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Metaphoricity in the real estate showroom: Affordance spaces for sensorimotor shopping

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Abstract

This paper adopts an ecological view of cognition to analyse the role of the environment in scaffolding metaphorical experience. Using ethnographic material collected from two real estate showrooms in China, we describe how each showroom setting is equipped with to-be-phenomenologically-experienced objects designed to stimulate desirable sensorimotor experiences and altered bodily states during the guided showroom tours. By analysing the qualities of such settings and identifying the processes through which visitors become environmentally coupled—including active and passive touch in highly organized auditory, olfactory, and gustatory environs—we demonstrate how the showrooms constitute an affordance space for enacting metaphoricity through doubleness in experience. Implications for conceptual metaphor theory relating to the nature of environments and bodies are discussed.

Keywords: metaphoricity, showrooms, advertising, ecological cognition, affordance space

1. Introduction

Almost forty years have passed since Lakoff and Johnson (1980) famously proposed that metaphor involves "*understanding and experiencing one kind of thing in terms of another*" (p.5; emph. orig.). During this time, what was perhaps the major appeal of Conceptual Metaphor Theory – an embodied mind (Lakoff, 1987; Lakoff and Johnson, 1999) – has become one of its major criticisms. As Malafouris (2013, p. 65) explains:

> No doubt by grounding cognition in bodily experience we have taken a step toward resolving the traditional mind-body dichotomy. Nevertheless… what this step essentially implies for the proponents of embodied-cognition approach is simply an expansion of the ontological boundaries of the *res cogitans* rather than the dissolution of those boundaries altogether. Transposing the conventional demarcation line of human conceptual architecture outside the brain but still inside the skin, the embodied mind approach… has created a sort of embodied cognitivism in which the material reality remains external and epiphenomenal to the cognitive structure.

This portrayal of Conceptual Metaphor Theory (CMT) allows us to retroactively classify the view of cognition in CMT as 'body-formatted' (Gallagher, 2017), with the identification of mappings across cognitive domains being a way to "explain the embodied roots of abstract thought" (p. 31; cf. Gallagher & Lindgren, 2015). As studies in metaphor have gradually described the complexity of these domains and operations, the mind has become further and further entrenched within the body.[1]

This paper draws on recent developments in cognitive science and philosophy of mind to demonstrate that abstract thought and conceptual processes, in this case metaphor, find their roots beyond brain and body (Varela, Thompson, & Rosch, 1991; Hutchins, 1995; Clark, 1997, 2011; Malafouris, 2013; Gallagher, 2017). In doing so,

[1] In Hampe's recently edited volume on metaphor from the perspective of embodied cognition, Jensen (2017) blames the confinement of cognition within the body on a "seemingly logical assumption"; namely that "since cognition is profoundly embodied, and since our bodies visibly have physical boundaries that separate us from the surrounding environment then cognition too must by definition be a bounded phenomenon tied to an individual body and reserved to processes in the head" (p.@@).

we wish to contribute original, naturalistic data in support of the growing number of metaphor scholars who see the classical version of CMT as reductionist in its view of metaphoric behavior as a static process of cross-domain mapping between conceptual domains that occurs privately within embodied minds. Gibbs (2013), for instance, questions "whether conceptual metaphors are truly rooted in some system of mind/brain" (p. 58), while Teng (2006) and Malafouris (2013) have sought to incorporate external materiality into the conceptual mapping process. Further concerns arise from a body of evidence that metaphoric behavior cannot always be located in single words or actions, but instead emerges dynamically through processes of behavioral coordination during stretches of social interaction (Gibbs & Cameron, 2008; Müller, 2008; Gibbs & Santa Cruz, 2012; Gibbs, 2006, 2013; Jensen & Cuffari 2014; Jensen, 2017).

If not in brain or body, then where is the *res cogitans* (and subsequently metaphorical experience) to be found? To answer this question, we have been collecting ethnographic material from real estate showrooms in Ningbo, a major second-tier city in China. As in other Chinese cities experiencing unprecedented urban growth, Ningbo's showrooms are located in front of the numerous building sites where new property is being developed around the city. The showrooms play a central role in both advertising the property and providing the location where the sale of property will take place (often by selling off plot through competitive bidding; see Fleming & Harrison, 2018). For metaphor scholars, the *yet-to-be-built-ness* of the apartments on sale and the discourse of advertising surrounding them should evoke an ideal situation to observe the conditions for potentially metaphoric behaviours. Treating two showrooms as ecologies for cognition, we here examine their phenomenal qualities and describe the processes of coupling through which showroom visitors become embedded with their setting. We will argue that rooting cognition in the embodied mind can only provide part of the picture: as will become clear, the showroom illustrates how cognition is *extended* in the environment that awaits its visitors, ready to be *enacted* upon their arrival, through *situated* embodied experiences.

Excavating cognition from the body and situating it in-between brain, body, and world has consequences for our understanding of metaphor. In particular, we show how the cognitive domains and mappings traditionally described for such fundamental constructs as metaphor scenarios (Musolff, 2009), multimodal metaphors (Forceville & Urios-Aparisi, 2009), and primary metaphors (Grady, 1997) should not always

(or not only) be abstracted and construed as (internalized) B-formatted conceptual representations (such as image schemas, mental spaces, frames, projections, idealized models, and blends). We instead find support for Malafouris' (2014) proposal that "the conceptual space is not given to us preformed as a mental map inside our heads; rather it needs to be discovered or constructed in moment-to-moment, improvisational thinking inside the world" (p. 145). Our study of the showrooms highlights a range of processes of real-world discovery and construction through which the environment becomes an ecology for embodied conceptualisation.

Our findings thus contribute to an approach to metaphor that has been developing under the term of *metaphoricity* (Müller, 2008; Müller & Tag, 2010; Jensen & Cuffari, 2014; Jensen, 2017). As the suffix *–ity* suggests, the metaphoric process of understanding one thing in terms of another may be experienced gradually and dynamically (Müller, 2008). Rather than identifying, establishing, and detailing what kinds of metaphoric mappings exist (describing metaphors as products of the embodied mind), the dynamic view of metaphor has shifted focus to analysing the interactive micro-behaviors through which metaphoricity may become gradually activated, including not only language but also co-speech gestures, facial expressions, eye-gaze and other bodily movements (Müller, 2008; Müller & Tag, 2010; Müller & Ladewig, 2013). Situating metaphor in "real-life face-to-face discourse situations", Jensen and Cuffari (2014) have subsequently developed "an experience-oriented methodology for identifying and analysing metaphoricity as a special kind of interpersonal, inter-bodily, and inter-affective meaning coordination" that has been called 'doubleness' (Jensen & Cuffari, 2014, p. 280; Jensen, 2017).

It is not yet clear, however, how this approach can be applied more broadly, which may account for its lack of uptake within other areas of metaphor analysis, such as advertising discourse (Forceville, 2008, 2009; Pérez-Sobrino, 2016, 2018). The ethnographic setting of real estate showrooms in China illustrates the broader applicability of a process-oriented approach to metaphoricity. The showrooms locate multimodal discourses related to advertising in a context for embodied interaction, drawing attention to the role of the physical environment in guiding or constraining behaviour in ways that scaffold the enactment of metaphoricity. When we approach metaphoricity from the embedded perspective of a real estate showroom, thus, we can understand how cognitive processes occur, following Malafouris (2014), "not (only)

between two humans but *in-between* humans and things" (p. 150; emphasis in original). This environment-oriented perspective on interaction helps decentralize in-the-head metaphoric mappings from the embodied mind a step further, going beyond human-human interaction to include human-environment interaction.

The paper is structured as follows. The next two sections continue the introduction by providing the conceptual framework and research questions (Sections 1.2 and 1.3). We then introduce our methods of data collection and analysis (Section 2), before presenting the findings with data from two real estate showrooms (Section 3). Finally, the implications of our findings for conceptual metaphor theory relating to the nature of environments and bodies are discussed (Section 4).

1.2 Cognition: Embodied, embedded, extended and enacted

While many cognitivists and analytical-style philosophers had conceptualized the human brain as a bio-computer running on a logical-symbolic system (Varela *et al* 1991, pp.40-43), the terms *embodied*, *embedded*, *extended* and *enacted* were developed to account for compelling evidence from neuroscience, artificial intelligence, cognitive anthropology and philosophy of mind that cognition—thought and thinking—is not localized solely in the brain (e.g. Hutchins, 1995; Clark, 2011; Malafouris, 2013; Gallagher, 2017).

To illustrate *Embodied* cognition, Malafouris (2013) explains that "bodily features play a significant role in how or what an organism thinks and in how it makes sense of the world" (p.59). The hand, for example, as well as being "an instrument for manipulating an externally given objective world by carrying out the orders issued to it by the brain," must also be recognised as "one of the main perturbatory channels through which the world is perceived and classified" (Malafouris, 2013, p. 60; cf. Streeck 2009, pp.39-58). Consider in this light the experimental evidence from Pruszynski and Johansson (2014) who showed how "peripheral neuronal mechanisms" in our fingertips function "not only to send signals to the brain that something has touched the skin, but also process geometric data about the object touching the skin" (p.1404). Here, touch becomes a rich source for receiving information and for shaping that information in a way that determines (indeed constitutes) how individuals think.

While *Embedded* cognition broadens the scope of cognitive activity from the body to its material, social and cultural environment (Wilson & Foglia, 2017), *Extended*

cognition seeks to explain how "relevant external features are *active*, playing a crucial role in the here-and-now" of a cognitive process (Clark & Chalmers, 1998, p.9; emphasis in original). Classic examples include the use of touchstones, or in more modern times, the pocket diary as an extrasomatic memory, the blind person's cane as a 'feeler', and the external rotation of a Tetris zoid to "reduce inner computational effort" in determining goodness of fit (Clark, 1997, p. 66; Clark, 2011; Kirsh, 1995). Note how in all these examples, the role of embodied interaction is crucial, because "the human organism is linked with an external entity in a two-way interaction, creating a *coupled system* that can be seen as a cognitive system in its own right" (Clark & Chalmers, 1998, p.8; emph. orig.). Touchstones, white canes, notebooks, and Gameboy joysticks belong to the external world of objects but become integral facets of cognition through *coupling* with the sensorimotor system, thereby extending or 'supersizing' the organism's body schema (Gallagher, 2005; Noë, 2009).

An *Enactive* view of the relation between cognition, body, and environment offers a different perspective to embedded and extended models (Gallagher, 2017). Originating in the philosophical tradition of phenomenology (Merleau-Ponty, 2012 [1945]), *Enactive* cognition forces attention to how, as Varela *et al* (1991) put it, "cognitive structures emerge from the kinds of recurrent sensorimotor patterns that enable action to be perceptually guided" (p. 176). The terms 'emerge', 'enable', and 'guide' are key constructs here. They index the gradual and bi-directional processes of perceptual adjustment and adaptation required to accomplish cognitive tasks ranging from the everyday (e.g. reaching for an apple, opening a door) to the more complex (e.g. viewing a painting, fielding a baseball). Instead of relying on inner mental models to accomplish such actions, following enactivist Gallagher (2017), the embodied mind dynamically "*responds* to the world rather than *represents* it" (p. 47; emphasis original). Taking into account the biological, emotional, and affective aspects of our embodied lives becomes relevant here too, as even factors such as "hunger, fatigue and pain" are among those found to "modulate body-environment coupling, and become part of the reciprocal causal relations that shape cognitive process" (p. 41).

Despite the different perspectives offered by the 4Es, 'embodied cognition' remains an umbrella term for a decentralised approach to cognition (albeit with 'weak' or 'strong' versions, depending on which E is in focus; Wilson & Foglia, 2017; Gallagher, 2017). Another umbrella term for these relational facets between brain, body,

and environment is 'ecological'. As discussed by other contributors to the current issue, the notion of ecology emphasises the mutual influences between organisms and their environments, positing the unit of cognitive analysis as not one or the other but as the *organism-environment-system* (Jensen & Greve;, 2019 Szokolszky, 2019). To view the showroom as an ecology, however, we now require the concepts of cognitive niche and affordance space.

1.3 Unpacking the cognitive ecology: From cognitive niche to affordance space

With cognition emerging dynamically from the interaction between brain, body, and world (Clark, 2011; Malafouris, 2013; Gallagher, 2017), our earlier statement that cognition is *extended* in the environment that awaits visitors to the showrooms, and ready to be *enacted* upon their arrival, through *situated* bodily experiences can be specified. The showroom, like any other ecology for organism-environment interaction, can be viewed as a "prestructured niche" (Clark, 2011, p. 62) or "(pre-personal) affordance space" (Gallagher, 2017, p. 181).

Important groundwork for these ideas were laid by Kirsh (1995) in the journal *Artificial Intelligence* as follows:

> How we manage the space around us… is not an afterthought; it is an integral part of the way we think, plan and behave, a central element in the way we shape the very world that constrains and guides our behaviour (pp.31-32)

Distinguishing between constraints and guides, Kirsh explained how the environment guides our behaviour by informing perception (such as when people "arrange items… to draw attention, to cue cognitive events or processes", p.38); and he explained how the environment constrains our behaviour by determining patterns of interaction (such as when "sticking a door jam under a door serves to constrain the physical freedom of an agent", p.38). Building this into active externalism, Clark (2011) explained that people routinely engineer their environments in this way to facilitate behaviors that

enable forms of thought: such "niche construction activity leads to new feedback cycles" (p. 62), which themselves constitute cognition.

The ecology of real estate showrooms may thus be approached as a cognitive niche that has been structured for certain forms of organism-environment dynamics, what Gallagher (2017) refers to with the Gibsonian-inspired concept of "affordance space" (p. 174). For Gibson (1979), the "affordances of the environment are what it offers to the animal, what it provides or furnishes" (p. 127). While the concept of a cognitive niche highlights how we actively structure our environments to facilitate cognition, the affordance space thus captures the reverse influence in referring to the possibilities for cognition that certain structures in our environment may provide, furnish, or *afford* for us. As Gallagher (2017: 181) clarifies:

> it's not so much that we carve out an affordance space from the surrounding world, as that we find ourselves in a world and within an already established (pre-personal) affordance space that opens up through the dynamic relation between body and world' (p. 181).

Acknowledging the active role played by the environment has methodological and empirical entailments directly relevant for studying cognition, and subsequently metaphor. As Malafouris (2013) argues, it requires "bringing materiality—that is, the world of things, artefacts, objects, materials, and material signs—firmly into the cognitive fold" (p. 2). This 'world of things', however, is not "the sphere of isolated and fixed categories (objects, artefacts, etc.)" but instead "the sphere of the fluid and relational transactions between people and things" (Malafouris 2013, p.143). It is precisely this latter sphere that we target in the current study.[2]

By describing the real estate showrooms in China as affordance spaces, we propose a systematic treatment of the role of the material environment for establishing metaphoricity. This requires answering three inter-related research questions:

[2] This shift from products or 'things' to processes and relations is what Malafouris (2014) coins '*thinging*': "the capacity to affect and to be affected through movement and sensation from the phenomenal qualities of the materials that surrounds us" (p. 144).

RQ1. What are the phenomenal qualities of the showroom environments – their layouts, props and structures?
RQ2. What mechanisms do the showrooms deploy to facilitate organism-environment interactions for their visitors? How may this manipulation of the physical environment lead to visitors exploiting the experiential affordances of their new surroundings?
RQ3. With questions one and two having established the showrooms as an affordance space, we can ask which facets of such behaviours potentially activate metaphoricity? Can we identify the shifts in experience that constitute 'doubleness' and may lead customers in-the-moment to begin experiencing, understanding or imagining one thing in terms of another?

2. Methods

2.1 Data collection and selection

This study is based on showrooms that were advertising and selling real estate between 2016 and 2018 in Ningbo, China. Crucial to our study was a local Ningbonese acquaintance, who was visiting these showrooms with the goal of purchasing real estate. This professional small business owner gave informed consent to become a key participant in our research and granted us access to the photos and video clips that she had taken with her phone during her showroom tours to naturally document her apartment-buying experience. She also shared with us the promotional posters, leaflets, flyers and web links that she had either procured from the different sites or had been sent to her social media accounts. To add to this archival data, we subsequently joined our key participant on several return visits to the showrooms, occasioning further photos and note taking, as well as videos of our key participant inside the showroom context. This method has provided an abundance of ethnographic material, allowing us to both reconstruct and experience first hand the layouts, material structures, and interactive features that constitute the environments of at least five showrooms in Ningbo.

To achieve an appropriate level of ethnographic and analytical depth, two showrooms were selected for the current study. We chose *Ningbo Bay City* and *King Plan*

because their names and design immediately showed similarities to the kinds of metaphors described in Forceville's (1996, 2008) landmark studies of metaphor in advertising discourse (the centre of Ningbo has neither bays nor royalty, and hence these could preliminary be identified as source domains). This method of selection provides a good starting point for our study by allowing us to draw contrasts to to a conceptual mapping approach were appropriate.

2.2 Data analysis

Our method of analysis was determined by our three research questions. The first step accordingly involved describing the materiality of the showrooms, that is, identifying "the material at hand" (Malafouris, 2014, p. 150). For each of the showrooms, we viewed the images and videos with the goal of discerning the physical properties of the showroom and analysing how they might be experienced by its visitors. We began with the exterior – the showroom forecourt and the grounds where the apartments were being built (which were still under construction to different extents). This allowed us to identify the approach to each showroom and reconstruct the routes that visitors would take (paths, doorways, entrances), noting any decorative items, displays, or objects they may actively or passively encounter on their way. Influenced by Gibson's (1979) work on affordances, we characterised the ecology of the showroom with attention to the "properties or qualities" of these physical environments, such as "color, texture, composition, size, shape and features of shape, mass, elasticity, rigidity, and mobility", always considering these qualities in light of what they might afford the human sensorimotor system (p. 134). Our descriptions thus included any objects that visitors might see, smell, hear, touch, taste, and even ingest. This same approach was then applied to studying the interiors of the showroom.

Attention to the decoration and interior design of the showrooms in this first stage allowed us to identify what might traditionally be viewed as source domains or 'image-offering fields' (Müller, 2008: 83) in conceptual metaphor theory. Subsequently, this stage also included discussing and sketching out the associations that the developers were hoping to map onto the apartments on sale (viewed as the Target domain in the context of advertising; Forceville, 2008).

For the second research question, we examined the different ways in which visitors could be brought into contact or become 'coupled' with the phenomenal qualities of their surrounds – seeking to identify "the spots where the rubber of embodied

agency meets the road of the wider world" (Clark, 2011, p. 31). This involved examining the interactions that were visible in the material – either between visitors and other people (interpersonal) or between visitors and their physical environment. These interactions provide the basis for analysing how the showroom environment could play an active role in coordinating, constraining and otherwise enabling certain forms of behaviour through sensorimotor coupling – requiring us to consider them from diverse perspectives, including physical, emotional, affective, biological and cognitive. During the process of describing these behaviors, we were able to enhance and verify our descriptions by accompanying the key participant on revisits to both of these showrooms.

Having mapped out the phenomenal qualities of the showroom settings and identified ways in which visitors were required to interact with their settings (experiencing these first hand on our own visits too), we shifted our analysis to addressing the third research question and examined these behaviours for traces of metaphoricity. For this, we adopted the "experience-oriented methodology for identifying and analysing metaphoricity" proposed by Jensen and Cuffari (2014, p. 283). Jensen and Cuffari (2014) were working with face-to-face communication data, and thus saw metaphoricity "as a special kind of interpersonal, inter-bodily, and inter-affective meaning coordination" (p. 283). By measuring metaphoricity in terms of 'doubleness', they introduced descriptors that apply not only to face-to-face encounters but also to organism-environment ones:

> When we can identify more than one experiential affordance (felt sense or felt meaning) being opened or made room for in what follows, the affording behavioural coordination has metaphoricity. The transition from the complex felt sense and symbol (significant behavior) on the one hand, to the new sense on the other, might be the relation between old and new, familiar and unexpected, present and absent, or it could be the experience of merging or layering perspectives or roles. (pp. 282-283; emphasis in original)

> Features of doubleness include contrast, multiplicity, instability, affective ambivalence or contradiction, and swells in dialogical system activity across modalities (p. 283).

Through this three-step methodology, we hope to demonstrate how a pre-personal affordance space becomes a cognitive niche for visitors to begin enacting forms of cognition, paying specific attention to doubleness as a measure for the activation of metaphoricity.

3. Findings and analysis

Each showroom will now be presented from the perspective of a visitor arriving at, approaching, entering, and exploring inside the showroom. We first describe the scenes, layouts and objects in the data, then briefly identify the 'image offering' or 'source situations' informing their overall theme or design. This allows us to identify how the target domains of apartments, property, and real estate are being construed from the perspective of conceptual metaphor theory. Each analysis then moves beyond domain-based metaphor identification to show how these settings have been equipped with to-be-phenomenologically-experienced material structures and how visitors are required to engage with their environments in ways that potentially scaffold metaphoricity.

3.1 Showroom 1: Ningbo Bay City

The forecourt of Ningbo Bay City (江湾城)—a high-end development located centrally on the banks of Ningbo's river—has been decked with sand, surfboards, and sun loungers (Figure 1). A make-shift mural portraying a cresting ocean scene with lighthouse, blue sky, sun and clouds is also visible, before which sits tables strewn with maritime paraphernalia, including model ships and fishing nets with their hauls of shells and starfish. Visitors encounter this scene on their approach to the showroom, as they walk along a wooden deck laid atop the sand. At the end of this deck, a buffet table with a barbeque grill manned by a chef in *Carte Bleu* uniform is serving a selection of freshly cooked fish and meats. The visitors pass onto the sand, optionally pick up food from the buffet table, then make their way into the showroom entrance (far right of image).

Fig 1. Secluded beach set-up with private BBQ grill manned by Carte Bleu Chef[3]

From the perspective of CMT, we can immediately identify the image-offering field (Müller, 2008) or source situation (Musolff, 2009) made implicit by the material structures on display. Images and objects have been arranged, we could argue, to suggest a secluded beach scenario, possibly at an international holiday resort. Conceptually, visitors approaching the showroom are invited to map the otherness of the simulated surroundings onto their first impressions of a Target domain – in this case the housing estate under construction. The beachside theme (along with the name of the development 'Ningbo *Bay* City') is consistent with the exclusive riverside location of the saleable plots (which are yet to be developed). Such themes would imply consequences for novel metaphorical mappings from domains of seclusion, nature, and

[3] This is an altered image from our film-philosophy analysis in *Social Semiotics* (Fleming & Harrison, 2018), copyright of Taylor & Francis, available online: 10.1080/10350330.2018.1526856.

health being projected onto an emerging conceptualisation of the life-style spaces on sale. If we take the apartments as the Target located within a context provided by these Source domains, we encounter a common trope in advertising discourse – the contextual multimodal metaphor (Forceville, 2008), wherein presentation of the apartments on display inside the showroom (Target) is temporally and semiotically separated from the structured scene outside (Source).

There are undoubtedly elements of internal conceptual representations being activated here, including memories, frames, and scripts influencing how the visitors would recognize, interpret, and interact with the visual scene they encounter at Ningbo Bay City. However, if we are to view the showroom as an ecology or 'organism-environment-system' (Jensen & Greve, 2019), we must also consider how the scene presents visitors to the showroom with an embedded experience of multi-sensory stimuli and active materiality with which they can physically engage (and begin responding) as they approach the showroom.

The wooden deck, for instance, assigns a fixed path for the visitors to follow, taking them past the surfboards and onto the soft sand. In addition to being jarred by the contrived optics while guided by the pre-determined path, they experience a form of 'passive touch' – embodied cognitive processing driven by different textures coming into contact with the body (Ackerman, Nocera & Bargh, 2010: 1714). Occasioned by traversing the boardwalk and then loose sand, a series of changes in sensory feedback and neuromuscular activity would occur (Serino & Haggard, 2010), presumably reinforcing associations with non-urban spaces and settings coherent with the visual beach scene. As the visitors thereafter pass by the operational BBQ, further changes in bodily states would now be stimulated by the olfactory particles from the grilled meats. Barsalou (2008) offers neuroimaging evidence of such phenomena, reporting how gustatory and olfactory areas of the brain and body become triggered by food smells (p. 627). To extend our own metaphor, the stimulation of such brain areas begin to ramp up the human subjects' biological desires to consume. Customers have been offered opportunities to taste, and begin consuming, which demonstrates a series of ways in which 'inner' bodily states and sensations are transformed in turn by the metabolisation of food matter.

As such, the showroom forecourt can be described as an affordance space, pre-personal because "already defined by the possibilities of action in relation to objects located in one's manipulatory area and outside of it" (Gallagher 2017, p. 180). A

combination of loaded visual landscape, underfoot sand impressions, cooking smells, and nutritional tastes have been prepared for visitors to Ningbo Bay City. The walkway is designed to guide them through this space, providing them opportunities to become sensorially coupled with their environment. As the visitors begin responding to this environment – adopting new ways of walking, balancing, feeling, touching, smelling, tasting – their embodied experience of the apartment-buying process becomes subtly altered. The sand would solicit alterations in gait involving all joints of the lower limbs (and requires increased oxygen consumption; Lejeune, Willems & Heglund, 1998), while the ingestion of food would affect appetite and energy levels. Such subtle alterations in bodily state exemplify the organism's progressive embedding into the new environment unfolding as visitors approach the showroom. Such "fluid, contextual adaptation" illustrates what Clark (1997) has called a "multi-factor, decentralized approach" to cognition, where "the local environment plays a large role in selecting (and orchestrating) behaviours" (p. 43). Since the target domain of apartments is as yet absent from this experience, we may see these multimodal, multi-sensorial coordinating behaviours as a form of emerging doubleness (Jensen & Cuffari, 2014).

Entering into the showroom, we immediately see how the organization of other sensorimotor experiences, namely sound and rhythm, have been added into the affective mix. Having ventured across the forecourt, visitors now entering into the showroom become serenaded by a string quartet of young women dressed in bride's maid's gowns, playing classical western music afore an upsurge of perfumed flowers (Fig. 2).

Fig. 2. Classical quartet serenade against upsurge of perfumed flowers[4]

To momentarily revert back to a domain-based CMT analysis, this classical quartet serenade suggests a different source situation from the forecourt, with implications for conceptual mapping onto the target. According to Forceville's (2009) case study analysis of commercial advertisements, music can trigger a range of positive qualities to be mapped onto the target domain (which is unequivocally the product on sale). Similarly, qualities associated with the classical music genre may be evoked upon entering the sound scape of the showroom: elegance, sophistication, refined musical tastes, and even enlightenment or spirituality, for example.

[4] This is an altered image from our film-philosophy analysis in *Social Semiotics*, copyright of Taylor & Francis, available online: 10.1080/10350330.2018.1526856.

One detail worth highlighting with respect to such ideas is this showroom's preference for western classical music, which as Brownrigg (2007) reminds us, generally operates on a different system of scales to Chinese music; with its different organizational substratum deriving alternative "rules of diatonic harmony that follow on from them" (p. 311). Traditional Chinese music has historically employed "an anhemitonic pentatonic (five note) scale," meaning that "the Oriental sense of harmony is distinctively different from the Occidental one" (Brownrigg 2007, p.311). By entering into these sonorous Western soundscapes, we can easier detect music being deployed as a symbolic "acoustic space" (Elsaesser & Hegener, 2009, pp.129-130) used to provoke "imaginative travel" (de la Fuente, Budarick & Walsh, 2012, p.43).

The presence of live musicians is significant here too. As Forceville (2009) observed, music in commercial advertisements is able to "remind many viewers of a similar situation" from elsewhere (p. 391). Historically, small groups of performers might connote the Chamber music of an aristocratic home, but for visitors to the contemporary showroom, they may connote formal banquets, ceremonies, receptions or galleries (cf. the glass art), potentially enhancing how visitors appraise their self-worth as they enter.

As with the forecourt passage from urban-scape to sea-scape, and from tarmac to wooden deck and soft sand (or from urbanity to simu-nature), we can now consider how the transition from the discordant city sounds outside the showroom to the organized and ordered music-scape inside the showroom reveals a new affordance space. Therein, the live classical serenade affords further forms of doubleness or "significant behaviours… (that) serve in the moment to mark, capture, constrain, organize and redirect the experiential flow" (Jensen & Cuffari, 2014, p. 282).

As customers enter this new space, the calming and serene 3D vibrational sound environment would stretch out to envelop and penetrate the visitor's body, intimately touching and rhythmically stimulating its sensitive surfaces. Certainly, de la Fuente, Budarick and Walsh (2012) argue that in addition to operating as a "symbol of where we have been or want to go," music, like the traditional view of metaphor, can be enactively understood as "a 'vehicle' for transporting [people] emotionally," materially moving them into "different states of being" (p. 43). Acoustically enwrapped would-be customers thus encounter a new range of transitional experiences, whereby "[a]ffect arises from a break in the continuity of experience..." and may thus "disrupt the clichéd narrative of daily life" (Marks, 2008, p. 139).

The material functional properties, or affective dimensions of such transitions may be viewed as experiential affordances. Music emerges as a temporal 'device' or pre-personal condition that offers the body an "orientation setting" that it can map onto, swaying its subsequent conduct and movements (cf. DeNora, cited in de la Fuente, Budarick & Walsh 2012, p.43). Forceville's (2009) observations that "rhythmic percussion steers us into understanding" (p. 395) can be reassessed from an enactive view here. Following accounts of sound in cinema by Elsaesser and Hegener (2009), such steering can be viewed as something that literally possesses "tactile and haptic qualities, since it is a phenomenon related to waves, [and …] movement"; this "in turn makes bodies vibrate," because its sound "covers and uncovers, touches and enfolds even the spectator's body (in this way, sound is closely related to the paradigm of skin and contact)" (pp.137-138). On account of such affects/effects, the customer essentially becomes "a bodily being enmeshed acoustically, spatially and affectively" (Elsaesser & Hegener, 2009, pp.131-132). The melodic environment actively contributes to a multi-layered, embodied experience of the visitor, setting the conditions for doubleness.

As we might expect by now, this sound environment becomes intermodally articulated to, and intermingled with, other olfactory and associative domains. Visitors have entered here into a pungent floral atmosphere, quite different to the smoky BBQ aromas outside. The transition or contrasting montage between the two sound- and smell-scapes thus marks further salient contrasts, opening opportunities for new experiential affordances. For as we know from cognitive science, "smell is not a passive mapping of external features but a creative form of enacting significance on the basis of the animal's embodied history" (Varela et al, 1991, p.175).

To sum up, the overall design of the Ningbo Bay City showroom has been informed by elements from a number of source domains (holidays, beaches, travel, weddings, galleries). Delving into the phenomenal qualities of these domains (RQ1), we found that 3D optical displays, soft yielding terrains, nutritional substances, and different vibrational frequencies had been built into the environment – creating a pre-personal affordance space for visitors to engage with and begin responding to upon arrival. Various forms of sensorimotor coupling enabled this experience (RQ2), ranging from automatic visual processing and passive touch experiences to active exploratory sense-making (walking, sniffing, picking up, eating, entering, etc.). We have sought to view metaphoricity emerging within this ecology (RQ3). As visitors make

their way through the showroom spaces, doubleness is experienced through altered bodily states and stimulated brain areas – directly affecting how they see, feel and understand the apartment-buying process.

3.2 Showroom 2: King Plan

At our second showroom King Plan (金磐)—a development located in a prosperous neighbourhood of the city, justifying the high price of apartments and having consequences for the scenario being developed—we discover a regal theme. Therein opulent splendour and sophistication motivate the decoration of the showroom grounds and apartmental arrangements. Figure 3 captures how railings, lampposts, tree trunks, and balconies were draped in gold (a – c). Images from a website sent to our key participant's social media account show how these thematic associations were carried through to the apartments' interior designs (d – e).

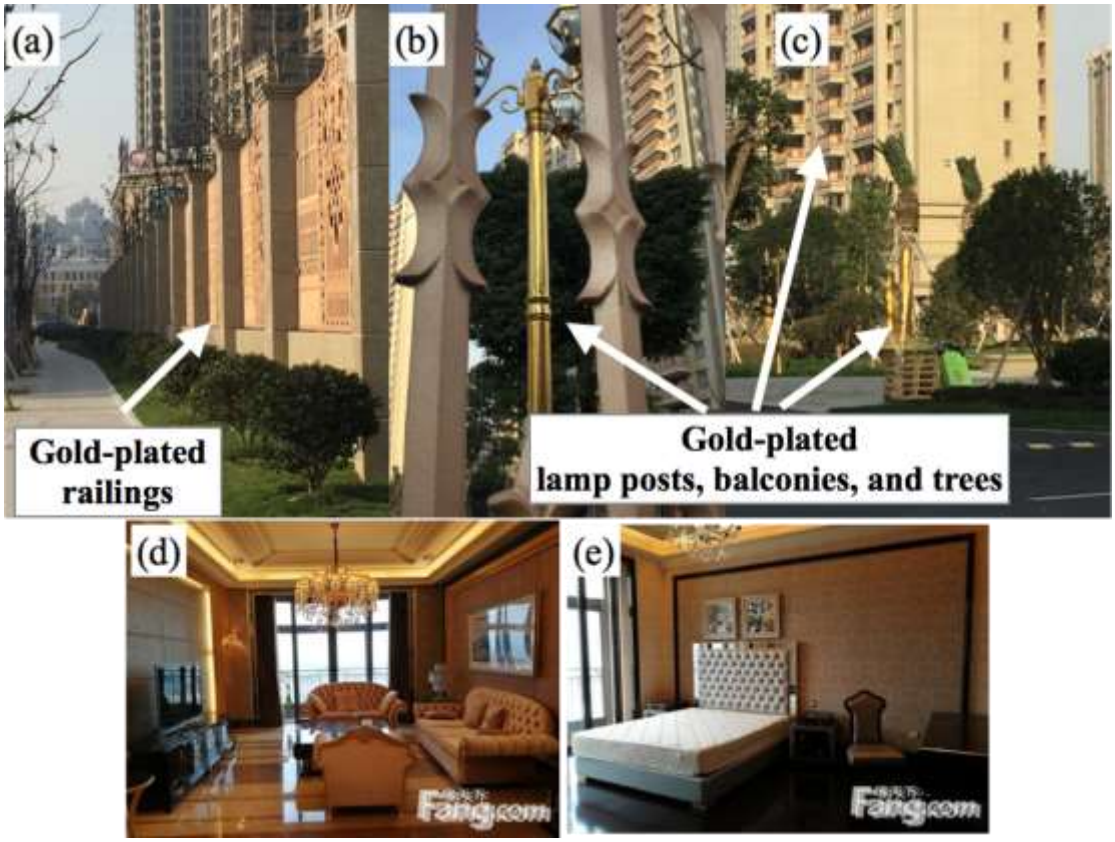

Fig. 3. Railings, lampposts, tree trunks, and balconies draped in gold (d –e from http://jinshengjinpan.fang.com)

Beyond these optical aesthetics, visitors to King Plan showroom were handed elaborate brochures providing information about the potential properties on sale. As might be expected, the regal theme motivating the showroom's name and the design of the grounds on display was the basis for explicit linguistic metaphors structuring the informational texts, which overtly compared the building materials to precious gems (diamonds), the imaginary community to a palace, and the future apartment owners to royalty. Parts of the text relevant to this discussion are highlighted with underlining (translation by Scott Cao, original Chinese in Appendix 1):

> Structured entirely by Karamori Gold stones, the artsy architectural facades tell the lives of the Royal families. A house that is built to last must contain the unvarying value like a diamond, an enduring architectural facade must be made entirely by dry-hanging stones! Without the stones, the Chateau de Versailles of Louis XIV would fade with 316 years of existence and the Louvre would not stand to be admired for 800 years; and only with stones, can the Chateau de Fontainebleau shine for 875 years…… Using Karamori Gold stones to cover nearly 70 thousand square meters of buildings, the King Plan provides you with a house with the top quality like the Royal families! The Royal families are meant to be admired, therefore, the aristocrat-like surroundings of the entrance become a necessity! King Plan, inheriting the feature of garden ordering in the French court, initiates the example of arranging the living scenery in Ningbo using only stones. You will be welcomed with the courtesy paralleled to national guest treatment!

Except for the size of the grounds (70,000m2) and the type of material used for construction (Karamori Gold Stones – a form of granite quarried in China), this passage contains little substantive content. Instead, the function of the text is to elaborate the (metaphorical) concept of the King Plan project and cue the mappings required to ensure its interpretation. As with the design of the grounds, the salient source domain here is ROYALTY. The activation of this domain begins subtly when readers discover that other buildings made from the same material as King Plan include French palaces (specifically Château de Versailles, the Louvre, and the Château de Fontainebleau). In addition to highlighting the resistance and durability of landmarks made from such material, metonymic relations between buildings and the nobility of their occupants are subtly evoked (further cued by direct reference to Louis XIV). The metaphor is then more directly activated with the sentence "the King Plan provides you with a house with the top quality *like the Royal families*" (emphasis added). Explicit mapping instructions follow, namely that "royal families are meant to be admired" and that upon purchasing one of the apartments "you will be welcomed with the courtesy paralleled to national guest treatment".

Any metaphors in this promotional text must now be contextualized within the broader immersive experience of customers to the showroom. In what follows, we re-examine these promotional texts in relation to the form and context of their transmission. For even though metaphor is recognised as "modality-independent" (Müller,

2008, p. 32), attention must be paid to the affordances of the specific modality in which they arise. The collage of pictures in Figure 4 shows the carrier bags in which these brochures were presented to customers upon arrival at the showroom (a – b) and the nature of the material on which the metaphorical texts had been printed (c – f).

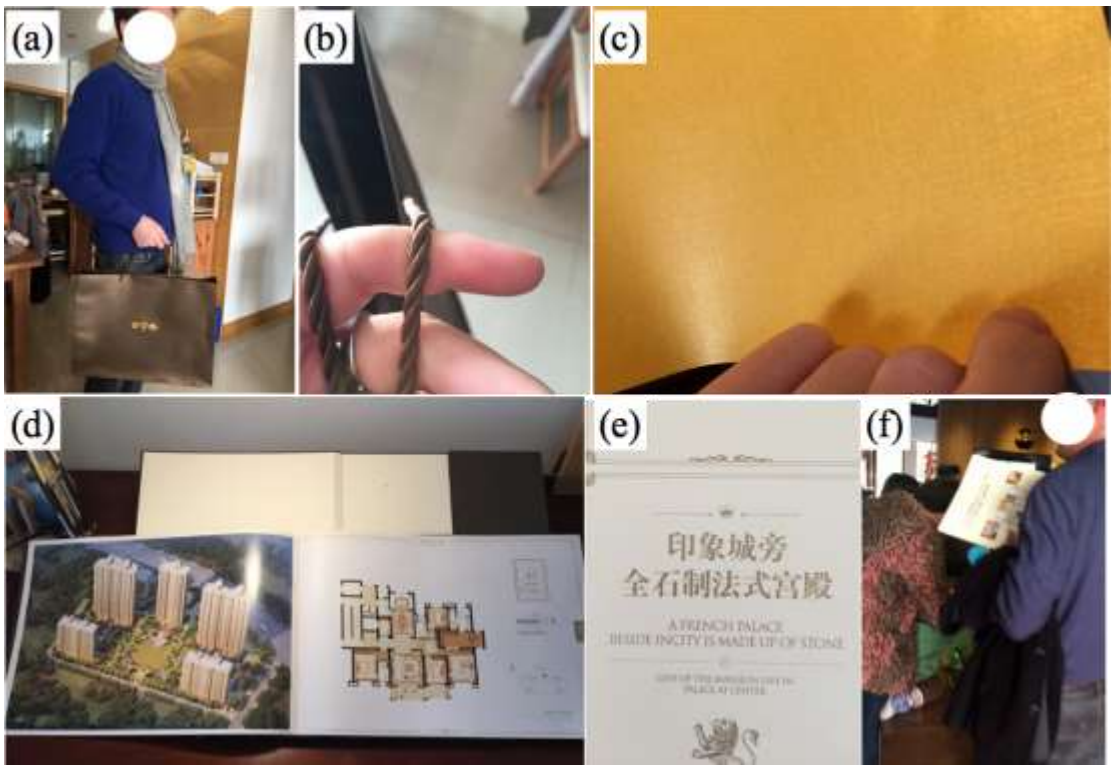

Fig 4. Promotional materials replete with glossy tactile pages and rich colour palettes

Beyond mere supports for linguistic expression of metaphors, our analysis reveals these brochures to be yet more contrived elements whose phenomenal qualities plausibly affect the embodied experiences available inside the showroom, and therefore take part in developing the visitor's affordance space.

Consider, for example, how the brochures were sizeable objects, delivered in premium quality rigid card bags, replete with soft golden velvet rope handles (Figure 5a – b; modelled by the researcher). Recall from embodied cognition that dermal contact

with textured materials is recognized to actively trigger first-order neurons in the tactile system (Pruszynski & Johansson, 2014; cf. Serino & Haggard, 2010). Upon receiving a bag, therefore, the plushness of the velvet handles are phenomenologically experienced in terms of its shape, texture, and heft. As Wilson and Foglia (2017) specify, "fingers capable of grasping objects…" may actively "sort and categorize stimuli" (Wilson & Foglia 2017, n.p). Rather than a conceptual metaphor in the mind cueing the interpretation of stimuli, it is information from the finger-tips that feeds back through afferent channels into the formation of judgments and impressions (Ackerman, Nocera & Bargh, 2010). A commutation test with plastic, paper, lace or cotton handles helps highlight the different associations that various materials can conjure upon mere contact.

Inside these lustrous gift-bags were substantial hardback covered brochures, with glossy tactile pages and rich colour palettes (5c – f). The richly finished high-grade paper and thickly coated pages also lend a certain heft. On closer inspection, some of the pages within this tome reveal a textured or embossed surface (c)—speaking of their own relatively bulky material content—while others present images upon laser-quality glossy photo paper (d). Visitors were handed these visually rich tactile materials on entry and would hold onto them throughout their showroom tour (f).

Qualities such as size, texture and weight are well established as source domains for a rich network of conceptual metaphors that manifest in language. Yu and colleagues (2017) found that IMPORTANCE IS SIZE and IMPORTANCE IS WEIGHT "can be instantiated through concrete images evoked verbally or visually, with metaphorical mappings casted within the structures of conceptual frames composed of specific elements and relations among them" (Yu, Yu & Lee, 2017, p. 246). In this approach, the semantics of the linguistic forms (explicit or implicit) are viewed as an instantiation or activation of metaphorical mappings, which are *casted within* an underlying conceptual frame known as a primary metaphor (following Grady, 1997).

Relevant to the current example of material engagement in the showroom, however, experimental studies have shown how such metaphoric mappings are not only 'evoked verbally or visually', but also cued by sensorimotor stimulation during in the moment experiences of weight, texture and hardness. Ackerman, Nocera and Bargh (2010) report that "touching objects may simultaneously cue the processing of physical sensation and touch-related conceptual processing" (p. 1713). By covertly requiring their participants to actively (and passively) feel objects during tasks, they found

that “heavy objects made job candidates appear more important, rough objects made social interactions appear more difficult, and hard objects increased rigidity in negotiations” (p. 1712).

Thus, the correlations between sensory and conceptual/intersubjective impressions solicited experimentally offer an example of “the dense structural coupling between the supposedly internal and external domains of the human conceptual map” (Malafouris, 2013, p. 99). In the experiments, the sensorimotor experience of weight and texture form an integral part of a cognitive loop ‘crisscrossing’ brain, body and world (Clark, 2011). In CMT terms, this would mean situating the conceptual source domain externally to the body – what Teng (2006) describes as ‘practical ensembles’ (pp.69-71). In extended and enactive terms, such loops and their subsequent embodied experience become enacted over the time course of the showroom visit, with the perceived weight of materials arguably growing and further altering cognition as the immersion endures.

At the end of this tour, visitors now queuing to enter the showroom would perceive their more fortunate counterparts emerging through the golden doors to what we call a ‘whoosh of success’. For at the reception desk of King Plan, money counting machines had been set-up to assist future homeowners (or showroom shills) paying down their deposit with huge volumes of red cash. This whoosh indexes a completed financial transaction, and thereby frames the apartments as a sought-after but dwindling and competitive resource. For anyone familiar with the sound of this machine from other contexts, such as casinos, it may also trigger an emotional response, with the thrills and risks inside the showroom potentially stimulating a release of adrenaline.

To sum up, the regal source domain informing the overall King Plan concept was manifest in features of the deco and in linguistic texts, which explicitly spelled out metaphorical mappings concerning the raw materials (precious and rare), the buildings (magnificent and dignified), and the future home owners (royalty). Addressing the phenomenal qualities of this showroom (RQ1), we shifted focus to the form and transmission of these promotional brochures, finding that their shape, heft, and texture also embodied the metaphorical King Plan concept. Encounters with these qualities were engineered through processes of coupling (RQ2), as visitors could be seen receiving, holding, and carrying their brochures during the showroom tours. We argued that such organism-environment interaction is the location of metaphoricity (RQ3),

citing evidence that incidental haptic sensations pave the way for doubleness – the environment playing an active and causal role in the conceptualisation process.

4. Discussion

The design and decoration of real estate showrooms in China is reminiscent of the multimodal metaphors deployed manipulatively in advertising discourse (Forceville 2008, 2009; Pérez-Sobrino, 2016). But building on a critique of the embodied mind (Malafouris, 2013; Gallagher, 2017), and adopting the dynamic notion of metaphoricity as *doubleness* (Jensen & Cuffari, 2014; cf. Müller, 2008), this paper has argued that impressions, judgements, and associations developed in the showroom were formed through real-time sensorimotor engagement between visitors and the phenomenal qualities of the showroom setting. The environment plays an active role in shaping people's in-the-moment metaphoric experience (Teng, 2006), questioning the need to posit mappings *in* the mind (Gallagher & Lindgren, 2015).

The findings stress that metaphor activation may be determined by a pre-personal affordance space (Gallagher, 2017). In equipping the showroom setting with to-be-phenomenologically-experienced objects and sophisticated affective arrangements, developers have transformed empty warehouses into affordance spaces designed to stimulate desirable and profitable embodied cognitions. In such ecologies, the cognitive process of experiencing one thing in terms of another (or as another) is not cast in a conceptual mapping but "opens up through the dynamic relation between body and world" (Gallagher, 2017, p. 181). Manipulating the environment to scaffold metaphoricity illustrates why "'being situated' does not simply mean… located somewhere", showing instead how "the situation (environmental, technological, cultural, or social) can shape and/or become part of the embodied thinking process" (Malafouris 2013, pp.221-222). A systematic treatment of environments as affordance spaces therefore seems vital to determining whether or not (and to what degree) metaphoricity may be experienced (Müller, 2008).

The findings similarly question the notion of *body* in embodiment. By requiring visitors to couple with their environments (Clark, 1997, 2011), the showroom settings constrain, extend, or otherwise modulate the 'body schema' – "a dynamic, operative performance of the body, rather than a consciousness, image, or conceptual model of

it" (Gallagher, 2005, p. 32; cf. Noë, 2009). Accordingly, it was the walking, balancing, touching, holding, carrying, smelling, hearing, and tasting body that grounded the embodied experience of visitors to the showroom. Given that "different bodies think differently" (Malafouris 2013, p. 222), cognitive experience will be relative not only to a given setting but also to a given body (Gallagher and Lindgren, 2015). This should command attention in metaphor studies to what Müller and Ladewig (2013) identify as "the local, subjective, and interactive processes of experiencing and understanding the body in motion" (p. 300), rather than appealing to a common or generalizable source domain of embodied experience.

Finally, the above assertions must be contextualised within the specificity of our showroom data. We have asked readers to re-perceive and re-cognize the showroom settings, seeing them not merely as *ad hoc* collections of things in a warehouse, but rather as living ecological environments that provide the conditions for emergent experience and cognitive 'doings', including metaphoricity. Methods in addition to those employed here—such as micro-analysis of (multimodal) face-to-face interactions occurring in the showroom setting—would provide a valuable form of additional support to our findings. Furthermore, to what extent our conceptual and theoretical framing of the environment is reproducible with showroom data from other cultural settings and with discourse data from other interactive domains remains to be explored.

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Appendix 1 – King Plan promotional blurb (original Chinese)

全卡拉麦里金石材艺术建筑立面, 打造金石品质豪门
传世豪宅就要有钻石般恒久价值，建筑立面就要全石材干挂铸造！
没有了石头，路易十四的凡尔赛宫无法传世 316 年;失去了石头，卢浮宫无法让世人朝圣 800 年;只有全石材建筑，王室的枫丹白露宫才能耀目 875 年……

金盛.金磐，把近 7 万平方的建筑全用卡拉麦里金石材覆盖立面 为您打造金石品质豪宅！

豪门就是习惯被人仰望，入门的排场势必要皇家般的建制！

金盛.金磐，世袭法式宫廷的序列园林，开创宁波全石材铺装景观的先河，

给您以国宾级的豪门景观礼遇！