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The mere association effect and brand evaluations

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Abstract

The associative network model of memory proposes that each node (construct) belongs to specific networks of associations. These networks include nodes that share associations with a third (common) construct but are not themselves directly associated (*merely associated nodes*). The present research proposes that automatic associations between such indirectly related nodes can be primed in a single exposure and this may be sufficient to alter subsequent concept evaluations. An implicit cognition measure is used to demonstrate the automatic transfer of properties (both cognitive evaluations and affective responses) from a common associative node to seemingly unrelated objects. The effect is driven by individuals' inability to ignore activated but irrelevant associations. Results also show that the mere association effect and the underlying property transfer process (1) are more likely for consumers familiar with the concepts involved, (2) involve both cognitive and affective information, and (3) counterintuitively, occur more often for concepts from different categories rather than the same category.

Keywords: Implicit/mere associations; Affective/cognitive transfer; Information processing

"*It's ironic to have co-champs from the Big Ten and Pac-10 playing together on another coast.* […] *What a great matchup, though.* […] *USC may have the sexier name, but we think it will be a great game.*"
University of Iowa football coach Kirk Ferentz (2003).

On the surface, it appears that in characterizing USC as having a "sexier" name, Coach Ferentz was presumably associating USC with its location in the entertainment capital of Los Angeles versus his university's location in agricultural Iowa City. However, the use of the word "sexier" rather than other possible descriptors such as "more glamorous" is intriguing. Sports fans might note that USC's athletic teams are known as the Trojans, which is also a prominent brand of condoms—a product directly associated with sexual activities. Is it possible that the subconscious association of USC with Trojans as well as that of sex with Trojans results in a linking of USC with sex, thereby making it more likely that someone will think of the school as "sexier" than other universities? To the extent that individuals are aware that such a transfer of an association based on similar spellings is illogical, they should not be influenced by it. However, the present research maintains that these transient associations often occur in ways that make it difficult for individuals to ignore their influence, adding to the growing evidence that many seemingly unrelated associations primed by brand names may guide subsequent concept evaluations in ways that go beyond mere spreading activation effects. This research identifies important considerations in selecting brand names and justifies vigilance toward contextual elements that may exert unanticipated influences.

The mere association effect

Researchers agree that environmental stimuli (e.g., words processed via the auditory route, objects perceived visually, and olfactory excitants) stimulate multiple thoughts, some of which are activated even though they have little (e.g., only one link) in common. However, once the common element is activated, there might be confusion as to which of the many other possible associations are relevant. With repeated exposures, these tangential associations may be strengthened to become

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automatic associations to the previously unrelated entity. With such a possibility in mind, the pork meat industry was wise to successfully lobby government and health organizations to label the "swine flu" as H1N1 (Zakaria, 2009), as even public awareness that the flu was not transmitted by eating pork may not have been sufficient to prevent consumers from avoiding pork products.

When presented with ambiguous information in the form of concepts that share some associations, individuals may initially think about (i.e., retrieve) many possible references and rely on contextual cues to narrow their thoughts to the intended one. Thus, hearing someone talk about buying *Dove* may cause confusion regarding a bar of soap or an ice cream cone, ambivalence that should quickly be resolved when the context is choosing dessert. At this point, one would expect that all soap and cleaning related thoughts would be ignored or suppressed as irrelevant. However, explicit thought suppression is often difficult (Kramer & Block, 2011) and frequently even counterproductive (Wenzlaff & Wegner, 2000). Neuro-imaging studies confirm that individuals frequently find themselves dealing with task-unrelated thoughts (Binder et al., 1999), and although these thoughts may not seem logically meaningful in context they are generally linked to the target stimuli either semantically or perceptually. A high profile "guilt by association" phenomenon as occurred with the swine flu poses a difficult challenge for brand managers. Further, it is possible that such indirect association transfers are even more difficult to control when they are implicit (Lewicki, 1985).

Inspired by Bargh's (2002) review of automatic influences on consumer judgments, we focus on identifying conditions when simultaneous exposure to objects having minimal attributes in common leads to an illogical transfer of other associations. We show that such transfers may be implicit but still affect explicit and implicit brand associations and evaluations. Borrowing from the extensive research on the mere exposure effect, we label the implicit transfer of meanings or affect from logically unrelated stimuli as the *mere association effect* (cf. mere attitudes by Walther, 2002) and propose that its underlying process involves both a failure to ignore unintended automatic associations as well as familiarity-based variations in the activation of associations. Importantly, we demonstrate that counter to the widely held view of spreading activation and knowledge accessibility, mere association effects are more likely among concepts that are part of distinct categories (at the basic level of the consumers' cognitive hierarchical structure) than among categorically similar concepts.

Knowledge and affect transfer across cognitive associations

The associative view of memory as a network of connected nodes (Anderson, 1983) argues that memory knowledge consists of connections between the to-be-learned material and concepts already known, or connections between the material and aspects of the learning context. These associations vary in strength, with some nodes only indirectly linked rather than being directly connected. An immediate question is whether an ad-hoc association between two indirectly related nodes can be created merely because these nodes' individual associations with a common (i.e., mediating) third node are activated at simultaneous or temporally adjacent moments.

An early line of research from cognitive psychology is informative for our account. In a classic study, Erickson and Mattson (1981) introduced and demonstrated the "Moses Illusion," whereby individuals often mistakenly accept as legitimate a question such as "How many animals of each kind did Moses take on the Ark?" and answer "two." This incorrect response occurs despite the fact that these individuals know well that it was Noah who took animals on the Ark, not Moses and the correct answer is "none." Subsequent work in the area has shown a similar effect for the question "What was the famous line uttered by Louis Armstrong when he first set foot on the moon?" and has explained both effects by arguing for the unconscious activation and priming of propositional information from nodes that are simply connected at a superficial level (Shafto & MacKay, 2000). For example, Moses and Noah share single names that prime biblical associations such as The Old Testament, large bodies of water, and saving people/beings. This apparently primes individuals to link their unique other associations such as Noah's building of an ark and filling it with two animals of each kind and Moses' parting of the Red Sea and receiving the ten commandments. One could extend this account using an availability explanation for judgments (Tversky & Kahnemann, 1973) and suggest that, without factual evidence, people will perceive Louis Armstrong as more of an astronomy buff than most jazz celebrities and that Neil Armstrong will be perceived as more of a jazz fan than the typical NASA astronaut.

Consistent with our theorizing, Walther (2002) proposed a spreading attitude effect according to which "evaluative learning is not dependent on the (conscious or unconscious) experience of a valued event, but can work through associative chains" (p. 930). Accordingly, "spreading attitudes means that effects of evaluative conditioning are not confined to stimuli that were directly paired with an evaluated event but may have an impact on other stimuli preassociated with this stimulus" (Walther, 2002 p. 931). Attitudes spreading via what consumer researchers have termed *secondary associations* (Keller, 2002) may thus influence consumer response to marketing stimuli in the absence of conscious processing. This has been hinted at in early cognitive research on what was termed the "mediated priming effect" (e.g., McNamara & Altarriba, 1988), although that effect has not been shown to produce evaluative or affective transfers of the kind we propose. Finally, McDermott (1997) suggests that priming via associated nodes occurs in routine cognitive processing quite commonly.

Consumer research on attitudinal (Pavlovian) conditioning has established that both cognitive and affective processes mediate attitudinal responses to conditioned stimuli after exposure to unconditioned prompts (Kim, Allen, & Kardes, 1996). For example, Kim et al.'s (1996) second experiment repeatedly paired pictures of two kittens with a facial tissue brand and found that consumers exhibited both inferential belief formation (enhanced perceptions of tissue softness) and direct affect transfer (more pleasant feelings toward the tissue brand, especially among women) as attitude determinants. These

results suggest that mere associations may operate in both cognitive and affective processes, and that both evaluative and affective transfers can be mediated by common associative nodes (cf. Meersmans, De Houwer, Baeyens, Randell and Eelen, 2005).

We extend these conceptual accounts by addressing several questions related to assessing the extent to which implicit associative processes also result in a measurable transfer of knowledge (both cognitive and affective). We are interested in explaining how automatic secondary associations emerge and specifying individual difference and stimulus-specific variables that moderate mere association effects. We focus on the phenomenon involving the transfer of secondary associations (e.g., concepts associated with jazz and space) to distinguish it from the more commonly studied transfer of primary associations (e.g., jazz and space for Louis and Neil Armstrong). In addition, this work explores various conceptual and perceptual aspects of brand names and associated entities that may be involved in this knowledge transfer. The research benefits from recently developed measures of implicit association in cognitive psychology (e.g., the Implicit Association Test—IAT: Greenwald, McGhee, & Schwartz, 1998) that allow for capturing automatic processing and implicit associative transfers in ways not previously observable.

Familiarity and the availability of secondary associations

Cognitive psychology research suggests that one's existing knowledge structure and its inclusion of the relevant concepts may be a facilitating condition for a mere association effect. Lewicki (1985) determined that, in the absence of any other relevant information, individuals judge an entity on the basis of learned associations between the entity's features and a certain trait based on experiences with another entity that shares that feature. For example, individuals treated kindly (unkindly) on a single occasion by a stranger with a defining physical feature (short hair) evidenced approach (avoidance) behavior toward another stranger with a similar appearance even though the feature had no obvious causal link to the judged trait. However, the phenomenon may not be as robust as suggested by Lewicki (1985). Musen, Szerlip, and Szerlip (1999) used an experimental paradigm wherein implicit memory was tested after priming individuals with words, novel shapes, non-words, and colors. New-association priming occurred between words and colors but not between abstract shapes and colors or between non-words and colors, suggesting that new-association priming occurs for familiar but not for unfamiliar stimuli (Musen et al., 1999). An immediate extension of this line of research to the present case suggests that some level of consumer awareness of the to-be-associated concepts is necessary before implicit relationships are activated. Castelli and Zogmaister (2000) investigated how person-based representations stored in memory can influence subsequent information processing. Participants incidentally learned the gender category membership of various exemplars (presented in the form of forename–surname associations), and then the same surnames were used as primes in a name-completion task. Results showed that the influence of the primes differed in relation to the exemplars' status in memory, as only familiar surnames showed an implicit effect of category membership and selectively influenced gender-congruent name completions (Castelli & Zogmaister, 2000).

These accounts lead us to posit that subject familiarity with the concept categories involved assists the priming-based activation of secondary associations. Furthermore, Walther's (2002) spreading attitude effect research also supports the proposed role of concept familiarity: whereas most of the associative learning in her work was shown to occur in the absence of conscious information processing, repeated exposures to focal stimuli and an increasing number of trials were both found to be conducive to more pronounced spreading attitude effects.

Hypotheses

The previous theoretical considerations provide the conceptual underpinnings to answering the research questions presented in the introduction. Research reviewed above has shown that mere or incidental exposure is sufficient to activate implicit associations of logically unrelated concepts (causing a *transfer of secondary association*), but mainly for those individuals who have higher accessibility to the respective concepts (cf. Wheeler & Sleeth-Keppler, 2011). Among individuals familiar with the concepts involved, incidental priming with a common-node concept should activate nodes that result in the mere association of two concepts mediated by the common-node concept (e.g., exposure to a *Ford Fusion* car ad might create an implicit association between *Ford* and *neat* for consumers familiar with the *Gillette Fusion* razors). The presence and influence of these mere associations will be captured via participants' explicit and implicit responses. Thus, assuming an associative chain where concept A is linked to concept B and B is also linked to concept C, which has some A-irrelevant associations, we propose that some consumers will be influenced by these irrelevant associates, such that:

H1. If A–B–C, priming B is sufficient to create an implicit transfer of secondary cognitive associations to A from C for consumers with easy access to A, B, and C.

In addition to the simple semantic linking of two concepts via a third concept to which both are related (i.e., cognitive transfer), it is proposed in a second case that the valence associated with these concepts can also be transferred via an indirect path (labeled an *affective transfer*). For example, exposure to *Goodwill* charity brochures might positively alter the implicit evaluation of one's last will and testament (and simultaneously make the inclusion of charitable donations in it more likely). Again, the effect is expected for those familiar enough with the concepts involved to be likely to activate these valenced associations. We thus hypothesize that:

H2. If A–B–C, priming B is sufficient for positive or negative valence associated with C to become implicitly associated with A for consumers with easy access to A, B, and C.

The next sections of the article are structured as follows. Studies 1a and 1b establish the mere association effect on

perceptions and choice by showing a judgmental influence attributable to the presence of logically irrelevant but accessible cognitive associations (*cognitive transfer*), aided by manipulated consumer accessibility. In the process, we distinguish this effect from mere spreading activation. Next, Study 2 extends previous research findings by Labroo and colleagues on conceptual and perceptual fluency by focusing on implicit transfers of valenced associations for brand symbols (*affective transfer*) using similar experimental procedures. Overall, these studies suggest that consumers with sufficiently well-established brand-related associative networks often build unexpected associations and are generally unable to avoid influences produced by unwarranted or undesirable cognitive or affective transfers. An instance that may help consumers with this problem is when the needed suppression results from the stimuli themselves. Studies 3a and 3b thus propose a boundary condition for the mere association effect by illustrating selectivity in the transfer of associations that mirrors within-category suppression effects (cf. Anderson, Green, & McCulloch, 2000). The article concludes with a discussion of implications of the current work and directions for future research.

Cognitive transfer from mere association

The purpose of the first study is to demonstrate that a transfer of specific propositional associations between entities can occur when the relationship between them is merely phonetic as suggested by the Armstrong Illusion (Shafto & MacKay, 2000). It uses a procedure previously employed to illustrate conceptual fluency effects (Lee & Labroo, 2004), to show that priming that enhances familiarity may also prime secondary associations for some individuals. As hypothesized, primed awareness of the entities and their attributes is expected to moderate the transfer phenomenon. Finally, we attempt to distinguish the mere association effect from spreading activation.

Study 1a

Lee and Labroo (2004) reported that consumers exposed first to a high context-relevant (i.e., restaurant) advertisement for mayonnaise and subsequently to a visual image of a ketchup bottle expressed more positive attitudes toward ketchup than those exposed to a control ad - a low context-relevant (i.e., supermarket) ad for vitamins. This was interpreted as evidence for a transfer of the conceptual fluency established for mayonnaise (due to the initial exposure to its advertisement) to ketchup, facilitated by mayonnaise and ketchup both being condiments. These authors posit that such fluency effects will occur when the prime is meaningfully (i.e., conceptually) related to the target in a common associative network. In other words, a mayonnaise prime might impact attitudes toward concepts present in the "condiments" associative network (Labroo, Dhar, & Schwarz, 2008) but not, for example, toward the Mayo Clinic—a perceptually related object but one belonging to a very different associative network. Based on our theoretical framework, we posit that this is not necessarily the case. Instead, we hypothesize that a conceptual transfer of propositional associations is possible although the mediating link is phonetic rather than conceptual. Further, the effect could be a transfer of specific attributes including both positive (best doctors) and negative associations (treat patients with rare and complex illnesses) rather than merely enhancing fluency. The specific attribute transfer would depend on the relative accessibility of these associations for a given individual.

Method

The study involved a 2 (accessibility of prime associations: high-Mayo Clinic or low-Cleveland Center) × 2 (advertisement: perceptually related-mayonnaise or perceptually unrelated-ketchup) full factorial. One hundred and forty-two undergraduate students from a metropolitan East Coast university took part in the study in return for partial credit toward fulfilling the requirements of an introductory marketing class. To evaluate the role of accessibility as a moderator of the mere association effect, we manipulated this variable by having participants first read a 4-paragraph general description of a particular medical institution (identical information describing patients with complicated diseases and health conditions purportedly being investigated at either the Mayo Clinic or the Cleveland Center). After about 10 min of filler tasks, participants were exposed to ad copy consisting of pictures of three different packages of either mayonnaise[1] or ketchup. Dependent measures including attitudes toward the promoted product and the Mayo Clinic were subsequently collected on 7-point items anchored at very unfavorable/very favorable. Participants were finally debriefed, thanked, and dismissed. Prior attitudes toward the two products and related consumption information were also collected but are not discussed because they did not impact subsequent results.

It was hypothesized that individuals made more aware of Mayo Clinic associations (as would be true of familiar compared to unfamiliar individuals) would exhibit different attitudes toward the product promoted in the subsequent advertisement compared to those of individuals made more aware of the Cleveland Center, but only when the product was mayonnaise and not ketchup. A pretest ($N=121$) uncovered that the overwhelming majority of our young respondents felt that reading about a hospital would mainly bring to mind the unpleasant aspects of disease detection and treatment and not the more pleasant aspects related to the quality of care and personnel in the hospital (90% vs. 10%, $\chi^2=74.60$, $p<.001$). Accordingly, both the Mayo Clinic and Cleveland Center primes were expected to be negative, but only the Mayo-familiar participants would build an undesirable association between mayonnaise and hospitals/diseases (an *unhealthy* link), via the Mayo name (see Fig. 1).

Results

A manipulation check confirmed that individuals exposed to the Mayo Clinic article described themselves as more familiar with it than those exposed to the Cleveland Center ($M_{Mayo}=2.40$,

[1] Mayonnaise is often referred to as *mayo*, although not in our experimental procedure.

M_{Clev}=1.71, t(141)=4.29, p<.001), consistent with having higher accessibility of Mayo information. As expected, both descriptions were evaluated as equally informative: M_{Mayo}=3.00, M_{Clev}=2.94, t(141)<1, *ns*. A two-way ANOVA on participants' attitudes toward the promoted product with prime (Mayo/Cleveland) and product (mayonnaise/ketchup) as factors revealed a main effect of product, such that ketchup was better liked than mayonnaise: M_{mayo}=4.08, M_{ketch}=4.69, F(1, 139)=4.99, p<.03. Importantly, this effect was qualified by a two-way interaction of product and prime (F(1, 139)=6.74, p<.01), driven by the less favorable attitudes toward mayonnaise of participants previously exposed to the Mayo Clinic information (M_{ketch}=4.87, M_{mayo}=3.71, t(79)=3.79, p<.001; see Table 1 for all relevant means). A similar analysis with attitude toward the Mayo Clinic as the dependent variable found a main effect of accessibility (F(1, 139)=41.75, p<.001), such that participants exposed to positive Mayo Clinic information were more favorable toward it than those exposed to the Cleveland Center (M_{Mayo}=6.00, M_{Clev}=4.87, t(141)=5.78, p<.001).

Discussion

Although the Mayo Clinic is similar to mayonnaise in terms of spelling and sound, they have no direct conceptual relationship. Despite being logically unrelated, we found a phonetically-induced mere association effect (similar to the Armstrong Illusion) that had unfavorable attitudinal consequences opposite to what perceptual fluency or spreading activation would predict. Furthermore, this finding eliminates concerns about demand effects via mere priming as this would also predict more positive mayonnaise attitudes after reading an article about the Mayo Clinic. Our results support H1 and extend Lee and Labroo (2004), who argued that "fluent processing may be associated with constructs that are negatively valenced; the negative associations may, in turn, give rise to less favorable attitudes toward the target" (p. 162). Indeed, when a food product was phonetically (although not conceptually) linked to a medical facility consumers thought less favorably of it. This effect was not present when the product was phonetically unrelated to the construct (ketchup paired with the Mayo Clinic or mayonnaise paired with the Cleveland Center).

The complexity of the mere association effect is illustrated by the finding that consumers whose familiarity was enhanced by reading an article describing it were more positive toward the Mayo Clinic while simultaneously being less favorable toward mayonnaise. Apparently, participants assimilated the positive information about the Mayo Clinic discussed in the familiarity manipulation when evaluating the Mayo Clinic. However, for the mayonnaise evaluation, subjects apparently activated irrelevant, negative thoughts related to hospital-based associations[2] (e.g., *unhealthy*) as these would be consistent with prior beliefs that mayonnaise is high in fat and therefore not a healthy food. A related study was conducted to determine the accessibility of transferred unhealthy associations.

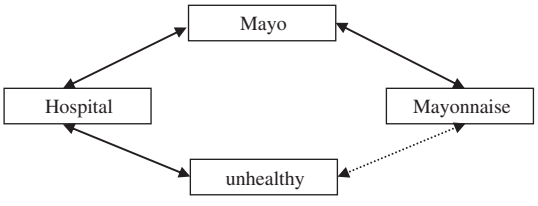

Fig. 1. Visual illustration of associative processes in Study 1b.

Table 1
Study 1a main dependent variables.

		Familiarity			
		Low		*High*	
		Mean	S.E.	Mean	S.E.
Attitude product	Mayonnaise ad	4.49	.24	3.71	.23
	Ketchup ad	4.40	.28	4.87	.20
Attitude Mayo Clinic	Mayonnaise ad	4.78	.22	6.14	.15
	Ketchup ad	5.00	.25	5.85	.17

Study 1b

Although the phonetic association between the Mayo Clinic and mayonnaise when both are activated resulted in a less favorable evaluation compared to when only one was activated, direct evidence that this resulted from a transfer of associations was not available via the measures used in the first study. To get at the underlying implicit association explanation without undue bias from prior explicit responses, a second sample composed of individuals similar to those participating in study 1a (N=108) was exposed to the same accessibility/familiarity (Mayo Clinic or the Cleveland Center article) and priming (mayonnaise or ketchup product ads) manipulations. They then performed an Implicit Association Test (Greenwald et al., 1998; Forehand, Perkins, & Reed II, 2011) looking at automatic associations between mayonnaise/ketchup (represented by pictures of product jars/bottles) and healthy/unhealthy (described by items such as well, fit, or athletic and unfit, obese, or flabby). A two-way ANOVA on the IAT D-measure scores with consumer accessibility and product prime as factors revealed a main effect of accessibility: F(1, 107)=5.78, p<.02. Further analyses showed that this effect was mainly driven by the automatic responses of consumers with Mayo Clinic-accessible information exposed to mayonnaise advertising, as they associated mayonnaise and *unhealthy* more closely ($D_{Mayo\text{-}m}$=.35, a moderate to strong effect) than consumers with Cleveland-accessible information exposed to mayonnaise ($D_{Clev\text{-}m}$=.19, t(54)=2.23, p<.03) or than those with Mayo-accessible information exposed to ketchup ($D_{Mayo\text{-}k}$=.23, t(48)=1.82, p=.07).

Study 1c

The first two studies demonstrate that a conceptual transfer of associations is possible via a phonetic mediating link. We expand on this idea by trying to demonstrate the mere association effect based on a logically unrelated visual prime

[2] See Brasel and Gips (2011) on the nonconscious accessibility of positive and negative brand identity associations.

rather than a verbal cue. Further, to show that the mere association effect differs from spreading activation, we choose items where the two processes make different predictions. Thus, we employed photos of actual football jerseys for either the New Orleans Saints or the USC Trojans that featured either number 69 or 96 (see Appendix). In this study, we hypothesized that the common association of Trojans and 69 with sex will create a feeling of fit that would enhance perceptions of the USC #69 shirt (relative to the USC #96 jersey), whereas the opposite will occur for the Saints' #69 and #96 shirts (note that spreading activation would predict that both #69 shirts will be better liked). Respondent familiarity with the employed stimuli (both football team names and condom brand name) was uniformly high across our student sample population—a necessary condition for the mere association effect.

Method

The study involved a 2 (team name association with sex: positive—USC Trojans or negative-New Orleans Saints) × 2 (jersey number: propositionally related-69 or propositionally unrelated-96) full factorial. Two hundred undergraduate students from a metropolitan East Coast university took part in the experiment in return for partial credit in an introductory marketing class. In a pre-experimental battery of questions, participants revealed no particular preference for either of the sports franchises employed in this study but a relatively high interest in and knowledge of sports. In the experiment, participants were exposed to a series of items on computer screens, supposedly for sale at a sports apparel retailer website, including the focal football jersey (between subjects assignment to one of the four cells). The jersey featured the team logo and the large number on its front side, plus the team name caption under the product. Dependent measures (on 7-point scales) including the perceived sales success of the featured product, respondent liking thereof, and willingness to pay for it (WTP) were subsequently collected. Participants were finally debriefed, thanked, and dismissed.

Results

A two-way ANOVA on participant perceptions of the sales success of the focal product with team name (Trojans/Saints) and jersey number (69/96) as factors revealed a non-interesting main effect of team, such that the college jersey was thought to sell better than the professional jersey (employing a student sample population is likely responsible for this effect). More importantly, the analysis also uncovered a significant two-way interaction ($F(1, 196) = 8.18$, $p < .01$), driven by the higher sales estimates from participants exposed to the Trojans 69 jersey and lower estimates for the Saints 69 shirt (all pairwise contrasts within the team factor significant at $p < .05$; see Table 2 for all relevant means). An ANOVA with the respondent liking of the featured product as the dependent variable found a similar main effect and interaction of team name and jersey number ($F(1, 196) = 8.52$, $p < .01$), such that participants liked the Trojans 69 jersey more and liked the Saints 69 shirt less than jerseys featuring the number 96 (all pairwise contrasts within the team factor significant at $p < .05$). No effect emerged in terms of WTP, likely due to the fact that neither of the teams is an East Coast franchise relevant to our sample population. Finally, an open-ended probe asking for a justification of the jersey liking response found that not a single respondent was aware of the underlying explanation provided by the mere association effect.

Table 2
Study 1c main dependent variables.

		Association			
		Control (#96)		Treatment (#69)	
		Mean	S.E.	Mean	S.E.
Liking of jersey	New Orleans Saints	3.96	.14	3.44	.19
	USC Trojans	3.88	.23	4.51	.21
Sales success perceptions	New Orleans Saints	4.26	.16	3.73	.20
	USC Trojans	4.17	.19	4.75	.21
WTP	New Orleans Saints	45.72	3.91	37.31	3.40
	USC Trojans	48.62	3.55	50.06	3.07

Discussion

Whereas the name of a football franchise is explicitly unrelated to either religious or sexual concepts, a transfer of related mere associations emerges to these teams' jerseys depending on the number featured on it. When this number has a sexual connotation, the propositionally congruent Trojans team name leads to more favorable responses and the incongruent Saints team name leads to less favorable responses compared to equivalent jersey numbers with no clear semantic associations. The results of Study 1c extend the recent work by Wheeler and Berger (2007), who showed that the same prime can operate differently depending on the specific associations consumers have with them, so that the same prime can produce distinct effects depending on contextual associations. We include this finding as an example of the mere association effect because it has an unconscious nature and is conceptually inconsistent with a spreading activation explanation.

Affective transfer from mere association

Studies 1a, 1b, and 1c showed that a perceptual link could result in a transfer of propositionally relevant thoughts (i.e., *unhealthy* or *sexual*) that might subsequently alter the valence of the target product because of the negative or positive valence of the transferred association. The purpose of the next study is to show that strongly valenced secondary associations may also transfer and impact brand choices from a mere association based on semantic characteristics. Primes were selected that had a semantic similarity to the label of a target brand but had no attributes conceptually relevant to the product. The study's design extends the fluency research by Labroo and her colleagues. For example, Labroo et al. (2008) demonstrate that verbal semantic primes are sufficient to promote elaboration that leads to subsequent perceptual fluency. In their work, participants primed with the word *frog* and asked to visualize a frog were more likely to choose a wine bottle featuring a picture of a frog on its label over one featuring another image, especially when the decision had to be made very quickly (.16 or 3 s). Thus, even though a frog and its associated thoughts

have no obvious connection to wine, the enhanced fluency of the primed frog image influenced the likelihood of choosing a wine bottle with a frog on the label.

Study 2

We were interested in whether similar priming that involved visualizations with highly valenced propositional associations to the target image would cause consumers to approach or avoid selecting a wine with that image on its label even though the valenced associations were unrelated to the product. To maintain comparisons with Labroo et al.'s (2008) results, we also used the frog stimulus along with related stimuli that were familiar to the participants.

Method

One hundred and forty-eight undergraduate students from a metropolitan East Coast university took part in the experiment in return for partial credit toward fulfilling the requirements of an introductory marketing class. After being exposed to various words, participants were exposed to and had to make a quick choice (2000 ms or less) between pairs of wines that only differed in terms of the image featured on their labels. During the brief (5-second) pre-choice exposure, subjects were asked to create a mental image related to each word. The critical choice (in a series of 5) always involved a pairing of bottles: one featuring a frog and the other a boy farmer on their labels (see Appendix). The stimuli were counterbalanced between subjects such that the *frog* and *boy* labels appeared on the left and right sides of the pair equally often. The priming conditions varied in terms of the valence of likely associations: in the control condition, this was the word *airplane*. In the positive valence condition, the name of the popular frog-like character on the Muppets television show (*Kermit*) was the prime word. In the neutral valence condition (replicating Labroo et al., 2008) the prime was *frog* (note that in order to check on whether any of the effects are contingent upon the [a]typicality of a frog-centered wine label, some participants were exposed to the counterbalancing neutral prime—*boy*). Finally, in the negative valence condition, the critical wine choice was prefaced by the word *warts*. Although warts are actually more associated with toads, it was expected that the visual similarity between toads and frogs would cause an adverse response to a wine label featuring a picture of a frog. Wine label choices for the 4 non-critical pairings were preceded by various unrelated words. Latencies for all 5 wine label choices were recorded by the experimental software and subsequent to the final choice participants provided personal mood ratings. Filler tasks were undertaken for another 5 min, followed by participants' performing of a valence IAT looking for associations between pictures of frogs/flowers and pleasant/unpleasant words (e.g., peace, angel, and war, devil, respectively). Visual images were used because the subjects had been instructed to create a visual image and the wine labels had pictures to distinguish them. Participants were finally debriefed, thanked, and dismissed.

The study thus involved comparisons across 5 prime conditions (control$_1$=*airplane*, control$_2$=*boy*, neutral=*frog*, positive=*Kermit*, and negative=*warts*). Dependent variables included individual wine choice on the critical trial, the latency associated with this choice, and participants' mood and score on the IAT. The purpose of the IAT was to establish that potential choice shifts are linked to the valence differences associated with the different primes (see Fig. 2). Accordingly, on the explicit side it was hypothesized that exposure to the *airplane* prime would produce chance level choice for the frog label, but that this choice would be more likely after the *frog* and *Kermit* primes and less likely after the *boy* and *warts* primes. On the implicit side, we expected to observe stronger implicit association of *frog* and *pleasant* in the *Kermit* condition and stronger implicit association of *frog* and *unpleasant* in the *warts* condition. As mentioned above, this valence transfer was expected across all participants (a pretest on a similar holdout sample showed them to be highly familiar with the concepts involved). Mood ratings were not expected to vary by condition due to participants' lack of conscious awareness of the impact of prime valence on choice.

Results

A Kruskal–Wallis non-parametric H-test on participants' wine label choice (coded as 0 if the *boy* label was selected and 1 if the *frog* label was picked) found a significant effect of prime ($\chi^2(4)=46.33$, $p<.001$). As expected, when primed with the unrelated word *airplane*, participants' choice of the wine bottle with the frog label did not differ from chance (46%). We replicated the result of Labroo et al. (2008) by finding a clear preference for whichever wine label was primed with the descriptive word. For example, 92% selected wine with the *frog* label following the *frog* (i.e., neutral) prime and 73% selected the wine bottle with the boy label on after the *boy* priming (both selections statistically different from chance). The somewhat greater influence of the frog label may be due to its positive associations or atypicality (thus salience) in the particular context of wine selections. The positively valenced *Kermit* prime yielded a choice level (89%) greater than chance but equivalent to the *frog* prime, most likely reflecting a ceiling effect and the already positive associations to the frog. As hypothesized, the choice shifted away from the focal label when participants were primed with the negatively valenced word *warts* (33%, significantly different from chance: $\chi^2=4.00$, $p<.05$).

The IAT analysis is informative in that participants' IAT D-measure scores found that, as expected, respondents implicitly

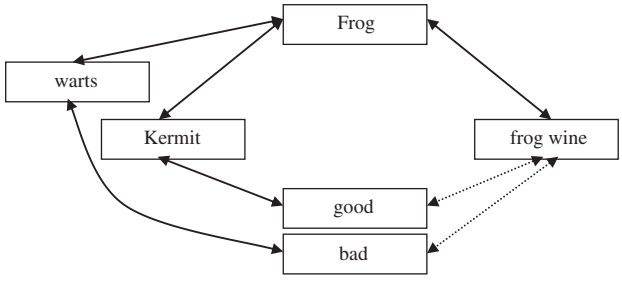

Fig. 2. Visual illustration of associative processes in Study 2.

associated frogs more closely with unpleasant words after the *warts* prime than after *frog*: $D_{frog}=.31$, $D_{warts}=.17$, $t(61)=2.31$, $p<.03$. There were no significant frog–unpleasant IAT differences among the other primes (airplane, boy, and Kermit). Also, no differences in terms of response latency or post-choice mood were observed across the various conditions, attesting to the unconscious nature of the effect.

Discussion

In line with Labroo et al. (2008), Study 2 demonstrates an approach tendency related to fluency following a visualization task prompted by a verbal prime naming an item (*frog*) used on a product label. It extends their research by showing equivalent effects when the visualization task involves a proper name (*Kermit*) that is sometimes positively associated with the item on the label (frog) even though the frog had none of the unique features of the prime. Furthermore, Kermit and wine cannot be considered to be related in the way that mayonnaise and ketchup are (i.e., condiments) as was the case in Lee and Labroo (2004). On the other hand, avoidance tendencies were observed when the prime had negatively valenced associations. The negative valence transfer from an unpleasant skin disease (*warts*) to a frog was sufficient to affect decisions about a wine featuring a picture of a frog on its label, supporting H2. Consumers were thus unable to ignore the negative but irrelevant frog-related thoughts that the *warts* prime activated, with direct explicit effects on choice. Consistent with Shapiro's (1999) finding that contextual cues may be processed unconsciously and influence consumption decisions, this study extends the findings of Labroo et al. (2008) by showing that semantic-based mere associations may occur automatically and alter perceptual fluency effects. This supports the more complex association activation pattern labeled as a mere association effect.

Within-category inhibition of mere associations

Previous research suggests that the ability of primes to activate related concepts may be limited by the extent that the nodes involved are part of the same category (i.e., nodes in the same associative network may inhibit each other). For example, Labroo et al. (2008) exposed participants to semantic primes that were either consistent or inconsistent with the image featured on the label of a product subsequently evaluated. The authors found that participants exposed to image-consistent primes (i.e., dog-related words) liked the product (pet shampoo) more when its label featured the image of a dog than when it featured no image (Labroo et al., 2008). However, another interesting finding was that participants who were exposed to image-conflicting semantic primes (i.e., cat-related words) liked the product less when its label featured the image of a dog than when it featured no image. Is it possible that this type of effect is due to the inhibition of the target? Research by Anderson et al. (2000) proposes that when two constructs (e.g., dog and cat) are both common exemplars of the same category (i.e., pets), priming one of these constructs produces activation that results in a simultaneous suppressing of the other construct. The idea that inhibitory mechanisms are in play for unprimed (or unpracticed) within-category exemplars is also supported by Perfect, Moulin, Conway, and Perry (2002), who demonstrate the retrieval-induced-forgetting effect by employing implicit tests of conceptual memory. Finally, in a consumer research article relevant to the issue, Kim et al. (1996) suggest that when only one of two competing brands in a category is subject to favorable attitudinal conditioning, the other brand will be subject to a reverse effect, such that attitudes toward it become more negative in the absence of a positive unconditioned stimulus. Thus, we posit:

H3. The mere association effect is inhibited when A and C are part of the same category (i.e., are directly associated explicitly as in A–C as well as A–B–C).

Study 3a

Previous research has found that ambiguous stimuli (e.g., homonyms—words of different spellings but identical pronunciations) quickly activate multiple interpretations and associations (Hennessey, Bell, & Kwortnik, 2004), despite the presence of contextual cues that strongly favor a particular meaning. McNamara and McDaniel (2004) argued that suppressing irrelevant associations is generally difficult and never fully possible, as also demonstrated by the Moses and Armstrong Illusions (Shafto & MacKay, 2000). What the within-category inhibition account adds to this discussion is the prediction, for example, that an Armstrong Illusion is less likely when the two targets belong to the same subordinate category (i.e., either both jazz musicians or both astronauts). In other words, this categorization variable moderates the mere association effect. One way to demonstrate this involves the literal–figurative meanings of a polysemous expression. Under the generally accepted notion that associative networks are built around literal meanings and that their nodes' figurative meanings reside outside of the immediate network/category (Kintsch, 1988), we should observe suppression of associations to related literal meanings but facilitation of mere associations when produced by unrelated figurative meanings.

Method

One hundred and seven undergraduate students from a West Coast university took part in the experiment in return for partial credit in an introductory marketing class. Under the guise of assessing the creative efforts of an advertising agency, participants were exposed to a Coca-Cola ad featuring the classic polar bears. In one condition, the ad paired the bears and the Coke logo on a white background, while in the other condition the background involved ice and snow. We hypothesized that a property transfer from the icy background will emerge for Coke in terms of the brand eliciting colder feelings (an out-of-category, metaphorical sense) but not in terms of its being perceived as bottled at lower temperatures (a within-category, literal connotation). One dependent measure (within-category) was collected using a 7-point scale anchored at *definitely Coke* versus *definitely Pepsi* in response to an inquiry as to which beverage is bottled at a lower temperature. The other dependent measure (out-of-

category) involved asking subjects to report their feelings toward Coke using a 7-point scale anchored at *very cold* and *very warm* feelings. Open thoughts on what came to mind when looking at the ad were also collected. Participants were finally debriefed, thanked, and dismissed. The study thus involved a simple contrast of two experimental conditions, with participants assigned randomly to brand exposure with either an icy background or no background, for each of the two dependent measures.

Results

The contrast on the perceptions of Coke's bottling temperature (relative to Pepsi) found no difference based on the background (M_{back}=3.87, M_{none}=3.72, $t(105)$=.80, *ns*), but a significant effect emerged in terms of the warmth of respondents' feelings toward Coke: M_{back}=3.98, M_{none}=4.76, $t(105)$=2.32, $p<.03$), supporting H3. Open thoughts were coded for mentioning the cold aspect of Coke and all observed instances represented the literal interpretation of the word. Analyses showed that only 4% of the respondents in the no-background condition mentioned aspects related to *cold*, whereas 23% did so in the icy background cell (χ^2=8.44, $p<.01$). Interestingly, this discrepancy did not produce different literal coldness perceptions but did create differences in figurative brand-coldness associations.

Discussion

The fact that consumers did not perceive Coke to be bottled at lower temperatures despite featuring an icy background suggests that when noticing the coldness aspect (done so more often in this condition) related literal coldness connotations (such as the temperature at which the product is bottled) were suppressed and did not influence respondents' judgments. However, a secondary, figurative interpretation of the priming ad was not as easily ignored, producing reports of colder feelings toward Coke for the same consumers.

The metaphorical meaning of *cold* being less subject to conscious suppression than the literal provides more evidence for the implicit nature of the effect. This is in line with work by Dimofte and Yalch (2007) evaluating individuals' [in]ability to consciously suppress the unintended meaning of a polysemous expression. They show that, even when explicitly instructed to attempt suppression of the literal, many subjects are unable to avoid the figurative implications of such statements. Thus, a wireless phone provider slogan such as "raising the bar" produces unwarranted inferences suggesting that the credit requirements to qualify for the service are higher than for competitors (Dimofte & Yalch, 2007). One can surmise that when such explicit suppression instructions are absent the effect persists and a cold background to Coke can easily produce inferences of a cold brand personality.

As these results suggest that the within/outside-category variable is worth pursuing, Study 3b does so with a more detailed design and analysis.

Study 3b

To further evaluate the inhibition account discussed above in a different branding context, we chose "delta" as the focal construct. The related prime involved a river delta, whereas the brands affected by the mere association effect were Delta Airlines and Delta Faucets (both brands with relatively high awareness in the subject population). We propose that the Delta Faucets can be construed as part of the same category as the river delta (perhaps "flows of water"), whereas Delta Airlines cannot. However, both brands are unrelated in any explicit way to a river delta. If the category-driven inhibition argument summarized in H3 is correct, we should observe a meaning transfer property from the river's delta to Delta Airlines, but not to Delta Faucets (see Fig. 3).

Method

One hundred and eighty-nine undergraduate students from a metropolitan East Coast university took part in the experiment in return for partial credit toward fulfilling the requirements of an introductory marketing class. Participants were first exposed to a National Geographic article that emphasized the quick waters of either the Mississippi Delta (prime) or Mouth of the Mississippi (control). Exposure to an advertisement for either Delta Airlines or Delta Faucets followed after several minutes of filler tasks. We hypothesized that a property transfer from the quick waters of the Mississippi Delta will emerge for Delta Airlines (an out-of-category item) but not for Delta Faucets (a within-category item). The airline related item involved perceptions of speed of on-board beverage service; the faucet related item evaluated perceptions of speed of water flow. Dependent measures (on 7-point scales) including attitude toward the promoted brand and perceptions of speed for the Delta faucet water flow/Delta Airlines beverage service were subsequently collected. Participants were also required to assess the degree to which a delta river could belong to the same category or be related to either a faucet or an airline (unrelated to either, related equally to both, or more related to one of them). Participants were finally debriefed, thanked, and dismissed.

To focus on the variables of interest and ensure enough statistical power to uncover the effects of interest, we chose to only address the high-familiarity consumer category (i.e., via pretests we selected study participants who were familiar with river deltas as well as both Delta brands). The study thus involved a 2 (prime: mere association inducing-delta or not-mouth)×2 (ad exposure: within-category-faucet or outside-category-airline) full factorial. Both variables were manipulated.

Results

The manipulation check found that most participants indeed perceived a river delta to be more related to a faucet (i.e., belong in its category) rather than an airline: $N_{neither}$=17, N_{both}=1, $N_{airline}$=6, N_{faucet}=145, χ^2=336.34, $p<.0001$.

In the critical test, a two-way ANOVA with prime and brand as predictors of speed perceptions, a significant interaction of the two factors was observed: $F(1, 188)=7.83$, $p<.01$. Planned contrasts revealed that the interaction was driven by two opposite effects: a drop in speed perceptions for the faucet (M_{mouth}=4.79, M_{delta}=4.38, $t(93)$=1.91, $p=.06$) and an increase for the airline (M_{mouth}=4.31, M_{delta}=4.74, $t(92)$=2.06, $p<.05$) after exposure to the delta prime (see Table 3 for

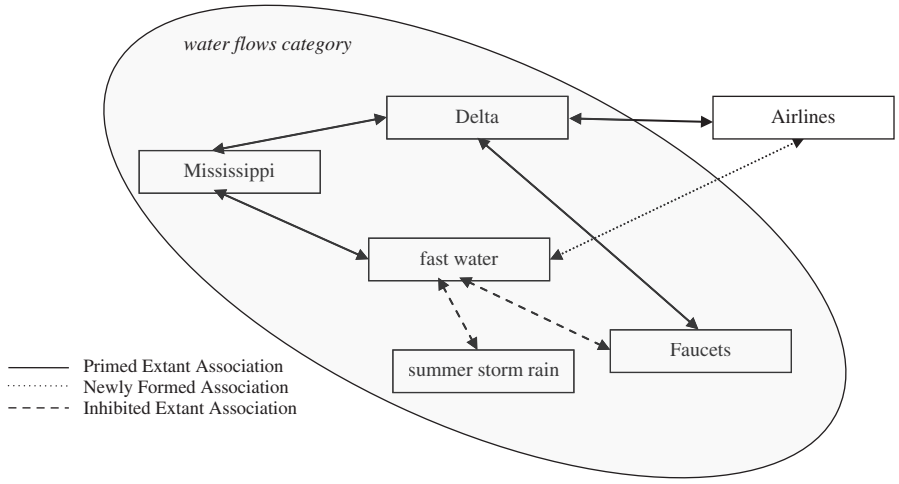

Fig. 3. Visual illustration of associative processes in Study 3b.

all relevant means). The same analysis on participants' attitudes toward the promoted brand only revealed an uninteresting main effect of brand, such that Delta Airlines was less favorably perceived than Delta Faucets regardless of prime (M_{faucet}=5.58, $M_{airline}$=4.71, $F(1, 188)=24.24$, $p<.001$), suggesting that overall brand evaluations are relatively complex (an additive model) and include more attributes than speed.

Discussion

The results of Study 3b support the hypothesized counter-intuitive impact of category membership on the influence of mere associations. The within-category inhibition account thus appears to offer a boundary condition for the mere association effect. A mere association effect was observed when the relationship involved different categories. In this case, the beverage service speed on Delta Airlines flights was judged to be quicker after exposure to a prime mentioning the fast waters of a river delta compared to a prime mentioning a river mouth. However, for a within-category relationship, speed perceptions did not improve for the Delta faucet after exposure to the fast waters of the Mississippi Delta, but they in fact dropped—a finding in line with those of Kim et al. (1996).

Table 3
Study 3b main dependent variables.

		Category			
		Within (faucet)		Outside (airline)	
		Mean	S.E.	Mean	S.E.
Attitude toward Delta	River delta article	5.71	.16	4.65	.21
	River mouth article	5.45	.15	4.77	.18
Speed perceptions	River delta article	4.38	.16	4.74	.16
	River mouth article	4.79	.15	4.31	.13

These results are informative regarding seemingly contradictory results in research by Labroo and colleagues regarding the impact of semantic primes on consumer response to brands when exposure to the target involves perceptual processing. In one experiment, Lee and Labroo (2004) propose that a mayonnaise advertisement plays the role of a facilitating prime in terms of consumers' subsequent processing of and attitudinal response to an advertisement for ketchup. In a subsequent paper, Labroo et al. (2008) argue that priming individuals with cat-related words plays the role of an inhibiting prime in terms of the subsequent processing of and attitudinal response to an advertisement for a pet shampoo that features a dog on its label. If the explanation to the first effect stands (i.e., ketchup is part of the same associative network as mayonnaise and thus it is activated and easier to process when consumers view the mayonnaise ad), then it is difficult to see how the exact opposite effect occurs for the dog–cat experiment. We argue that the key to solving this contradiction resides in the way the overall category is defined. In the dog–cat scenario, both animals are perceived automatically as exemplars of the pet category. Thus, priming with either exemplar will produce inhibition of the other, as indeed observed. Alternatively, ketchup and mayonnaise may not be as easily categorized in a common set even though both are condiments. This is likely when a hamburger is used as the prime, a food not often associated with mayonnaise, as it was in Lee and Labroo's (2004) second experiment. On the other hand, if the prime activated the perception that ketchup and mayonnaise were closely related (much as may have occurred in Labroo et al.'s 2008 cat prime–dog shampoo experiment when individuals were also primed with the word *pet*), one should not expect as positive an enhancement of the attitude toward ketchup as after a mayonnaise prime. In a within-category context the mere association effect is thus thwarted, such that—despite a cold background prime—Coke is not judged to be a colder beverage and that—despite the priming of the quick waters of the

Mississippi river delta—Delta faucets do not allow faster water flow.

General discussion

Research has established that incidental exposures to various objects, words and persons result in perceptual and conceptual fluency with related entities resulting in enhanced liking and other evaluative judgments (Lee & Labroo, 2004; Labroo et al., 2008). More recent research (e.g., Cho & Schwarz, 2010) has shown that these fluency effects can involve remarkable discriminatory abilities. For example, Cho and Schwarz (2010) report a fluency effect when subjects judged eye glasses on a familiar individual (regular view) but not in an uncommon perspective (the individual's mirror image). The present studies add to this literature by showing how such judgments and evaluations can also be activated by incidental exposure to information that shares a perceptual or semantic similarity but not a logical relationship to a target. Thus, propositional as well as affective thoughts can transfer between entities with minimal conscious processing. Novel automatic conceptual associations may be built between apparently independent concepts by simple perceptually related primes with relative ease. Furthermore, the data show that such mere associations can influence beliefs, attitudes, and choice. Finally, two important boundary conditions for the mere association effect are uncovered: consumer familiarity with/accessibility to the concepts involved and the lack of a direct, explicit association between the mediated nodes.

In Study 1a, participants made more familiar with the Mayo clinic expressed less favorable attitudes toward a prefix-sharing product (mayonnaise), without any explicit mention of the health concerns some consumers associate with eating mayonnaise. Yet only individuals familiarized with the history and operations of the Mayo Clinic showed evidence of a transfer (explicit and implicit) of the less desirable aspects of health clinics to a food product. The IAT (Study 1b) supported the implicit processes hypothesized to underlie the mere association effect. In Study 1c, the mere association effect was shown to underlie the previous finding that a prime can produce different effects depending on specific associations (in this case, context-induced) that consumers have with the respective stimuli. Thus, a football jersey featuring number 69 is responded to positively if it is for the USC Trojans but negatively if it belongs to the New Orleans Saints.

Study 2 focused on the affective transfer base of the effect. A wine bottle featuring a frog was chosen more often when participants were primed with *frog* or a proper name, *Kermit*, often positively associated with frogs but less often when primed with the negative associate *warts*. This study extends previous literature findings on conceptual and perceptual fluency by demonstrating that an implicit affect transfer related to a phonetical association (i.e., the valence of associated words) may counter any fluency effect attributable to prior exposure.

Finally, Studies 3a and 3b illustrate selectivity in the transfer of associations. When the two to-be-associated nodes belong to the same semantic category (i.e., are already associated explicitly), inhibition from one to the other occurs and the mere association effect is suppressed. In Study 3a, a brand explicitly associated with *cold ice* did not produce perceptions of a physically colder product, but did elicit colder emotional feelings toward the brand. Similarly, Study 3b employed a river delta prime and found a mere association effect for a construct outside of the water category (i.e., the water/beverage service on Delta commercial flights) but not for a construct within the category (i.e., the water flowing through Delta faucets).

Further support for the automatic nature of the mere association account is found in an experiment not reported here that more closely explored the Iowa coach anecdote that inspired this research. Undergraduate students were first asked to rate 20 large universities in terms of their reputations as either party or work-intensive schools. In the critical contrast between two comparable West Coast academic institutions, UCLA was judged as significantly more of a party-school than USC. However, after incidental exposure to the Trojan condom brand logo, an IAT assessing automatic associations between the two schools (represented by their logos) and *work*/*play* attributes uncovered a complete reversal of the prior explicit responses for participants familiar with collegiate sports, such that USC was implicitly more closely associated with *play*. No such reversal occurred for unfamiliar individuals or for those exposed to a control condom brand logo. Another experiment along the lines of the Armstrong Illusion involved priming participants with a piece of campus news according to which either a new campus minister or soccer coach named Noah had been hired. Afterwards, subjects were asked to evaluate what contemporary sport (out of 4 possible choices) the Biblical character Noah would prefer if he were alive today. As predicted, respondents familiar with the Noah Bible story were more likely to suggest that he would be a soccer fan, despite being unaware of the reason underlying their choice. Overall, the mere association effect appears highly robust and replicable.

Interestingly and counter intuitively, these spurious implicit associations appear to be more likely for individuals familiar with the concepts involved and in cases when these concepts do not share clear explicit links. The latter point is an important argument for the conceptual distinction between the mere association effect and simple spreading activation: since the explicit association between nodes should enhance spreading activation but was shown to work counter to the mere association effect (Studies 2a and 2b), the two phenomena are conceptually distinct. It could also be the case that when consumers note an explicit connection they correct for it and are not influenced by irrelevant primes. That is why the mere association account is an implicit processing account and why automatic cognition measures such as the IAT are instrumental in demonstrating its mechanism.

The mere association account is consistent with numerous recent literature findings. In a social psychology context, Chartrand, Dalton, and Fitzsimons (2007) demonstrate that

when primed subliminally with the names of controlling acknowledgesignificant others, individuals nonconsciously and unintentionally reject goals they associate with these relationship partners and instead pursue opposing goals. This reactance-based mechanism can be construed as an unconscious negative affect transfer from prime to goal and is well in line with the mere association account. Applied to a branding context, Fitzsimons, Chartrand, and Fitzsimons (2008) recently showed that subjects exposed to the Apple brand logo exhibited more creativity due to the prevalent association of Apple Corp. with the state of "being creative." Our account suggests that, under certain circumstances, exposure to any apple (i.e., the fruit and not necessarily the stylized brand logo) may produce similar effects, especially for consumers who are users of Apple products.

In the marketing literature, Yorkston and Menon (2004) demonstrate that the mere sound of a brand name can create inferences about the likely attributes of unfamiliar brands. In their work, consumers evaluated identical "Frish" and "Frosh" brands of ice cream differently, in line with the specific denotative meanings evoked by their phonetic associations. The authors' conclusion that "consumers gather and process information from brand names in an automatic manner" (Yorkston & Menon, 2004 p. 49) supports our focus on the implicit effects triggered by the multiple meanings or associations inherent to most concepts and relates to the Armstrong Illusion discussed earlier. Other research shows that consumers must consider and suppress unintended associations in deriving the intended meaning of polysemous or multiple meaning slogans used in advertising messages (Dimofte & Yalch, 2007). In these authors' research, context cues are shown to often prime undesired brand associations when advertising slogans of multiple possible meanings (and thus associations) are employed to promote the brand. Similar research by Nelson and Simmons (2009) found that individuals' judgments of space, distance, and time are influenced by the metaphorical relationship between cardinal direction and vertical position such that traveling South for example (i.e., down on a map) is unjustifiably perceived to be easier that traveling North (i.e., up on a map). Finally, Aggarwal and McGill (2007) recently found that when products exhibit features typically associated with humans (e.g., a car's "smiling" or "frowning" front grill), consumers often humanize them and evaluate them accordingly. Consistent with our mere association concept, this effect only occurs for subjects primed to think in human terms and did not occur for those primed to think in terms of object. The human perspective enables the illogical but unsuppressed association of the valence associated with the grill (positive—smiling, negative—frowning) to transfer to the car.

Our results have immediate practical implication for corporate branding and trademark law. For example, trademark law was changed by the Federal Dilution Act of 1995 and revised in 2006 to cover situations in which firms attempted to use an identical brand name in a market other than the brand's current market. Thus, Hasbro successfully sued to stop an adult internet site from using its family board game name of *Candyland* because of the possibility that the sexual association might dilute and tarnish its wholesome image (Zaichkowsky, 2006). Even without a threat of tarnishment, courts have held that a trademark holder may suffer when consumers no longer have a clear understanding of the brand's meaning as would occur if a business was allowed to use Rolls Royce for chewing gum or Kodak shoes. This can be a particular problem in international markets: It is unclear for example what kind of impact Tata Motors' introduction of their Nano vehicle model in India may have on iPod's Nano media player. In the Candyland and Nano cases, the connection is obvious because the brand names are identical. Less obvious but still relevant are situations in which the brand names are spelled differently but look or sound the same (see the trademark case of rice supplements Cholestin vs. Cholestene discussed in Zaichkowsky, 2006 p. 80). Thus, dangerous consequences of such ambiguity can occur when drugs beget unwarranted associations: Celebrex pills are meant for the treatment of arthritis, while Cerebryx is intravenous medicine for epilepsy. One strategy might be for companies threatened by unintended associative transfers to focus on how consumers categorize their products. Considering the in/out-of-category findings in the present research, the potential for damaging mere association effects could be assessed and prevented.

This investigation supports the increasing amount of consumer research looking at attitude formation as the result of consumers' own mental associations to specific brands or companies. Zaltman's Metaphor Elicitation Technique (Zaltman, 1997) and Roedder John, Loken, Kim, and Monga's (2006) Brand Concept Mapping method are examples of this innovative work. Our results contribute by suggesting that qualitative research findings that discover linkages between brands and consumer thoughts that seem far removed from the product category (e.g., colors, shapes, flavors, animals) may reflect networks of mere associations that can influence product beliefs, attitudes and choices. On the other hand, it suggests that the associations activated in a particular context may vary from the usual ones because of the presence of entities not consciously recognized as being associated with the focal brand or product.

Our automatic cognition account proposes that mental associations are often spontaneous, uncontrolled, and prompted by unexpected sources. When consciously acknowledged, mere associations can really make one think: Homer Simpson: *"I hate this new (939) area code. Like I don't have enough to remember already.* [...] *Don't you miss the old (636), Carl?"* Carl Carlson: *"I'm not sure which one's better. The 6 is closer to the 3, so you got convenience there, but the 9 has less to do with Satan, which is a plus in this religious world of ours..."*

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Appendix

Study 1c stimuli.

Study 2–stimulus for the critical choice.

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