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Can the surface material of a display table prompt context effects on shoppers' product evaluations? If so, how might the direction of such effects be influenced by people's use of different modes of cognition—namely, holistic versus analytic cognition? The authors theorize and find that people's use of holistic cognition, as prompted by an interdependent self-view, produces an assimilation effect. Product evaluations are assimilated with associations with the table surface. However, people who rely on analytic processing, as prompted by an independent self-view, elicit a contrast effect in which evaluations are negatively related to such associations.

*Keywords:* context effects, self-view, display fixture

## The Influence of Self-View on Context Effects: How Display Fixtures Can Affect Product Evaluations

In most stores, consumers view products on display fixtures that are presumed to be of little consequence. However, suppose that the consumer were shopping for a set of trendy new coffee mugs and noticed some on a nearby table or shelf. Might his or her evaluation of the trendiness of the mugs be subject to context effects arising from the display fixture's surface material, such as the sheath of glass or wood beneath the product? There is reason to believe so.

Several accounts have been offered to explain context effects (e.g., the feature-matching model [Herr 1986], the comparison relevance model [Stapel, Koomen, and Velthuisen 1998], the inclusion–exclusion model [Schwarz and Bless 1992]), but the prevailing view is that context effects can occur at two stages of the evaluation process (Schwarz and Bless 2006). In some instances, a concept that is activated by contextual data (e.g., perhaps the concept of trendiness elicited by a glass display fixture) is used at the encoding stage to help a person interpret and construct a mental representation of the target (e.g., the mugs). In such cases, this concept is typically included in the person's representation of the target, and an assimilation effect occurs as target product evaluations are positively related to the

implications of the contextual data. At other times, however, the same concept may be evoked and used at a subsequent stage, when the person forms a judgment of the target product. Here, the concept may serve as a comparison standard against which the target is judged. Because the concept that embodies the standard is often fairly extreme, in general, this comparison process produces a contrast effect, and target product evaluations are negatively related to the implications of the contextual data.

What determines how people use the contextually activated concept? Most research exploring this question has focused on how characteristics of the contextual data can influence the direction of the context effects (e.g., Herr 1986; Stapel, Koomen, and Velthuisen 1998). For example, research has found that when the concept activated by the contextual data possesses moderate implications (e.g., a concept, such as unruly) or is nondistinct (e.g., a general trait, such as unkind), its lack of well-defined boundaries causes it to be included in the representation of the target, producing an assimilation effect during encoding. However, when the concept is extreme (e.g., evil) or represents a distinct exemplar (e.g., Hitler), its clear-cut boundaries not only deter such inclusion but often promote its use as a comparison standard during the judgment stage, which typically results in a contrast effect (Herr 1986; Stapel, Koomen, and Velthuisen 1998).

The preceding findings are important because they suggest that factors that blur versus delineate the boundaries of contextually activated concepts promote assimilation versus contrast effects, respectively. Nevertheless, extant research

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has not considered whether far more fundamental factors, such as the nature of the cognition that people use, also shape the direction of context effects. Moreover, although most previous work has bolstered its internal validity by employing sterile, carefully worded verbal representations of the contextual data and targets, such procedures have come at a cost. Their artificiality raises questions about the applicability of the context effect findings in real marketing settings, in which physically present and decidedly tangible contextual and target goods typically dominate.

With these issues in mind, this research focuses on an important theoretical and practical issue that has been ignored in the context effects literature: whether and how the mode of cognition that people use can affect the likelihood and direction of context effects that may emerge when a product is viewed on a display table with a surface composed of, for example, glass, which seemingly implies trendiness and manufacturing, versus wood, which connotes tradition and naturalness. Specifically, we examine how holistic versus analytic cognition, as induced by a person's interdependent versus independent self-view mindset, can affect context effects. We explore this issue using a setting and procedures that are both fairly realistic and actionable (e.g., people's mode of cognition is varied through a mind-set task or depictions on nearby signage).

We begin by discussing these two modes of cognition and the kinds of context effects they are likely to foster (i.e., assimilation or contrast effects). Then, we apply such theorizing to the product display table issue and test our predictions in one lab and one field experiment.

### THEORETICAL BACKGROUND

Self-construal theory holds that people possess multiple views about how the self relates to others and the environment (Markus and Kitayama 1991). Furthermore, even if one self-view is chronically accessible, people can be induced to activate a different self-view temporarily (Singelis 1994). People known as interdependents activate predominantly interdependent self-knowledge such that the self is viewed as fundamentally connected to and a continuous part of both others and the context. In contrast, those known as independents activate an independent self-view and perceive the self as a unique and autonomous entity with distinct boundaries that distinguish it from the social and natural background (Markus and Kitayama 1991). Accordingly, research has shown that when asked to describe themselves, interdependents generate more responses that refer to other people and/or fluidly mutate across situations, whereas independents report more stable personal traits (Ip and Bond 1995; Markus and Kitayama 1991).

Of particular relevance to our inquiry, however, is the contention that these alternative ways of thinking about the self affect people's cognition more generally (Nisbett et al. 2001; Van Baaren et al. 2003). Interdependents' emphasis on the inseparability of objects (e.g., the self, others) and their settings appears to broaden, prompting general holistic processing (Nisbett 2003). Conversely, independents, who view the self as an isolated entity that is distinct from the social and natural background, generalize their context-independent manner of thinking. Thus, they engage in ana-

lytic cognition, treating objects or items of any type as well-bounded, self-contained units of data (Nisbett 2003).

It seems plausible that each of these two modes of cognition outlined by self-construal theory could influence the context effects that may occur on people's evaluations of a target product when it is viewed on a display table made of different surface materials. In support of this possibility, extant research suggests that people often learn or develop shared associations with objects (e.g., surface materials) as a result of their experience with or common observations of them (Peracchio and Meyers-Levy 2005; Scott 1994). Thus, it would seem that most people are likely to associate glass with the concepts of modernity and artificiality, given that glass is a dominant material in modern buildings or decor, and it is known to be commonly manufactured using mechanization. In contrast, wood is likely to be associated with the concepts of tradition and naturalness because of its time-honored use in construction (e.g., log cabins, clapboard-sided colonials) and its natural origins. Thus, to the extent that these concepts are associated with and activated by the glass or wood surface of a display table and product viewers use a mode of cognition that either blurs or accentuates the boundaries between these activated concepts and the target product, alternative context effects may arise.

Holistic cognition, as used by people with an interdependent self-view, involves blurring or minimizing the boundaries among separate pieces of data, so that such data are perceived as continuous parts of a larger integrated unit. This implies that interdependents, who are more prone to employ holistic cognition, are likely to exhibit an assimilation effect on their product evaluations. Accordingly, the concepts elicited by the contextual table's wood or glass surface are likely to be assimilated with perceptions of the product. In contrast, analytic cognition, as used by people with an independent self-view, entails treating individual pieces of data as separate and fairly autonomous elements. Although analytic processors might be expected to use the contextual data in a different way than holistic processors, two viable approaches seem possible. First, if each piece of data is regarded as a separate entity such that any and all relationships between the pieces of data are minimized or ignored, context effects might be entirely absent. That is, people may encode the table surface and the target product as completely independent elements and thus assess the product in isolation of the table. This should result in no context effects. Second, although analytic processors may perceive all pieces of data as separate entities, they may be inclined to attend to the distinctiveness of each self-contained unit's properties. This would require comparing these properties with those of another or with a convenient standard (Malaviya, Kisielius, and Sternthal 1996). If so, information that is highly accessible might be used as a plausible standard with which the target data are compared, resulting in a contrast effect. If we apply this logic to the focal issue, concepts activated by the table's surface may be used as a comparison standard against which the target product is judged, prompting a contrast effect.

To shed light on which of these processes is likely to occur, we examined self-construal theory and research on independents' use of analytic cognition. According to this research, such people treat each element of data as a

bounded, self-contained unit of analysis, but they also are likely to seek “to understand what an object’s *distinctive* properties” are in relation to others (Nisbett 2003, p. 19, emphasis in original). As Markus and Kitayama (1991, p. 226) note, among independents, a bounded target entity may be “set contrastively both against other such wholes and against a ... natural background.” Thus, “others, or the ... situation in general, are important, but primarily as standards of reflected appraisal” or comparison (Markus and Kitayama 1991, p. 226). This implies that independents who use analytic processing should be likely to exhibit a contrast effect. Although they may be immune to contextual influence at encoding, during the judgment phase, associations with the context (i.e., the glass or wood table surface) are likely to be employed as a contrastive standard of comparison, producing a contrast effect.<sup>1</sup>

Still, although the preceding propositions seem reasonable, might outcomes be qualified at times by the nature of the target product assessed? The predictions we developed are likely to ensue if the target product is ambiguous or neutral on the concepts evoked by the table surface (i.e., modernity and naturalness). However, what if the product possesses fairly extreme associations pertaining to these concepts? Here, the context effects may not be observed, because perceptions of the target product may not be sufficiently flexible for the contextual associations to exert any effect. Thus, if both neutral and extreme products are assessed, a three-way interaction should occur involving people’s mode of cognition, table surface, and product type. Formally, we predict the following:

H<sub>1</sub>: Because interdependents should rely on holistic processing, an assimilation effect should emerge, such that they will evaluate a neutral product as more modern and/or less natural when it is displayed on a glass table than when it is displayed on a wood table. However, because independents employ analytic cognition, a contrast effect should emerge, such that they will view the product as more modern and/or less natural when it is displayed on a wood table than when it is displayed on a glass table.

H<sub>2</sub>: These effects will be absent if the product itself is unambiguously extreme (i.e., either high or low) on the evaluative dimensions in question (i.e., modernity and/or naturalness).

Experiment 1 tests H<sub>1</sub> with a target product that is neutral on the two focal dimensions elicited by a display table (i.e., modernity and naturalness). Furthermore, it examines not only participants’ evaluations but also their product thoughts and choice-related input about issues that are rather distally related to the target product. Experiment 2 is

<sup>1</sup>A few social psychology studies have considered a topic seemingly related to such context effects—namely, the influence of people’s self-view on social comparison (Kühnen and Haberstroh 2004; Kühnen and Hannover 2000). These studies have activated a person’s self-view and then probed his or her perceived similarity to another known person. Therein lies the disparity: Given the obvious semantic linkage between the content of a person’s self-view (i.e., the representation of the self in relation to others) and the assessed object (i.e., the perceived similarity of the self and another person), any effects observed could be attributed to the nearly complete overlap between the semantic content of these two constructs (i.e., both are related to the perceived linkage between the self and another person). Thus, these studies are silent about the broader issue that interests us: whether the mode of cognition fostered by a person’s self-view (i.e., not merely the activation of a person’s self-view per se) can shape the direction of context effects.

a field study designed to extend this. It conceptually replicates the findings in a real retail setting in which people’s holistic versus analytic processing is induced through decidedly actionable means. Experiment 2 also tests H<sub>2</sub> by investigating target products that are neutral versus extreme on the focal dimensions, and it assesses the influence of two tabletop materials.

### PRETESTS FOR EXPERIMENT 1

Experiment 1 varied the mode of cognition participants would use and assessed their evaluations of a target product that was neutral on the contextually activated dimensions (i.e., modernity and naturalness) and viewed on a glass or wood table. To accomplish this, two pretests were necessary. The first pretest examined whether people’s associations with glass and wood would vary as we expected on the proposed dimensions.

In line with extant theory about how associations with items are learned (Peracchio and Meyers-Levy 2005; Scott 1994), we reasoned that glass would be associated with both modernity (e.g., trendiness) and artificiality but that wood would be associated with opposite concepts, namely, tradition and naturalness. Thus, in the first pretest, 34 participants visually examined one of two comparable tables (e.g., similar size, shape) that featured either a glass or a wood tabletop. Then, they evaluated the table on six items (1 = “not at all,” and 7 = “extremely”). We averaged three items—trendy, modern, and urban—to produce a trendiness index ( $\alpha = .77$ ). We averaged the others—natural, organic, and artificial (last item was reverse coded)—to form a naturalness index ( $\alpha = .80$ ).

A one-way analysis of variance (ANOVA) (table surface: wood versus glass) revealed a main effect on both the trendiness ( $F(1, 32) = 31.34, p < .001$ ) and the naturalness ( $F(1, 32) = 48.39, p < .001$ ) indexes. Participants perceived the glass table as more trendy than the wood table ( $M_{\text{glass}} = 4.67, M_{\text{wood}} = 3.00$ ), but they regarded the wood table as more natural than the glass table ( $M_{\text{wood}} = 4.93, M_{\text{glass}} = 2.98$ ). Thus, the two tables appeared to evoke the anticipated opposing types of associations.

The second pretest attempted to identify a product that was neutral rather than extreme on the modernity and naturalness dimensions. We tested three products. One was a glass candleholder that, because of its composition material, appeared to be both trendy and manufactured. A second product, a bamboo picture frame, appeared to be traditional and natural for the same reason. The third product, a celadon green mug with gold trim and a subtle cracked ceramic design, appeared to be neutral on both dimensions. To confirm these product characterizations, 25 participants visually examined and evaluated the products on the same six items used in the first pretest (alphas ranged from .69 to .86 for the products). Each product was viewed by itself on a table covered with a white cotton tablecloth, and product order was rotated.

Evaluations of the products supported our expectations. A one-way ANOVA (type of product: candleholder, mug, picture frame) revealed a main effect of product type on both the trendiness ( $M_{\text{candleholder}} = 4.84, M_{\text{mug}} = 4.05, M_{\text{picture frame}} = 2.59; F(2, 23) = 25.70, p < .001$ ) and the naturalness ( $M_{\text{candleholder}} = 2.48, M_{\text{mug}} = 4.00, M_{\text{picture frame}} = 4.85; F(2, 23) = 60.73, p < .001$ ) indexes. The mug was

viewed as less trendy than the candleholder ( $F(1, 24) = 7.57, p < .05$ ) but more trendy than the picture frame ( $F(1, 24) = 15.45, p < .001$ ). In addition, it was regarded as less natural than the picture frame ( $F(1, 24) = 10.40, p < .01$ ) but more natural than the candleholder ( $F(1, 24) = 29.98, p < .001$ ). Thus, whereas the candleholder and the picture frame were extreme in trendiness and naturalness (i.e., low and high, and high and low, respectively), the mug was neutral on both dimensions.

### EXPERIMENT 1

#### Stimuli and Procedure

A total of 47 participants took part in this study in small groups. Each was given a clipboard with attached survey materials and stationed near a small display table. Participants were informed that the study would examine their views about a product and a new home decor store that would be opening soon locally.

To begin, we administered a warm-up exercise. This was actually a self-view mind-set task that prompted holistic or analytic processing (see Trafimow, Triandis, and Goto 1991). To induce holistic processing, half the participants completed an interdependent mind-set task. Specifically, they were asked to write a paragraph describing a particularly meaningful event, occasion, or activity they took part in with their family and/or friends and were instructed to explain why doing so with these parties made the episode especially meaningful. The remaining participants performed an independent mind-set task that evoked analytic processing. They were asked to write a paragraph about a comparable episode, but one that they engaged in entirely by themselves, and to explain why doing so alone was meaningful.

Next, participants were asked to view the target product, a mug, that the new store would carry. It was displayed on either a glass or a wood table. Participants evaluated the mug on the same trendiness and naturalness items used in the pretests to gauge the two dimensions. The items that captured each dimension were interspersed, and they produced reliable indexes of the product's trendiness and naturalness ( $\alpha = .70$  and  $.83$ ). In addition, participants were asked to list their thoughts about the product. Two independent, naive coders classified thought content reliably ( $\alpha = .81$ ) for the quantities that implied trendiness (e.g., "modern design, but not durable"; "the mug was pretty cool and innovative") and naturalness (e.g., "the mug looks kind of rustic and reminds me of an older person"; "old-fashioned, looks like homemade").

Then, all display materials were removed from view, and participants focused on some other questions pertaining to the soon-to-open home decor store. To help choose a name for the store, participants assessed the appropriateness of six potential names (1 = "not at all," and 7 = "very much"). According to the results of a focus group, three of the names were suggestive of trendiness: Current, Vogue, and Silhouette. The other three connoted naturalness: Elements, Beginnings, and Simplicity. We averaged the responses to these sets of trendy and natural names to create two separate indexes ( $\alpha = .70$  and  $.72$ ). Then, to assist in choosing a gift basket that the store would give away to its first 50 customers, participants viewed photos of two options and assessed how appropriate they were (1 = "not at all," and

7 = "very much"). The order of the photos was rotated. The focus group results indicated that one possible gift, a large silver bowl filled with shiny new kitchen utensils and wares (e.g., a spatula, pepper mill, colorful pot holder), displayed a trendy appearance. The other option, a wicker basket filled with nuts, fruit, and muffins, exuded a natural appearance. The study ended with some demographic questions.

#### Results

All ANOVAs included self-view (interdependent or independent) as a between-subjects factor. For thoughts, the only other factor was table surface (glass or wood), which we varied between subjects. For all other measures, we included two additional factors: table surface and a within-subject trendiness or naturalness factor, which bore a label that varied depending on the dependent measure. For product evaluations, it was labeled as "evaluative dimension"; for store name appraisals, it was labeled as "store name connotations"; and for gift basket assessments, it was labeled as "basket appearance." Thus, except for thoughts, we conducted all analyses on a 2 (self-view)  $\times$  2 (table surface)  $\times$  2 (variably labeled; e.g., evaluative dimension) factorial. Degrees of freedom were 1 and 43. Treatment means appear in Table 1.

*Product evaluations and thoughts.* A three-way interaction among self-view, table surface, and evaluative dimension emerged on participants' product evaluations ( $F = 18.32, p < .001$ ). The two-way interaction between self-view and table surface was significant on both the trendiness ( $F = 16.89, p < .001$ ) and the naturalness ( $F = 7.07, p < .02$ ) evaluative dimensions. Furthermore, we obtained

Table 1  
EXPERIMENT 1: TREATMENT MEANS AND STANDARD DEVIATIONS

|                              | <i>Interdependents</i>        |                               | <i>Independents</i>           |                               |
|------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
|                              | <i>Glass</i>                  | <i>Wood</i>                   | <i>Glass</i>                  | <i>Wood</i>                   |
| <i>Product Evaluations</i>   |                               |                               |                               |                               |
| Trendiness                   | 4.53 <sup>a</sup><br>(1.37)   | 2.55 <sup>b</sup><br>(.97)    | 3.36 <sup>b</sup><br>(1.14)   | 4.47 <sup>a</sup><br>(1.57)   |
| Naturalness                  | 3.33 <sup>a</sup><br>(1.41)   | 4.42 <sup>b</sup><br>(1.70)   | 4.08 <sup>a,b</sup><br>(1.16) | 3.11 <sup>a</sup><br>(.96)    |
| <i>Thoughts</i>              |                               |                               |                               |                               |
| Trendiness related           | 1.58 <sup>a</sup><br>(1.44)   | .00 <sup>b</sup><br>(.00)     | .25 <sup>b</sup><br>(.45)     | 1.17 <sup>a</sup><br>(1.58)   |
| Naturalness related          | .75 <sup>a</sup><br>(.75)     | 1.64 <sup>b</sup><br>(1.36)   | 1.50 <sup>a,b</sup><br>(.80)  | .67 <sup>a</sup><br>(1.23)    |
| <i>Store Name</i>            |                               |                               |                               |                               |
| Trendiness connotations      | 3.61 <sup>a</sup><br>(.91)    | 2.67 <sup>b,c</sup><br>(1.24) | 2.36 <sup>b</sup><br>(.98)    | 3.47 <sup>a,c</sup><br>(1.02) |
| Naturalness connotations     | 3.94 <sup>a,c</sup><br>(1.43) | 5.03 <sup>b</sup><br>(1.06)   | 4.83 <sup>a,b</sup><br>(1.08) | 3.83 <sup>c</sup><br>(1.24)   |
| <i>Gift Basket Options</i>   |                               |                               |                               |                               |
| Trendiness associations      | 3.33 <sup>a</sup><br>(1.30)   | 2.18 <sup>b,c</sup><br>(1.08) | 2.42 <sup>a,c</sup><br>(1.17) | 3.42 <sup>a</sup><br>(1.51)   |
| Naturalness associations     | 3.92 <sup>a,b</sup><br>(1.31) | 4.82 <sup>a</sup><br>(1.25)   | 4.58 <sup>a,b</sup><br>(1.51) | 3.42 <sup>b</sup><br>(1.83)   |
| <i>Number of Respondents</i> | 12                            | 11                            | 12                            | 12                            |

Notes: Means within the same row that do not share a common superscript differ at  $p < .05$ .

two-way interactions between self-view and table surface on the number of thoughts pertaining to trendiness ( $F = 14.92, p < .001$ ) and on those related to naturalness ( $F = 7.70, p < .01$ ).

Planned contrasts on each of these measures upheld our theorizing: Interdependents, who engage in holistic cognition, exhibited assimilation effects, and independents, who employ analytic cognition, displayed contrast effects. Specifically, interdependents evaluated the mug as more trendy ( $F = 13.57, p < .001$ ) and generated more thoughts about its trendiness ( $F = 11.71, p < .001$ ) when it was viewed on a glass table than when it was viewed on a wood table. Similarly, they evaluated the mug as more natural ( $F = 3.87, p < .05$ ) and generated more thoughts about its naturalness ( $F = 4.00, p < .05$ ) when it was viewed on a wood table than when it was viewed on a glass table. However, such outcomes reversed and transformed into contrast effects for independents. That is, independents evaluated the mug as more trendy ( $F = 4.46, p < .05$ ) and generated more thoughts about its trendiness ( $F = 4.10, p < .05$ ) when it appeared on a wood table than when it appeared on a glass table. They also evaluated the mug as somewhat more natural ( $F = 3.21, p < .08$ ) and offered more thoughts about its naturalness ( $F = 3.70, p < .06$ ) when it was on a glass table than when it was on a wood table.

*Store name and gift basket options.* The context effects we observed for people's evaluations of the target product also seem to carry over and affect their views about the store in which the product would be sold, even though such input was rendered when the table and product were out of sight. An ANOVA revealed a three-way interaction among self-view, table surface, and store name connotations on participants' appraisals of the store names ( $F = 17.72, p < .01$ ), and we obtained a similar interaction among self-view, table surface, and basket associations on their gift basket assessments ( $F = 11.17, p < .01$ ). Follow-up analysis indicated that for store name appraisals, the two-way interaction of the first two factors was significant for both the store names that connoted trendiness ( $F = 11.49, p < .01$ ) and those that connoted naturalness ( $F = 8.63, p < .01$ ). For gift basket assessments, the same interaction emerged for the baskets that appeared trendy ( $F = 8.33, p < .01$ ) and for those that appeared natural ( $F = 5.60, p < .03$ ).

Planned contrasts on each of these measures supported our expectation that interdependents (independents), who engage in holistic (analytic) cognition, would exhibit an assimilation (contrast) effect. Specifically, interdependents perceived the trendy-connoting store names ( $F = 4.75, p < .05$ ) and the trendy-looking gift basket ( $F = 4.67, p < .05$ ) as more befitting of the store when the mug was viewed on a glass table than when it was viewed on a wood table. Also exhibiting assimilation effects, interdependents perceived the store names that connoted naturalness ( $F = 4.57, p < .05$ ) as more befitting of the store when the mug was viewed on a wood table than when it was viewed on a glass table. The natural-looking gift basket showed a directionally similar effect, though it did not reach significance ( $F = 2.90, p < .10$ ). Conversely, independents revealed contrast effects. They perceived the trendy-connoting store names ( $F = 6.87, p < .02$ ) and, marginally, the trendy-looking gift basket ( $F = 3.68, p < .07$ ) as more befitting of the store when the mug was viewed on a wood table than when it

was viewed on a glass table. Similarly, independents perceived the store names that connoted naturalness ( $F = 4.06, p < .05$ ) and the gift basket that appeared natural ( $F = 3.63, p < .06$ ) as more befitting of the store when the mug appeared on a glass table than when it appeared on a wood table.

### Discussion

Experiment 1 examined how people's use of holistic versus analytic modes of cognition affected the direction of context effects on their evaluations of a neutral product displayed on either a glass or a wood table. Specifically, when people adopted an interdependent self-view, they processed the displayed items (i.e., the product and table) holistically as a single unit. Thus, they assimilated their associations with the table with their mental representation of the product. Conversely, those who assumed an independent self-view processed the items analytically, perceiving each item as a separate entity. Yet because these participants also placed substantial value on an entity's distinctiveness or uniqueness, they used their associations with the context (i.e., the table) as a relevant standard for assessing the target product's properties, and this comparison resulted in a contrast effect. Furthermore, such effects emerged on people's target product evaluations and their thoughts about the item's trendiness and naturalness. Likewise, these effects occurred on people's appraisals of the store name and gift basket choices that were distally related to the product and rendered in the absence of any display materials.

In summary, the findings are important because they shed light on whether these well-known modes of processing evoke different context effects. Furthermore, our findings offer implications for a crucial applied issue. They indicate that the surface material of a store display structure that holds a product can influence consumers' perceptions of that product, but the mode of cognition that consumers use determines how such perceptions are altered.

Nevertheless, our findings could be augmented further. Experiment 1 did not assess our prediction (e.g.,  $H_2$ ) that the observed context effects should be limited to situations in which the target product possesses neutral rather than extreme associations on the contextually elicited dimensions (i.e., trendiness and naturalness). In addition, the applied implications of our work would be bolstered further if our predictions were upheld in a field study that used even more actionable means to vary people's mode of cognition and if we examined the contextual influence of alternative table surface materials. Experiment 2 addresses both points.

## EXPERIMENT 2

### Stimuli

Experiment 2 was similar to Experiment 1, but it was conducted in an alcove of a retail area within a student union. Shoppers were recruited by asking them to provide input about some products. To manipulate participants' self-view, we contracted a graphic artist to create three large posters that expressed either an interdependent or an independent self-view or mind-set. To exemplify, one poster that conveyed an interdependent self-view invited viewers

to "Treat Those Who Are Special to You with a Gift That Creates Memories." It displayed an open photo album filled with pictures of family and friends at special events. The counterpart poster that conveyed an independent self-view encouraged viewers to "Treat Yourself to Something That You Alone Have Been Longing for." It showed a person thinking about travel (e.g., depicted by an airplane), leisure activities (e.g., musical notes near a hammock hung on palm trees), and fine dining (e.g., a wine bottle and glass). Sample posters appear in the Appendix.

A pretest assessed whether each group of three posters activated the intended alternative self-views. Thirty-four undergraduate students viewed one of the alternative groups of posters and then responded to separate sets of three questions on a seven-point scale (1 = "not at all," and 7 = "a lot") that probed whether the posters prompted thoughts either about oneself as well as family and friends or just about oneself (Aaker and Lee 2001). We averaged the questions about self-cognitions to form a self-thoughts index ( $\alpha = .87$ ). We averaged those about both self and others to form an others-thoughts index ( $\alpha = .85$ ). As we expected, participants who viewed the posters intended to prompt an independent (versus interdependent) self-view produced higher ratings on the self-thoughts index ( $M_{\text{independent}} = 5.00$ ,  $M_{\text{interdependent}} = 2.35$ ;  $F(1, 32) = 87.61$ ,  $p < .001$ ) but lower ratings on the others-thoughts index ( $M_{\text{independent}} = 2.11$ ,  $M_{\text{interdependent}} = 4.92$ ;  $F(1, 32) = 190.12$ ,  $p < .001$ ).

In addition, to assess whether display materials other than glass and wood would produce context effects, we displayed all the products on a table covered with a cloth made of either a silver metallic fabric or a coarse brown burlap. Using the same procedure and measures employed previously to assess associations with glass and wood, we asked 22 participants to view one of the two tablecloths and to evaluate it on the six trendiness and naturalness items. We averaged these items to form separate trendiness ( $\alpha = .80$ ) and naturalness ( $\alpha = .78$ ) indexes. One-way ANOVAs on the two types of tablecloths (metallic and burlap) revealed a main effect on both indexes (trendiness:  $F(1, 20) = 14.64$ ,  $p < .001$ ; naturalness:  $F(1, 20) = 8.00$ ,  $p < .01$ ). As we expected, the metallic tablecloth was perceived as more trendy than the burlap one ( $M_{\text{metallic}} = 4.33$ ,  $M_{\text{burlap}} = 2.70$ ), but the burlap tablecloth was viewed as more natural than the metallic one ( $M_{\text{burlap}} = 4.57$ ,  $M_{\text{metallic}} = 3.28$ ). Thus, the two tablecloths evoked the intended opposing types of associations.

The products used in this study included the same neutral mug from Experiment 1 plus two products that the pretest for Experiment 1 identified as extreme on the focal dimensions. The latter items were a glass candleholder that was trendy but low in naturalness and a bamboo picture frame that was natural but low in trendiness. Thus, in accordance with  $H_1$ , we expected to observe an interaction among self-view, tablecloth type, and evaluative dimension on responses pertaining to the neutral mug, but not on those pertaining to the two extreme products.

#### Procedure

A total of 120 shoppers participated in the study. As many as 5 participants completed the study at the same time, and each group was assigned randomly to treatments. Participants were positioned around three sides of a display

table that was covered with either a metallic or a burlap tablecloth. The fourth side of the table was against a wall, on which hung three salient posters that fostered either an interdependent or an independent self-view. The alternative sets of posters were changed at the beginning of each day, and the tablecloths were varied in the middle of each day. Furthermore, because the study was conducted in an alcove in the student union, the preceding materials were largely hidden from the view of passersby.

To begin, participants were shown three target products separately. Each was set on the cloth-covered table in a counterbalanced order. For each product, participants completed two tasks in an order that was rotated. One was an evaluation task in which participants were given the same six items used previously; for each, they were asked to circle the number that best reflected their feelings about the product on display. We averaged the two sets of three items to create a trendiness and a naturalness index for each product (alphas ranged from .62 to .81). The other task involved making actual choices. Participants were told that the product on display was a private-label good that would be sold only in a new local gift store. They were asked to choose which of two possible brand names for the good seemed preferable. In accordance with focus group results, one proposed name was always associated with the concept of trendiness, and the other implied naturalness. The choices (name order was rotated) were Elegance and Earthborn for the mug, Eloquence and EcoSystem for the candleholder, and Tuned In and Terrain for the picture frame.

#### Results

*Product evaluations.* We analyzed product evaluations as a 2 (self-view: interdependence versus independence)  $\times$  2 (tablecloth type: metallic versus burlap)  $\times$  2 (evaluative dimension: trendiness versus naturalness)  $\times$  3 (type of product: extremely low versus neutral versus extremely high) factorial. The first two factors were varied between subjects, and the last two were varied within subjects. An interaction involving all four factors emerged on participants' product evaluations ( $F(2, 115) = 7.80$ ,  $p < .001$ ). Thus, we examined the evaluations of each product separately. Treatment means appear in Table 2.

Evaluations of the neutral mug revealed an interaction among self-view, tablecloth type, and evaluative dimension ( $F(1, 116) = 18.47$ ,  $p < .001$ ). The interaction between self-view and tablecloth type was significant on both the trendiness ( $F(1, 116) = 13.40$ ,  $p < .001$ ) and the naturalness ( $F(1, 116) = 10.73$ ,  $p < .001$ ) dimensions. Furthermore, planned contrasts conceptually replicated our previous findings. Participants who viewed the interdependent self-view signage exhibited an assimilation effect, whereas those who saw the independent self-view signage displayed a contrast effect. Specifically, participants exposed to the interdependent posters evaluated the mug as more trendy when it was displayed on a metallic tablecloth than when it was displayed on a burlap tablecloth ( $F(1, 116) = 9.53$ ,  $p < .01$ ), but they evaluated the mug as more natural when it was presented on a burlap tablecloth than when it was presented on a metallic tablecloth ( $F(1, 116) = 5.89$ ,  $p < .02$ ). In contrast, participants who saw the independent self-view posters revealed the opposite pattern. They evaluated the mug as more trendy when it was on a burlap tablecloth than

Table 2  
EXPERIMENT 2: TREATMENT MEANS AND STANDARD  
DEVIATIONS

|  | <i>Interdependents</i>      |                             | <i>Independents</i>         |                             |
|--|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
|  | <i>Burlap</i>               | <i>Metallic</i>             | <i>Burlap</i>               | <i>Metallic</i>             |
| <i>Product Evaluations</i>   |                             |                             |                             |                             |
| Mug: trendiness  | 3.54 <sup>a</sup><br>(1.67) | 4.59 <sup>b</sup><br>(1.08) | 4.46 <sup>b</sup><br>(1.25) | 3.74 <sup>a</sup><br>(1.22) |
| Mug: naturalness   | 4.32 <sup>a</sup><br>(1.28) | 3.44 <sup>b</sup><br>(1.31) | 3.38 <sup>b</sup><br>(1.54) | 4.18 <sup>a</sup><br>(1.48) |
| Glass candleholder:<br>trendiness  | 4.99 <sup>a</sup><br>(.86)  | 4.95 <sup>a</sup><br>(1.12) | 5.03 <sup>a</sup><br>(.93)  | 5.00 <sup>a</sup><br>(1.01) |
| Glass candleholder:<br>naturalness   | 2.86 <sup>a</sup><br>(1.03) | 2.82 <sup>a</sup><br>(1.13) | 2.61 <sup>a</sup><br>(.87)  | 2.62 <sup>a</sup><br>(.93)  |
| Bamboo picture frame:<br>trendiness  | 3.21 <sup>a</sup><br>(1.26) | 3.45 <sup>a</sup><br>(1.37) | 3.08 <sup>a</sup><br>(1.30) | 2.98 <sup>a</sup><br>(1.24) |
| Bamboo picture frame:<br>naturalness   | 5.34 <sup>a</sup><br>(1.17) | 5.12 <sup>a</sup><br>(1.06) | 5.27 <sup>a</sup><br>(1.02) | 5.07 <sup>a</sup><br>(.94)  |
| <i>Choice of Brand Name</i>  |                             |                             |                             |                             |
| Mug: % of people<br>choosing natural<br>(versus trendy) name                     | 83<br>(17)                  | 32<br>(68)                  | 33<br>(67)                  | 90<br>(10)                  |
| Glass candleholder: %<br>of people choosing<br>natural (versus<br>trendy) name   | 27<br>(72)                  | 21<br>(79)                  | 13<br>(87)                  | 30<br>(70)                  |
| Bamboo picture frame:<br>% of people<br>choosing natural<br>(versus trendy) name | 93<br>(7)                   | 90<br>(10)                  | 80<br>(20)                  | 83<br>(17)                  |
| <i>Number of Respondents</i>   | 29                          | 31                          | 30                          | 30                          |

Notes: Means within the same row that do not share a common superscript differ at  $p < .05$ .

when it was presented on a metallic tablecloth ( $F(1, 116) = 4.36, p < .04$ ), and they evaluated it as more natural when it was presented on a metallic tablecloth than when it was presented on a burlap tablecloth ( $F(1, 116) = 4.87, p < .03$ ).

Next, we examined evaluations of the two extreme products: the glass candleholder and the bamboo picture frame. As we predicted, no treatment effects emerged for either product ( $F_s < 1$ ). Specifically, the glass candleholder was evaluated consistently as high in trendiness (Ms ranged from 4.95 to 5.03) and low in naturalness (Ms ranged from 2.61 to 2.86). Similarly, the bamboo picture frame was always evaluated as high in naturalness (Ms ranged from 5.07 to 5.34) but low in trendiness (Ms ranged from 2.98 to 3.45).

*Choice of brand name.* An initial ANOVA of brand name choices for each product revealed a three-way interaction among self-view, tablecloth type, and product type ( $F(2, 113) = 14.16, p < .001$ ). Thus, we investigated the outcomes further with binary logistic regression by entering the preceding three factors and all interaction terms as categorical independent variables.

A regression on participants' brand name choice for the neutral mug revealed an interaction between self-view and tablecloth type ( $\beta = -5.20, p < .001$ ). Further analyses showed that participants who saw the interdependent self-view posters exhibited an assimilation effect. They chose the trendy Elegance name more frequently than the natural Earthborn name when the mug appeared on a metallic

tablecloth (68% versus 32%;  $\chi^2 = 3.91, p < .05$ ), but they opted for the natural versus the trendy name when it was viewed on a burlap tablecloth (83% versus 17%;  $\chi^2 = 12.45, p < .001$ ). Alternatively, participants exposed to the independent self-view posters revealed a contrast effect. They chose the natural name more frequently than the trendy name when the mug appeared on a metallic tablecloth (90% versus 10%;  $\chi^2 = 19.20, p < .001$ ), but they chose the trendy name more frequently than the natural name when it was viewed on a burlap tablecloth (67% versus 33%;  $\chi^2 = 3.33, p < .07$ ).

Conversely, regression analyses on participants' brand name choices for each of the two extreme products revealed no treatment effects ( $ps > .12$ ). For the trendy glass candleholder, participants consistently preferred the trendy Eloquence name over the natural EcoSystem name ( $ps < .03$ ). Similarly, for the natural bamboo picture frame, the natural Terrain name was uniformly preferred over the trendy Tuned In name ( $ps < .001$ ).

To summarize, this field study conceptually replicated and extended our previous findings. The results suggest that various kinds of display materials (e.g., metal, burlap) can prompt context effects on both shoppers' product evaluations and their choices. Yet this occurs only when associations with the product are neutral and not extreme on the contextually primed dimensions. We also find that salient content on nearby signage represents a highly actionable means of altering people's mode of cognition, thus controlling the direction of the context effects.

## GENERAL DISCUSSION

This research indicates that the surface material of a store display fixture on which products are shown can affect consumers' evaluations of those products. Importantly, however, the direction of this influence depends on the particular mode of cognition that consumers use. Specifically, when participants used holistic cognition that was prompted by an interdependent self-view, an assimilation effect occurred; their associations with the contextual data—namely, a display table's surface material—merged with their evaluations of the product. However, when participants employed analytic processing, as prompted by an independent self-view, a contrast effect emerged; here, associations with the contextual display table served as a standard that was compared with those of the product. Furthermore, this patterns of context effects emerged when the target product possessed neutral or flexible associations on the contextually implied concept. As Experiment 2 shows, such context effects disappeared when the product possessed associations with the concept that were extreme.

This work makes an important theoretical contribution. It adds to the context effect literature by clarifying for the first time how and why the direction of context effects can depend on people's mode of cognition. We show that whereas the use of holistic processing can elicit assimilation effects, analytic processing produces contrast effects. Notably, our research further introduces a new and actionable way of inducing these alternative modes of cognition—namely, self-view-shaping signs that can elicit holistic or analytic cognition. It also adds to extant work on atmospherics by showing that overlooked, but omnipresent, fixtures in retail milieus can influence product evaluations.

Applications of our research also are evident. Many brands are positioned on the dimensions we investigated in our studies—namely, trendiness (e.g., Diesel) versus traditional (e.g., Bass) or all natural (e.g., Aveda) versus synthetic (e.g., Lycra). Furthermore, retail fixtures and merchandising materials often relay these same concepts (e.g., glass suggests trendiness), and our findings indicate that such items can either bolster or damage product perceptions on these dimensions. If marketers want to control which outcome will occur, they will need to anticipate and/or actively manage the kind of cognition that pertinent segments of shoppers use. To some degree, this could be accomplished by considering shoppers' demographic profiles. For example, extant research suggests that people of American versus Eastern Asian descent typically employ analytic versus holistic cognition (Gardner, Gabriel, and Lee 1999). Yet marketers could also actively try to shape shoppers' cognition by, for example, using salient self-view-altering signage of the type we used in Experiment 2. The point is that by using selected tools strategically to shape the type of cognition shoppers use and by coordinating this with appropriate contextual materials (e.g., glass versus wood display tables), marketers should be able to use our findings to their advantage.

Still, many unanswered questions remain. For example, will people be more likely to purchase a product when congruity exists between associations implied by a brand's positioning and the composition of the display fixture (e.g., when a brand named Earthborn is displayed on a wood versus glass table)? Furthermore, our research attempted to shed light on how one dichotomous mode of cognition (i.e., holistic versus analytic cognition) can affect the direction of context effects. Yet many other dichotomous modes of cognition have been proposed (e.g., relational versus item-specific processing, top-down versus bottom-up processing), and it remains unclear whether and how these different modes of cognitions truly differ from each other and whether they produce parallel or different context effects. Further research is needed to investigate this issue and to produce a coherent framework that elucidates how all such modes of cognition may be interrelated but different. In addition, it is not clear which concepts are conveyed by the myriad other materials or structural elements commonly found in stores. Could carpeting elicit concepts such as softness and comfort, or could ceramic floor tile evoke concepts such as durability and low maintenance? Furthermore, what associations might be engendered by, for example, brick, papered, or merely painted walls? We hope that further research will pursue these and other important questions.

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#### Appendix POSTERS PRIMING SELF-VIEWS

A: Experiment 2: Posters Priming an Independent Self-View Paired with Burlap Tablecloth



B: Experiment 2: Posters Priming an Interdependent Self-View Paired with Metallic Tablecloth





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