

When Two Wrongs Make a Right: Using Conjunctive Enablers to Enhance Evaluations for
Extremely Incongruent New Products

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ABSTRACT

The success of new incongruent products hinges largely on whether consumers can efficiently make sense of the product. One of the most efficient ways that people make sense of new objects is through feature-based association. Such associations often incorporate an enabler (e.g., the color green) to help make sense of a semantically related feature (e.g., vitamin enriched). Evidence from three studies suggests that marketers can strategically incorporate enablers in product design to help consumers make sense of an extremely incongruent feature. As a result, consumers tend to reflect more favorably on the product. Furthermore, the authors find that even if the enabler itself is incongruent and leads to lower evaluations on its own, when combined with an atypical feature the effect can still be positive. Thus, a small, but semantically meaningful adjustment in design can help marketers successfully introduce extremely incongruent innovations.

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In 1993 PepsiCo introduced a new cola that they believed would quickly grow to be a billion dollar brand (Esterl 2016). They named it Crystal Pepsi because it was bottled without the dye that gives standard Pepsi its caramel coloring. The new product was launched with a Super Bowl commercial claiming “You’ve never seen a taste like this” accompanied by Van Halen’s hit song “Right Now.” Consumers, however, weren’t buying it. By 1995 sales dried up and the product was discontinued. In hindsight, pundits have argued that Crystal Pepsi failed because no explanation was given for its atypical color (Glass 2012). The company did not help consumers make sense of the new product and, in turn, consumers rejected it.

Researchers have reliably shown a relationship between the degree to which consumers can make sense of a new product and their evaluations of the product (Aggarwal and McGill 2007; Campbell and Goodstein 2001; Goodstein 2003; Jhang, Grant, and Campbell 2012; Meyers-Levy, Louie, and Curren 1994; Meyers-Levy and Tybout 1989; Noseworthy, Di Muro, and Murray 2014; Peracchio and Tybout 1996; Stayman, Alden, and Smith 1992). A general finding from this literature is that consumers are motivated to resolve new products within existing category beliefs and their ability to do so dictates their preference for the product. Thus, where consumers can successfully make sense of moderately incongruent products, their evaluations tend to turn more favorable, and where they struggle to make sense of extremely incongruent products, their evaluations tend to turn less favorable. This forms the basis for the classic non-monotonic relationship between the extent to which a new product is incongruent with a consumer’s expectations and the extremity of product evaluations—aptly coined the *schema congruity effect* (Meyers-Levy and Tybout 1989).

While the positive effects of moderate incongruity are well-documented, the focus of this research is on mitigating the negative effects of extreme incongruity. Consistent with the

literature on schema congruity, we define an extremely incongruent product as being so atypical of the category that people struggle to resolve it within an existing set of beliefs, and, consequently, the product suffers negative evaluations (Jhang et al. 2012; Meyers-Levy et al. 1994; Meyers-Levy and Tybout 1989; Noseworthy et al. 2014; Noseworthy and Trudel 2011; Peracchio and Tybout 1996; Stayman et al. 1992).

Although the literature has focused on how consumers make sense of new products that are at odds with their expectations, researchers have seldom acknowledged that the vast majority of extremely incongruent products are not incongruent as a whole, nor are they entirely novel. Rather they often incorporate a single feature that is non-normative for that particular category among several otherwise normative features, be it color (e.g., *black* toilet paper; Jhang et al. 2012), ingredient (e.g., *natural juice* in a soft drink; Meyers-Levy and Tybout 1989), packaging (e.g., *a bladder bag* soft drink; Noseworthy et al. 2014), shape (e.g., *a triangle* camera; Noseworthy, Cotte, and Lee 2011), or even benefit (e.g., *vitamin D* in meat; Meyers-Levy et al. 1994). These features are not new to the world, but rather it is the *feature combinations* that are novel. This is not unique to stimuli used in consumer behavior research. Crystal Pepsi, for example, was indeed incongruent with consumers' beliefs for a cola, but the concept of a clear beverage predated its introduction and existed comfortably in the broader soft drink schema.

A feature-based perspective suggests a novel approach to helping consumers resolve an extremely incongruent product: help them make sense of the feature that causes the broader incongruent inference. After all, if incongruent product evaluations are the result of one's ability to make sense of the source of the incongruity (Meyers-Levy and Tybout 1989), then combating incongruity at the feature level should alter evaluations of the product as a whole. This feature-based view of product incongruity represents a significant departure from current category-based

perspectives. Specifically, it suggests that people can resolve non-normative features by exploring the presence of other semantically-related features—what the literature refers to as *enablers* (Ahn and Kim 2001; Rehder 2010; 2014). This occurs either through a conjunctive process (e.g., something healthy is often green AND full of vitamins) or a disjunctive process (e.g., something unhealthy is often full of sugar OR contains saturated fats; Ahn, Marsh, Luhmann, and Lee 2002; Ashy and Maddox 2005; Kim and Ahn, 2002a). We are particularly interested in the former, as rule-learning through conjunction is one of the most efficient ways that people make sense of their environment (Ashy and Maddox 2005; Chater, Lyon, and Myers 1990). This suggests, for example, that if the inclusion of vitamins is causing a product to be extremely incongruent, we can help a consumer make sense of the incongruity by including an enabler, such as coloring the product green. Thus, we contend that semantically-related feature combinations can enhance product evaluations, even if such combinations are irrelevant beyond their normative co-occurrence.

In exploring this question, we make several important theoretical advances. First and foremost, we draw on theories of schema congruity and conjunctive enablers to make the novel claim that applying an enabler to an extremely incongruent feature can facilitate resolution and thus increase evaluations for something that would otherwise be perceived unfavorably. To date, the literature on enablers has not examined the impact of combining features that independently lower evaluations (two wrongs) to develop an overall favorable response (make a right). Prior work in this area has focused primarily on category typicality and feature likelihood judgments. The transition from resolution to evaluation is consistent with the predictions of schema congruity theory (Mandler 1982). We add to this literature the idea that the negative consequences of extreme product incongruity can be tackled at the feature level—that is, at the

source of the incongruity. Practically, this suggests that even small adjustments in product design can significantly improve consumer response to innovations that challenge existing beliefs.

In what follows, we outline existing theory regarding conjunctive inferences and, in particular, evidence for conjunctive enablers. We then develop the theoretical rationale for why the use of enablers should facilitate resolution of an extremely incongruent product by helping people make sense of the source of incongruity. From this, we predict that evaluations of a product with an extremely incongruent feature can be elevated by the presence of a corresponding enabler. We then identify the underlying mechanism by explaining how enablers facilitate the resolution of extreme incongruity and, as a result, improve product evaluations. In keeping with the title, we demonstrate this phenomenon with a stringent test: where both the enabler and the incongruent feature individually hinder resolution and lower evaluations (two wrongs), but in combination, enhance resolution and increase evaluations (make a right). We also demonstrate that the enabler does not have to be incongruent for this effect to work. Collectively, these hypotheses were tested across three studies: two lab experiments and in the field using an actual product with a classic incongruity problem. We conclude with a general discussion of the practical implications and theoretical contributions.

CONCEPTUAL DEVELOPMENT

Causal Reasoning through Conjunction

As children, we tend to learn about objects through conjunction—that is, by combining conceptual cues to form a more nuanced representation (Ahn et al. 2002; Kim and Ahn, 2002a;

Sloman, Love, and Ahn 1998). This is how we come to know that an animal with four legs that barks will probably chase our cat. Conjunctive inferences are beneficial in this regard, because they tend to facilitate meaning through probability. For instance, seeing something with a beak and wings gives us some probability that it will sing, although the likelihood of it doing so may be arbitrary. However, add that the exemplar is rather small, and our probability of observing a song bird increases dramatically. This is because these features are causally bound in a semantic network—small things with a beak and wings tend to sing.

One of the most important aspects of conjunctive inference is the notion of causal relationships—that is, some features are connected by the belief that one naturally leads to the other (Ahn and Kim 2001; Rehder 2010; 2014). As an example, consider a smartphone. Even knowing little about how it works, most consumers understand that the device has a battery, an internal processor (CPU), and a touch-screen display. More importantly, it is reasonable to believe that these features are causally connected: the battery powers the processor and the processor runs the display. Innovate any one of these features within the causal framework and the product becomes a less typical exemplar and thus more difficult to resolve within existing category knowledge (Ahn and Kim 2001; Rehder 2010). For instance, a phone with an innovative battery may be more atypical than a phone with an innovative shape given that the battery causally interacts with other functional elements within the phone, such as the processor and the user interface. This phenomenon is referred to as the *causal status effect* (Ahn, Kim, Lassaline, and Dennis 2000; Kim and Ahn 2002a, 2002b; Sloman et al. 1998).

Category Coherence and Enablers

Where causal status predicts when a novel feature will make an object extremely atypical, a second empirical phenomenon—the *coherence effect* (Ahn et al. 2002; Hayes and Rehder, 2012; Marsh and Ahn 2006; Mayrhofer and Rothe 2012; Rehder and Kim 2006)—offers insight into how one might strategically avoid the negative consequences. Coherence suggests that it is not only the degree to which the product incorporates the right features, but also the right feature combinations. Such combinations are the result of semantic associations that provide a more coherent representation of the object (Hayes and Rehder 2012). This process allows people to make sense of an object by making sense of its features in relation to other features, rather than making sense of its features in relation to the broader category. For example, Crystal Pepsi may be difficult to make sense of within the consumers' broader expectations for a cola, but a more coherent representation of the product might incorporate a semantically-related conjunct for the feature causing the difficulty—such as explaining that this new cola is made with natural spring water. Indeed, natural spring water is clear. This is based on the observation that if a conjunct is consistently present (as translucence is with water), it can become construed as an *enabler*—a feature that semantically facilitates the presence of another feature (Cheng and Novick 1991).

Enablers can have a considerable influence on category typicality, even if they are the effect of some other cause (Rehder 2014). In the case of Crystal Pepsi, this suggests that the enabler of natural spring water may be effective even if the cola's appearance and the water it is made from are technically unrelated. The inclusion of an enabler for a corresponding feature leads to an object being perceived as more typical of the category than if the feature was shown independently (Rehder 2003b; Rehder 2014; Rehder and Hastie 2001). The importance of this, however, is that the enabler does not need to be literally causal; it only has to retain a semantic association to another feature to heighten typicality judgments (Cheng and Novick 1991).

This gets interesting from a product design perspective because semantically associated features could be relatively minor, even superficial, design elements. That is, enablers can be salient cues that help people understand or infer more complex conceptual properties (Anderson and Sheu 1995). This is the same principle that informs the general field of perceptual causality—where perceptual cues afford a sense of a cause, independent of reasoning (Michotte 1946; 1963). For example, say Apple was to introduce an explicitly recyclable smartphone—a fairly substantial conceptual adjustment. This indeed may be at odds with our expectations for the category, and we may have a hard time making sense of it. Of course smartphones are plastic and glass and thus they should be recyclable. What makes them non-recyclable (at least in terms of domestic disposal) is their internal workings, and at some level, we probably know this as consumers. However, what would happen if Apple made the phone feel like cardboard?—a fairly superficial design adjustment. Cardboard is also incongruent with the smartphone category, but definitely not inconsistent with the concept of recyclable. Yet this does not change the internal workings. However, given what we know about enablers and causal perception, the technically irrelevant cardboard feature could serve to enable the concept of recyclability. Thus, the product might make a bit more sense and consumers might like it more as a result. This suggests a relatively inexpensive way to help people make sense of more complex conceptual adjustments that an innovative product might introduce to an existing category.

How Enablers Facilitate Resolution

The basic assumption underlying the above example is fundamentally consistent with the schema congruity effect. The valence of the evaluations generated by schema incongruity

depends on a person's ability to facilitate meaning—or what is referred to as the ability to “resolve” the incongruity (Jhang et al. 2012; Meyers-Levy and Tybout 1989; Noseworthy et al. 2014). More accurately, however, it is the ability to resolve the tension that results *from* the incongruity. This is an important parameter in Mandler's (1982) framework. Thus, if an enabler can elevate perceptions of typicality (Rehder 2003b; Rehder and Hastie 2001), then we might be able to use an enabler to facilitate resolution of an extremely incongruent feature. This is where our “two-wrongs” making a “right” enters the scene. Take an enabler (e.g., cardboard) that is semantically linked to the source of the incongruity (e.g., recyclable) more so than to the category, and consumers should struggle to make sense of both the enabler and the incongruent feature in isolation. However, if the enabler facilitates the resolution of the incongruent feature, then combining the two should result in positive evaluations.

The final step is to explain what we mean by facilitating resolution. The vast majority of research examining the schema congruity effect has explored how marketing tactics can facilitate assimilation—that is, resolution within an activated schema (e.g. Jhang et al. 2012; Noseworthy et al. 2011; Noseworthy et al. 2014). Comparatively little research has explored how marketers can facilitate accommodation—that is, resolution through schema reconfiguration or subtyping. This is partly due to the general belief that such a process results in negative evaluations. However, Mandler (1982) acknowledged that accommodation, which indeed is often necessitated by extreme incongruity, does not have to result in negative evaluations, but it tends to because of the cognitive effort it requires of consumers.

We contend that enablers can play an important role in mitigating that effort and the corresponding negative effect on evaluations. Specifically, we predict that the enablers allow consumers to subtype rather than engage in the more difficult process of schema reconfiguration.

This is possible because most incongruent products do not introduce a truly novel design or a new-to-the-world feature that requires accommodation through schema reconfiguration. Products like Dyson's bladeless fans—which require consumers to accept that not all fans require blades and reconfigure their schema—are relatively rare. Instead, most new products are incongruent because they alter a single feature that is part of well-established platform of features.

Going back to our recyclable phone example, we suggest that consumers will be more likely to subtype that device as an environmentally friendly smartphone when both the incongruent feature and the enabler are both present, than when either the enabler or incongruity are presented independently. In contrast, it seems highly unlikely that consumers will engage in schema reconfiguration and assume that henceforth all smartphones may be recyclable. This line of reasoning suggests that enablers are particularly useful in marketing products that introduce atypical features into well-established categories.

In sum, this paper is motivated by a simple observation leading to a clear set of predictions. If the vast majority of extremely incongruent products are the result of a non-normative feature leading consumers to see the product as atypical for the category, then we predict that it is possible to combat the negative consequences of extreme incongruity by changing the way consumers construe these features. Prior work suggests that enablers can alter the typicality of related features. Therefore, we set out to test if enablers can help consumers make sense of extremely incongruent products. Moreover, consistent with the notion that the mere act of resolving incongruity can elevate evaluations, we predict that enablers will increase product evaluations accordingly. The following studies test these predictions.

OVERVIEW OF THE STUDIES

Three studies investigate the core prediction that conjunctive enablers can facilitate the resolution of extremely incongruent features. In each study we vary the source of incongruity in accordance with a corresponding enabler. Study 1 shows that while consumers may see an incongruent feature and an incongruent enabler as less typical in isolation from one another, the combination of the two elevates typicality judgments and enhances resolution, which ultimately leads to heightened product evaluations. Critically, study 1 also shows that the enabler must retain a semantic link to the source of incongruity for this effect to hold.

Study 2 replicates the results of study 1 using a different incongruity manipulation, with a haptic enabler—that is, an enabler based on the sense of touch. This study further confirms resolution as the underlying mechanism driving the increase in evaluations. Finally, under the guise of a field taste test, study 3 replicates the findings using a real example of incongruity failure (Crystal Pepsi). This study employs a congruent conceptual enabler to disentangle the source of incongruity from the enabler, and utilized an empirical design to test whether the facilitation of incongruity can bias post-experience evaluations. This study shows that even after tasting the product, an enabler can enhance resolution and thus alter evaluations. Taken as a whole, this research illustrates how marketers can help consumers understand new incongruent products by incorporating minor adjustments that leverage pre-existing semantic networks.

STUDY 1

The core objective of study 1 was to test the initial hypothesis that using an enabler to facilitate consumers' ability to resolve an incongruent product can lead to elevated evaluations. Thus, we took two “wrongs”—an incongruent conceptual adjustment to a category (vitamin-enriched coffee) and a corresponding perceptual alteration (green coffee), both of which independently lower evaluations—and designed a study to test whether combining them makes a “right.” That is, whether an enabler (the color green) can help consumers make sense of a more meaningful conceptual alteration (vitamin-enriched) in a category.

Method

Participants and Design. One-hundred and ninety-eight participants (34.8% females; $M_{\text{age}} = 26.3$) were recruited through public posters and advertisements soliciting regular coffee drinkers, and were subsequently paid \$10 for taking part in the study. Participants were randomly assigned to one of six conditions in a 2 (product congruity: congruent [standard coffee] vs. incongruent [vitamin-enriched coffee]) \times 3 (perceptual cue: black [control] vs. green vs. red) between-subjects factorial design.

Stimuli. We chose coffee as the target product for two reasons: First, a similar manipulation of adding vitamins to coffee has been used in prior work to study the schema congruity effect (Jhang et al. 2012; Noseworthy et al. 2014). Second, that same work explored non-normative color as alternative manipulations of schema incongruity (e.g., black toilet

paper).¹ This provided the unique opportunity to examine the individual and combined effects of previously validated cues, while using one as an enabler for the other.

To establish a color adjustment that could serve as an appropriate enabler for something enriched with vitamins, pretest participants ($n = 85$) were asked to list the first color that comes to mind when they think of health and vitamins. The vast majority of respondent chose the color green (72%). A color, which was mentioned, but not dominantly linked to health, was the color red (9%). Critically, neither green nor red were mentioned in a follow-up question about color expectations for coffee. Thus, we adopted the color green as the enabler, and included the color red to help us rule out the possibility that any novel cue would work. Doing so afforded the additional benefit of balancing out the design given that more information is provided when a perceptual cue accompanies a conceptual cue. Thus, black coffee served as our perceptual cue control condition, green coffee served as the predicted enabler condition, and red coffee was included to rule out alternate explanations and balance the design (see appendix A).

Procedures and Dependent Measures. Participants were brought into a product testing lab under the explicit guise that we are interested in their thoughts on a new coffee product. They were then directed to a computer screen where they read a statement explaining how they are about to see a working version of a print advertisement (one of the three ads in appendix A). In one condition, the concluding sentence explicitly stated, "... a working version of a print advertisement *for a new vitamin-enhanced coffee product.*" In another condition, participants

¹ Note: Jhang et al. (2012) and Noseworthy et al. (2014) used this manipulation as "moderate" incongruity. However, in pretesting the stimuli from these two papers we found that, at least with self-identified coffee drinkers, this concept was perceived to be as atypical and difficult to resolve as many of the extreme incongruity stimuli. This may speak to the variance noted by Noseworthy et al. around the vitamin-fortified feature (p. 1114). Nevertheless, we selected this manipulation as something that is difficult to resolve for these users based on pretesting data.

read, "... a working version of a print advertisement *for a new coffee product.*" Participants were then permitted to view the ad at their leisure, and were informed that once ready, they may click "next" to answer some questions about the product. The questionnaire included 10 randomized items (anchored: 1 = *not at all*; 7 = *extremely*). Seven captured participants' overall attitude towards the product (left a favorable impression, is likeable, is appealing, is desirable, is of good quality, interested in trial, is a high performance product), and three captured perceived typicality (is common, is likely, matches expectations; Campbell and Goodstein 2001). Following these measures, participants were asked to indicate their ability to resolve the product on a two item 7-point scale, which captured the extent to which the new coffee made sense to them ("makes no sense/makes sense"), and whether they understood the rationale of the product ("disagree/agree"; Jhang et al. 2012). Participants were then asked to type their open-ended opinion about whether and how the coffee makes sense (e.g., "*What did you think about the product you reviewed?*") Jhang et al. 2012). The thought-listing exercise provided a second explicit measure of the resolution process. The questionnaire concluded with basic demographic questions.

Results

Perceived Typicality. A two-way ANOVA on perceived typicality ($\alpha = .70$), as a function of conceptual incongruity (incongruent = vitamin-enriched vs. standard [control]) and perceptual cue (conjunctive = green vs. control = black vs. confound check = red), yielded a significant interaction ($F(2, 192) = 50.79, p < .001, \eta^2 = .30$). Simple effects revealed that participants judged the black vitamin-enriched coffee to be less typical ($M = 2.77$) than the black standard coffee ($M = 5.03; F(1, 192) = 69.89, p < .001, \eta^2 = .57$). Participants also judged the

green standard coffee ($M = 2.32$) and red standard coffee ($M = 2.65$) to be less typical than the black standard coffee ($M = 5.03$; $F(1, 192) = 100.05, p < .001, \eta^2 = .25$ and $F(1, 192) = 77.58, p < .001, \eta^2 = .19$, respectively). Thus, the incongruent cue and the two perceptual cues reduced perceived typicality when presented independently.

However, when the perceptual and conceptual cues were combined, participants judged the green vitamin-enriched coffee to be more typical ($M = 3.86$) than either the black vitamin-enriched coffee ($M = 2.77$; $F(1, 192) = 16.25, p < .001, \eta^2 = .05$) or the red vitamin-enriched coffee ($M = 2.87$; $F(1, 192) = 13.38, p < .005, \eta^2 = .04$). Critically, the green vitamin enriched coffee was also judged as more typical ($M = 3.86$) than the green standard coffee ($M = 2.32$; $F(1, 192) = 31.18, p < .001, \eta^2 = .09$). Thus, as expected, the predicted enabler, though constituting little more than a semantic adjustment to the product's color, led consumers to see a conceptual alteration as more typical than it otherwise would be. This did not occur for the red coffee, which the pretest established was not semantically-linked to vitamins ($M_{Enriched} = 2.87$ vs. $M_{Control} = 2.65, p = .41$). These findings suggest that not any novel cue will do; rather, it seems that the cue only works when it is linked to the source of incongruity. We predicted that this change in typicality is the direct result of a heightened ability to resolve the source of incongruity.

Resolution. A two-way ANOVA on resolution ($r = .85$) yielded a significant incongruity \times perceptual cue interaction ($F(2, 192) = 16.80, p < .001, \eta^2 = .13$). The nature of the interaction was such that participants were less likely to resolve the black vitamin-enriched coffee ($M = 3.26$) than the black standard coffee ($M = 4.56$; $F(1, 192) = 11.81, p < .005, \eta^2 = .04$). They were also far less likely to resolve the green standard coffee ($M = 2.35$) and the red standard coffee ($M = 2.23$) than the black standard coffee ($M = 4.56$; $F(1, 192) = 34.03, p < .001, \eta^2 = .13$ and $F(1,$

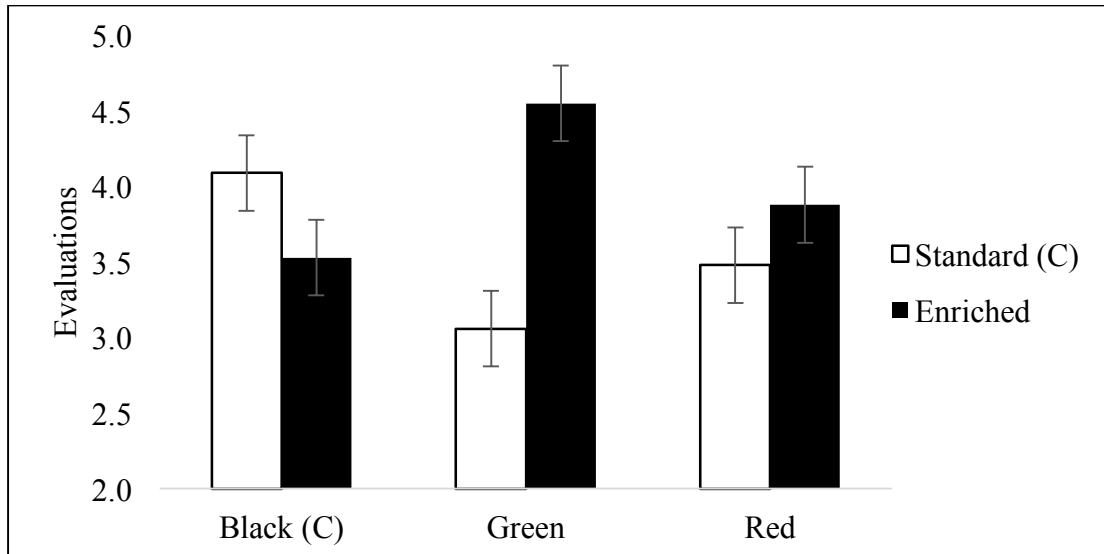
192) = 37.86, $p < .001$, $\eta^2 = .14$, respectively). Thus, consistent with the typicality results, participants struggled to make sense of the cues when presented independently. However, when presented together, participants were more likely to resolve the green vitamin-enriched coffee ($M = 4.15$) than either the black vitamin-enriched coffee ($M = 3.26$; $F(1, 192) = 5.56$, $p < .05$, $\eta^2 = .02$) or the red vitamin-enriched coffee ($M = 2.58$; $F(1, 123) = 17.27$, $p < .001$, $\eta^2 = .07$). Critically, the green vitamin-enriched coffee was easier to resolve ($M = 4.15$) than the green standard coffee ($M = 2.35$; $F(1, 192) = 22.61$, $p < .001$, $\eta^2 = .09$), and, in particular, it was just as easy to resolve as the black standard coffee ($M = 4.56$, $p = .282$). These contrasts further support the prediction that people are more likely to resolve a conceptual adjustment to a product concept if there is a corresponding perceptual cue that relates to it.

As a follow-up, we went one step further and explored the contents of the thought task. Using a procedure similar to that described by Jhang and colleagues (2012) and Noseworthy and colleagues (2014), two independent coders—blind to the hypotheses—coded the open-ended responses. All responses showing successful resolution were coded as 1 (e.g., “*It’s a new healthy coffee*”), responses showing unsuccessful resolution were coded as -1 (e.g., “*I don’t understand why they would do this*”), and any responses that did not pertain to the resolution process were coded as 0 (e.g., “*I’ll stick with my Starbucks!*”). The two coders had 89% agreement; all outstanding disagreements were resolved through discussion. The results yielded a significant product congruity \times perceptual cue interaction ($F(2, 192) = 5.10$, $p < .01$, $\eta^2 = .05$). The nature of the interaction was such that participants were more likely to articulate resolving the green vitamin-enriched coffee ($M = .27$) than either the green standard coffee ($M = -.27$; $F(1, 192) = 7.37$, $p < .01$, $\eta^2 = .04$), the black vitamin-enriched coffee ($M = -.12$; $F(1, 192) = 3.84$, $p = .05$, $\eta^2 = .02$), or the red vitamin-enriched coffee ($M = -.45$; $F(1, 192) = 13.10$, $p < .001$, $\eta^2 = .06$). Of

note, however, the ease of resolving the green vitamin-enriched coffee was no different than the ease of resolving the black standard coffee ($M = .27$ vs. $M = .21$, $p = .763$). Close inspection of the content of the thought listings lent insight into why this was occurring. The green vitamin-enriched coffee condition had the greatest percent of mentions (59% as a ratio of participants in that condition) referring to the product as a “*healthy coffee*” (all other cells < 18%, $ps < .05$). Thus, it seemed as if the semantic link between the enabler and the source of incongruity solidified this product as a special case of the coffee category, which would explain the elevated typicality estimates. We predicted that this will translate into heightened product evaluations consistent with the schema congruity effect (Meyers-Levy and Tybout 1989).

Target Evaluations. A two-way ANOVA on target evaluations ($\alpha = .81$) yielded a significant incongruity \times perceptual cue interaction ($F(1, 192) = 16.90$, $p < .001$, $\eta^2 = .14$). As illustrated in figure 1, simple effects revealed that participants evaluated the black vitamin-enriched coffee less favorably ($M = 3.53$) than the black standard coffee ($M = 4.09$; $F(1, 192) = 4.98$, $p < .05$, $\eta^2 = .02$). Participants also evaluated the green standard coffee ($M = 3.06$) and the red standard coffee ($M = 3.48$) less favorably than the black standard coffee ($M = 4.09$; $F(1, 192) = 16.96$, $p < .001$, $\eta^2 = .07$ and $F(1, 192) = 5.83$, $p < .05$, $\eta^2 = .02$, respectively). These results are consistent with prior research, which has found that people do not like objects that they cannot easily make sense of (evidenced by the lack of resolution in these conditions in concert with the decrease in typicality; Meyers-Levy and Tybout 1989; Noseworthy et al. 2014).

FIGURE 1
PRODUCT EVALUATION RESULTS FOR STUDY 1



Note: (C) denotes the treatment control within each condition

As predicted, this changed when the enabler was presented with the incongruity. Specifically, participants evaluated the green vitamin-enriched coffee more favorably ($M = 4.55$) than either the black vitamin-enriched coffee ($M = 3.48$; $F(1, 192) = 16.79, p < .001, \eta^2 = .07$) or the red vitamin-enriched coffee ($M = 3.97$; $F(1, 192) = 7.28, p < .01, \eta^2 = .03$). Moreover, people evaluated the green vitamin-enriched coffee ($M = 4.55$) more favorably than the green standard coffee ($M = 3.06$; $F(1, 192) = 35.81, p < .001, \eta^2 = .15$). In fact, participants' evaluations of the green vitamin enriched coffee did not differ from standard black coffee ($M = 4.55$ vs. $M = 4.09$, $t(192) = -1.87, p = .064, d = .54$). In other words, consumers liked the green vitamin-enriched coffee more than either the green coffee or the vitamin-enriched coffee (see table 1 for aggregated results).²

² Note: In addition to red, we piloted other colors which had some relation to health, but not vitamins (e.g., blue.). Only green demonstrated the enabler effect with vitamin-enriched coffee. This gave us additional confidence that there is a need for the enabler to be semantically linked to the source of incongruity.

TABLE 1
DESCRIPTIVE STATISTICS FOR STUDY 1

	Standard Coffee			Vitamin-Enriched Coffee		
	Black	Green	Red	Black	Green	Red
Typicality	5.03 (1.18)	2.32 (.93)	2.65 (1.06)	2.77 (1.12)	3.86 (1.31)	2.87 (.95)
Resolution	4.56 (1.89)	2.35 (1.03)	2.23 (1.08)	3.26 (1.73)	4.15 (2.03)	2.58 (1.14)
Evaluations	4.09 (.92)	3.06 (.91)	3.48 (1.07)	3.53 (1.06)	4.55 (.79)	3.88 (1.24)
<i>Coding for Resolution</i> **	.21 (.78) 42.4%	-.27 (.76) 18.2%	-.36(.78) 21.2%	-.12 (.93) 36.3%	.27 (.88) 54.5%	-.45 (.75) 15.2%
Cell size	33	33	33	33	33	33

Note—Standard deviations are reported in parentheses, ** = means of index and percent of successful resolution.

As we predicted, if product evaluations are being influenced by consumers' ability to resolve the incongruent elements, then resolution should mediate product evaluations (Jhang et al. 2012). Thus, consistent with prior work (e.g., Jhang et al. 2012; Maoz and Tybout 2002), we sought to round out our analysis by exploring resolution as the underlying mechanism. A mediated moderation analysis was conducted (Hayes 2012; model 8, bias-corrected bootstrap with 10,000 draws). As predicted, the conditional indirect effect of product congruity (standard coffee vs. vitamin-enriched coffee) on product evaluations through resolution was contingent on the perceptual cue. That is, resolution mediated the elevated evaluations for the vitamin-enriched coffee when it was colored green versus black ($B = .09$; $SE = .07$; 95% CI: .001; .277). Resolution also mediated the decreased evaluations for the standard coffee when it was colored green versus black ($B = -.23$; $SE = .11$; 95% CI: -.473; -.024). There was no significant mediating effect of resolution for the vitamin-enriched red coffee relative to the vitamin-enriched black coffee ($B = -.01$; $SE = .03$; 95% CI: -.059; .037), which makes sense given that both conditions were equally difficult to resolve. However, there was a marginally significant

negative indirect effect of resolution on evaluations for the standard red coffee relative to the standard black coffee ($B = -.12$; $SE = .07$; 90% CI: $-.245$; $-.001$). The first positive indirect effect suggests that participants were better able to resolve the concept of a vitamin-enriched coffee when it was green, and this process led to elevated evaluations consistent with the literature on schema congruity. The two negative indirect effects showed that the concept of a vitamin-enriched coffee and the color red independently inhibited resolution and lowered evaluations. The statistically insignificant indirect effect of adding the color red to the concept of vitamin-enhanced coffee ruled out the possibility that the results are being driven by the additional information or by a source novelty. Thus, we have our “two wrongs”—the concept of a vitamin-enhanced coffee and the concept of a green coffee, which independently inhibit resolution and lower product evaluations—and we combined them to make a “right.”

Discussion

The results of study 1 offered initial support for the notion that conceptual adjustments to a product category can be facilitated by seemingly superficial enablers, which, in turn, help consumers to better make sense of the product. Specifically, coffee drinkers struggled with the concept of vitamin-enriched coffee, and also struggled with the concept of green coffee. This led to relatively poor evaluations of both products. Yet, when the two incongruent features were combined, green vitamin-enriched coffee received a superior evaluation. The same cannot be said for red vitamin-enriched coffee, presumably because the color red is not semantically linked to the inclusion of vitamins. This was also illustrated in the difficulty that participants had resolving the red vitamin-enriched coffee. Thus, a novel color alone did not facilitate resolution.

The one result that was not anticipated, at least not to the extent observed, was the rather large increase in perceived typicality for the green vitamin-enriched coffee. While it is known that enablers can enhance perceptions of typicality (Rehder 2003b; Rehder 2014; Rehder and Hastie 2001), it was unexpected that it would rise to the same level as the congruent control. We believe this may be related to the thought task results, which suggest that participants are subtyping the green vitamin-enhanced coffee as a “healthy alternative.” Thus, it may be that green vitamin-enhanced coffee is more typical of one’s expectations for a healthy subtype. That said, there is the possibility that telling people they are going to see a vitamin-enhanced coffee and then showing them the color green primed the expectation. This effect could have also been exacerbated by the choice of category, given that perceptual variations in beverages are relatively common. Thus, in study 2, we sought to conceptually replicate these results by exploring a more durable product category, while using a more subtle manipulation of an enabler. Specifically, we designed study 2 to explore a haptic (touch perception) enabler.

STUDY 2

Method

Participants and Design. Participants ($N = 127$; 52% females; $M_{\text{age}} = 28.3$) were recruited through newspaper ads and public posters to take part in a new product study in exchange for \$10. Those who agreed were randomly assigned to one of four conditions in a 2 (product congruity: congruent [standard phone] vs. incongruent [recyclable phone]) \times 2 (perceptual cue: cardboard fiber vs. plastic [control]) between-subjects factorial design.

Stimuli. The target product chosen was smartphones. We chose smartphones for three reasons: (1) the category is relevant and familiar to most consumers, (2) the basic prototype has varied little over time and thus afforded a stable category in which to introduce incongruity, and most importantly, (3) recent work has employed haptic incongruity in the design of smartphones to generate negative product evaluations. Specifically, Sundar and Noseworthy (2016) used a cardboard fiber smartphone to induce negative sensory conflict. The authors found that because consumers have a general belief that smartphones are plastic, a smartphone that looks plastic but feels like rough cardboard violates this schema. Thus, we adopted similar stimuli, which notably allowed us to use a more subtle perceptual input for our enabler—namely, touch.

Two versions of a visually identical smartphone case were printed for this study based on the Toyo Labo iPhone jacket template. The phone cases consisted of a finish that pretested as either, 1) looking like and feeling like plastic (this constitutes our control), or 2) looking like plastic but feeling like rough cardboard fiber (this constitutes our haptic enabler, see appendix B). Toyo Labo printed and shipped the stencil cut-out of the iPhone jacket (as depicted in this video: <https://www.youtube.com/watch?v=0RK2Itrxt4c>). Research assistants then affixed the jacket to non-functional iPhone 5s. This step was critical given the case needed to be seen as part of the phone itself and not a peripheral add-on (Sundar and Noseworthy 2016).

Pretesting ($n = 92$) confirmed discernable differences in tactile perception only occurred when participants were permitted to handle the phones (softness, thickness, and relief [i.e. roughness]; adapted from Picard 2006; anchored: 1 = *very incapable*; 7 = *very capable*, $ps < .001$). As in Sundar and Noseworthy (2016), we also collected perceptions of innovativeness (anchored: 1 = *strongly disagree*, 7 = *strongly agree*) on four 7-point items: “The phone is highly

innovative”; “Relative to other phones in this category, this phone is very innovative”; “The phone I reviewed is unique to its users”; and “The technology adopted in this phone is new and cutting edge”; adapted from Ali, Krapfel, and LaBahn 1995; Calantone, Chan, and Cui 2006). The results confirmed the phones did not vary in perceived innovativeness ($\alpha = .86$; $ps > .21$).

Given the results of study 1, it is interesting to examine what would happen if we used a haptic perceptual cue such as cardboard fiber as an enabler to facilitate the resolution of a more meaningful conceptually incongruent cue (e.g., recyclable). Indeed, a pretest ($n = 65$), using sheets of plastic-coated cardboard or sheets of cardboard fiber—that is, sheets of the same materials used to make the phones—revealed that consumers felt the rough cardboard fiber sheets were more recyclable (anchored 1 = *not at all recyclable*; 7 = *extremely recyclable*; $M = 5.03$) than the plastic-coated sheets ($M = 3.19$; $t(63) = 5.41$, $p < .001$, $d = 1.35$). Thus, confirming a stronger semantic link between recyclability and cardboard fiber (versus plastic).

If recyclability is sufficiently incongruent with the smartphone category then consumers should struggle to make sense of it. To be sure, pretest participants ($n = 37$) were shown two identical phones (counterbalanced), but one had an explicit “recyclable” label. They were asked to indicate how many mental steps are needed to make sense of each phone (anchored: 0 = *few steps*; 5 = *many steps*; adapted from Jhang et al. 2012). As expected, the mere mention of recyclability led to more mental steps as people tried to work out the implication of a phone being recyclable ($M_{\text{control}} = 1.78$ vs. $M_{\text{recyclable}} = 3.11$; $t(36) = -5.54$, $p < .001$, $d = 1.29$). Thus, consistent with evidence linking this measure to heightened product evaluations, it was predicted that the recyclable tag will reduce product evaluations (Jhang et al. 2012). Similarly, the haptic enabler should lead to the previously found negative evaluations (Sundar and Noseworthy 2016). Hence, again we have two wrongs, and we are looking to make a right. If our findings are driven

by a conjunctive process that enhances resolution and thus leads to positive evaluations, then we should be able to override the negative effects of each independent cue. This suggests that consumers may evaluate a cardboard fiber recyclable phone substantially more favorably than either a cardboard fiber smartphone or a recyclable smartphone individually.

Procedures and Dependent Measures. Participants were brought into a new product testing lab under the guise that they will be handling a standard (vs. recyclable) phone that was designed by a major smartphone manufacturer in the US. The phones were presented as hardware prototypes (i.e. participants were told there was no working software interface). This allowed us to avoid having consumers estimate their preference based on the software.

Participants were asked to handle one of the two fabricated phones. They were then asked to assume that they came across this smartphone while shopping in their local mall, and to evaluate the phone as if considering it for purchase (using the same evaluation items described in study 1). The only alterations being that we adopted Jhang and colleague's (2012) measure for typicality (two items 7-point scale; *atypical/typical* and *usual/usual*). We chose this scale due to the relatively poor loadings observed in study 1. Participants then filled out the same two resolution items described in study 1, and responded to the same open-ended question about whether the phone makes sense (e.g., "*What did you think about the smartphone you reviewed?*") (Jhang et al. 2012). The questionnaire concluded with basic demographic questions.

Results

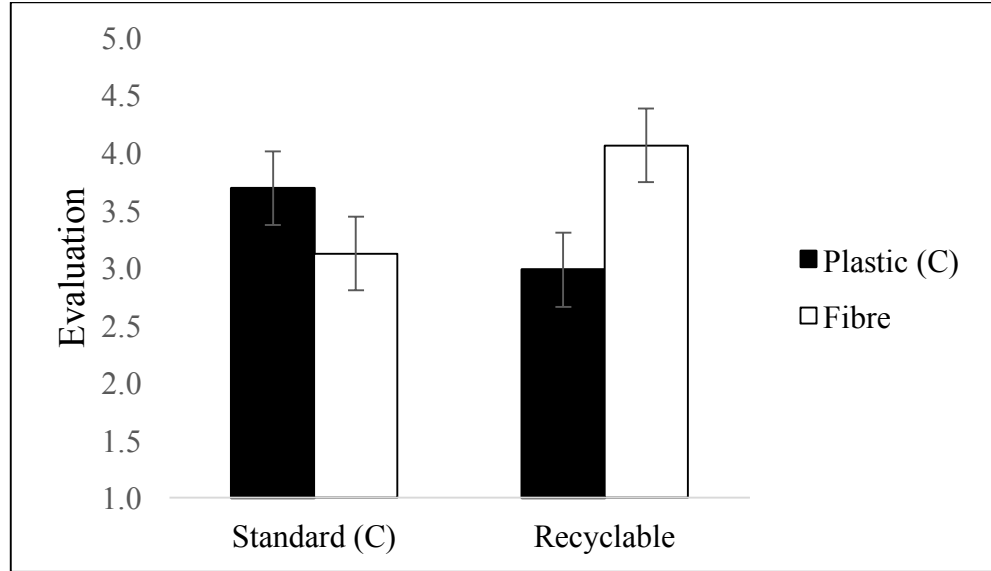
Perceived Typicality. A two-way ANOVA on perceived typicality ($r = .75$) as a function of product congruity (incongruent = recyclable phone vs. congruent = standard phone) and perceptual cue (cardboard fiber vs. plastic) yielded a significant interaction ($F(1, 123) = 58.66, p < .001, \eta^2 = .30$). Simple effects revealed that participants judged the plastic recyclable phone to be less typical ($M = 2.65$) than the plastic standard phone ($M = 4.37; F(1, 123) = 56.42, p < .001, \eta^2 = .28$). Participants also perceived the cardboard fiber standard phone to be less typical ($M = 2.73$) than the plastic standard phone ($M = 4.37; F(1, 123) = 51.87, p < .001, \eta^2 = .26$). Thus, like study 1, the incongruent cue and the corresponding enabler reduced perceived typicality when presented independently. Once again, when the two were presented together, participants judged the cardboard fiber recyclable phone to be more typical ($M = 3.48$) than either the plastic recyclable phone ($M = 2.65; F(1, 123) = 12.04, p < .005, \eta^2 = .07$) or the cardboard fiber standard phone ($M = 2.73; F(1, 123) = 10.81, p < .005, \eta^2 = .06$). Thus, as predicted, the enabler led participants to see a conceptual alteration to the category as more typical than it otherwise would be. Consistent with study 1, we predicted this would be reflected in heightened resolution.

Resolution. A two-way ANOVA on resolution ($r = .85$) yielded a significant product congruity \times perceptual cue interaction ($F(1, 123) = 13.83, p < .005, \eta^2 = .10$). The nature of the interaction was such that participants were much less likely to resolve the plastic recyclable phone ($M = 2.76$) than the plastic standard phone ($M = 4.03; F(1, 123) = 9.23, p < .005, \eta^2 = .07$). They were also far less likely to resolve the cardboard fiber standard phone ($M = 2.73$) than the plastic standard phone ($M = 4.03; F(1, 123) = 9.73, p < .005, \eta^2 = .07$). Thus, consistent with the typicality results, participants struggled to make sense of the incongruent cue and the corresponding enabler when both were presented independently. However, when the two were

presented together, participants were more likely to resolve the cardboard fiber recyclable phone ($M = 3.66$) than either the plastic recyclable phone ($M = 2.76$; $F(1, 123) = 4.59, p < .05, \eta^2 = .03$) or the cardboard fiber standard phone ($M = 2.73$; $F(1, 123) = 4.91, p < .05, \eta^2 = .04$). Participants were just as able to resolve the cardboard recyclable phone as they were the plastic standard phone ($M = 3.66$ vs. $M = 4.03, p = .369$). Thus, people are more likely to resolve a recyclable smartphone when there is an enabler to help them do so.

As a follow-up, we explored the contents of the thought task using the procedures described in study 1. The two coders had 87% agreement; all outstanding disagreements were resolved through discussion. The results yielded a significant product congruity \times perceptual cue interaction ($F(1, 123) = 8.58, p < .005, \eta^2 = .07$). The nature of the interaction was such that participants were more likely to articulate resolving the cardboard fiber recyclable phone ($M = .25$) than either the plastic recyclable phone ($M = -.13$; $F(1, 123) = 4.30, p < .05, \eta^2 = .03$) or the cardboard fiber standard phone ($M = -.28$; $F(1, 123) = 8.59, p < .005, \eta^2 = .07$). Close inspection of the content of the thoughts was also revealing. In support of the subtyping results from study 1, the cardboard fiber recyclable phone condition had the greatest percent of mentions (64% as a ratio of participants in that condition) referring to the product as an “*environmentally friendly smartphone*” (all other cells $< 30\%$, $ps < .05$). Thus, it seemed as if the semantic link between the enabler and the source of incongruity solidified this product as a special case of the smartphone category, which would again explain the increase in typicality estimates. Consistent with study 1, we predicted that this would translate into elevated product evaluations.

FIGURE 2
PRODUCT EVALUATION RESULTS FOR STUDY 2



Note: (C) denotes the treatment control within each condition

Target Evaluations. A two-way ANOVA on target evaluations ($\alpha = .88$) as a function of product congruity and perceptual cue yielded a significant interaction ($F(1, 123) = 13.62, p < .001, \eta^2 = .10$). As illustrated in figure 2, simple effects revealed that participants evaluated the plastic recyclable phone less favorably ($M = 2.98$) than the plastic standard phone ($M = 3.69$; $F(1, 123) = 5.01, p < .05, \eta^2 = .04$). Consistent with Sundar and Noseworthy (2016), participants also evaluated the cardboard fiber standard phone less favorably ($M = 3.11$) than the plastic standard phone ($M = 3.69$; $F(1, 123) = 3.31, p = .071, \eta^2 = .02$). Taken in concert with the resolution results, these findings are consistent with evidence that people tend not to like objects that they cannot easily make sense of (Meyers-Levy and Tybput 1989; Noseworthy et al. 2014).

However, this changed when the enabler was presented with the incongruity. Specifically, participants evaluated the cardboard fiber recyclable phone more favorably ($M = 4.06$) than either the cardboard fiber standard phone ($M = 3.11$; $F(1, 123) = 8.91, p < .001, \eta^2 = .06$) or the plastic recyclable phone ($M = 2.98$; $F(1, 123) = 11.53, p < .005, \eta^2 = .08$). In fact,

evaluations of the cardboard recyclable phone did not differ from evaluations of the plastic standard phone ($M = 4.06$ vs. $M = 3.69$, $p = .246$). Thus, the recyclable cardboard fiber phone was liked more than either the cardboard fiber phone or the recyclable phone (see table 2 for aggregated results).

TABLE 2
DESCRIPTIVE STATISTICS FOR STUDY 2

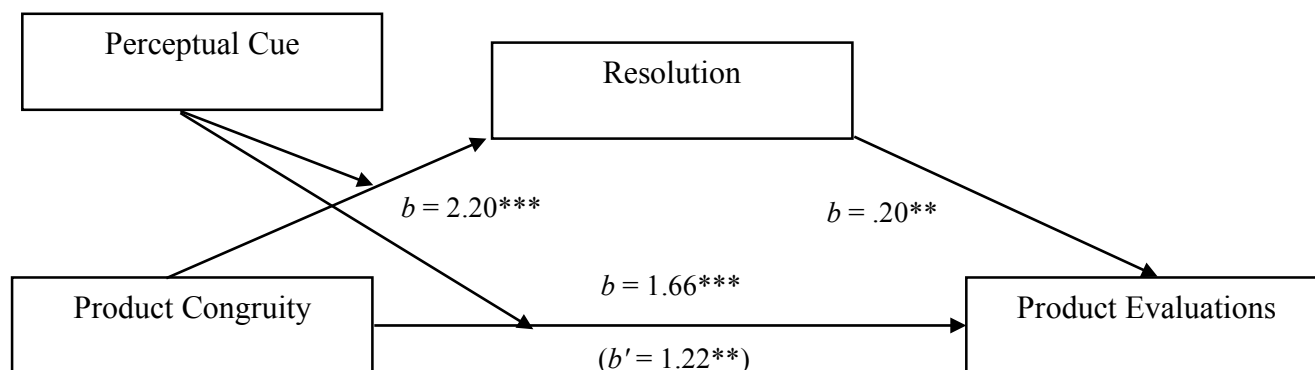
	Plastic		Cardboard Fiber	
	Standard Phone	Recyclable Phone	Standard Phone	Recyclable Phone
Typicality	4.37 (1.25)	2.65 (.91)	2.73 (.85)	3.48 (.49)
Resolution	4.03 (2.09)	2.76 (1.29)	2.73 (1.43)	3.65 (1.71)
Evaluations	3.69 (1.13)	2.98 (1.16)	3.11 (1.34)	4.06 (1.40)
<i>Coding for Resolution</i> **	.09 (.64) 95%	-.13 (.76) 65%	-.28 (.73) 56%	.25 (.76) 81%
Cell size	32	31	32	32

Note—Standard deviations are reported in parentheses. ** = means of index and percent of successful resolution

Once again, we sought to round out our analysis by exploring resolution as the underlying mechanism (Hayes 2012; model 8, bias-corrected bootstrap with 10,000 draws; see figure 3). As predicted, the conditional indirect effect of product congruity (standard smartphone vs. recyclable smartphone) on product evaluations through resolution was contingent on the perceptual cue. That is, an increase in resolution mediated the elevated evaluations for the recyclable phone when it was made out of cardboard fiber relative to when it was made out of plastic ($B = .18$; $SE = .11$; 95% CI: .027; .452), whereas a decrease in resolution mediated the reduction in evaluations for the standard phone that was made out cardboard fiber relative to

when it was made out of plastic ($B = -.25$; $SE = .14$; 95% CI: $-.628$; $-.059$). As in study 1, the first indirect effect suggests that participants were able to resolve the product better when the enabler facilitated the processing of the incongruent cue, and this process led to elevated evaluations. The second significant indirect effect shows that when the enabler was presented independently, it inhibited resolution and lowered product evaluations. Thus, again, we have our “two wrongs”—the concept of recyclability and the cardboard fiber, which independently inhibit resolution and lower product evaluations—and we combined them to make a “right.”

FIGURE 3
MEDIATED-MODERATION RESULTS FOR STUDY 2



Note: Unstandardized betas are reported with superscripts * ($p < .05$), ** ($p < .01$), and *** ($p < .001$).

Discussion

The results of study 2 built upon study 1 by confirming that conceptual adjustments to a product category that would otherwise be met with negative evaluations can indeed be facilitated by perceptual enablers. Specifically, we found that because participants struggled with the concept of a recyclable phone, their evaluations of it were relatively low. Similarly, participants seemed to struggle to make sense of a phone made out of cardboard fiber and they responded

with lower evaluations. Yet, consistent with the conjunctive effect observed in study 1, participants had less difficulty with a cardboard fiber recyclable phone and that led to superior product evaluations. Critically, resolution once again mediated this effect, such that the enabler facilitated the resolution of the source of incongruity, and this, in turn, improved product evaluations. This finding is consistent with schema congruity theory (Mandler 1982). The results of studies 1 and 2 represent the first instances where two unique atypical cues, which independently are difficult to resolve, combine to offset one another.

Although compelling and consistent with the preamble of “two wrongs” making a “right,” these findings raise the question of whether our effects apply broadly or only to a narrow subset of product incongruity—namely, conceptual adjustments. Indeed, perceptual incongruity has been explored extensively in the literature, so the question is relevant (Jhang et al. 2012; Noseworthy et al. 2014). It is our contention that the effect should be bi-directional. The notion of perceptual causality does not require that a perceptual cue be applied to a corresponding conceptual cue, but merely that the two coexist to afford a more coherent representation (Cheng and Novick 1991). We applied superficial perceptual cues as a means of testing whether marketers could economically capitalize on the use of enablers during product design. Of course, it is not likely that a product designer would incur the expense of making a phone recyclable to help a consumer make sense of it feeling like cardboard. This does not mean that such a tactic would fail, however. Perceptual cues may facilitate coherence (Anderson and Sheu 1995), but this need not relegate them to being the enabler.

STUDY 3

The main objective of study 3 was to test whether a conceptual cue could lend meaning to an incongruent perceptual cue. To accomplish this we took our paradigm into the field, using a real product with a known perceptual problem (Crystal Pepsi). This also created—by necessity of finding a superficial conceptual cue—the opportunity to test an enabler that is not incongruent in its own right. Thus, we strategically stepped back from our “two wrongs” narrative in an effort to isolate what is actually causing the observed reversals in preference by disentangling the enabler from the source of incongruity. If we are truly tapping semantic associations in memory, the enabler itself need not be incongruent; it merely needs to facilitate meaning (Rehder 2014).

Lastly, up until now, our evaluation measures were predicated on mental simulation—asking consumers the extent to which they “think” they may like or desire the product. Given the field setting, study 3 was designed to have people actually experience the product and to see if a conjunctive effect can bias how they interpret that experience.

Method

Participants and Design. Participants ($N = 323$; 43% females; $M_{\text{age}} = 21.4$) were recruited at a taste-testing booth that was set up on the campus of a large public University, and were randomly assigned to one of four conditions in a 2 (product congruity: congruent [brown cola] vs. incongruent [clear cola] \times 2 (conceptual cue: spring water vs. control) between-subjects factorial design. We made the a priori decision to almost double the sample size to account for the noise in the field setting, particularly given that the selected product category has well-established preferences.

Stimuli. The target product selected for this study was Cola. We selected this category for several reasons: First, this product is familiar to most consumers. Second, the soft drink category has featured extensively in the schema congruity literature (e.g., Campbell and Goodstein 2001; Meyers-Levy and Tybout 1989; Noseworthy et al. 2014; Stayman et al. 1992). Third, and most importantly, we had the unique opportunity to exploit a limited time re-release of Crystal Pepsi in the summer of 2016. This opportunity provided us with a real and timely perceptual adjustment to a product that constitutes one of the most salient examples of a new product failure from the early 90s. In fact, this exact product has been used to illustrate how perceptual cues can cause schema incongruity (Noseworthy et al. 2011, see also Jhang et al. 2012). Thus, we had to come up with an enabler that was conceptual in nature, and critically, one that was, in and of itself, not too incongruent. To that end, we ostensibly added natural spring water to the cola as a conceptual enabler for why it is clear. A pretest of open-ended thought protocols ($n = 46$) confirmed that this was not too much of a stretch for students as all soft drink manufacturers use water, albeit often municipally sourced, but some (e.g., Coke) have actually used spring water.

Procedures and Dependent Measures. A “new cola” tasting booth was set up at the entrance to a busy shopping area on campus. Participants who approached the booth were asked if they are willing to evaluate a new cola that will soon be introduced to the local market. They then completed a consent form. Next, they were given two ounces of the cola to taste test. The enabler was manipulated by varying the information provided prior to the taste test. Specifically, control participants were informed that “This cola is going to be competing with other products already in the market, such as Coke and Pepsi. Please taste the cola now.” However, in the treatment condition, the enabler was made salient by informing participants that “This cola is

going to be competing with other products already in the market, such as Coke and Pepsi. *One of the distinguishing features of this cola is that it has been made with natural spring water.* Please taste the cola now.” To avoid any issues related to pre-existing preferences, or other brand-related confounds, participants were told that this was a new product and no mention was made of a brand name (i.e., Crystal Pepsi or Regular Pepsi). Once participants had tasted the cola, they were asked to complete a brief pencil and paper survey. The questionnaire consisted of the product evaluation, perceived typicality, and resolution measures used in study 2.

Results

Exclusion of Participants. Five participants were excluded from the analysis. Three participants were excluded because they correctly guessed the stimuli of the study based on the limited re-release (i.e., Crystal Pepsi), while two other participants were excluded because they did not believe our guise and instead thought that the taste test was a psychology experiment.

Perceived Typicality. A two-way ANOVA on perceived typicality ($r = .72$) as a function of product congruity (incongruent = clear cola vs. congruent = regular cola) and conceptual cue (natural spring water vs. control) yielded a significant main effect of product congruity, such that the Regular Pepsi was perceived to be much more typical of the cola category ($M = 5.53$) than was Crystal Pepsi ($M = 4.51$; $F(1, 319) = 126.99, p < .001, \eta^2 = .28$). This effect was qualified by a significant product congruity \times conceptual cue interaction ($F(1, 319) = 4.80, p < .05, \eta^2 = .01$). Simple effects confirmed that although people perceived no difference in typicality between Crystal Pepsi made with natural spring water ($M = 4.59$) relative to Crystal Pepsi control ($M =$

4.42; $p = .189$), there was a marginal difference in typicality between Regular Pepsi made with natural spring water ($M = 5.42$) and Regular Pepsi control ($M = 5.65$; $F(1, 319) = 3.18$, $p = .076$, $\eta^2 = .01$). Although definitely not extremely incongruent, this effect was still strong enough to facilitate an interaction when we were expecting a main effect given that the enabler was meant to be relatively congruent. Thus, it was important to ensure that people resolve this feature, or else we may still be working with two “wrongs.”

Resolution. A two-way ANOVA on resolution ($r = .71$) yielded a significant product congruity \times conceptual cue interaction ($F(1, 319) = 6.08$, $p < .05$, $\eta^2 = .02$). The nature of the interaction was such that consumers were less likely to resolve the standard Crystal Pepsi ($M = 4.54$) than the Regular Pepsi control ($M = 5.38$; $F(1, 319) = 15.51$, $p < .001$, $\eta^2 = .05$). However, given that the enabler was not as incongruent as in the prior studies, participants were no less likely to resolve the Regular Pepsi made with natural spring water ($M = 5.09$) compared to the Regular Pepsi control ($M = 5.38$; $p = .18$). Thus, although the incongruent cue led to lower resolution, the enabler did not. Nevertheless, when the enabler and the incongruity cue were combined, participants were better able to resolve the Crystal Pepsi made with natural spring water ($M = 4.99$) than the standard Crystal Pepsi ($M = 4.54$; $F(1, 319) = 4.54$, $p < .05$, $\eta^2 = .01$). This suggests that even though the enabler was not difficult to resolve on its own, it still helped people make sense of Crystal Pepsi. Once again, close inspection of the content of the thought protocols lent insight into “how” participants were resolving the product. Despite the vast majority of thoughts relating to specific brands and taste preference, the only evidence of subtyping as a more pure or natural cola emerged when the cola was both clear and made with

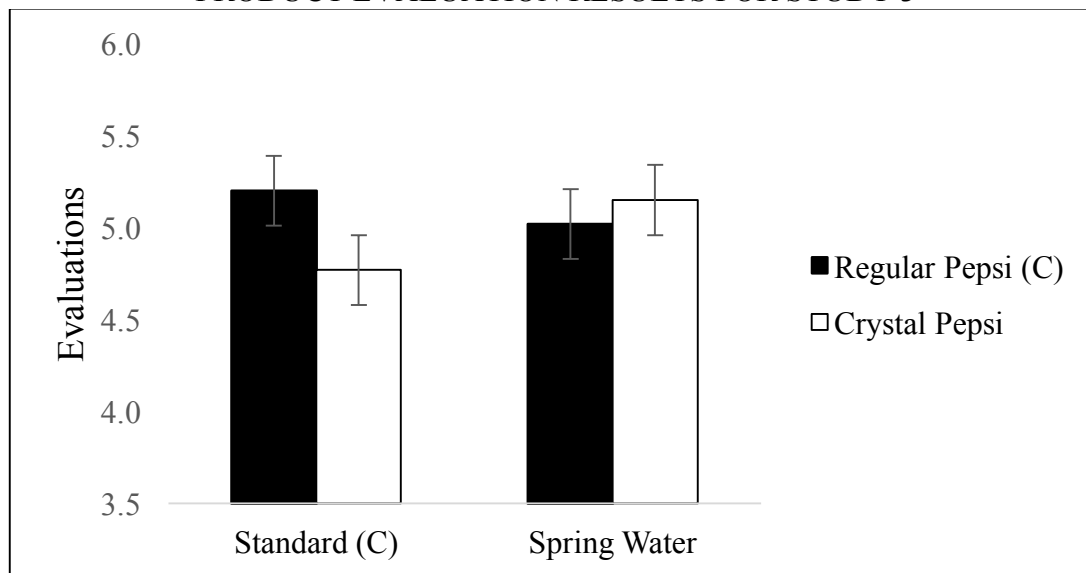
natural spring water (e.g., “*makes sense if it’s healthier*”). Consistent with the resolution results in Studies 1 and 2, we predicted that this will translate into elevated evaluations, even post trial.

Post-Taste Target Evaluations. A two-way ANOVA on evaluations ($\alpha = .84$) as a function of product congruity and conceptual cue yielded a significant interaction ($F(1, 319) = 3.85, p < .05, \eta^2 = .01$). As illustrated in figure 4, and consistent with the historical market response to Crystal Pepsi, simple effects revealed that participants evaluated Regular Pepsi Control more favorably ($M = 5.20$) than the standard Crystal Pepsi ($M = 4.78; F(1, 319) = 4.58, p < .05, \eta^2 = .02$). However, consistent with our core prediction, participants liked Crystal Pepsi more when it was made with natural spring water ($M = 5.15$) compared to the standard Crystal Pepsi ($M = 4.78; F(1, 319) = 3.57, p = .059, \eta^2 = .01$). Critically, the inclusion of natural spring water for the Regular Pepsi did not alter evaluations ($M_{\text{Control}} = 5.20$ vs. $M_{\text{Natural}} = 5.02; p = .377$). In fact, when spring water was added to both Colas, evaluations for Crystal Pepsi ($M = 5.15$) did not differ from Regular Pepsi ($M = 5.02, p = .53$; see table 3 for aggregated results).

A follow-up mediated moderation analysis (Hayes 2012; model 8, bias-corrected bootstrap with 10,000 draws) revealed that resolution mediated the elevated evaluations for Crystal Pepsi when it was listed as being made with natural spring water relative to standard Crystal Pepsi ($B = .45; SE = .12; 95\% \text{ CI: } .029; .481$), but not for Regular Pepsi when listed as being made with natural spring water relative to the Regular Pepsi control ($95\% \text{ CI: } -.379; .069$). The fact that the latter mediation analysis in the control did not show a significant negative mediation effect like in study 2 (i.e., a reduction in resolution leading to lower evaluations), is consistent with the intent to have an enabler that was not too incongruent. Thus, the presence of a conceptual enabler, which in and of itself did not inhibit resolution, nevertheless significantly

helped participants resolve a perceptually incongruent feature, and this, in turn, increased evaluations for the product as a whole. The results of this field test confirm that an enabler can help an incongruent product that has historically suffered in the marketplace.

FIGURE 4
PRODUCT EVALUATION RESULTS FOR STUDY 3



Note: (C) denotes the treatment control within each condition

TABLE 3
DESCRIPTIVE STATISTICS FOR STUDY 3

	Regular Pepsi		Crystal Pepsi	
	Standard Control	Spring Water	Standard Control	Spring Water
Typicality	5.65 (.73)	5.42 (.78)	4.42 (.92)	4.59 (.83)
Resolution	5.38 (1.31)	5.09 (1.44)	4.53 (1.26)	4.99 (1.42)
Evaluations	5.20 (1.29)	5.02 (1.28)	4.77 (1.24)	5.15 (1.24)
Cell size	80	82	81	80

Note—Standard deviations are reported in parentheses.

Discussion

The results of study 3 confirmed our core prediction using a real product that consumers taste-tested in a field setting. We found that participants did not like Crystal Pepsi as much as they liked Regular Pepsi, and that this corresponded with difficulty resolving Crystal Pepsi within the broader cola schema. However, when we added the conceptual enabler to suggest the product was made with natural spring water, preference was elevated and this was mediated by heightened resolution. Critically, this enabler was not incongruent in its own right; it served only to semantically link the concept of clear to the inclusion of natural spring water. Equally important, this effect did not occur for Regular Pepsi, which is black, and thus the enabler did not have a clear semantic link and was rendered benign. Notably, this occurred following an actual product trial, as opposed to a hypothetical purchase scenario. This suggests that conjunctive effects can even bias how consumers interpret consumption. Indeed, the product should have tasted the same in each of the experimental conditions. Once again, as in studies 1 and 2, when an irrelevant enabler shares a semantic link with an incongruent cue, we observed a conjunctive effect that enhances evaluations.

GENERAL DISCUSSION

Through three studies, this paper examines whether enablers can help consumers make sense of incongruent products. In study 1, we provide initial evidence that enablers do indeed facilitate consumers' understanding of an incongruent product, which, in turn, elevates evaluations of the product. We took “two wrongs”—an incongruent feature and an incongruent enabler that independently lowered evaluations—and combined them to create “a right.” As a

result, the product was easier to make sense of and thus received superior consumer evaluations. We replicate this effect in study 2 using haptic cues as our enabler in the smartphone category. Lastly, in study 3, we tested our predictions in a field setting with a product that has a known incongruity problem (Crystal Pepsi). We took the opportunity to disentangle the enabler from the source of incongruity by introducing a congruent enabler that provided meaning without inhibiting resolution. Each study identified increased resolution as the underlying mechanism. Taken as a whole, we find that marketers can use enablers to help consumers make sense of incongruent products, which results in higher evaluations.

Theoretical Implications

From a general theoretical perspective, this work represents the first evidence that enablers can influence evaluations. Prior research in this area has focused on the influence of enablers on category typicality judgments (Rehder 2003b; Rehder 2014; Rehder and Hastie 2001). We extend prior work by increasing the perceived typicality of something that would otherwise be extremely atypical for its respective category and exploring how this influences overall schematic processing. While the coherence effect has some commonalities with other more traditional associative network models, such as spreading activation—e.g., where the color “red” and the concept “vehicle” activates the concept “fire engine” (Chwilla, Hagoort, and Brown 1998), or where the color “green” with the claim “eco-friendly” impact product efficacy ratings (Pancer, McShane, and Noseworthy 2017)—the notion of category coherence goes beyond mere semantic activation by predicting how semantic relations amongst feature can alter overall object typicality. We extend these models by showing that with elevated perceptions of

typicality comes an enhanced ability to make sense of the object. Consistent with schema congruity theory, this sense making process, in turn, leads to more positive evaluations of the target (Meyers-Levy and Tybout 1989). In this way, we add to the literature on causal status (Ahn, Kim, Lassaline, and Dennis 2000; Kim and Ahn 2002a, 2002b) and coherence (Ahn et al. 2002; Marsh and Ahn 2006) by directly testing the potential of enablers to facilitate the processing of category exceptions or special cases.

This work, in part, is a reversion back to Mandler's (1982) initial thesis. In particular, his view of schema configurations: "Thus, an animal is called a horse not just because it has a head, mane, tail, legs, etc., but also because these elements occur in a particular configuration. These same configurations may be the occasion for calling a horse beautiful or not, but both kinds of judgments depend to some extent on the internal structure of the event" (9). Mandler is often quoted as advocating for the structure of a schema over the presence or absence of features (Meyers-Levy and Tybout 1989). Indeed, this is true, but he was also advocating for coherence in that structure—that is, a configuration that makes sense. We show that coherence can be achieved by adding non-normative features that are semantically linked. This helps people process an incongruent object as an exception or special case of the category. In Mandler's (1982, 10) own words, "while in description and categorization, features as well as their structure have major determining functions." Although the notion of coherence has received little attention in modern schema congruity literature, we feel that it presents a fruitful avenue for future work.

This work implies a new way of thinking about incongruent products. On average, new products tend not represent new-to-the-world categories. Rather, the vast majority of new products are incremental versions of something we already know, and thus they incorporate an atypical feature. Critically, this feature is also often not novel on its own, but what makes it

seemingly new is that its inclusion represents a novel *combination of features*. This feature-based view of product incongruity contributes to the literature by illustrating that semantically-linked feature combinations can help people make sense of product incongruity.

Additional research is required to better understand what constitutes an enabler. From a tactical perspective it seems logical that the most economically effective enablers are relatively inexpensive minor adjustments in product design (e.g., the color green) that help people make sense of a more meaningful functional adjustment (e.g., vitamin-enriched). Yet, this should not imply that semantic relationships require a superficial cue. Indeed, we demonstrate just the opposite in Study 3, as the enabler—a cola made with natural spring water—is arguably the functional alteration that helps consumers make sense of a superficial feature (e.g., a clear cola). The key point is that an enabler should only need to be coherent with the other incongruent feature in order to facilitate meaning (Rehder 2015).

Practical Implications

From a substantive perspective, this work illustrates that an enabler can change how consumers actually experience a product. Telling consumers that Crystal Pepsi was made with natural spring water actually altered their perceptions of its taste. Notably, this occurred for a product that struggled in the marketplace and eventually failed. While Crystal Pepsi was eventually discontinued, our work indicates that helping consumers resolve the incongruity with an enabler may increase the likelihood of success for similar extremely incongruent products.

Our results also have implications for product design—seemingly minor features can provide semantic meaning that facilitates consumers' sense-making process for incongruent

products. These seemingly minor features can be aesthetic in nature. For instance, color can be critical to consumers' ability to make sense of a new product, as evidenced by the green colored coffee used in study 1. Alternatively, the physical material of the product can be central to the sense-making process, as per the cardboard fiber smartphone in study 2. Beyond product design, even advertising claims or product information can facilitate resolution of an incongruent product, as evidenced by the claim in study 3 that Crystal Pepsi was made with natural spring water. Our results indicate that marketers should pay particular attention to how semantically-linked feature combinations can help resolve the incongruity presented by a new product, thus leading to superior product evaluations.

Limitations

Although this research advances our understanding of consumer response to extreme incongruity, the studies are not without limitations and there is more work to be done. For example, we have demonstrated that a semantic-link between the enabler and the incongruent feature is critically important. There may, however, be other ways to use an enabler to establish a more coherent representation of the object within the category. The details of how that happens could have important practical and theoretical implications.

There is also more to learn about the nature of the resolution process when using enablers to help consumers make sense of extreme incongruity. Our results indicate accommodation, but our studies were not designed to disentangle accommodation from assimilation. In fact, accommodation and assimilation may not be mutually exclusive (Benson and Haith 2010). Nevertheless, we lean towards a process of accommodation for two reasons: (1) we see direct

evidence of subtyping in the thought listing tasks; (2) we find a significant increase in typicality judgments. This latter effect would not make sense under Mandler's (1982) conceptualization of assimilation—of course, a green vitamin-enriched coffee should not be as typical as a standard black coffee. Rather it seems people are developing a new schema to handle the exception. The challenge with disentangling the resolution process is best illustrated by Benson and Haith (2010): “when a child encounters a new species of dog for the first time and is told that it is a dog, this information finds a home in the existing network of ideas (i.e., it is assimilated), but the network is also changed as the child's mind creates a new representation corresponding to the new *subtype* of dog (i.e., there is accommodation)” (p. 388; italics added).

Finally, our studies examine how a product's look (clear cola), feel (cardboard fiber phone) and ingredients (vitamin-enriched) can be incongruent. There are, of course, many different types of innovative features that can vary in the extent to which they are perceived to be incongruent—ranging from mild to extreme. We have adopted a definition of extreme incongruity consistent with Mandler's (1982) view. Prior work has found that mild and moderate incongruity are relatively easy to resolve (Jhang et al. 2012; Noseworthy et al. 2014) and, therefore, the need for an enabler is likely negligible. At the same time, a clear cola is likely easier to resolve than a driverless car or lab grown meat, and there may be important differences along that continuum in how effective enablers will be. The impact of enablers at different levels of congruency is an interesting avenue for additional research. Certainly more research is needed in this area.

Concluding Remarks

The ability to successfully introduce innovation to the marketplace has long been recognized as a critical driver of economic growth and societal progress (Schumpeter 1934). Today, new products are appearing at an astonishing rate. In the consumer packaged goods business alone, Mintel’s Global New Products Database tracks approximately 33,000 new products a month (mintel.com)—many of which involve features that change the look and feel of the product in ways that are incongruent with existing schemas. As a result, these offerings often fail to find a foothold with consumers. Our findings reveal how a minor design change—even one that is “wrong” on its own—can significantly improve evaluations when it provides a semantic link that helps consumers make sense of otherwise unappealing innovations. This suggests that enablers may be key in unlocking the likelihood of new product success.

APPENDIX A
STIMULI FOR STUDY 1



APPENDIX B
STIMULI FOR STUDY 2



REFERENCES

- Aggarwal, Pankaj, and Ann L. McGill (2007), "Is That Car Smiling at Me? Schema Congruity as a Basis for Evaluating Anthropomorphized Products," *Journal of Consumer Research*, 34 (December), 468–79.
- Ahn, Woo-Kyoung and Nancy S. Kim (2001), "The Causal Status Effect in Categorization: An Overview," *The Psychology of Learning and Motivation*, 40, ed. in Douglas L. Medin, San Diego, CA: Academic Press, 23–65.
- Ahn, Woo-Kyoung, Nancy S. Kim, Mary E. Lassaline, and Martin J. Dennis (2000), "Causal Status as a Determinant of Feature Centrality," *Cognitive Psychology*, 41 (December), 361–416.
- Ahn, Woo-Kyoung, Jesseca K. Marsh, Christian C. Luhmann, and Kevin Lee (2002), "Effect of Theory Based Correlations on Typicality Judgments," *Memory & Cognition*, 30 (January), 107–118.
- Ali, Abdul, Robert Krapfel, and Douglas LaBahn (1995), "Product Innovativeness and Entry Strategy: Impact on Cycle Time and Break-Even Time," *Journal of Product Innovation Management*, 12(1), 54–69.
- Anderson, John R. and Ching-Fan Sheu (1995), "Causal Inferences as Perceptual Judgments," *Memory & Cognition*, 23(4), 510–524.
- Benson, Janette B. and Marshall M. Haith (2010), "*Language, Memory, and Cognition in Infancy and Early Childhood.*" New York: Academic Press.

- Calantone, Roger J., Kwong Chan, and Anna S. Cui (2006), "Decomposing Product Innovativeness and Its Effects on New Product Success," *Journal of Product Innovation Management*, 23(5), 408–421.
- Campbell, Margaret C., and Ronald C. Goodstein (2001), "The Moderating Effect of Perceived Risk on Consumers' Evaluations of Product Incongruity: Preference for the Norm," *Journal of Consumer Research*, 28 (December), 439–49.
- Chater, Nick, Karen Lyon and Terry Myers (1990), "Why Are Conjunctive Categories Overextended?" *Journal of Experimental Psychology: Learning, Memory and Cognition*, 16 (May), 497–508.
- Cheng, Patricia W. and Laura R. Novick (1991), "Causes Versus Enabling Conditions," *Cognition*, 40 (August), 83–120.
- Chwilla, Dorothee J., Peter Hagoort, and C. M. Brown (1998), "The Mechanism Underlying Backward Priming in a Lexical Decision Task: Spreading Activation Versus Semantic Matching," *The Quarterly Journal of Experimental Psychology*, 51 (3), 531–560.
- Esterl, Mike (2016), "Crystal Pepsi Is Returning to Store Shelves," *Wall Street Journal*, June 29.
- Glass, Sandie (2014), "What Were They Thinking? When The Fizz Went Flat For Crystal Pepsi," *Fast Company*, January 4.
- Goodstein, Ronald C. (1993), "Category-Based Applications and Extensions in Advertising: Motivating Extensive Ad Processing," *Journal of Consumer Research*, 20 (June), 87–99.
- Hayes, Andrew F. (2012), "PROCESS: A Versatile Computational Tool for Observed Variable Mediation, Moderation, and Conditional Process Modeling," White paper, <http://www.afhayes.com/public/process2012.pdf>

- Hayes, Brett K. and Rob Rehder (2012), “The Development of Causal Categorization,” *Cognitive Science*, 36 (August), 1102–1128.
- Jhang, Ji Hoon, Susan Jung Grant, and Margaret C. Campbell (2012), “Get It? Got It. Good! Enhancing New Product Acceptance by Facilitating Resolution of Extreme Incongruity,” *Journal of Marketing Research*, 49 (April), 247–59.
- Kim, Nancy S. and Woo-Kyoung Ahn (2002a), “Clinical Psychologists’ Theory-based Representations of Mental Disorders Affect Their Diagnostic Reasoning and Memory,” *Journal of Experimental Psychology: General*, 131 (December), 451–476.
- (2002b), “The Influence of Naive Causal Theories on Lay Concepts of Mental Illness,” *American Journal of Psychology*, 115 (Spring), 33–65.
- Mandler, George (1982), “The Structure of Value: Accounting for Taste,” in *Affect and Cognition: The Seventeenth Annual Carnegie Symposium on Cognition*, ed. Margaret S. Clark and Susan T. Fiske, Hillsdale, NJ: Erlbaum, 3–36.
- Marsh, Jesseca K. and Woo-Kyoung Ahn (2006), “The Role of Causal Status Versus Inter-Feature Links in Feature Weighting,” in *Proceedings of the 28th Annual Conference of the Cognitive Science Society*, ed. Ron Sun and Naomi Miyake, NJ: Erlbaum, 561–566.
- Maoz, Eyal, and Alice M. Tybout (2002), “The Moderating Role of Involvement and Differentiation in the Evaluation of Brand Extensions,” *Journal of Consumer Psychology*, 12 (2), 119–31.
- Mayrhofer, Ralf and Anselm Rothe (2012), “Causal Status Meets Coherence: The Explanatory Role of Causal Models in Categorization,” *Proceedings of the 34th Annual Conference of the Cognitive Science Society*, Austin, TX: Cognitive Science Society, 743–748.

- Meyers-Levy, Joan, Therese A. Louie, and Mary T. Cullen (1994), "How Does the Congruity of Brand Names Affect Evaluations of Brand Name Extensions?" *Journal of Applied Psychology*, 79 (February), 46–53.
- Meyers-Levy, Joan, and Alice M. Tybout (1989), "Schema Congruity as a Basis for Product Evaluation," *Journal of Consumer Research*, 16 (June), 39–54.
- Michotte, A. E. (1963). *The perception of causality* (T. R. Miles & E. Miles, Trans.) London: Methuen. (Original work published 1946)
- Newell, Ben R., Helen Paton, Brett K. Hayes and Oren Griffiths (2010), "Speeded induction under uncertainty: The influence of multiple categories and feature conjunctions," *Psychonomic Bulletin & Review*, 17 (6), 869–74.
- Noseworthy, Theodore, Fabrizio Di Muro and Kyle B. Murray (2014), "The Role of Arousal in Congruity-Based Product Evaluation," *Journal of Consumer Research*, 41 (December), 1108–26.
- Noseworthy, Theodore, June Cotte, and Seung H. Lee (2011), "The Effects of Ad Context and Gender on the Identification of Visually Incongruent Products," *Journal of Consumer Research*, 38 (August), 358–75.
- Noseworthy, Theodore J. and Remi Trudel (2011), "Looks Interesting But What Does It Do? Evaluation of Incongruent Product Form Depends on Positioning," *Journal of Marketing Research*, 48 (December), 1008 – 19.
- Pancer, Ethan, Lindsay McShane, and Theodore J. Noseworthy (2017), "Isolated Environmental Cues and Product Efficacy Penalties: The Color Green and Eco-labels," *Journal of Business Ethics*, 143 (June), 159–177.

- Peracchio, Laura A., and Alice M. Tybout (1996), "The Moderating Role of Prior Knowledge in Schema-Based Product Evaluation," *Journal of Consumer Research*, 23 (December), 177–92.
- Rehder, Bob (2003a), "Categorization as Causal Reasoning," *Cognitive Science*, 27 (July), 709–748.
- (2003b), "A Causal-Model Theory of Conceptual Representation and Categorization," *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 29 (November), 1141–1159.
- (2010), "Causal-Based Classification: A Review," in *The Psychology of Learning and Motivation*, ed. Brian H. Ross, San Diego, CA: Elsevier Academic Press, (52), 39–116.
- (2014), "The Role of Functional Form in Causal-Based Categorization," *Journal of Experimental Psychology: Learning, Memory and Cognition*, 41 (May), 670–92.
- Rehder, Bob and Reid Hastie (2001), "Causal Knowledge and Categories: The Effects of Causal Beliefs on Categorization, Induction, and Similarity," *Journal of Experimental Psychology: General*, 130 (September), 323–360.
- Rehder, Bob and ShinWoo Kim (2006), "How Causal Knowledge Affects Classification: A Generative Theory of Categorization," *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 32 (July), 659–683.
- Schumpeter, Joseph A. (1934) "The theory of economic development." Cambridge, MA: Harvard.
- Sloman, Steven A., Bradley C. Love, and Woo-Kyoung Ahn. (1998), "Feature Centrality and Conceptual Coherence," *Cognitive Science*, 22 (June), 189–228.

Stayman, Douglas M., Dana L. Alden, and Karen H. Smith (1992), "Some Effects of Schematic Processing on Consumer Expectations and Disconfirmation Judgments," *Journal of Consumer Research*, 19 (September), 240–55.

Sujan, Mita, and James R. Bettman (1989), "The Effects of Brand Positioning Strategies on Consumers' Brand and Category Perceptions: Some Insights from Schema Research," *Journal of Marketing Research*, 26 (November), 454–67.

Sundar, Aparna and Theodore J. Noseworthy (2016), "Too Exciting to Fail, too Sincere to Succeed: The Effects of Brand Personality on Sensory Disconfirmation," *Journal of Consumer Research*, 43 (June), 44–67.

Taylor, Shelley E., and Jennifer Crocker (1981), "Schematic Bases of Social Information Processing," *Social Cognition: The Ontario Symposium*, 1, 89–134.