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The Effect of Processing Modes and Lighting Types on Shoppers' Engagement in a Store

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The effectiveness of lighting type (holistic vs. focused) was examined in relation to its fit with shoppers' processing mode in attentional scope. Five experiments demonstrated the contingency of lighting effectiveness on a dominant processing mode activated in a given moment and the underlying mechanism for fit effect.

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EXTENDED ABSTRACT

When perceiving physical environments, Westerners tend to use a local processing mode by focusing on foreground objects with a narrowed scope of attention, whereas East Asians tend to see contexts through a global processing mode that includes a broadened scope of attention (Miyamoto, Nisbett, & Masuda, 2006). Patterns of attention associated with cultures exhibit predispositions toward approaching and exploring an environment (Masuda et al. 2008). In stores, shoppers either zoom out to see a whole store (global processing) or focus in on a product for its details (local processing). The type of lighting (holistic vs. focused) guides the shopper's attention toward focusing on gestalt or detail in a store; therefore, lighting can potentially interact with shoppers' processing modes. Despite the potential benefits of enhanced retail store lighting, little is known about how specific lighting decisions influence shoppers' in-store behaviors (Quartier, Vanrie, and Van Cleempoel 2014). This study assesses the influence of focused versus holistic lighting. In this study, we posit that a person is more likely to approach and explore a store when a store environment arranges an attentional scope to match the person's processing style.

Hypothesis 1: Global processors will show a higher intention to spend time in a store with holistic lighting, whereas local processors will show a higher intention to spend time in a store with focused lighting.

We investigate H1 by comparing Westerners (Americans) and Easterners (Koreans) in Study 1. We manipulate a temporary processing mode in Study 2 and Study 3 to confirm the fit effect between processing mode and lighting type on shopping behavior. Of practical significance, we test whether a positive mood can enhance the fit effect. Two different predictions can be proposed, depending on two opposite views of mood effect: fixed view or flexible view. According to the fixed view, positive moods lead people to perceive gestalt by broadening their attention (Gasper & Clore, 2002). Likewise, negative moods lead shoppers to view detail by narrowing their attention. Also, positive moods can override local processing and lead to preferences for holistic lighting. In contrast, according to the flexible view, positive moods empower momentarily dominant attentional focus (Huntsinger et al., 2010). Then, positive moods will confer the local Western processing style and lead to preferences for focused lighting. Adopting the flexible view on positive moods, we hypothesize that the fit effect remains with positive moods (H2). We test H2 with people from Western (American) culture in Study 4 and with people from both Western and Eastern cultures in Study 5.

Hypothesis 2: The fit effect on the enhanced intention to spend time in a store is likely to occur in the positive mood condition.

We conducted five experimental studies using the same lighting stimuli. In a store for digital products, holistic and focused lighting displays were developed. Both a perception study (n = 17) and an

eye-tracking study (n = 33) demonstrated the different attentional scopes between holistic lighting and focused lighting. In Study 1, 236 students (127 Americans and 155 South Koreans) participated. After reporting their moods and shopping orientation, participants were shown a store with holistic or focused lighting and asked to indicate their intention to spend time in the store. Supporting H₁, a culture x lighting interaction ($F [1,278] = 7.97, p = .008$) suggested that Americans prefer focused lighting ($M_{\text{focused}} = 4.51, M_{\text{holistic}} = 3.98, F [1,278] = 4.204, p = .045$) and Koreans prefer holistic lighting ($M_{\text{holistic}} = 4.93, M_{\text{focused}} = 4.35, F [1,278] = 3.96, p = .048$).

In Study 2, we directly manipulated processing mode using Navon letters (Navon, 1977), which consist of large letters composed of small letters. A total of 187 American participants were asked to identify global letters in the global mode condition, local letters in the local mode condition, and both global and local letters in the neutral condition. Supporting H₁, a processing prime x lighting type interaction was significant, $F (1,180) = 5.51, p = .005$. The intention to spend time was higher for the holistic lighting ($M_{\text{holistic}} = 5.86, M_{\text{focused}} = 5.13; F [180] = 5.08, p = .025$) in the global mode condition, and for the focused lighting in the local mode condition ($M_{\text{focused}} = 5.62, M_{\text{holistic}} = 4.85; F [180] = 4.63, p = .033$). There was no difference in the neutral condition ($p = .210$).

Study 3 replicated the fit effect by using a map-viewing task (Friedman et al. 2003) which in turn bolsters or undermines creative generation. In the first two experiments, participants completed visual tasks that forced them to focus perceptual attention on a comparatively broad or narrow visual area. As predicted, broad, compared to narrow initial focusing of perceptual attention subsequently led to generation of more original uses for a brick (Experiment 1). A total of 179 MTurk participants were instructed to look at a map's shape in the global processing condition, the map's details in the local processing condition, or both details and shape in the neutral condition. Then, participants were asked to report their intention to spend time in a store. An interaction was significant: $F (2,170) = 5.15, p = .007$. Participants in the global processing condition preferred the holistic lighting ($M_{\text{focused}} = 4.36, M_{\text{holistic}} = 5.01; F [1,170] = 3.88, p = .051$), whereas participants in the local processing condition preferred the focused lighting ($M_{\text{focused}} = 4.55, M_{\text{holistic}} = 3.87; F [1,170] = 6.53, p = .012$). Participants in the neutral condition showed no difference ($p = .995$). The variations in attention from culture (Study 1) and temporary priming in Study 2 and Study 3 support H1, suggesting processing fit as a driver of shoppers' intentions to spend time in a store.

In Study 4, a total of 141 American students listened to Mozart's *Eine kleine Nachtmusik* (positive mood induction) or Mahler's *Adagio* (negative mood induction). Supporting H2, there was a significant mood x lighting interaction: $F (1,133) = 9.80, p = .002$. Positive mood enhanced local processors' approach intention toward the focused lighting store ($M_{\text{focused}} = 5.34, M_{\text{holistic}} = 4.57, F [1,133] = 5.19, p = .024$), whereas negative mood induced the opposite results ($M_{\text{holistic}} = 5.26, M_{\text{focused}} = 4.44, F [1,133] = 4.38, p = .038$).

Study 5 replicated Study 4 using both North Americans (n = 69) and East Asians (n = 96). A significant three-way interaction ($F [1,153] = 7.42, p = .007$) indicated that positive moods drove prefer-

ence for lighting type aligned with the culturally dominant processing mode. Americans in positive moods preferred focused lighting ($M_{\text{focused}} = 5.75$, $M_{\text{holistic}} = 4.77$, $F [1,157] = 6.94$, $p = .009$), whereas Koreans in positive moods preferred holistic lighting ($M_{\text{focused}} = 4.53$, $M_{\text{holistic}} = 5.34$, $F [1,157] = 8.06$, $p = .005$).

Our research points out that the attentional scope shaped by lighting type influences the ways people engage in a store. The fit in lighting type and processing style facilitates engagement in a store as shoppers more attentively process information aligned with their processing style in a given moment.

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