's no use in really trying to get something I want because I probably won't get it.  | True | False |

These questions are designed to help identify how you feel. Read each item and place a tick opposite the reply which is closest to how you have been feeling in the past few weeks. Don't take too long over your replies: Your immediate reaction to each item will probably be more accurate than a long thought out response.

- |   |   |
|---|---|
| I feel tense or 'wound up':   | I feel as if I'm slowed down:   |
| 1. Most of the time _____   | 1. Nearly all of the time _____                                       |
| 2. A lot of the time _____  | 2. Very often _____   |
| 3. Time to time, occasionally _____   | 3. Sometimes _____  |
| 4. Not at all _____   | 4. Not at all _____   |
| I still enjoy the things I used to enjoy:                                   | I get a sort of frightened feeling like 'butterflies in the stomach': |
| 1. Definitely as much _____   | 1. Not at all _____   |
| 2. Not quite so much _____  | 2. Occasionally _____   |
| 3. Only a little _____  | 3. Quite often _____  |
| 4. Not at all _____   | 4. Very often _____   |
| I get a sort of frightened feeling like something awful is about to happen: | I have lost interest in my appearance:                                |
| 1. Very definitely and quite badly _____                                    | 1. Definitely _____   |
| 2. Yes, but not too badly _____   | 2. I don't take as much care as I should _____                        |
| 3. A little but it doesn't worry me _____                                   | 3. I may not take quite as much care _____                            |
| 4. Not at all _____   | 4. I take just as much care as ever _____                             |
| I can laugh and see the funny side of things:                               | I feel restless as if I have to be on the move:                       |
| 1. As much as I always could _____  | 1. Very much indeed _____   |
| 2. Not quite as much now _____  | 2. Quite a lot _____  |
| 3. Definitely not so much now _____   | 3. Not very much _____  |
| 4. Not at all _____   | 4. Not at all _____   |

Worrying thoughts go through my mind:

- 1. A great deal of the time \_\_\_\_\_
- 2. A lot of the time \_\_\_\_\_
- 3. From time to time but not too often \_\_\_\_\_
- 4. Only occasionally \_\_\_\_\_

I feel cheerful:

- 1. Not at all \_\_\_\_\_
- 2. Not often \_\_\_\_\_
- 3. Sometimes \_\_\_\_\_
- 4. Most of the time \_\_\_\_\_

I can sit at ease and feel relaxed:

- 1. Definitely \_\_\_\_\_
- 2. Usually \_\_\_\_\_
- 3. Not often \_\_\_\_\_
- 4. Not at all \_\_\_\_\_

I look forward with enjoyment to things:

- 1. As much as I ever did \_\_\_\_\_
- 2. Rather less than I used to \_\_\_\_\_
- 3. Definitely less than I used to \_\_\_\_\_
- 4. Hardly at all \_\_\_\_\_

I get sudden feelings of panic:

- 1. Very often indeed \_\_\_\_\_
- 2. Quite often \_\_\_\_\_
- 3. Not very often \_\_\_\_\_
- 4. Not at all \_\_\_\_\_

I can enjoy a good book or radio or TV programme:

- 1. Often \_\_\_\_\_
- 2. Sometimes \_\_\_\_\_
- 3. Not often \_\_\_\_\_
- 4. Very seldom \_\_\_\_\_

## Appendix 33

*Cross-sectional Data Hierarchical multiple regression analyses testing the moderating relationship between positive and negative memory recall and self-oriented and socially prescribed perfectionism in the prediction of psychological distress (hopelessness, depression, anxiety, suicide ideation).*

### Self-oriented Perfectionism

Table 188 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between self-oriented perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	-.023	-.058	NS
Step 2 Negative	-.035	.123	NS
Step 3 Self x Negative	-.051	-.110	NS

Note: Self= Self-oriented perfectionism

Table 189 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between self-oriented perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.066	.300	.060
Step 2 Negative	.041	.014	NS
Step 3 Self x Negative	.083	.255	NS

Note: Self= Self-oriented perfectionism

Table 190 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between self-oriented perfectionism and anxiety at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.008	.184	NS
Step 2 Negative	-.003	.124	NS
Step 3 Self x Negative	.004	.179	NS

Note: Self= Self-oriented perfectionism

Table 191 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between self-oriented perfectionism and suicide ideation at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.009	.186	NS
Step 2 Negative	-.018	-.032	NS
Step 3 Self x Negative	-.041	.426	NS

Note: Self= Self-oriented perfectionism

Table 192 Hierarchical multiple regression analyses testing the moderating effects of positive autobiographical memory recall on the relationship between self-oriented perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	-.023	-.058	NS
Step 2 Positive	-.042	.091	NS
Step 3 Self x Positive	-.050	.144	NS

Note: Self= Self-oriented perfectionism

Table 193 Hierarchical multiple regression analyses testing the moderating effects of positive autobiographical memory recall on the relationship between self-oriented perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.066	.300	.060
Step 2 Positive	.115	.268	.085
Step 3 Self x Positive	.092	.036	NS

Note: Self= Self-oriented perfectionism

Table 194 Hierarchical multiple regression analyses testing the moderating effects of positive autobiographical memory recall on the relationship between self-oriented perfectionism and anxiety at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.008	.184	NS
Step 2 Positive	.203	.460	.003
Step 3 Self x Positive	.181	-.005	NS

Note: Self= Self-oriented perfectionism

Table 195 Hierarchical multiple regression analyses testing the moderating effects of positive autobiographical memory recall on the relationship between self-oriented perfectionism and suicide ideation at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.009	.186	NS
Step 2 Positive	.018	.185	NS
Step 3 Self x Positive	-.008	.031	NS

Note: Self= Self-oriented perfectionism

### Socially Prescribed Perfectionism

Table 196 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between socially prescribed perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.015	.199	NS
Step 2 Negative	.025	.196	NS
Step 3 Social x Negative	.112	-.328	.039

Note: Social= Socially prescribed perfectionism

Table 197 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between socially prescribed perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.113	.369	.019
Step 2 Negative	.095	.072	NS
Step 3 Social x Negative	.108	.191	NS

Note: Social= Socially prescribed perfectionism

Table 198 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between socially prescribed perfectionism and anxiety at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.087	.333	.036
Step 2 Negative	.100	.196	NS
Step 3 Social x Negative	.089	.114	NS

Note: Social= Socially prescribed perfectionism

Table 199 Hierarchical multiple regression analyses testing the moderating effects of negative autobiographical memory recall on the relationship between socially prescribed perfectionism and suicide ideation at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.028	.168	NS
Step 2 Negative	-.024	.013	NS
Step 3 Social x Negative	-.041	.103	NS

Note: Social= Socially prescribed perfectionism

Table 200 Hierarchical multiple regression analyses testing the moderating effects of positive autobiographical memory recall on the relationship between socially prescribed perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.015	.199	NS
Step 2 Positive	-.004	.087	NS
Step 3 Social x Positive	-.032	-.011	NS

Note: Social= Socially prescribed perfectionism

Table 201 Hierarchical multiple regression analyses testing the moderating effects of positive autobiographical memory recall on the relationship between socially prescribed perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.113	.369	.019
Step 2 Positive	.140	.219	NS
Step 3 Social x Positive	.133	.133	NS

Note: Social= Socially prescribed perfectionism

Table 202 Hierarchical multiple regression analyses testing the moderating effects of positive autobiographical memory recall on the relationship between socially prescribed perfectionism and anxiety at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.087	.333	.036
Step 2 Positive	.251	.423	.004
Step 3 Social x Positive	.234	.063	NS

Note: Social= Socially prescribed perfectionism

Table 203 Hierarchical multiple regression analyses testing the moderating effects of positive autobiographical memory recall on the relationship between socially prescribed perfectionism and suicide ideation at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.003	.168	NS
Step 2 Positive	.002	.158	NS
Step 3 Social x Positive	.027	.233	NS

Note: Social= Socially prescribed perfectionism

## Appendix 34

*Cross-sectional Data. Hierarchical multiple regression analyses testing the moderating relationship between over-general positive and negative memory recall and self-oriented and socially prescribed perfectionism in the prediction of psychological distress (hopelessness, depression, anxiety, suicide ideation).*

### Self-oriented Perfectionism

Table 204 Hierarchical multiple regression analyses testing the moderating effects of over-general negative autobiographical memory recall on the relationship between self-oriented perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.023	-.058	NS
Step 2 Over-general Negative	.003	.214	NS
Step 3 Self x Over-general Negative	.031	-.014	NS

Note. Self= Self-oriented perfectionism

Table 205 Hierarchical multiple regression analyses testing the moderating effects of over-general negative autobiographical memory recall on the relationship between self-oriented perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.066	.300	.060
Step 2 Over-general Negative	.041	-.025	NS
Step 3 Self x Over-general Negative	.084	.262	NS

Note. Self= Self-oriented perfectionism

Table 206 Hierarchical multiple regression analyses testing the moderating effects of over-general negative autobiographical memory recall on the relationship between self-oriented perfectionism and anxiety at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.008	.184	NS
Step 2 Over-general Negative	.009	.163	NS
Step 3 Self x Over-general Negative	.001	.138	NS

Note. Self= Self-oriented perfectionism

Table 207 Hierarchical multiple regression analyses testing the moderating effects of over-general negative autobiographical memory recall on the relationship between self-oriented perfectionism and suicide ideation at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.009	.168	NS
Step 2 Over-general Negative	-.017	-.015	NS
Step 3 Self x Over-general Negative	-.038	.083	NS

Note. Self= Self-oriented perfectionism

Table 208 Hierarchical multiple regression analyses testing the moderating effects of over-general positive autobiographical memory recall on the relationship between self-oriented perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	-.023	-.058	NS
Step 2 Positive	-.009	.201	NS
Step 3 Self x Positive	-.016	.141	NS

Note. Self= Self-oriented perfectionism

Table 209 Hierarchical multiple regression analyses testing the moderating effects of over-general positive autobiographical memory recall on the relationship between self-oriented perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.066	.300	.060
Step 2 Over-general Positive	.072	.174	NS
Step 3 Self x Over-general Positive	.072	-.156	NS

Note. Self= Self-oriented perfectionism

Table 210 Hierarchical multiple regression analyses testing the moderating effects of over-general positive autobiographical memory recall on the relationship between self-oriented perfectionism and anxiety at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.008	.184	NS
Step 2 Over-general Positive	.146	.399	.011
Step 3 Self x Over-general Positive	.174	-.221	NS

Note. Self= Self-oriented perfectionism

Table 211 Hierarchical multiple regression analyses testing the moderating effects of over-general positive autobiographical memory recall on the relationship between self-oriented perfectionism and suicide ideation at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.009	.186	NS
Step 2 Over-general Positive	.005	.147	NS
Step 3 Self x Over-general Positive	-.014	-.094	NS

Note. Self= Self-oriented perfectionism

### Socially Prescribed Perfectionism

Table 212 Hierarchical multiple regression analyses testing the moderating effects of over-general negative autobiographical memory recall on the relationship between socially prescribed perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.015	.199	NS
Step 2 Over-general Negative	.056	.257	NS
Step 3 Social x Over-general Negative	.090	-.237	NS

Note. Social= Socially prescribed perfectionism

Table 213 Hierarchical multiple regression analyses testing the moderating effects of over-general negative autobiographical memory recall on the relationship between socially prescribed perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.113	.369	.019
Step 2 Over-general Negative	.090	.001	NS
Step 3 Social x Over-general Negative	.165	.307	.044

Note: Social= Socially prescribed perfectionism

Table 214 Hierarchical multiple regression analyses testing the moderating effects of over-general negative autobiographical memory recall on the relationship between socially prescribed perfectionism and anxiety at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.087	.333	.036
Step 2 Over-general Negative	.103	.199	NS
Step 3 Social x Over-general Negative	.132	.225	NS

Note: Social= Socially prescribed perfectionism

Table 215 Hierarchical multiple regression analyses testing the moderating effects of over-general negative autobiographical memory recall on the relationship between socially prescribed perfectionism and suicide ideation at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.003	.168	NS
Step 2 Over-general Negative	-.024	-.010	NS
Step 3 Social x Over-general Negative	.020	.261	NS

Note: Social= Socially prescribed perfectionism

Table 216 Hierarchical multiple regression analyses testing the moderating effects of over-general positive autobiographical memory recall on the relationship between socially prescribed perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.015	.199	NS
Step 2 Over-general Positive	.031	.202	NS
Step 3 Social x Over-general Positive	.012	-.091	NS

Note: Social= Socially prescribed perfectionism

Table 217 Hierarchical multiple regression analyses testing the moderating effects of over-general positive autobiographical memory recall on the relationship between socially prescribed perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.113	.369	.019
Step 2 Over-general Positive	.104	.118	NS
Step 3 Social x Over-general Positive	.145	.259	NS

Note: Social= Socially prescribed perfectionism

Table 218 Hierarchical multiple regression analyses testing the moderating effects of over-general positive autobiographical memory recall on the relationship between socially prescribed perfectionism and anxiety at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.087	.333	.036
Step 2 Over-general Positive	.196	.356	.018
Step 3 Social x Over-general Positive	.220	.219	NS

Note: Social= Socially prescribed perfectionism

Table 219 Hierarchical multiple regression analyses testing the moderating effects of over-general positive autobiographical memory recall on the relationship between socially prescribed perfectionism and suicide ideation at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.003	.168	NS
Step 2 Over-general Positive	-.011	.112	NS
Step 3 Social x Over-general Positive	.141	.431	.009

Note: Social= Socially prescribed perfectionism



## Appendix 35

*Cross-sectional Data Hierarchical multiple regression analyses testing the moderating relationship between missing positive and negative memories and self-oriented and socially prescribed perfectionism in the prediction of psychological distress (hopelessness, depression, anxiety, suicide ideation).*

### Self-oriented Perfectionism

Table 220 Hierarchical multiple regression analyses testing the moderating effects of missing negative autobiographical memory recall on the relationship between self-oriented perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.023	-.058	NS
Step 2 Missing Negative	.050	.013	NS
Step 3 Self x Missing Negative	.053	-.160	NS

Note: Self= Self-oriented perfectionism

Table 221 Hierarchical multiple regression analyses testing the moderating effects of missing negative autobiographical memory recall on the relationship between self-oriented perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.066	.300	.060
Step 2 Missing Negative	.043	.048	NS
Step 3 Self x Missing Negative	.115	.307	.053

Note: Self= Self-oriented perfectionism

Table 222 Hierarchical multiple regression analyses testing the moderating effects of missing negative autobiographical memory recall on the relationship between self-oriented perfectionism and anxiety at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.008	.184	NS
Step 2 Missing Negative	-.009	.097	NS
Step 3 Self x Missing Negative	.048	.285	.081

Note: Self= Self-oriented perfectionism

Table 223 Hierarchical multiple regression analyses testing the moderating effects of missing negative autobiographical memory recall on the relationship between self-oriented perfectionism and suicide ideation at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.009	.186	NS
Step 2 Missing Negative	.000	.132	NS
Step 3 Self x Missing Negative	.001	.166	NS

Note: Self= Self-oriented perfectionism

Table 224 Hierarchical multiple regression analyses testing the moderating effects of missing positive autobiographical memory recall on the relationship between self-oriented perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	-.023	-.058	NS
Step 2 Missing Positive	.036	.287	.077
Step 3 Self x Missing Positive	.010	.027	NS

Note: Self= Self-oriented perfectionism

Table 225 Hierarchical multiple regression analyses testing the moderating effects of missing positive autobiographical memory recall on the relationship between self-oriented perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.066	.300	.060
Step 2 Missing Positive	.129	.290	.061
Step 3 Self x Missing Positive	.124	.142	NS

Note: Self= Self-oriented perfectionism

Table 226 Hierarchical multiple regression analyses testing the moderating effects of missing positive autobiographical memory recall on the relationship between self-oriented perfectionism and anxiety at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.008	.184	NS
Step 2 Missing Positive	.042	.239	NS
Step 3 Self x Missing Positive	.016	-.027	NS

Note: Self= Self-oriented perfectionism

Table 227 Hierarchical multiple regression analyses testing the moderating effects of missing positive autobiographical memory recall on the relationship between self-oriented perfectionism and suicide ideation at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.009	.186	NS
Step 2 Missing Positive	.116	.357	.032
Step 3 Self x Missing Positive	.093	.035	NS

Note: Self= Self-oriented perfectionism

### Socially Prescribed Perfectionism

Table 228 Hierarchical multiple regression analyses testing the moderating effects of missing negative autobiographical memory recall on the relationship between socially prescribed perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.015	.199	NS
Step 2 Missing Negative	-.003	.101	NS
Step 3 Social x Missing Negative	-.012	-.136	NS

Note: Social= Socially prescribed perfectionism

Table 229 Hierarchical multiple regression analyses testing the moderating effects of missing negative autobiographical memory recall on the relationship between socially prescribed perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.113	.369	.019
Step 2 Missing Negative	.106	.132	NS
Step 3 Social x Missing Negative	.082	.037	NS

Note: Social= Socially prescribed perfectionism

Table 230 Hierarchical multiple regression analyses testing the moderating effects of missing negative autobiographical memory recall on the relationship between socially prescribed perfectionism and anxiety at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.087	.333	.036
Step 2 Missing Negative	.098	.194	NS
Step 3 Social x Missing Negative	.073	-.022	NS

Note: Social= Socially prescribed perfectionism

Table 231 Hierarchical multiple regression analyses testing the moderating effects of missing negative autobiographical memory recall on the relationship between socially prescribed perfectionism and suicide ideation at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.003	.168	NS
Step 2 Missing Negative	.003	.171	NS
Step 3 Social x Missing Negative	-.023	.046	NS

Note: Social= Socially prescribed perfectionism

Table 232 Hierarchical multiple regression analyses testing the moderating effects of missing positive autobiographical memory recall on the relationship between socially prescribed perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.015	.199	NS
Step 2 Missing Positive	.069	.278	.080
Step 3 Social x Missing Positive	.135	-.303	.058

Note: Social= Socially prescribed perfectionism

Table 233 Hierarchical multiple regression analyses testing the moderating effects of missing positive autobiographical memory recall on the relationship between socially prescribed perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.113	.369	.019
Step 2 Missing Positive	.151	.242	NS
Step 3 Social x Missing Positive	.177	.223	NS

Note: Social= Socially prescribed perfectionism

Table 234 Hierarchical multiple regression analyses testing the moderating effects of missing positive autobiographical memory recall on the relationship between socially prescribed perfectionism and anxiety at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.087	.333	.036
Step 2 Missing Positive	.106	.203	NS
Step 3 Social x Missing Positive	.122	.204	NS

Note: Social= Socially prescribed perfectionism

Table 235 Hierarchical multiple regression analyses testing the moderating effects of missing positive autobiographical memory recall on the relationship between socially prescribed perfectionism and suicide ideation at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.003	.168	NS
Step 2 Missing Positive	.091	.331	.037
Step 3 Social x Missing Positive	.096	.176	NS

Note: Social= Socially prescribed perfectionism

## Appendix 36

*Cross-sectional Data. Hierarchical multiple regression analyses testing the moderating relationship between BIS motivation and self-oriented and socially prescribed perfectionism in the prediction of psychological distress (hopelessness, depression, anxiety, suicide ideation).*

### Self-oriented Perfectionism

Table 236 Hierarchical multiple regression analyses testing the moderating effects of BIS on the relationship between self-oriented perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.023	-.058	NS
Step 2 BIS	-.040	.121	NS
Step 3 Self x BIS	-.004	.260	NS

*Note.* Self= Self-oriented perfectionism

Table 237 Hierarchical multiple regression analyses testing the moderating effects of BIS on the relationship between self-oriented perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.066	.300	.060
Step 2 BIS	.074	.216	NS
Step 3 Self x BIS	.050	-.037	NS

*Note.* Self= Self-oriented perfectionism

Table 238 Hierarchical multiple regression analyses testing the moderating effects of BIS on the relationship between self-oriented perfectionism and anxiety at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.008	.184	NS
Step 2 BIS	-.011	.099	NS
Step 3 Self x BIS	-.036	.058	NS

*Note.* Self= Self-oriented perfectionism

Table 239 Hierarchical multiple regression analyses testing the moderating effects of BIS on the relationship between self-oriented perfectionism and suicide ideation at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.009	.186	NS
Step 2 BIS	.029	.253	NS
Step 3 Self x BIS	.057	.239	NS

*Note.* Self= Self-oriented perfectionism

### Socially Prescribed Perfectionism

Table 240 Hierarchical multiple regression analyses testing the moderating effects of BIS on the relationship between socially prescribed perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.015	.199	NS
Step 2 BIS	-.012	-.020	NS
Step 3 Social x BIS	.067	.321	.049

*Note.* Social= Socially prescribed perfectionism

Table 241 Hierarchical multiple regression analyses testing the moderating effects of BIS on the relationship between socially prescribed perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.113	.369	.019
Step 2 BIS	.133	.215	NS
Step 3 Social x BIS	.157	-.215	NS

*Note.* Social= Socially prescribed perfectionism

Table 242 Hierarchical multiple regression analyses testing the moderating effects of BIS on the relationship between socially prescribed perfectionism and anxiety at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.087	.333	.036
Step 2 BIS	.066	.065	NS
Step 3 Social x BIS	.062	-.144	NS

*Note.* Social= Socially prescribed perfectionism

Table 243 Hierarchical multiple regression analyses testing the moderating effects of BIS on the relationship between socially prescribed perfectionism and suicide ideation at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.003	.168	NS
Step 2 BIS	.034	.250	NS
Step 3 Social x BIS	.038	.173	NS

*Note.* Social= Socially prescribed perfectionism

## Appendix 37

*Cross-sectional Data. Hierarchical multiple regression analyses testing the moderating relationship between BAS Drive motivation and self-oriented and socially prescribed perfectionism in the prediction of psychological distress (hopelessness, depression, anxiety, suicide ideation).*

### Self-oriented Perfectionism

Table 244 Hierarchical multiple regression analyses testing the moderating effects of BAS drive on the relationship between self-oriented perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.023	-.058	NS
Step 2 BAS Drive	.108	-.418	.014
Step 3 Self x BAS Drive	.115	.176	NS

Note: Self= Self-oriented perfectionism

Table 245 Hierarchical multiple regression analyses testing the moderating effects of BAS drive on the relationship between self-oriented perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.066	.300	.060
Step 2 BAS Drive	.171	-.378	.021
Step 3 Self x BAS Drive	.149	.032	NS

Note: Self= Self-oriented perfectionism

Table 246 Hierarchical multiple regression analyses testing the moderating effects of BAS drive on the relationship between self-oriented perfectionism and anxiety at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.008	.184	NS
Step 2 BAS Drive	.019	-.202	NS
Step 3 Self x BAS Drive	-.008	-.026	NS

Note: Self= Self-oriented perfectionism

Table 247 Hierarchical multiple regression analyses testing the moderating effects of BAS drive on the relationship between self-oriented perfectionism and suicide ideation at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.009	.186	NS
Step 2 BAS Drive	.065	-.300	.080
Step 3 Self x BAS Drive	.113	.272	.092

Note: Self= Self-oriented perfectionism

### Socially Prescribed Perfectionism

Table 248 Hierarchical multiple regression analyses testing the moderating effects of BAS drive on the relationship between socially prescribed perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.015	.199	NS
Step 2 BAS Drive	.171	-.422	.007
Step 3 Social x BAS Drive	.151	-.049	NS

Note: Social= Socially prescribed perfectionism

Table 249 Hierarchical multiple regression analyses testing the moderating effects of BAS drive on the relationship between socially prescribed perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.113	.369	.019
Step 2 BAS Drive	.170	-.279	.067
Step 3 Social x BAS Drive	.219	-.261	.075

Note: Social= Socially prescribed perfectionism

Table 250 Hierarchical multiple regression analyses testing the moderating effects of BAS drive on the relationship between socially prescribed perfectionism and anxiety at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.087	.333	.036
Step 2 BAS Drive	.089	-.160	NS
Step 3 Social x BAS Drive	.183	-.335	.028

Note: Social= Socially prescribed perfectionism

Table 251 Hierarchical multiple regression analyses testing the moderating effects of BAS drive on the relationship between socially prescribed perfectionism and suicide ideation at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.028	.168	NS
Step 2 BAS Drive	.026	-.221	NS
Step 3 Social x BAS Drive	-.001	.011	NS

Note: Social= Socially prescribed perfectionism

## Appendix 38

*Cross-sectional Data. Hierarchical multiple regression analyses testing the moderating relationship between BAS Fun motivation and self-oriented and socially prescribed perfectionism in the prediction of psychological distress (hopelessness, depression, anxiety, suicide ideation).*

### Self-oriented Perfectionism

Table 252 Hierarchical multiple regression analyses testing the moderating effects of BAS Fun on the relationship between self-oriented perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.023	-.058	NS
Step 2 BAS Fun	.101	-.382	.017
Step 3 Self x BAS Fun	.076	-.017	NS

Note: Self= Self-oriented perfectionism

Table 253 Hierarchical multiple regression analyses testing the moderating effects of BAS Fun on the relationship between self-oriented perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.066	.300	.060
Step 2 BAS Fun	.070	-.167	NS
Step 3 Self x BAS Fun	.091	-.214	NS

Note: Self= Self-oriented perfectionism

Table 254 Hierarchical multiple regression analyses testing the moderating effects of BAS Fun on the relationship between self-oriented perfectionism and anxiety at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.008	.184	NS
Step 2 BAS Fun	.028	-.211	NS
Step 3 Self x BAS Fun	.036	-.185	NS

Note: Self= Self-oriented perfectionism

Table 255 Hierarchical multiple regression analyses testing the moderating effects of BAS Fun on the relationship between self-oriented perfectionism and suicide ideation at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.009	.186	NS
Step 2 BAS Fun	.002	-.136	NS
Step 3 Self x BAS Fun	-.023	.053	NS

Note: Self= Self-oriented perfectionism

### Socially Prescribed Perfectionism

Table 256 Hierarchical multiple regression analyses testing the moderating effects of BAS Fun on the relationship between socially prescribed perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.015	.199	NS
Step 2 BAS Fun	.135	-.374	.017
Step 3 Social x BAS Fun	.117	-.073	NS

Note: Social= Socially prescribed perfectionism

Table 257 Hierarchical multiple regression analyses testing the moderating effects of BAS Fun on the relationship between socially prescribed perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.113	.369	.019
Step 2 BAS Fun	.102	-.108	NS
Step 3 Social x BAS Fun	.140	-.248	NS

Note: Social= Socially prescribed perfectionism

Table 258 Hierarchical multiple regression analyses testing the moderating effects of BAS Fun on the relationship between socially prescribed perfectionism and anxiety at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.087	.333	.036
Step 2 BAS Fun	.092	-.167	NS
Step 3 Social x BAS Fun	.125	-.239	NS

Note: Social= Socially prescribed perfectionism

Table 259 Hierarchical multiple regression analyses testing the moderating effects of BAS Fun on the relationship between socially prescribed perfectionism and suicide ideation at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.003	.168	NS
Step 2 BAS Fun	-.013	-.102	NS
Step 3 Social x BAS Fun	-.041	-.016	NS

Note: Social= Socially prescribed perfectionism

## Appendix 39

*Cross-sectional Data. Hierarchical multiple regression analyses testing the moderating relationship between BAS Reward motivation and self-oriented and socially prescribed perfectionism in the prediction of psychological distress (hopelessness, depression, anxiety, suicide ideation).*

### Self-oriented Perfectionism

Table 260 Hierarchical multiple regression analyses testing the moderating effects of BAS reward on the relationship between self-oriented perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.023	-.058	NS
Step 2 BAS Reward	.128	-.442	.009
Step 3 Self x BAS Reward	.105	-.021	NS

*Note.* Self= Self-oriented perfectionism

Table 261 Hierarchical multiple regression analyses testing the moderating effects of BAS reward on the relationship between self-oriented perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.066	.300	.060
Step 2 BAS Reward	.244	-.472	.003
Step 3 Self x BAS Reward	.254	.177	NS

*Note.* Self= Self-oriented perfectionism

Table 261 Hierarchical multiple regression analyses testing the moderating effects of BAS reward on the relationship between self-oriented perfectionism and anxiety at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.008	.184	NS
Step 2 BAS Reward	.080	-.327	.055
Step 3 Self x BAS Reward	.113	.246	NS

*Note.* Self= Self-oriented perfectionism

Table 262 Hierarchical multiple regression analyses testing the moderating effects of BAS reward on the relationship between self-oriented perfectionism and suicide ideation at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Self	.009	.186	NS
Step 2 BAS Reward	.112	-.376	.026
Step 3 Self x BAS Reward	.184	.314	.046

*Note.* Self= Self-oriented perfectionism

### Socially Prescribed Perfectionism

Table 263 Hierarchical multiple regression analyses testing the moderating effects of BAS reward on the relationship between socially prescribed perfectionism and hopelessness at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.015	.199	NS
Step 2 BAS Reward	.155	-.398	.010
Step 3 Social x BAS Reward	.132	-.016	NS

*Note.* Social= Socially prescribed perfectionism

Table 264 Hierarchical multiple regression analyses testing the moderating effects of BAS reward on the relationship between socially prescribed perfectionism and depression at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.113	.369	.019
Step 2 BAS Reward	.177	-.287	.055
Step 3 Social x BAS Reward	.259	-.315	.029

*Note.* Social= Socially prescribed perfectionism

Table 265 Hierarchical multiple regression analyses testing the moderating effects of BAS reward on the relationship between socially prescribed perfectionism and anxiety at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.087	.333	.036
Step 2 BAS Reward	.107	-.206	NS
Step 3 Social x BAS Reward	.241	-.385	.009

*Note.* Social= Socially prescribed perfectionism

Table 266 Hierarchical multiple regression analyses testing the moderating effects of BAS reward on the relationship between socially prescribed perfectionism and suicide ideation at time 1.

Variable	Adj R <sup>2</sup>	Final Beta	Sig.
Step 1 Social	.003	.168	NS
Step 2 BAS Reward	.043	-.253	NS
Step 3 Social x BAS Reward	.018	-.033	NS

*Note.* Social= Socially prescribed perfectionism