Shades of Meaning: The Effect of Color and Flavor Names on Consumer Choice

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Abstract

Building on Grice’s (1975) theory of “conversational implicature,” we propose that consumers react favorably to unusual color or flavor names (e.g., blue haze or Alpine snow) because they are essentially assuming that the marketing messages convey some useful information. Specifically, since consumers cannot interpret the literal meaning of the ambiguous label, they focus on what they assume is the pragmatic or underlying meaning or reason for the communication effort. Since consumers believe that packaging or advertising would only provide positive information, they make positive attributions about the brand based on the ambiguous descriptions. The results of a series of experiments provide empirical support for our proposal and rule out some alternative explanations for the success of ambiguous naming strategies.
An examination of the colors in a Crayola crayon box reveals an interesting phenomenon – while the original Crayola crayons box contained six colors (black, blue, brown, green, orange, and red), Crayola now offers 120 different colors, and the most recent of these (e.g., purple heart, razzmatazz, tropical rain forest, fuzzy wuzzy brown) are increasingly ambiguous. Such a proliferation of color names, and in particular, ambiguous color names, are appearing in all sorts of product categories from ice-cream (e.g., Ben and Jerry’s) to juice drinks (e.g., Gatorade) to nail polish (e.g., Hard Candy), leading at least one reporter to exclaim, “there is no red” (Schulz 2001). In this paper, we examine the effect of such color and flavor names on consumers’ product perceptions and purchase intentions.

According to a survey by Kohli and LaBahn (1997), sixty percent of brand managers believe a brand name can influence the sales of a product. Such beliefs have been borne out by research demonstrating that brand names influence the perceived favorability of brands (e.g., Harris et al. 1994; Zinkhan and Martin 1987), the likelihood of purchase (e.g., Harris et al. 1994), and product evaluations (e.g., Sullivan 1998). Similarly, linguistics research on the Wharfian hypothesis (e.g., Bloom 1984; Gellatly 1995; Hardin and Banaji 1993; Hunt and Agnoli 1991) also suggests that the name used can influence perceptions. For example, Loftus and Palmer (1974) found that the use of the word “smashed” led to perceptions that two cars involved in a collision were going faster than the use of the word “hit.” Similarly, the literatures on stereotyping (e.g., Allport 1954) and framing (e.g., Kahneman and Tversky 1984) have pointed to the effects particular labels or words have on attributions and decisions. Considering these findings, it is reasonable to expect that color and flavor names will also influence such variables as likelihood of purchase and other product perceptions.
Building on Grice’s (1975) theory of “conversational implicature,” we propose that consumers react favorably to the unusual names or descriptions of colors or flavors because they are essentially assuming that the marketing messages convey some useful information. Specifically, since consumers cannot interpret the literal meaning of the ambiguous label because it offers little assistance in communicating information about the taste or color shade, they focus on what they assume is the pragmatic or underlying meaning or reason for the communication effort. Since consumers believe that packaging or advertising would only provide positive information, they make positive attributions about the brand or product itself based on the ambiguous descriptions. The results of a series of experiments provide empirical support for our proposal and rule out some alternative explanations for the effect of ambiguous naming strategies.

**BACKGROUND**

**Theory of Conversational Implicature**

According to Grice’s (1975) theory of conversational implicature, conversations are guided by a set of tacit assumptions. These assumptions enable people to mean more than they say (i.e., convey nonliteral meanings) and to make sense of sentences that might literally be seen as non sequiturs. Specifically, Grice argues that listeners interpret speakers’ utterances based on the assumption that the speaker is being cooperative, unless they have reason to believe otherwise. For example, “Suppose A asks, ‘where is Bill?’ and B responds, ‘There’s a yellow VW outside Sue’s home.’ If taken literally B’s contribution fails to answer A’s question – but rather than assume B changed the topic, we infer that Bill probably has a yellow VW and the location of that yellow VW may suggest Bill is at Sue’s house.” (Levinson 1983, p. 102).
Grice’s formulation of this cooperative principle embodies four conversational maxims – those of quantity (make your contribution as informative as required, no more, no less), quality (make your contribution one that is true), relation (make you contribution relevant to the exchange), and manner (be perspicuous or easy to understand). These maxims and examples suggest that one key assumption people make during conversations is that all information contributed by participants is relevant to the goal of the ongoing conversation.

Similarly we hypothesize that consumers may assume that all information offered to them by the marketer, including the description of the product’s color or flavor, is meant to be relevant or informative to their purchase process and that they will consequently try to make sense of this information. Thus they will try to assign meaning to the ambiguous color or flavor descriptions. This is similar to the process that Schwarz (1996) has proposed that participants engage in during research experiments. Schwarz hypothesizes that participants bring in tacit assumptions that govern the conduct of conversation in daily life to the research situation. Therefore if the experimenter presents a piece of information or an obvious manipulation, the participant assumes s/he should use it in his or her decision process. In addition, Schwarz (1996) argues that this process is often relatively automatic and occurs outside of conscious awareness.

In the situation of a marketing or packaging label, we hypothesize that the consumers would assume that the information that the marketer is trying to communicate is something positive about that product. They would therefore make positive attributions about the product itself as a result of the ambiguous name. If the color name is informative and helps the consumer better visualize the color shade, there would be no reason to form these additional positive
attributions. Therefore we hypothesize that ambiguous color or flavor names will yield more positive attributions about the product than will common, informative color or flavor names.¹

Specifically, we suggest that if consumers apply this informativeness principle to marketing situations, then they should expect color and flavor descriptions to provide information about the color or flavor, e.g., its taste or shade. If the ambiguous name is uninformative in the literal or semantic sense, consumers will search for a pragmatic meaning or reason for the communication (Gruenfeld and Wyer 1992; Harris and Monaco 1978). Moreover, in a marketing context, focusing on a pragmatic meaning would suggest that consumers search for positive information about the product. That is, consumers may see these names, realize they are uninformative about the color/flavor, and then wonder why the manufacturer has provided this information. Their conclusion would then be that the manufacturer named the item in this manner to communicate some other positive information, perhaps something about the product or brand’s quality or stylishness. Thus, in reaching this conclusion and trying to substantiate it, consumers elaborate on the products and form positive attributions. These additional positive attributions should then lead to a higher opinion of the product and an increased likelihood of purchase. We refer to this theory throughout the rest of the paper as the “Gricean Hypothesis.”

**Incongruency Theory**

Several other bodies of literature suggest alternative paths by which unusual color or flavor names might affect purchase decisions. According to incongruency theory, people make judgments by evaluating new encounters against existing schemas or expectations. When encounters (events, information) are incongruent with prior expectations, individuals will engage in more effortful or elaborative processing to resolve the incongruency (Heckler and Childers 1992). This is somewhat related to the process that Carpenter et al. (1994) speculated might be contributing to the positive effect that irrelevant attributes had on consumer judgments; however, they did not provide explicit empirical support for their conjecture.
1992). Generally, preferences are thought to be related to incongruity in an inverted-U shaped manner (Meyers-Levy et al. 1994). Specifically, Mandler (1982) posits that congruent items will produce mildly favorable responses with little arousal because no resolution is required. In contrast, Mandler predicts that moderate incongruity will lead to more extensive processing as people try to resolve and find meaning in the incongruity. Such incongruity can make items appear more interesting leading to positive valuations; in addition, such items may receive a positive boost due to the person feeling good for having “solved” the incongruity. Extreme incongruity will also lead to increased processing, but such incongruity is unlikely to be resolved leading to feelings of frustration and helplessness and consequently, negative valuations. These tenets suggest an inverted-U function where items of moderate incongruity should be most preferred compared to congruent and highly incongruent items. Meyers-Levy et al. (1994) find support for these predictions, showing that brand name extensions are evaluated more favorably when the product’s brand name is moderately incongruent compared to when it is congruent or extremely congruent.

Applied to the context of flavor and color names, this theory suggests that when consumers encounter an unfamiliar name, they try to determine how the adjective describes the color/flavor. For example, when encountering a name such as “monster green,” one might think about the color of monsters and realize that many monsters are green or they might think about the Green Monster at Fenway Park. Having discovered the connection, the consumer may congratulate himself for solving the problem, resulting in positive affect. This positive affect might then carry over to the product itself, resulting in a higher likelihood of purchase. This theory would not require that the name be ambiguous but rather just unexpected or unfamiliar, so that some processing needs to occur to make the connections. In fact, if the name is particularly
ambiguous such that the connections are difficult to make, positive affect would not result. We refer to this theory throughout the rest of the paper as the “Incongruency Explanation,” and test it in studies 1 and 3.

**Affective Reactions**

While the previous two explanations focus on more cognitive pathways (in that they both depend on some type of elaboration occurring – either why was this name provided (Gricean hypothesis) or why was this adjective chosen (Incongruency)), ambiguous names could also impact decisions through a more affective pathway. Previous researchers have shown that people in positive mood states evaluate products more favorably (e.g., Axelrod 1963; Isen et al. 1978). Similarly, Petty and Cacioppo’s Elaboration Likelihood Model (ELM) suggests that affect can be used as a peripheral cue in making judgments. Thus, if the unusual names create positive affect, consumers could attribute this affect to a positive feeling towards the product, causing them to evaluate the product more highly and increasing their likelihood of purchasing it. Such names could create positive affect as a consequence of their vividness. That is, because such names tend to employ vivid adjectives, such as sunshine or mountain, they may cause people to think about sunshine or mountains, resulting in positive affect. We refer to this hypothesis as the “vividness hypothesis” and test for it in studies 1 and 2.

Alternatively, such names may engender positive affect as a consequence of their novelty. That is, because atypical names are new and unusual, they may be seen as more exciting and arousing in and of themselves. This increased affect and arousal could lead to an increased likelihood of purchase. We refer to this hypothesis as the “novelty-affect hypothesis” and examine it in studies 1, 2 and 3.
Effects of Novelty and Elaboration

While the novelty of the unusual names could lead to increased likelihood of purchase through an affective pathway, it could also impact perceptions through a more cognitive pathway. Many researchers have suggested that items that are novel and surprising are likely to generate increased attention (e.g., Alba et al. 1991; Bettman 1979; Heckler and Childers 1992; Lynch and Srull 1982). This increased attention could result in increased elaboration about the product, leading consumers to respond more favorably to it (Molaviya and Meyers-Levy 1998). We refer to this hypothesis as the “novelty hypothesis” and examine it more explicitly in studies 1 and 3.

Effect of Prior Experience: Quality Hypothesis

One additional pathway by which unusual names could affect perceptions concerns a consumer’s prior experience. When unusual names first filtrated the marketplace, they tended to be employed by high end retailers (although they have since been adopted by other low-end retailers such as K-mart). Thus, such names might be associated with higher quality products. Consumers may see the name and recall that existing high quality/ high cost/ trendy products currently use such names and therefore assume that this product is also high quality, high cost, and/or trendy, leading to a greater likelihood of purchase. We refer to this hypothesis as the “quality hypothesis” and rule it out in studies 1, 2, and 3.

Mere Exposure Effect

While the previous six sections suggest that ambiguous names should have a positive effect on purchase intentions, the mere exposure effect (Zajonc 1968) would predict that ambiguous names should be less preferred than common names. However, several aspects of this context lead us to believe that a positive effect of ambiguous names is more likely. Ye and
van Raaij (1997) have noted that stimuli unfamiliarity is often a prerequisite to produce the mere exposure effect. Indeed, such effects have typically not been found for familiar objects; rather, they tend to be found with unfamiliar objects that activate few existing schemas or expectations (Mandler 1982). In addition, mere exposure effects tend to be larger with subliminally presented stimuli compared to clearly recognized stimuli. Since the stimuli used in our studies (typical consumer products such as sweaters and jelly beans) tend to be very familiar to participants and are presented at levels above the threshold of consciousness, a mere exposure effect seems unlikely. Nonetheless, we specifically examine whether unfamiliar, ambiguous names will be preferred to more familiar, common names in Study 1.

Summary of Theories

The previous section outlined several theories that suggest that ambiguous names should be preferred to common names, and one (mere exposure) that suggests the opposite (see Figure 1). The Gricean, incongruency, and novelty hypotheses all posit cognitive mechanisms that rely on elaboration which results in the increased preference for the ambiguously-named items. The type of elaboration proposed is what differentiates the Gricean and incongruency hypotheses and the source of the elaboration is what distinguishes the Gricean and novelty hypotheses. The Gricean hypothesis posits that consumers elaborate about the product or manufacturer because they are searching for the reason the information was provided; this search is prompted by the name’s ambiguity (or lack of meaning (when one was expected)). In contrast, the incongruency theory posits that consumers elaborate in their search to determine how the adjective provided describes the color; this search is prompted by the name’s unexpectedness. The novelty hypothesis posits an elaboration that is caused by the novelty of the items themselves.
These theories also differ on what they would predict if the ambiguity was resolved through revelation of the color or flavor. In our discussion so far, we have been describing reactions to the color or flavor names without revelation of the actual color or flavor. If in addition to the names, the actual flavor or color hue was revealed, consumers could still be affected by the novelty of the name or could still seek to resolve the incongruity puzzle between the color hue and the name, BUT the name would no longer be essential as an identifier. Hence only the Gricean hypothesis would suggest that with the revelation of the actual color, the positive advantage of ambiguous names would be mitigated. (We will discuss this further in Study 3 where we explicitly test this.)

In contrast to these cognitive mechanisms, the vividness and novelty-affect mechanisms are more affective in nature, relying on increased affect which carries over to the product to lead to an increased preference for ambiguous names. These two mechanisms differ in the source of affect – the vividness theory suggests the increased affect is a result of positive associations with the adjectives used to describe the colors, while the novelty-affect hypothesis suggests this affect is due to the novelty of the names themselves.

The quality hypothesis is more cognitive than affective, but we believe the cognition involved via this mechanism is not effortful, but rather reflexive, as compared to the other cognitive mechanisms proposed. Thus manipulations (or situational characteristics) designed to impede available cognitive resources during the task would not affect evaluations of the color names if only the quality hypothesis were operating.

Despite these differences in explanation, six of the seven mechanisms all predict a positive influence of ambiguous names on decisions. Thus, we predict:
**H1:** Ambiguous named items should be preferred to more commonly named items.

In the studies that follow, we test this hypothesis as well as the various mechanisms proposed to account for this effect. In Study 1, we explicitly test H1, examining whether the type of name impacts product decisions. In addition, by also examining consumers’ preferences for familiar and unfamiliar specific names as compared to unfamiliar ambiguous names, we show that the incongruity, vividness and novelty explanations cannot wholly account for our results, whereas the Gricean explanation can. In Study 2, we examine whether the results regarding ambiguous names as compared to common names hold in a more realistic product decision, while also providing support for a cognitive (as opposed to an affective) mechanism. In Study 3, we provide further support for a cognitive Gricean process, while casting further doubt on the novelty and incongruity hypotheses.

**STUDY 1**

The purpose of study 1 is to assess whether color names influence purchase intentions. As stated in H1 above, we predict that ambiguous names will be preferred to more common names. In addition, in this study, we begin to disentangle the various mechanisms proposed to account for this effect by also examining the effect of both typicality (high and low) and specificity (high and low) of color names on purchase intentions. We define ambiguous names as low typical, low specific names. We define common names (e.g., dark red, light blue) as high typical, low specific names.

Like ambiguous names, specific names can also feature a distinctive adjective prior to the color name. These adjectives can be familiar and thus have high typicality (e.g., brick red or
pine green) or unfamiliar, and thus have low typicality (e.g., rainslicker yellow, Coke red).

However, unlike ambiguous names, the adjective in specific names helps resolve the specific shade of the color, and is, thus, informative. Consequently, the Gricean hypothesis predicts that specific names should not be preferred to common names, while ambiguous names should.

**H2a:** If preferences are driven by Gricean mechanisms then ambiguous names should be preferred to more common names while familiar or unfamiliar specific names should not be preferred to common names.

The incongruency theory predicts the effect of specific names will depend on their familiarity – familiar specific names should not be preferred to common names because the “puzzle” has been encountered before and hence no affect boost is experienced on recognizing the connection (i.e., the task is too easy). However, for unfamiliar specific names, such as “Coke red,” some thought is required to figure out how the unexpected adjective describes the color; solving this “puzzle” will result in affective boost, and thus an increased preference for the color. Depending upon how hard it is to solve the puzzle, the incongruity theory could predict that ambiguous names will be less preferred to unfamiliar specific names if it is frustrating in the former situation to make the connections (e.g., Meyers-Levy et. al. 1994). Thus we predict that if preferences are driven by incongruity then unfamiliar specific names will be preferred to common names, but we make no hypothesis about ambiguous names per se.

**H2b:** If preferences are driven by incongruity, then specific names will be preferred to common names only when they are unfamiliar.

The novelty-affect and novelty mechanisms as well as the quality mechanism predict that unfamiliar names will be preferred to common names regardless of whether they are specific or ambiguous.
**H2c:** If preferences are driven by novelty or quality mechanisms, then unfamiliar names will be preferred to common names.

Finally, the vividness mechanism predicts that any color name that employs vivid adjectives regardless of whether they are specific or not, or familiar or not, should be preferred to common names since they contain adjectives that could result in imagery and a positive response.

**H2d:** If preferences are driven by a vividness mechanism, then familiar and unfamiliar specific names and ambiguous names will be preferred to common names.

**Method**

The study used a 2 x 2 between-subjects design. The first factor, *typicality*, had two levels: high, low. The second factor, *specificity*, had two factors: high, low. This design created four different name types: ambiguous (low typical, low specific), unfamiliar specific (low typical, high specific), common (high typical, low specific), and familiar specific (high typical, high specific). The actual names used are listed in the Appendix.

*Subjects and Procedure*

Participants were sixty undergraduates (37 male, 23 female) who participated in exchange for an opportunity to win one of two $50 gift certificates to the campus store. The experiment was conducted via paper/pencil surveys. Participants were told that they had decided to order sweaters from a catalogue and were then presented with a list of available items and asked to indicate how many of each they would like. Participants were told to assume the style and material of the sweater was acceptable to them and that the sweater could be purchased in multiple styles.
Following their product decision, participants were asked to indicate their mood using the Peterson and Sauber (1983) Mood Short Form. Next participants were asked to rate the selection of sweaters on 11-point scales anchored by low price/high price, low quality/high quality, not stylish/very stylish, not trendy/very trendy. They were also asked to indicate (also on 11-point scales), the degree to which they liked/did not like the selection of sweaters, how similar they thought the color names were to those they usually saw in a store, and the degree the color names matched what they were expecting. Participants were also asked how much they thought they would like the sweaters they chose (0-10 scale anchored by “will not like” and “will like a lot”).

Following these questions, participants received a grid where the y-axis was labeled “very typical” (top) / “not at all typical” (bottom), and the x-axis was labeled “not at all specific” (left) / “very specific” (right). Participants were asked to place the seven colors they had seen on the grid to indicate how specific and typical they thought each color was.

At the end of the study, participants were asked to indicate their gender, as well as their familiarity with purchasing sweaters. The familiarity question asked “How familiar are you with purchasing sweaters?” and was rated on an 11-point scale anchored by not at all familiar/very familiar.

**Results and Discussion**

*Manipulation Checks*

There was a main effect of specificity such that the items that we classified as high specificity were rated more specific (M =1.3) than the items that we classified as low specificity (M = -0.01, F(1, 56) = 6.96, p=.01). Similarly, there was a main effect of typicality such that the items we classified as high typicality were rated more typical (M=1.6) than the items we classified as low typicality (M=0.2, F(1, 56) = 10.13, p=.002). The two factors did not interact (F
<1). Thus these manipulation checks indicate that our 2x2 orthogonal classification of the color names was successful.

In addition to these manipulation checks, we also asked how similar items were to items participants had previously seen in stores and how closely the color names matched expectations. Consistent with the manipulation checks above, we found that high typical names were seen as more similar (M = 5.3) than low typical names (M = 3.2, F(1, 56) = 10.64, p=.002) and better matched expectations (M = 5.2) than the low typical names (M = 3.9, F(1, 55) = 4.43, p=.04).

There was a marginal effect of specificity (F(1, 56) = 3.73, p=.06) on the degree to which participants liked the selection of sweaters with those in the low specificity group (M = 5.8) liking the selection more than those in the high specificity group (M = 4.6). However, there were no differences in the degree to which participants thought they would like the actual sweaters (overall F<1).

*Effects of Specificity, Typicality, and Name Type*

The data were analyzed both as a 2x2 design (with specificity and typicality as the two factors) and as a one factor design with four levels (ambiguous, unfamiliar specific, familiar specific and common).

The two-way ANOVA revealed a significant effect of typicality on the number of items selected (F(1, 56) = 5.58, p=.02) and a marginally significant effect of specificity on the variety of colors selected (F(1, 56) = 3.20, p=.08). Specifically, items that were low in typicality were selected more (M=5.6) than items that were high in typicality (M = 5.2). Further, low specificity items led to a greater variety of colors selected (M= 4.2) than high specificity items (M = 3.4). None of the other effects were significant (p’s>0.2).
To test our hypotheses we ran a one-way ANOVA with four levels that corresponded to the four color names. We found a significant effect of name type on quantity selected (F(3, 56) = 3.07, p=.04), but not on the variety selected (F(3, 56) = 1.82, p=.15). Consistent with H1 and with the Gricean explanation (H2a) (and counter to H2c and H2d) ambiguous named items (M=9.4) were ordered in greater quantities than common items (M=5.2, p=.01), but neither familiar specific names (M=5.2) nor unfamiliar specific names (M=6.6) were preferred to common names (p’s > 0.4). We also did not find significant support for an incongruity effect (H2b) in that although unfamiliar specific names (M=6.6) were directionally selected more than common names (M=5.2) this difference was not significant.

Attributions, Perceptions, and Mood

There were no differences by condition on perceptions of the price or trendiness of the sweaters (overall F’s < 1). However, a two-way ANOVA revealed a significant impact of specificity on perceptions of quality (F(1, 55) = 10.78, p=.002), such that the items with low specificity names were seen as higher quality (M = 6.7) than the items with high specificity names (M = 5.0). The one-way ANOVA revealed a similar effect of name-type on quality (F(3, 55) = 3.98, p=.01) with the ambiguous (M = 6.8) and common (M = 6.4) names perceived as higher quality than the familiar specific (M = 4.9) and unfamiliar specific (M = 5.1) names (p’s < .05, except for common-unfamiliar specific contrast: p=.07). This finding further refutes the quality hypothesis as the mechanism behind the advantage found by ambiguous names as higher quality is also imputed for common names.

There were no significant effects of typicality or specificity on our other measures.

Discussion
The results from Study 1 suggest that the type of color name does matter. In addition, consistent with our contention, we find that ambiguous names are preferred to more common names. Further, this preference does not appear to be due to the “vividness” of the adjectives used, as a similar preference is not observed for the familiar and unfamiliar specific names which use similar types of adjectives. Although this preference appears to be partially driven by the novelty of the items, novelty alone is not enough – the lack of specificity matters, too. Unfamiliar specific names were not preferred to common names while ambiguous names were. These results are consistent with H2a, suggesting a Gricean mechanism is operating. Further, reports of perceived quality suggest that it is not a quality mechanism driving this preference. While low specificity did result in improved ratings of quality, the perceived quality of the ambiguous names did not differ from the perceived quality of the common names, indicating quality cannot explain the observed difference in preference for items with these two name types. Thus the results of Study 1 suggest that while some of the other mechanisms may be operating in part, the Gricean mechanism appears to offer the best explanation for all of the findings.

Validation of Categorization of Color Names

The Gricean theory suggests that names whose literal meanings are not readily discernable will result in a search for the pragmatic meaning of the communication, leading to an increased preference for items with such names. In Study 1, we operationalized such names as low typicality and low specificity, and labeled such names “ambiguous.” In this study, we seek to confirm that, unlike specific or common color names that are associated with a specific color (or a narrow band on a color wheel), ambiguous names do not identify the color shade very well, and thus do not have a literal meaning that is informative. (This is a necessary pre-condition for
the Gricean theory to be operating.) To do so, we conducted a survey in which respondents were asked to indicate the range of shades associated with a particular color on a color wheel (see Figure 2).

Fifty-two respondents who did not participate in any of the other experiments, but who were drawn from the same subject population, participated. Participants were told that we were interested in learning how people respond to and think about various colors. They were then asked to imagine that they were going shopping for some sweaters and that they were going to purchase these sweaters from a catalogue. Participants were then told that they would be shown some color names as well as an image of a color wheel and asked to identify the colors that were described. A color wheel containing 36 color sections was then presented and participants were asked to indicate (1) the spot in the image that represents the very best point to match the color description and (2) the range of shades in the image that the color name could refer to. The range of shades was indicated by placing four boxes on the image to “box” out the area the participant believed the color name could refer to. After each color name, participants were asked (1) How easy was it to select a single point that the color name referred to (0 = very easy, 10 = very hard); (2) On a scale from 0-100 percent, how sure are you that if you actually saw an item of this color, it would be the color you indicated (by placing the single point); (3) How easy was it to select the range of shades that the name could refer to? (0 = very easy, 10 = very hard); and (4) On a scale from 0-100 percent, how sure are you that if you actually saw an item of this color, the color would fall in the range you indicated (by placing the four points)?

Each participant rated 18 names – 6 of which were specific (both familiar and unfamiliar), 6 of which were common, and 6 of which were ambiguous. The actual names used
were: pine green, baby blue, brick red, lemon yellow, orange marmalade, eggplant purple (specific), light yellow, dark red, dark orange, dark purple, light blue, dark green (common), monster green, passion orange, moody blue, mellow yellow, island purple, and Florida red (ambiguous). The types of color names were randomly organized in one list (i.e., the name types were not blocked) and the order of the colors presented was counterbalanced.

As predicted, the area boxed out for the ambiguous names (M = 1125449) was significantly larger than that for common names (M = 761541, t_{46} = 3.68, p < .001) and that for specific names (M = 829937, t_{46} = 4.55, p < .0001). In addition, consistent with our definition of ambiguous names, respondents found it more difficult to place the single point for ambiguous names compared to both common (p < .0001) and specific names (p < .0001) and were less confident about their placement (p’s < .0001; see Table 1). Respondents also reported greater difficulty and less confidence in creating the range (all p’s < .0001; see Table 1). In addition, controlling for difficulty and confidence, respondents also took longer to place the point for ambiguous names compared to both common (p = .007) and specific names (p = .01). Common and specific names did not differ on any of these variables (p’s > 0.2).

The results of Study 1 supported our hypothesis that color names influence purchase decisions, however they do so in a somewhat contrived, unrealistic environment. In addition, while Study 1 and the validation study suggest that the Gricean mechanism accounts for the impact of color names on decisions, these studies do not explicitly rule out an affective mechanism. These issues are addressed in Study 2.
STUDY 2

While Study 1 used a hypothetical decision, this study uses a real product decision with real stimuli. In addition, the study examines whether the mechanism driving our results is cognitive or affective in nature by examining decisions under high and low cognitive load. If ambiguous names influence decisions via a cognitive route (e.g., Grice, incongruency, or novelty), then one would expect to see a preference for items with ambiguous names (over those with familiar specific names) when cognitive load is low and consumers have the ability to process the names, but not when cognitive load is high, preventing elaboration. Conversely, if ambiguous names influence decisions via an affective route (e.g., vividness or novelty-affect), then we would not expect to see any effect of cognitive load on decisions (i.e., items with ambiguous names should be preferred regardless of load) since positive affect should arise without requiring any deep thought by the consumer. Similarly, we would not expect cognitive load to impact decisions if ambiguous names operated through a quality mechanism, as such an attribution should be relatively automatic and thus not impacted by cognitive load. Thus, we predict the following:

**H3a:** If preferences for ambiguously named items are due to a cognitive pathway, items with ambiguous names will be preferred under conditions of low cognitive load, but not under conditions of high cognitive load.

**H3b:** If preferences for ambiguously named items are due to an affective pathway, then items with ambiguous names will be preferred regardless of cognitive load.

**Method**

The experiment was a 2 x 2 between-subjects design. The first factor was name type (familiar specific and ambiguous) and the second factor was cognitive load (low, high).

*Stimuli (name type)*
Participants saw jelly beans with either familiar, specific-named flavors or ambiguous-named flavors. Familiar specific names were created by taking the actual flavor of the jelly bean (e.g., blueberry) and combining it with the color of the jelly bean (e.g., blue to make “blueberry blue”). Ambiguous names were created by selecting a subset of the items identified as acceptable in the pretest for sweater names. The actual flavor names used appear in the Appendix.

Subjects and Procedure

One hundred undergraduates participated in the experiment in partial fulfillment of a requirement for their introductory marketing class.

Participants first participated in an unrelated study that was administered via computer. After completing the study, participants were told that the researchers wanted to thank them for their participation by giving them some jelly beans to take home with them. Participants were told that the jelly beans were available in an adjacent room and that they should go to that room to make their selections and to complete some paperwork to insure that they would receive credit for their participation. Participants were asked to enter the jelly bean room one-at-a-time.

Upon entering the jelly bean room, participants were greeted by a research assistant who handed the participant a napkin to hold the jelly beans. The research assistant then directed the participant to a table which had six different cups filled with jelly beans and told the subject to take as many jelly beans as s/he would like. Each cup was filled with a different colored (flavored) jelly bean and had a sign attached to it with the jelly bean’s flavor. For half the participants, the cups were labeled with familiar, specific names (the actual names of the flavors plus the jelly bean’s color). For the other half of the participants, the cups were labeled with
ambiguous names (which were chosen from the validation study where possible). The exact names used appear in the Appendix. The order of the cups was random.

Participants in the low cognitive load condition then chose their jelly beans and left. Participants in the high cognitive load condition were told that there had been a glitch in the computer program that had administered the study and that the program had failed to record the (experimental) cell the participant had been in. Consequently, the research assistant needed to ask the participant some questions to determine what cell the participant was in. The research assistant then asked several questions about the studies that were designed to cause the subject to think about the previous study and try to recall minute details about it. These questions were asked while the participant made his/her jelly bean choices.

A second research assistant surreptitiously recorded the number of jelly beans selected by the participant. In cases where it was not possible to determine the amount of jelly beans taken surreptitiously, the research assistant stopped the participant prior to the participant’s departure and explained that in order for the researcher to be reimbursed, the university needed to know the exact number of jelly beans that had been distributed. The research assistant then asked to count the number of jelly beans the participant had taken and gave the participant a plastic bag to place the jelly beans in. The participant was then dismissed. All participants were then later debriefed.

Results and Discussion

Effect of Name Type and Elaboration

As predicted by H3a, there was a significant cognitive load*name type interaction on quantity taken (F(1, 96) = 5.34, p=.02, see Table 2). Specifically, participants took more ambiguously-named jelly beans than familiar, specific-named jelly beans, but only when their
cognitive resources were unconstrained (i.e., when cognitive load was low). When cognitive resources were constrained, there were no differences in the amount of jelly beans taken (p>0.5).

"INSERT TABLE 2 HERE"

**Discussion**

This study replicates the results of study 1 – that color name can influence product decisions – with a new product and real decision. In addition, it provides an increased understanding of the type of mechanism that underlies this effect – namely, that the effect is cognitive, not affective, in nature. Study 1 and Study 2 together provide evidence that the process driving the influence of ambiguous color names is cognitive and primarily driven by the Gricean theory. Although there is some evidence that incongruity, vividness and novelty may also be occurring, those three theories do not predict the added advantage that novel ambiguous names have over novel specific names. Study 3 provides further evidence of this latter distinction.

**STUDY 3**

According to the Gricean theory, the ambiguous color names led to increased selection of items in Studies 1 and 2 (under low load) because consumers did not know how to interpret the literal meaning of the name, and consequently, focused on the pragmatic meaning, leading them to make positive attributions about the product. As a result of this increased elaboration, consumers felt more positive towards the product, and were consequently, more likely to make a purchase.

If this theory is correct, the advantage that ambiguous names have over more common names should be mitigated if the literal meaning of the name is interpretable, which would be the
case if a picture of the actual color of the product were presented first, or even simultaneously with the color description. If on the other hand, the name is presented first, followed by a picture or if the name is presented without a picture, then the positive attributions will still be made about the ambiguous names (but not the common names) and the advantage would remain.

The incongruency theory suggests that if consumers view the shade with the name, and the shade increases their curiosity about why the particular adjective was chosen, then ambiguous names should be preferred to common names with or without a picture. Similarly, the novelty theory (as well as the two affective theories and the quality explanation) does not predict any difference between ambiguously named items presented without a picture and those presented with a picture. The novelty of the color names will be the same regardless of what other information about the shade is presented. Thus, as long as consumers have access to the name itself, they should respond to it (either by experiencing positive affect (vividness explanation, novelty-affect explanation), by making a quality attribution (quality explanation), or by elaborating due to the novelty of the name itself (novelty). Therefore, we predict:

**H4a:** If the Gricean theory is correct, then the advantage of ambiguous color names over unambiguous color names depends on whether the literal meaning of the color is discernable from the given information.

**H4b:** If the novelty theory, incongruity theory, or quality theory are correct, then the advantage of ambiguous color names over unambiguous color names will not depend on whether the literal meaning of the color is discernable.

In addition to distinguishing between the Gricean, novelty, and incongruity theories, we also seek additional evidence for these processes. The Gricean, novelty and incongruity theories propose that consumers elaborate about the product as a result of searching for the meaning of the communication (Grice) or due to the novelty of the name itself (novelty) or while trying to resolve the puzzle (incongruity). The Gricean theory further predicts such elaboration results in
positive attributions about the product. Therefore, we predict that consumers viewing items with ambiguous names should make a greater number of attributions than those viewing items with common names. In addition, such attributions should lead to an increased propensity of purchase.

**H5:** Consumers will make a greater number of attributions during their decision when viewing items with ambiguous names than when viewing items with common names.

**H6:** The number of attributions will predict purchase.

### Method

The experiment followed a 2 x 4 between-subjects design. The first factor, **color name**, had two levels: common and ambiguous. The second factor, **picture presence**, had four levels: no picture (only word description of the color name), picture with word description presented simultaneously, word description first followed after a delay by picture, picture first followed after a delay by word description.

**Color Name**

Two lists of color names -- one for common items and one for ambiguous items -- were created using a subset of the items from the validation study (plus two more neutral colors – brown and white). The specific items used are listed in the Appendix.

**Picture Presence**

Items were presented by name only (no picture), by showing the name with a rectangular color swatch (picture + word), by showing the name first, followed by the rectangular color swatch after a brief delay (name first), or by showing the rectangular color swatch, followed by the name after a brief delay (picture first).

**Subjects and Procedure**
One hundred and eighteen undergraduates participated in the study in partial fulfillment of a class requirement.

Participants were presented with six items. In the no-delay conditions (no picture and picture + word conditions), participants were shown the items and asked to indicate how many of each item they would like, as though they were ordering from a catalog. In the delay conditions (name first and picture first conditions), participants were told "Below are the available colors. Please examine them." Then, after a brief delay, the additional information (color or name) appeared, and participants were asked to indicate how many of each item they would like (as though they were ordering from a catalog).

After making their purchase decisions, participants responded to three open-ended questions, to gain further insight into their decision process: (1) What criteria did you use when making your decisions? (2) What do you think of the sweaters that were offered? (For example, was there an ample selection? Do you think the sweaters were of high quality? Etc.) and (3) What do you think of the manufacturer of these sweaters? (For example, do you think they are helpful? Make expensive sweaters? Etc.). Following these open-ended questions, participants answered the dependent measure questions, which included questions about the meaningfulness of the names used and preferences for the colors.

Prior to answering the dependent measure questions, a subset of the participants (99) also answered the following question, which was designed to assess the attributions made about the ambiguous versus typical sweaters to: “Below is a list of qualities that people often use when describing traits of manufacturers. Please select the qualities you think a company carrying the product line you just saw would have.” The list of qualities contained twelve items, listed
alphabetically in three columns, that had been chosen on the basis of a pre-test (discussed below). Participants were also able to add additional qualities that were not listed.

Finally, at the end of the experiment, participants were shown a picture of an actual sweater in a color that matched one they had selected in the choice task and told that this was one of the sweaters they had ordered. They were then asked to indicate how satisfied they were with the sweater and how likely they were to buy from the manufacturer again.

Latencies for time to make the purchase decision were also collected.

**Dependent Measures**

*Attribute checklist pretest.* Ten undergraduates participated in the pre-test. Participants were told that we were interested in how companies’ product lines influence perceptions of the company and the product. Participants were further told that they would be presented with six products from a particular sweater manufacturer. Half the participants viewed common-named items, while the other half viewed ambiguous-named items. After viewing the items, participants were asked: “Based on the product line you have just seen, describe as many characteristics as you can of the company. That is, what traits/characteristics would you expect a company that offered these products to have?” After answering this question, participants were then presented with a list of 50 adjectives with the following instructions: “Below is a list of qualities people often use when describing traits of manufacturers. Please select those qualities you think a company carrying the product line you just saw would have (include both those you mentioned previously and any additional qualities you hadn’t considered.”

Based on the responses to these two questions, the top “vote-getters” for each name type were chosen to comprise the list of 12 adjectives that were used in this study. Eight of these items came from the original checklist, while four of the items came from the open-ended
responses. The resulting list of adjectives was as follows: appealing, creative, innovative, limited selection, original, serious, simple, stylish, traditional, trendy, variety, and young.

We hypothesized that respondents in the ambiguously-named conditions would make more positive attributions about the company than would respondents in the commonly named conditions.

Perceptions Questions. As in the previous studies, participants were asked to rate the sweaters on the following 11-point scales: low price/ high price, low quality/high quality, unstylish/stylish, unpopular/popular, not trendy/very trendy. In addition, participants were asked to indicate how familiar the colors were (11-point scale anchored by “not at all familiar” and “very familiar”) and how much they liked them (11-point scale anchored by “did not like at all” and “liked a lot”). These questions followed the checklist question (for those who received it) or the open-ended questions (for those who did not receive the checklist).

Other process measures. To further understand the types of attributions participants might make based on the color names they saw, participants were also asked how much they agreed or disagreed (5-point scales) with the following statements: (1) I think the manufacturer has named the color in order to help me know what it is; and (2) I think color names provide clues about the manufacturer. In addition, participants were asked to what degree they made their choices because (1) they liked the color, (2) they thought the names were creative, and (3) they thought the sweaters were high quality. These latter three questions were rated on 5-point scales anchored by “strongly disagree” and “strongly agree.”

Post-decision measures. In order to assess whether the color names used also impacted ratings of satisfaction and repeat purchase decisions, at the end of the experiment (after the two process measures, but before the three choice criteria scale questions), participants were shown a
picture of an actual sweater in a color that matched one they had selected in the choice task and told that this was one of the sweaters they had ordered. The sweater shown was selected via a ranking algorithm such that the highest ranked sweater chosen was shown. The ranking of the sweaters was red, blue, brown, white, green, and then orange, and was determined based on prior data which suggested participants tended to choose these colors with roughly this frequency (i.e., orange sweaters were least likely to be selected in previous studies). After viewing the sweater, participants were asked how satisfied they were with the sweater (11-point scale anchored by “not at all satisfied” and “very satisfied”) and how likely they were to buy from the manufacturer again in the future (11-point scale anchored by “probably would not buy again” and “probably would buy again”).

Results and Discussion

We ran an ANCOVA with participants’ perceptions of price, quality and style of sweaters, as well as how much they liked each (base) color, as covariates in order to test our hypotheses (H4) about the effect of picture presence and name type on purchase. Consistent with H4a, there was a significant picture presence * color name interaction (F(3, 106) = 2.64, p=.05). Table 3 shows the means for the number of items purchased. There were no main effects of picture presence or name type on any of the covariates (all p’s>0.1). In addition, the only covariate which had a significant effect on purchase was how much participants liked the (base) color, with increased liking resulting in increased purchase (as one would expect).

INSERT TABLE 3 HERE

As can be seen from the table, the results are consistent with H4a and the predictions of the Gricean hypothesis. Specifically, when no picture is present, more items with ambiguous names were chosen (M=5.2) marginally more often than items with common names (M=3.5, p=0.1).
This advantage to ambiguous names remained when the name was shown first, and the picture was shown after a delay. In this case, again, more items with ambiguous names were purchased (M=6.7) than items with common names (M=3.7, p=.003). This suggests that once the elaboration or attributions are made about the item, they are persistent even when the actual color is depicted.

However, as predicted, if the picture is presented either simultaneously with the name or if the picture is presented first, then the advantages of the ambiguously named products are mitigated. When both the name and the picture were present, more ambiguous items were chosen (M=5.7) than common items (M=4.9) but this difference is no longer significant (p>0.1). In addition, when the picture was presented first, fewer ambiguously named items were actually chosen (M=4.4) than commonly named items (M = 5.4), although this difference was not significant (p>0.1).

**Process Measures**

Several of the dependent measures questions provide insight into the process behind the purchase effects found above. According to our hypotheses (H5 and H6), the color names should affect purchases based on their ability to prompt elaboration and encourage consumers to make attributions about the products. Consistent with these hypotheses, we found significant main effects of picture presence (F(3, 109) = 2.98, p=.04) and color name (F(1, 109) = 10.88, p=.002) on the amount of time it took participants to make their purchase decisions. Specifically, participants took a significantly shorter amount of time to make their decisions when they saw the picture first (M = 18.5 msec) than when they saw the name first (M = 23.9 msec) or the name and the picture simultaneously (M =23.9 msec) or just the name (M = 25.5 msec), suggesting they were least likely to make attributions about the products in this condition.
where the literal meaning was most evident. In addition, participants took longer to make their
decisions when they saw items with ambiguous names (M = 26.6 msec) than when they saw
items with common names (M = 19.2) msec, suggesting they made more attributions when
viewing the ambiguous names compared to when viewing the common names. Although the
interaction between color name and picture presence was not significant (F(3, 109) = 1.14,
p>0.3), analysis of specific contrasts revealed that participants spent more time in the
ambiguous-name, no picture (M = 31.3 msec) and ambiguous-name first, picture later (M = 28.4
msec) conditions compared to all other conditions. Participants in the common color picture first
and name later condition spent significantly less time (M = 15.4 msec) making their decisions
than participants in any of the ambiguous cells (see Table 4). In addition, consistent with our
theory that greater elaboration (number of attributions) leads to increased purchase, a regression
of decision time on quantity purchased revealed that the amount of time participants spent
making their choices predicted the number of items they bought (β = .07, t = 2.49, p = .01), with
the more time participants spent making their decision, the more items they bought.

INSERT TABLE 4 HERE

Consistent with these findings (and H5), analysis of participants’ responses to the four
open-ended questions revealed a greater number of attributions by participants who saw
ambiguous names (M = 3.2) compared to those who saw common names (M = 2.1; F(1, 90) =
6.32, p=.01). However, there were no significant effects of picture condition on this variable
(F<1), although consistent with the latency data, participants made the fewest attributions when
they saw the picture first (M = 2.3) compared to the other conditions (M = 2.8). In addition,
consistent with H6, a regression of number of attributions on purchase quantity revealed that the
number of attributions marginally predicted purchase ($\beta = .25$, $t = 1.81$, $p=.07$), with the more attributions made, the greater the number of items selected.

To further understand the types of attributions participants were making due to the color names, we showed a subset of participants ($n = 99$) a list of 12 adjectives and asked participants to select those qualities that they thought a company carrying the product line they just saw would have. We hypothesized that respondents in the ambiguously-named conditions would make more positive attributions about the company than would respondents in the commonly named conditions.

Looking only at the adjectives in which the responses were significantly different between conditions, we find strong support for this hypothesis. Consistent with the proposition, participants who saw the ambiguous names were significantly more likely to indicate that the company was creative (40% in ambiguous condition vs. 8% in common condition; $p=.0005$), original (A = 23%, C = 8%; $p= 0.04$), stylish (A = 35%, C = 16%; $p = 0.03$), and/or trendy (A = 38%, C = 16%; $p = 0.02$), while those who saw the common names were more likely to indicate that the company was simple (A = 52%, C = 78%; $p= 0.006$) and traditional (A = 38%, C = 55%; $p = 0.08$) and had a limited selection (A = 42%, C = 61%; $p = 0.06$).

Further evidence that participants differed in the types of attributions they made as a consequence of the color names they saw was evident in responses to several scale questions. Significant differences were observed in response to the statements "I think the manufacturer has named the color in order to help me know what it is" ($F(1, 110) =24.70$, $p = 0.0001$) and "I think color names provide clues about the manufacturer" ($F(1, 110) = 6.91$, $p = 0.01$). Specifically, participants who saw the common names were more likely to believe the manufacturer was trying to be helpful ($M = 3.6$) than were participants who saw the ambiguous names ($M = 2.6$),
while participants who saw the ambiguous names were more likely to believe the names provided clues about the manufacturer (M = 3.2) than were participants who saw the common names (M = 2.6). In addition, participants who saw ambiguously named items were more likely to indicate that they had made their choices based on the creativity of the item names (M= 1.5) than were those who saw commonly-named items (M = 1.2, F(1, 110) = 4.98, p = 0.03).

Discussion

The results from Study 3 provide direct evidence for the proposed process behind the effects of ambiguous names. As predicted, ambiguous names increased purchases both when the name appeared by itself and when the name appeared first, followed by the shade after a brief delay, but not when the name and picture were seen together or when the picture was seen first, followed by the name after a brief delay. Such results provide additional support for the Gricean mechanism we proposed, while casting further doubt on the affective mechanisms proposed, as well as the novelty, incongruity and quality hypotheses.

The absence of differences when the picture is seen first seems to be due to a lack of the increased elaboration and attribute generation that appears to be going on in the other conditions. Corroboration for this explanation is obtained from the latency data. Participants took less time to make their decisions when the picture was seen first, suggesting less thought about the products (and consequently, fewer attributions) and they took more time to make their decisions when viewing items with ambiguous names, suggesting greater thought about the products (and consequently, more attributions). Responses to the open-ended questions were consistent with the latency data in that participants made a greater number of attributions when viewing the ambiguous names compared to when viewing the typical ones.
While these results support our Gricean theory, this theory makes one underlying assumption that is not tested here -- namely that consumers believe names should be informative. To assess this belief, we asked an additional 80 subjects to rate their agreement or disagreement with the following statement (where 0 = "strongly disagree" and 10 = "strongly agree"): "I believe color names should be informative, in that they convey information about the color of the sweater." Consistent with our theory, the mean rating of agreement with this statement was 7.4 (sd = 2.7), which was significantly different than the scale midpoint (t=7.97, p = 0.005).

These results suggest that consumers apply Gricean norms to the marketing situation -- that is, they expect marketing communications, such as color name descriptions to be informative. Consequently, when such names are not informative in the literal sense, consumers search for the pragmatic meaning of the communication, leading them to make positive attributions about the brand. These attributions then result in an increased likelihood of purchase.

GENERAL DISCUSSION

The results from these three studies suggest that color names can influence propensity of purchase, and that this effect is related to the specificity (or lack thereof) of the names and people’s underlying assumptions that information in the marketplace should conform to conversational norms. Although past research has examined many aspects of product attributes (e.g., missing attributes, irrelevant attributes (Carpenter et al. 1994), and number of attributes) and their effects on choices, to the best of our knowledge, no one has examined the effects of how the attribute levels are named. In addition, although researchers have suggested that people carry the assumptions of conversational norms into settings other than interpersonal
In Study 1, we demonstrate that the type of name used does impact product decisions and that this impact is derived from both the name’s lack of novelty and its lack of specificity. The results from this study are consistent with the predictions of the Gricean theory and also cast doubt on several other alternative explanations. The fact that ambiguous names were preferred to both familiar specific and unfamiliar specific names and that specific names were not preferred to common names suggests that “vividness” is not driving preferences for items with different name types since specific names employ similar modifiers to those employed by the ambiguous names.

These results also cast doubt on the incongruency explanation, as this theory would predict an increased preference for unfamiliar specific names as well as ambiguous names over common names. Although the unfamiliar-specific names show a directional increase in quantity ordered over common names, this difference was not significant. Further, the incongruency theory does not predict a decreased effect when the color name is displayed with the shade and may even predict an increased effect in this situation, as the picture of the shade may make the adjective even more unexpected. However, in Study 3, when pictures of the shade were shown with the color name, we did not observe an increased preference for ambiguous names; rather, we saw a mitigation of the effect, as predicted by the Gricean explanation. Taken as a whole, the results from these studies are more consistent with the Gricean explanation than the incongruency explanation.

Study 1 does find an effect of novelty (non-typicality) on purchase decisions, with novel named items ordered to a greater extent than typical items. However, the fact that the
ambiguously named items are preferred to common names to a greater extent than the unfamiliar-specific items is less consistent with this explanation than with the Gricean explanation. Further, the results from Study 2 suggest that preferences for ambiguous names derive from a cognitive process rather than an affective process. This result is inconsistent with the novelty-affect hypothesis. In addition, the fact that the presence of the color shade presented simultaneously with the color shade mitigates the effect of the color name suggests that the novelty-elaboration hypothesis is not driving the effect either. Color names should be perceived as novel regardless of whether the shade is present and thus the presence or absence of the shade should have no effect.

The specific pattern of preferences revealed in Study 1 may be consistent with the quality hypothesis (although the quality hypothesis is likely to predict an effect for unfamiliar, specific names as well). In any event, additional data in that study as well as the results from Study 2 cast doubt on this explanation as well. Although participants were queried about their perceptions of the products’ quality in studies 1 and 3, items with ambiguous and common names were always perceived to have similar levels of quality. Further, the quality attribution should be a fairly automatic one and thus should not be affected by limited cognitive resources. However, in Study 2, we find that the preference for items with ambiguous names is mitigated when participants could not devote cognitive resources to the task.

Thus, the observed pattern of results in Studies 1-3 is most consistent with the Gricean mechanism. Further support for this mechanism is also evident throughout the studies. Study 3 demonstrated that consistent with Grice’s Theory of Conversational Implicature (Grice, 1975), people do believe color names should be informative (about color), and both this study and the validation study revealed that ambiguous names are not informative in this manner. When the
material presented was informative, i.e., when a picture of the color was presented first or simultaneously, the advantage to the ambiguous named products was mitigated. In addition, this study provides evidence that people do make positive attributions when viewing ambiguous names and that these attributions lead to an increased likelihood of purchase.

Some limitations to these studies should be noted. Studies 1 and 3 utilized hypothetical choices and products where participants had very little information about the actual products, and thus the decision process used in this environment may not transfer to more real-world environments. The fact that we find similar results in Study 2 which did use a real product and a real product decision helps mitigate this concern. However, this decision (while real) also took place in the laboratory environment and lacked some information (e.g., brand name) that might be present in other decision environments. The question of how brand name might interact with the attribute label is an interesting question to consider in future research.

We should also note that although the stimuli in studies 1 and 3 may bear less resemblance to the decision a consumer might face in a retail store, it is similar to the environment a consumer ordering products from a catalogue or online might face, where the flavor or color name is much more salient. In addition, as noted earlier, the experience of seeing a color name without a shade (as in study 1 and the word-only condition of study 3) is similar to the experience of seeing a flavor name prior to tasting the product. Thus, we would expect the consumer’s choice process to be similar in such situations, as well, as borne out by the results in Study 2.

Another related limitation of these studies is that the paucity of information about the products – namely the focus on the color name – may have caused a demand effect. We find this explanation unlikely since the type of color name description (i.e., common or ambiguous) was
manipulated between subjects, making it unlikely that participants could have guessed our actual hypotheses. In addition, in Study 2, participants had much more information about the actual products (the products were right in front of them and they scooped the jelly bean right into their hands) and we still find similar effects.

Another potential limitation concerns the types of product classes used in our studies. All of our studies used fairly familiar products where ambiguity was not particularly risky. In categories where there is perceived risk in the choice of color or flavor, our effects may not hold. Future research should explore how attitudes toward risk impact the effect of color and flavor names.

Despite these limitations, this research does provide insight into the success some companies are having with unusual naming strategies. In particular, the results from Study 3 suggest that causing consumers to focus on the color or flavor name of the product will lead to increased likelihood of purchase when an ambiguous name is used. Indeed, for a product like Gatorade, the informativeness of the label may be the only cue consumers have to judge the flavor, and thus, the additional positive attribution engendered by the ambiguous name are likely to lead to success. However, while such names may induce trial of such beverages, future research should explore how the effects of such names change over time, as familiarity reduces the ambiguity inherent in the name. In addition, future research should explore if such Gricean processes also occur for the naming of other product attributes besides color and flavor.

The proliferation of unusual naming strategies in the marketplace raises many interesting research questions. The studies reported here indicate that such naming strategies can lead to increased preferences for products over more typically named products and that such effects arise due to the ambiguity of the names. Specifically, we find that consumers react favorably to
unusual color and flavor names because they assume that the marketing messages convey some useful information, leading them to make positive attributions about the product as they try to determine the reason behind the communication.
Appendix

Colors Used in Study 1:

*Ambiguous (low typical, low specific):* antique red, millennium orange, party yellow,
  passion blue, lucky brown, friendly green, snuggly white

*Unfamiliar Specific (low typical, high specific):* Coke red, Florida orange, rainslicker
  yellow, cookie monster blue, freckle brown, Kermit green, cotton white

*Common (high typical, low specific):* dark red, dark orange, light yellow, light blue, light
  brown, dark green, pure white

*Familiar Specific (high typical, high specific):* cherry red, tangerine orange, lemon
  yellow, baby blue, chocolate brown, pine green, ivory white

Flavors Used in Study 2:

*Familiar specific:* blueberry blue, cherry red, chocolate brown, marshmallow white,
  tangerine orange, and watermelon green

*Ambiguous:* moody blue, Florida red, Mississippi brown, white Ireland, passion orange,
  and monster green.

Colors Used in Study 3:

*Common:* dark brown, dark green, dark orange, dark red, light blue, pure white

*Ambiguous:* Mississippi brown, monster green, passion orange, Florida red, moody blue,
  and white Ireland
REFERENCES


Table 1. Color Wheel Task

<table>
<thead>
<tr>
<th></th>
<th>Ambiguous</th>
<th>Common</th>
<th>Specific</th>
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</thead>
<tbody>
<tr>
<td>Point Difficulty</td>
<td>6.2 (0.2)***</td>
<td>3.6 (0.2)</td>
<td>3.9 (0.2)</td>
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<tr>
<td>Point Confidence</td>
<td>34.8 (1.6)***</td>
<td>54.4 (1.6)</td>
<td>54.0 (1.6)</td>
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<tr>
<td>Range difficulty</td>
<td>4.2 (0.1)***</td>
<td>2.2 (0.1)</td>
<td>2.3 (0.1)</td>
</tr>
<tr>
<td>Range confidence</td>
<td>65.0 (1.2)***</td>
<td>80.8 (1.2)</td>
<td>80.5 (1.2)</td>
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<tr>
<td>Time to place point</td>
<td>9.7 (0.8)***</td>
<td>7.6 (0.7)</td>
<td>7.8 (0.7)</td>
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<tr>
<td>Time to place range</td>
<td>19.9 (0.9)</td>
<td>16.7 (0.9)*</td>
<td>19.7 (0.9)</td>
</tr>
</tbody>
</table>

Note: numbers in parentheses are standard errors.
* Items are significantly different from others in the same row at p< .05
*** Items are significantly different from others in the same row at p<.0001

Table 2. Effect of Cognitive Load and Name Type on Jelly Bean Quantities (Study 2)

<table>
<thead>
<tr>
<th></th>
<th>Ambiguous</th>
<th>Familiar, specific</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low load</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambiguous</td>
<td>18.0 (3.0)(^a,b,c)</td>
<td>7.8 (1.9)(^a)</td>
</tr>
<tr>
<td><strong>High load</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambiguous</td>
<td>6.1 (1.9)(^b)</td>
<td>6.3 (2.0)(^c)</td>
</tr>
</tbody>
</table>

Note: numbers in parentheses are standard errors.
\(^{a,b,c}\) p<.005
### Table 3. Mean Number of Items Chosen (Study 3)

<table>
<thead>
<tr>
<th></th>
<th>Ambiguous</th>
<th>Common</th>
</tr>
</thead>
<tbody>
<tr>
<td>No picture (word name only)</td>
<td>5.2 (0.8)(^a)</td>
<td>3.5 (0.8)(^a)</td>
</tr>
<tr>
<td>Word Name first, then picture</td>
<td>6.7 (0.7)(^b)</td>
<td>3.7 (0.7)(^b)</td>
</tr>
<tr>
<td>Picture and Word Name Simultaneously</td>
<td>5.7 (0.8)</td>
<td>4.9 (0.8)</td>
</tr>
<tr>
<td>Picture first, then word name</td>
<td>4.4 (0.8)</td>
<td>5.4 (0.7)</td>
</tr>
</tbody>
</table>

Note: Numbers in parentheses are standard errors.

\(^a\) p < .10  
\(^b\) p < .01

### Table 4. Mean Time Spent Making Decision(s) (Study 3)

<table>
<thead>
<tr>
<th></th>
<th>Ambiguous</th>
<th>Common</th>
</tr>
</thead>
<tbody>
<tr>
<td>No picture (word name only)</td>
<td>31.3 (2.8)(^b,d,e,f,g,m)</td>
<td>19.6 (2.5)(^c,i)</td>
</tr>
<tr>
<td>Word Name first, then picture</td>
<td>28.4 (2.3)(^c,h,j,k)</td>
<td>19.4 (2.3)(^l)</td>
</tr>
<tr>
<td>Picture and Word Name Simultaneously</td>
<td>25.2 (2.8)(^b,l)</td>
<td>22.6 (2.5)(^c,m)</td>
</tr>
<tr>
<td>Picture first, then word name</td>
<td>21.7 (2.6)(^a,g,k)</td>
<td>15.4 (2.6)(^a,d,h,l)</td>
</tr>
</tbody>
</table>

Note: Numbers in parentheses are standard errors.

\(^a,b,c\) p < .10  
\(^d,e,f,g,h,i,j,k,l,m\) p < .05
## Figure 1. Proposed Mechanisms

<table>
<thead>
<tr>
<th>Mechanism</th>
<th>Description</th>
<th>Ambiguous names preferred to unambiguous names</th>
<th>Ambiguity Necessary?</th>
<th>Cognitive Resources Required?</th>
<th>Resolution of Ambiguity Mitigates effect (e.g. picture of the color included)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gricean Hypothesis</strong></td>
<td>search for meaning then make attributions</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td><strong>Incongruency</strong></td>
<td>Look for connection between adj. and color, affect follows when puzzle is resolved</td>
<td>Y</td>
<td>Not necessarily, but links between name and color cannot be blatantly obvious</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td><strong>Vividness</strong></td>
<td>Vivid adjective creates affect</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td><strong>Novelty-Affect</strong></td>
<td>Unfamiliar, novel adjective creates affect</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td><strong>Novelty</strong></td>
<td>Unfamiliar, novel adjective increases elaboration</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td><strong>Quality</strong></td>
<td>associate ambiguous names with high quality retailers/manufacturers</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td><strong>Mere Exposure</strong></td>
<td>Familiar items are preferred even if familiarity occurs subliminally</td>
<td>N</td>
<td>na</td>
<td>N</td>
<td>N</td>
</tr>
</tbody>
</table>
Figure 2. Color Wheel Used in Pretest 2