

## Love at second sight: Temporal effects of design typicality on brand liking

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◦*Purpose: Designs typical for a category (i.e., wine) are usually better liked by consumers as they find them more diagnostic. In contrast, atypical designs may be more likely to stand out in a retail environment, and may be processed more deeply, possibly increasing long-term liking. Integrating processing research with studies of schema congruity, this paper examines how the typicality of wine packages relates to short-term and long-term consumer liking.*

◦*Design/methodology/approach: Employing fictitious brand name and visuals, two experiments test how typical, moderately atypical and atypical wine package designs relate to diagnosticity and liking immediately after initial exposure (short-term condition) and after several days' time has passed (long-term condition). The first experiment (N=382) employs abstract package designs and is complemented by a second experiment (N=122) that employs realistic designs and additionally tests the interactive effects of design typicality and consumer tasting of the wine.*

◦*Findings: Across the two studies, the findings indicate that design typicality facilitates diagnosticity, which, in turn, increases liking. In the short-term condition consumers like brands with typical designs more than moderately atypical ones, which they like more than atypical packages. Diagnosticity increases, however, from short-term to long-term for moderately atypical packages more than for typical or atypical ones, hereby increasing liking. This effect is particularly pronounced when consumers evaluate the taste positively at the time of initial exposure.*

◦*Practical implications: The findings suggest that wine marketers may find themselves in a quandary as they need to decide whether to focus on short-term persuasion (by creating typical designs) or long-term attractiveness (by using moderately atypical designs) in conjunction with tastings.*

Keywords: package design, typicality, diagnosticity, brand attitude, tasting

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## 1. INTRODUCTION

Visual design is an important consideration in wine packaging since an offer's visual appearance captures attention (Pieters et al., 2010), generates liking (Bloch, 1995; Cho and Schwarz, 2010), creates value (e.g., Chitturi et al., 2008; Creusen and Schoormans, 2005; Orth et al., 2010), supports positioning (Orth and Malkewitz, 2012), leads to quality inferences (Lockshin, 2003) and, ultimately, aids in building strong brands (Henderson et al., 2003). Although a deep relationship with a brand hinges on extended experiences (Verhoef et al., 2009), liking begins at the first contact and this is where visual design plays a pivotal role.

In employing visual design, marketers adopt different strategies that can be assigned into one of two basic categories, one aiming at distinctiveness and the other at conformity (Schoormans and Robben, 1997). While typical wine package designs align with exemplars, prototypes or archetypes for the category, bearing classical visuals (e.g., vineyards, wineries) and common features (e.g., standard bottle shapes), atypical designs achieve differentiation through unusual visuals (e.g., "critter images"), colors, shapes, typeface and materials (Orth and Malkewitz, 2008). Conforming to consumer expectations (i.e., by adopting a design typical for the category) provides benefits in terms of lower perceived risk (Campbell and Goodstein, 2001) and more fluent processing (Orth and Malkewitz, 2012), whereas differentiation (i.e., choosing an atypical design) makes the package stand out from the crowd and receive greater attention (Schoormans and Robben, 1997). Both strategic approaches hereby differ in design typicality, the degree to which a stimulus is representative of a category (Barsalou, 1985).

Consumers regularly use category information in making judgments about a new category member. For example, looking at a classic Bordeaux style bottle with a chateau on the label in traditional muted red and grey colors may lead consumers to infer that the wine shares similarities with a typical Bordeaux wine (e.g., red, full-bodied, rich of tannins). Research supports the existence of a "prototypes are attractive" effect (Winkielman et al., 2006) such that options typical for a category are more attractive and more likable than either moderately or extremely atypical options (Schwarz, 2004). A series of studies supports this effect for abstract stimuli (Novemsky et al., 2007), new products (Landwehr et al., 2011), brands (Labroo et al., 2008), and servicescapes (Orth and Wirtz, 2013). While researchers have examined consumer responses to the typicality of wine package visual design (e.g., Celhay and Passebois, 2011; Orth and Malkewitz, 2012), most studies have adopted a short-term perspective, examining consumer response immediately after exposure to the typicality stimulus. A more complete framework would thus need to detail long-term effects where the time between initial exposure and a second encounter possibly affects the relationship between typicality and consumer response. Identifying how temporal conditions influence the typicality effect will provide a richer understanding of the phenomenon as it relates to consumer behavior. Research is consistent with this goal; for example, studies of visual processing (van Rompay et al., 2009) and schema congruity (Meyers-Levy and Tybout, 1989) demonstrate that a stimulus is processed more in-depth and preferred when it is only moderately typical. These studies suggest that short- versus long-term outcomes of the typicality effect may differ.

The current research proposes that individual processing of design typicality is an important variable that differentially impacts short- and long-term consumer liking. Specifically, we propose that the positive typicality effect observed immediately after initial exposure (i.e., in the short-term) will be different from the one when a consumer re-encounters the design after some time has passed (i.e., in the long-term). Instead, when time has passed, consumers will have a preference for the novel over the norm, liking an option that is moderately atypical for a category better than one that is typical.

Two studies examine effects of perceived typicality with wine package designs to provide support for the important role of time on consumer liking of moderately atypical packages. The first study demonstrates that time alters the relationship between typicality and liking (through

diagnosticity) for images of abstract wine packages. The second study replicates and extends this finding by demonstrating that typicality and tasting interact in shaping diagnosticity and consequently liking. Together, these studies provide support for temporal changes in liking due to changing diagnosticity, and equip marketers with a better understanding of divergent short- and long-term evaluative outcomes of moderately atypical designs.

## **2. LITERATURE AND HYPOTHESES**

### ***2.1. Typicality and Viewer Processing***

Typicality combines characteristics such as representative, natural, and archetypical (Henderson et al., 2004), and is usually defined as the degree to which an object overlaps with others commonly encountered in the category, or is representative of the category (Barsalou, 1985). For example, a Bordeaux-style wine bottle, bearing a traditional label with a classical Chateau pictured in muted colors and a red closure on top is more typical for the wine category than a cresting moon-shaped vessel in metallic blue with a minimalistic edged label and a bright yellow closure (Orth and Malkewitz, 2008). Typical stimuli are recognized more accurately than atypical ones (Cabeza and Kato, 2000; Rousselet et al., 2002), and relate to higher liking (Hekkert et al., 2003). In addition, typical stimuli serve as “goodness-of-example” indicators and tend to correlate substantially with convergent meaning and familiarity (Orth and Malkewitz, 2008). In contrast, designs low in typicality are more difficult to process and require more cognitive effort (Cho and Schwarz, 2010). Partially replicating previous research, we expect:

**H1:** *In the short-term condition, brand liking will be higher for typical rather than moderately atypical or atypical designs.*

### ***2.2. The Effect of Typicality on Diagnosticity***

Diagnosticity of information – the ability of sensory input to aid in forming evaluative judgments - helps to either confirm or disconfirm prior held beliefs and expectations (Menon et al., 1995). According to the accessibility-diagnosticity model (Feldman and Lynch, 1988), accessible information (i.e., design typicality) is used in the process of evaluation and choice when it is diagnostic. The more diagnostic the information, the more helpful it is for consumers to evaluate an offer’s quality and performance (Herr et al., 1991). Non-diagnostic information, in contrast, is open to multiple interpretations (Herr et al., 1991). Previous studies have established that diagnosticity affects consumer evaluation of product images (Jiang and Benbasat, 2004/5), nutritional information on product packages (Garretson and Burton, 2000), and works in combination with actual taste (Kempf and Smith, 1998).

In this research, we use a product category-based definition of typicality. Specifically, we define typicality in terms of category schema similarity—the extent to which a package design is perceived as similar to current representations of the wine category. Past research (e.g., Skowronski and Carlston, 1987) suggests that the greater the shared associations between two targets, the more diagnostic information about one is for making judgments about the other. In the typicality context, this finding implies that as the shared associations between the category and the wine package increase so does the diagnosticity of information about the package (e.g., package design elements) for making judgments. In other words, typical designs support prior schemata about the category and will thus be perceived as more diagnostic, whereas low typicality designs should be less likely to fit in with prior held beliefs about the category, relating to perceptions of lower diagnosticity. Diagnosticity, in turn, should have a positive effect on brand liking as discussed in the previous section. We expect:

**H2:** *The effect of typicality on liking will be mediated by diagnosticity.*

### *2.3. Effects of Typicality Processing on Schemata*

According to the three-partite model of memory (Atkinson and Shiffrin, 1968) the processing of current information in short-term memory interacts with information stored in long-term memory. Specifically, current information in short-term memory (e.g., visual input on a package design) triggers the retrieval of associated long-term memories (i.e., schemata) that are compared against the new input (Burke and Srull, 1988). In line with the thinking of Craik (2002), type and depth of stimulus processing impact subsequent storage in memory. A critical factor in processing is the congruity or fit (i.e., typicality) between current information and schemata stored in long-term memory (Baddeley, 2010).

Conceptualized as an association network of knowledge and expectations in memory, both of which are organized through experience, a schema is an abstract, cognitive structure that represents some stimulus domain, such as a person, place, event, or object (Taylor and Crocker, 1981). Through their involvement in encoding, interpretation, retention, and retrieval of information, schemata can influence perceptual cognitive activities through the generation of expectancies (Taylor and Crocker, 1981). For example, when new information is received, individuals use existing schemata to process the congruity of this information (i.e., the fit with the existing schema).

A key function of schemata is the provision of processing strategies that contain procedural definitions of its potential functions and operations (Norman and Bobrow, 1975). The expectancy system of a schema, including organization and interconnections of relevant information, is thought to guide the process of resolving incongruity (Lee and Schumann, 2004). By first identifying the level of incongruity, and then determining the difficulty (or ease) of resolution, incongruities are resolved either within the existing cognitive structure or by modifying structures (Mandler, 1982). Three types of processing strategies dealing with varying levels of incongruity and relating to distinct outcomes (Mandler, 1982) are relevant to the current context: assimilation, alternative schema, and accommodation.

Assimilation refers to the placement of the incongruent information into existing schemata. Assimilation of incongruity occurs with no or relatively weak levels of incongruity that can be easily incorporated. Previous research shows that consumers can easily assimilate weak incongruity between a generic product category and brand attributes (Sujan and Bettman, 1989), assimilate slightly incongruent information about a product with minimal cognitive effort (Meyers-Levy and Tybout, 1989), and accept slight incongruity of an advertised brand when it shares enough consistent attributes with the generic schema to be assimilated into the existing schema (Sujan and Bettman, 1989). Assimilation employs fewer cognitive resources than other processing strategies and receives less elaboration (Meyers-Levy and Malaviya, 1999). Stimuli that are easily assimilated are less likely to entail modification to long-term memory (Unkelbach, 2007).

Stimuli that are less congruent and cannot be easily processed and assimilated may require additional processing resources such as analogous reasoning (Vosniadou and Ortony, 1989) or extensive reinterpretation (Lee and Schumann, 2004). In employing analogies to resolve moderate incongruity, information from an existing schema can be recalled and transferred in a new way as a result of a productive thinking process (Guilford, 1965). Forming new connections and/or putting the incongruent representation under an alternative schema, or transferring prior knowledge to resolve incongruity, does not necessarily involve drastic changes in current schema structures. Instead, it uses other existing schemas to resolve moderate incongruity (Meyers-Levy and Tybout, 1989; Ozanne et al., 1992).

When confronted with severe incongruity, individuals may engage in an effortful cognitive process to be able to reinterpret incongruent information or reorganize current schema structure (Tesser and Leone, 1977). If people cannot use analogy or transfer prior knowledge

from existing schema to the target incongruity, a new schema is required. Specifically, in response to severe incongruities, a person might restructure his/her knowledge schema or build a new associative link between existing schemata that were not previously connected. While this process of creating a new schema will enable successful accommodation, it typically demands much more cognitive effort and application of cognitive resources.

In the case of wine packages, individuals would typically hold visual appearance relevant schemata (representations of typical wine package designs), acquired over time. This cognitive representation of the package, in terms of the container shape, label, colors, images, typefont, etc. is a set of abstracted attributes that might be used to describe this package (Orth and Malkewitz, 2008). When a consumer encounters a new package, the characteristics of that stimulus may be compared for congruity with their available schema. The level of congruity between the stimulus (the package design elements) and an evoked schema then influence processing and long-term memory (Mandler, 1982). The effort required for processing typicality increases from assimilation to alternative schema to accommodation strategies (Neuschatz et al., 2002). Integrating the discussion above with the previously reviewed diagnosticity literature we expect that typical designs should fit with existing schemata and should relate to little change in liking when encountered at a later time. Moderately atypical designs should likely become assimilated or relate to alternative schema, hereby relating to positive changes in liking when encountered at a later time, because the moderate deviation has been incorporated into a modified schema resulting in a subsequently better fit. Atypical designs, finally, should be more likely to relate to more extensive schema restructuring and accommodation, hereby relating to smaller changes in liking when encountered after the initial event. We expect:

**H3:** *Changes in liking from the short-term to the long-term condition will be greater (and more positive) for moderately atypical rather than typical or atypical designs.*

#### **2.4. Interactive Effects of Tasting the Wine**

Some of the wine's attributes, such as the sensory characteristics can only be assessed during consumption, i.e., product experience (Lockshin, 2003; Mueller, 2004). Product experience (i.e., sampling a wine) is particularly persuasive for three reasons (Hoch, 2002): any resulting visual, tactile, olfactory, auditory, and taste information is (1) self-generated, with maximum trustworthiness of the source (oneself); (2) more engaging, vivid, and memorable than corporate communication; and (3) the subjectivity of taste allows consumers to accommodate to chosen alternatives and results in infrequent regrets. In line with the expectation-disconfirmation paradigm (Oliver, 1980), relying on schemata when processing information not only influences the manner in which consumers evaluate new products, but additionally affects post-trial judgments and attitudes (Stayman et al., 1992). Specifically, when encountering information very discrepant from a prior category schema, more negative evaluative outcomes follow the sampling, compared with the situation in which the experience matches schema expectations.

Applying Mandler's (1982) model, Stayman et al. (1992) studied the post-trial evaluation effects of the level of congruity between category schema expectations and new product performance. Categorization theory specifically suggests that a failure to match expectations during the trial may influence post-trial judgments not only through better or worse judgments, but also through discrepancy from a schema-based expectation (Mandler, 1982). For example, a moderate positive discrepancy from performance expectations produces more positive evaluations than would performance that meets expectations or is extremely discrepant from expectations (Meyers-Levy & Tybout, 1989). In addition, a moderate discrepancy between expectations and trial experience results in a relatively deeper processing of the trial experience than would performance that either matches expectations or is extremely

discrepant (Ozanne et al., 1992). Integrating these findings with the previous research on diagnosticity we expect:

**H4:** *The positivity of taste evaluation will enhance the effect of design typicality on diagnosticity such that diagnosticity will be greater as the positive nature of taste evaluation increases.*

In summary, this research aims to contribute significantly to three critical issues by examining (1) the effect of package design typicality on short-term and long-term brand liking, (2) the role of diagnosticity as a mediator of the typicality - liking relationship, and (3) the role of taste evaluation as a moderator of the typicality - diagnosticity relationship.

### 3. EMPIRICAL STUDIES

Two experiments were conducted to test the effects of design typicality on brand liking (through diagnosticity) in short-term and long-term conditions. The first study examines the effects of typicality with abstract stimuli. The second study employs realistic stimuli and wine tasting to examine the robustness of effects in the presence of additional sensory input. The wine bottle was chosen as the target product consistent with previous research (Orth and Malkewitz, 2008). First, the wine category is one of the most established and traditional categories in studying visual design effects. Second, it is a product with which many consumers have at least some familiarity and interest in. Third, because of the wide variety of visual designs, wine styles, and available options evaluating a wine package is expected to involve cognitive effort.

#### 3.1. Experiment 1

Employing abstract wine package stimuli study 1 (N=263) tests the assertion that consumer liking (due to improved diagnosticity) will increase from the short-term to the long-term condition more for moderately atypical designs than for atypical or typical designs. The study further probes the underlying process by testing the mediating role of diagnosticity. The experiment employs a 3 (visual design: typical vs. moderately atypical vs. atypical) x 2 (long-term vs. short-term condition) mixed factorial design: While the typicality treatments were administered between-subjects, the temporal conditions involved within-subjects measurements.

Specific treatments consisted of custom-made digital images of a Bordeaux style wine bottle with a label (consisting of a visual and text) and a fictitious brand name (see Boudreaux and Palmer, 2007). Building on previous research (Henderson et al., 2004; Thomas and Pickering, 2003) an extensive pretest (N=113) aided in selecting a neutral brand name (Abington), and combinations of visual and typeface designed to generate variance in design typicality. Stimuli selected for the main study consisted of professional images created by an advertising and design agency to represent one design, each low (M=2.9; Aztec Goddess + Typefont Rave), moderate (M=4.3; Vine Terraces + Typefont Playbill), and high (M=5.3 Chateau + Typefont Kunstler Script) on a seven-point typicality scale (Campbell and Goodstein, 2001).

In the short-term condition (T1) of the main study, one randomly selected image was displayed on a computer screen for consumers to indicate typicality (Campbell and Goodstein, 2001;  $\alpha=.84$ , M=4.11, SD=1.38), diagnosticity (Ahluwalia and Gürhan-Canli, 2000;  $\alpha=.86$ , M=3.88, SD=1.47), liking (Fabrigar and Petty, 1999;  $\alpha=.85$ , M=4.12, SD=1.39), intention to purchase (Putrevu and Lord, 1994;  $\alpha=.88$ , M=3.46, SD=1.44) and personal information. Seven to fourteen days after the initial session, participants returned for a second session corresponding to the long-term condition (T2). Measures were identical to the ones in T1 and consisted of item batteries for assessing liking, diagnosticity, and intention to purchase. Randomly generated three-digit codes received by respondents at the conclusion of T1 ascertained that individual data from both sessions could be merged.

ANOVA, used to check the success of the manipulation, indicated a significant effect of the

treatments on perceived typicality ( $F(2,261)=27.8, p=.001$ ) with the package designed for low typicality receiving the lowest ( $M=3.35$ ), the high-typicality design receiving the highest ( $M=4.86$ ), and the third design receiving an intermediate score ( $M=4.40$ ), as intended.

In the short-term condition, ANOVA results indicated a significant effect of design typicality on liking ( $F(2,379) = 7.04, p = .001$ ) with scores increasing from the atypical ( $M=3.22$ ) to the moderately atypical ( $M=3.48$ ) to the typical design ( $M=3.80$ ). Liking, in turn, had a significant effect on intention to purchase ( $\beta=.48, t=10.76, p=.001$ ) and even choice ( $\beta=.27, t=5.52, p=.001$ ). These findings support hypothesis 1.

To test for mediation, we utilized Preacher and Hayes' (2004) macro. For the short-term condition, results indicate that typicality had a positive effect on diagnosticity ( $B=.16, t=2.91, p=.004$ ); diagnosticity had a positive effect on liking, when controlling for typicality ( $B=.36, t=9.46, p=.001$ ); and, finally, typicality had an indirect positive effect on liking ( $B=.11, t=2.40, p=.017$ ). The non-significant effect of typicality on liking when controlling for diagnosticity ( $B=.05, t=1.24, p=.215$ ) indicates that diagnosticity fully mediates the relationship. Both the formal two-tailed significance test (Sobel  $z=2.77, p=.006$ ) and bootstrapping (LL95CI=.017; UL95CI=.104) demonstrated that the indirect effect was significant, supporting hypothesis 2.

Repeating the test for mediation with long-term condition data yielded similar results: Typicality had a positive effect on diagnosticity ( $B=.29, t=4.86, p=.001$ ); diagnosticity had a positive effect on liking, when controlling for typicality ( $B=.55, t=8.64, p=.001$ ); and, finally, typicality had an indirect positive effect on liking ( $B=.31, t=4.58, p=.001$ ). The significant (and weaker) effect of typicality on liking when controlling for diagnosticity ( $B=.16, t=2.48, p=.014$ ) indicates a partial mediation. Both the formal two-tailed significance test (Sobel  $z=4.22, p=.001$ ) and bootstrapping (LL95CI=.084; UL95CI=.238) demonstrated that the indirect effect was significant, hence providing further support for hypothesis 2.

Further important to our core prediction, changes in liking from the short-term to the long-term condition (estimated as intra-individual differences of scores in T1 subtracted from scores in T2) were significantly different for the typicality treatments ( $F(2,261)=7.90, p=.001$ ). Specifically, liking did not change significantly ( $p>.05$ ) for atypical designs ( $\Delta M=.29$ ), but increased significantly for moderately atypical ( $\Delta M=.91$ ) and typical designs ( $\Delta M=1.17$ ). Perhaps more importantly, changes in diagnosticity were significantly different for the atypical ( $\Delta M=.16$ ) and moderately atypical ( $\Delta M=.59$ ) but not the typical design ( $\Delta M=.34$ ), providing corroborating evidence for hypothesis 3.

Taken together, study 1 findings support the claim that moderately atypical designs may be better liked by consumers in the long run due to greater diagnosticity. These results were, however, obtained with a set of abstract stimuli and no actual tasting of the wine. These possible limitations motivated the second study.

### **3.2. Experiment 2**

The second study ( $N=122$ ) employs digital images of actual wine packages to test the effect of typicality on short-term and long-term liking including the mediating role of diagnosticity and the moderating role of taste evaluation. The experiment re-employs the previously used 3 (visual design: typical vs. moderately atypical vs. atypical) x 2 (long-term vs. short-term condition) mixed factorial design with consumers sampling the wine after exposure to the visual in condition T1.

Stimulus development started with a selection of actual wine package designs submitted by a wine retailer to score high on typicality. A professional designer then modified those images, thereby creating moderately atypical and atypical variations. The guiding principle to generate such sets of designs was to modify design properties only and to not change other possible drivers of consumers' purchase intention (e.g., varietal, brand, visual content, or vintage). A pretest ( $N=20$ ) aided in selecting package visuals designed to generate variance in typicality.

Procedures were identical to the ones employed in study 1 with one exception. In the short-

term condition, immediately after submitting their ratings on typicality ( $\alpha=.89$ ,  $M=4.22$ ,  $SD=1.58$ ), diagnosticity ( $\alpha=.86$ ,  $M=4.04$ ,  $SD=1.58$ ), liking ( $\alpha=.90$ ,  $M=4.57$ ,  $SD=1.44$ ), intention to purchase ( $\alpha=.84$ ,  $M=4.18$ ,  $SD=1.51$ ) and personal information, consumers sampled the wine (a 2011 Riesling) and indicated their evaluation of taste (aroma intensity, sweetness, sourness, freshness) as well as their overall liking of the wine taste. Exactly two weeks after T1, participants returned and indicated liking, diagnosticity, and intention to purchase.

An ANOVA to check the success of the experimental manipulation indicated a significant effect of the treatments on perceived typicality ( $F(2,120)=58.82$ ,  $p=.001$ ) with the package designed for low typicality receiving the lowest ( $M=2.75$ ), the high-typicality design receiving the highest ( $M=5.43$ ), and the third design receiving an intermediate score ( $M=4.42$ ).

In the short-term condition, ANOVA results indicated a significant effect of design typicality on liking ( $F(2,120)=13.06$ ,  $p=.001$ ) with scores increasing from the atypical ( $M=3.73$ ) to the moderately atypical ( $M=4.77$ ) to the typical design ( $M=5.17$ ). Liking, in turn, had a significant effect on intention to purchase ( $\beta=.66$ ,  $t=9.49$ ,  $p=.000$ ) and choice ( $\beta=.40$ ,  $t=4.79$ ,  $p=.000$ ). These findings provide additional support for hypothesis 1.

Mediation test results for the short-term condition indicate a positive effect of typicality on diagnosticity ( $B=.40$ ,  $t=4.80$ ,  $p=.001$ ); a positive effect of diagnosticity on liking, when controlling for typicality ( $B=.47$ ,  $t=6.35$ ,  $p=.001$ ), and an indirect positive effect of typicality on liking ( $B=.20$ ,  $t=2.61$ ,  $p=.010$ ). The non-significant effect of typicality on liking when controlling for diagnosticity ( $B=.01$ ,  $t=.02$ ,  $p=.841$ ) indicates that diagnosticity fully mediates the relationship. Both the formal two-tailed significance test (Sobel  $z=3.80$ ,  $p=.001$ ) and bootstrapping (LL95CI=.091; UL95CI=.284) demonstrate that the indirect effect is significant. These results are consistent with those obtained in study 1 and further support hypothesis 2.

As with study 1, typicality had a significant influence on changes in liking from the short-term to the long-term condition ( $F(2,120)=3.19$ ,  $p=.045$ ). Specific changes included a decrease in liking for atypical designs ( $\Delta M=-.45$ ), an increase in liking for moderately atypical designs ( $\Delta M=.25$ ) and no significant change in liking for typical designs ( $\Delta M=-.01$ ). These results provide further support for hypothesis 3.

Mediation tests for the long-term condition indicate a positive effect of typicality on diagnosticity ( $B=.42$ ,  $t=4.24$ ,  $p=.001$ ), a positive effect of diagnosticity on liking, when controlling for typicality ( $B=.66$ ,  $t=8.13$ ,  $p=.001$ ), and an indirect positive effect of typicality on liking ( $B=.51$ ,  $t=4.83$ ,  $p=.001$ ). The significant (and weaker) effect of typicality on liking when controlling for diagnosticity ( $B=.23$ ,  $t=2.60$ ,  $p=.010$ ) indicates a partial mediation. Both the formal two-tailed significance test (Sobel  $z=3.74$ ,  $p=.001$ ) and bootstrapping (LL95CI=.130; UL95CI=.418) demonstrate that the indirect effect is significant, hence providing further support for hypothesis 2.

In the final analyses a two-factorial GLM was utilized to test hypothesis 4 and the claim that a positive taste evaluation (in T1) enhances the positive effect of typicality on diagnosticity (in T2). Results indicate a significant main effect of typicality ( $F(18,56)=3.00$ ,  $p=.001$ ), a non-significant main effect of taste evaluation ( $F(5,56)=1.57$ ,  $p=.183$ ) and a significant typicality x taste interaction ( $F(32,56)=2.06$ ,  $p=.009$ ). Specifically, diagnosticity scores increased significantly from low to high taste scores for moderately atypical designs ( $M=4.10$  vs.  $M=4.71$ ), did not change significantly for atypical designs ( $M=2.82$  vs  $M=3.06$ ) and decreased significantly for typical designs ( $M=5.32$  vs.  $M=4.70$ ). These results provide support for hypothesis 4.

#### **4. DISCUSSION**

The present work extends research on designing wine packages in at least three ways. First, studies of consumer short-term responses to design typicality (Celhay and Passebois, 2011; Orth and Malkewitz, 2012) and schema congruency (Meyers-Levy and Tybout, 1989; Sujan and Bettman, 1989; Unkelbach, 2007) are extended by offering evidence for differential effects



over time. According to our findings, consumer liking increases more from short- to long-term for moderately atypical designs than it does for typical or atypical designs. This outcome complements previous findings by demonstrating temporal changes in liking due to different levels of design typicality. While a part of increase in liking may be attributable to mere exposure effects (Landwehr et al., 2013), these are thought to occur only after several exposures (Landwehr et al., 2013). In addition, mere exposure theory is not capable of explaining differences in regard to levels of typicality.

Second, our work integrates diagnosticity research (Feldman and Lynch, 1988; Menon et al., 1995) with studies of visual design (Orth and Malkewitz, 2008) to show that the typicality of a package design relates to liking because consumers use their impressions of typicality to judge quality. While researchers have previously investigated consumer evaluative response to visual design, using processing fluency (Orth and Malkewitz, 2012) and visual attractiveness (Orth et al., 2010) as process explanations, other research highlights diagnosticity as a possible driver of brand liking (Page & Herr, 2002). Our finding that a medium level of typicality (i.e., moderately atypical designs) relate to the highest diagnosticity, adds a design perspective to established expectation-disconfirmation (Oliver, 1980) and congruence frameworks (Mandler, 1982; Meyers-Levy and Tybout, 1989).

Third, the present work unites the literature on visual design (e.g., Orth and Malkewitz, 2008) and product trial (Hoch, 2002) to show that a positive taste evaluation of a wine enhances typicality effects on diagnosticity and consequently liking. Extending studies on after-trial evaluation (Ozanne et al., 1992; Stayman et al., 1992) indicates that a positive taste evaluation enhances the diagnosticity of typicality, especially for moderately atypical ones.

Several managerial implications of the present research are worth mentioning. Given substantial variance in what consumers regard as typical (in France, any deviation from the standard chateau on a wine label may be perceived as atypical, whereas in the U.S., even “critter” images may classify as typical) perhaps the most important implication of our work is to alert professionals to the relevance and possible effects of typicality in wine package design. As our findings show, when the goal is to stimulate initial liking, especially in contexts where consumers cannot taste the wine, typical designs should be used as they relate to high diagnosticity. When the goal is to trigger longer-term liking, however, marketers should use moderately atypical designs as those relate to more desirable responses, especially when consumers are given an opportunity to sample the wine.

The finding that a positive taste evaluation lowers the diagnosticity of typical designs is unexpected. We speculate that the sensory input provided through the palate takes precedence over the evaluative judgment of “quality” as captured in diagnosticity ratings. Our data does not account for this possibility. We hope the contribution of this study will stimulate further research in this field.

## REFERENCES

- Ahluwalia, R. and Gürhan-Canli, Z. (2000), “The Effects of Extensions on the Family Brand Name: An Accessibility-Diagnosticity Perspective,” *Journal of Consumer Research*, Vol. 27 No.3, pp. 371-381.
- Atkinson, R.C. and Shiffrin, R.M. (1968), “Human Memory: A Proposed System and its Control Processes,” *Psychology of Learning and Motivation*, Vol. 2, pp. 89-195.
- Babin, B. J. and Babin, L. (2001), “Seeking Something Different? A Model of Schema Typicality, Consumer Affect, Purchase Intentions and Perceived Shopping Value,” *Journal of Business Research*, Vol. 54 No. 2, pp. 89-96.
- Baddeley, A. (2010), “Working Memory,” *Current Biology*, Vol. 20 No.4, pp. 136-140.
- Barsalou, L.W. (1985), “Ideals, Central Tendency, and Frequency of Instantiation as Determinants of Graded Structure in Categories,” *Journal of Experimental Psychology*:

- Learning, Memory, and Cognition, Vol. 11 No. 4, pp. 629-654.
- Bloch, P.H. (1995), "Seeking the Ideal Form: Product Design and Consumer Response", *Journal of Marketing*, Vol. 59, pp.16-29.
- Boudreaux, C.A. and Palmer, S.E. (2007), "A Charming Little Cabernet: Effects of Wine Label Design on Purchase Intent and Brand Personality," *International Journal of Wine Business Research*, Vol. 19 No.3, pp. 170-186.
- Burke, R.R. and Srull, T.K. (1988), "Competitive Interference and Consumer Memory for Advertising," *Journal of Consumer Research*, Vol. 15 No.1, pp. 55-68.
- Cabeza, R. and Kato, T. (2000), "Features are also Important: Contributions of Featural and Configural Processing Face Recognition," *Psychological Science*, Vol.11 No.5, pp. 429-433.
- Campbell, M.C., and Goodstein, R.C. (2001), "The Moderating Effect of Perceived Risk on Consumers' Evaluations of Product Incongruity: Preference for the Norm," *Journal of Consumer Research*, Vol.28 No.3, pp.439-449.
- Celhay, F. and Pasebois, J. (2011), "Wine Labelling: Is it Time to Break with Tradition? A Study of the Moderating Role of Perceived Risk," *International Journal of Wine Business Research*, Vol. 23 No.4, pp. 318-337.
- Chitturi, R., Raghunathan, R. and Maheajan, V. (2008), "Delight by Design: The Role of Hedonic versus Utilitarian Benefits," *Journal of Marketing*, Vol. 72, pp. 48-63.
- Cho, H. and Schwarz, N. (2010), "If I don't Understand it, it Must be New: Processing Fluency and Perceived Product Innovativeness," *Advances in Consumer Research*, Vol. 33, pp. 319-320.
- Craik, F.I.M. (2002), "Levels of Processing: Past, Present... and Future?," *Memory*, Vol. 10 No. 4-5, pp. 305-318.
- Creusen, M.E.H. and Schoormans, J.P.L. (2005), "The Different Roles of Product Appearance in Consumer Choice," *Journal of Product Innovation Management*, Vol. 22 No.1, pp. 63-81.
- Fabrigar, L.R. and Petty, R.E. (1999), "The Role of the Affective and Cognitive Bases of Attitudes in Susceptibility to Affectively and Cognitively Based Persuasion," *Personality Social Psychology Bulletin*, Vol. 25, pp. 363 – 381.
- Feldman, J.M. and Lynch, J.G. (1988), "Self-Generated Validity and Other Effects of Measurement on Belief, Attitude, Intention, and Behavior," *Journal of Applied Psychology*, Vol. 73 No.3, pp. 421-435.
- Garretson, J.A. and Burton, S. (2000), "Effects of Nutrition Facts Panel Values, Nutrition Claims, and Health Claims on Consumer Attitudes, Perceptions of Disease-related Risks, and Trust," *Journal of Public Policy & Marketing*, Vol. 19 No.2, pp. 213-227.
- Guilford, J.P. (1966) "Intelligence: 1965 model," *American Psychologist*, Vol. 21 No.1, pp. 20-26.
- Hekkert, P., Snelders, D. and Van Wieringen, P.C.W. (2003), "Most Advanced, Yet Acceptable: Typicality and Novelty as Joint Predictors of Aesthetic Preference in Industrial Design," *British Journal of Psychology*, Vol. 94 No.1, pp. 111-124.
- Henderson P.W., Giese, J.L. and Cote, J.A. (2004), "Impression Management Using Typeface Design," *Journal of Marketing*, Vol. 68, pp. 60-72.
- Henderson, P.W., Cote, J.A., Leong, S.M. and Schmitt, B. (2003), "Building Strong Brands in Asia: Selecting the Visual Components of Image to Maximize Brand Strength," *International Journal of Research in Marketing*, Vol. 20, pp. 297-313.
- Herr, Pa.M., Kardes, F.R. and Kim, J. (1991), "Effects of Word-of-Mouth and Product-Attribute Information on Persuasion: An Accessibility-Diagnosticity Perspective," *Journal of Consumer Research*, Vol. 17, pp. 454-462.
- Hoch, S.J. (2002), "Product Experience Is Seductive," *Journal of Consumer Research*, Vol. 29, pp. 448-454.

- Jiang, Z. and Benbasat, I. (2004), "Virtual Product Experience: Effects of Visual and Functional Control of Products on Perceived Diagnosticity and Flow in Electronic Shopping," *Journal of Management Information Systems*, Vol. 21 No.3, pp. 111-147.
- Kempf, D.S. and Smith, R.E. (1998), "Consumer Processing of Product Trail and the Influence of Prior Advertising: A Structural Modeling Approach," *Journal of Marketing Research*, Vol. 35 No. 3, pp. 325-338.
- Labroo, A.A., Dhar, R. and Schwarz, N. (2008), "Of Frog Wines and Frowning Watches: Semantic Priming, Perceptual Fluency and Brand Evaluation," *Journal of Consumer Research*, Vol. 34, pp. 819-831.
- Landwehr J.R., Labroo, A.A. and Herrmann, A. (2011), "Gut Liking for the Ordinary: Incorporating Design Fluency improves Automobile Sales Forecasts," *Marketing Science*, Vol. 30 No.3, pp. 416-429.
- Landwehr, J.R.; Wentzel, D. and Herrmann, A. (2013), "Product Design for the Long Run: Consumer Responses to Typical and Atypical Designs at Different Stages of Exposure." *Journal of Marketing*, Vol. 77 No.5, pp. 92-107.
- Lee, E-J and Schumann, D.W. (2004), "Explaining the Special Case of Incongruity in Advertising: Combining Classic Theoretical Approaches," *Marketing Theory*, Vol. 4 No. 1-2, pp. 59-90.
- Lockshin, L. (2003), "Consumer Purchasing Behaviour for Wine: What We Know and Where We are Going", in *First International Wine Marketing Colloquium*, Adelaide.
- Mandler, G. (1982), "The Structure of Value: Accounting for Taste", in *Affect and Cognition: The 17<sup>th</sup> Annual Carnegie Symposium*, Clark MS, Fiske ST (Hrsg), Hillsdale, NJ:Lawrence Erlbaum Associates, pp. 3-36.
- Menon, G., Raghurir, P. and Schwarz, N. (1995), "Behavioral Frequency Judgments: An Accessibility-Diagnosticity Framework," *Journal of Consumer Research*, Vol. 22 No.2, pp. 212-228.
- Meyers-Levy, J. and Tybout, A.M. (1989), "Schema Congruity as a Basis for Product Evaluation," *Journal of Consumer Research*, Vol. 16 No.1, pp. 39-54.
- Meyers-Levy, J. and Malaviya, P. (1999), "Consumers' Processing of Persuasive Advertisements: An Integrative Framework of Persuasion Theories," *Journal of Marketing*, Vol. 63, pp. 45-60.
- Mueller, S. (2004), "The German Wine Law From an Information Economics Perspective." *International Journal of Wine Marketing*, 16, 72-96.
- Neuschatz, J.S., Lampinen, J.M., Preston, E.L., Hawkins, E. R. and Togliola, M. P. (2002), "The Effect of Memory Schemata on Memory and the Phenomenological Experience of Naturalistic Situations," *Applied Cognitive Psychology*, Vol. 16, pp. 687-708.
- Norman, D.A. and Bobrow, D.G. (1975), "On Data-Limited and Resource-Limited Processes," *Cognitive Psychology*, Vol. 7 No.1, pp. 44-64.
- Novemsky, N., Dhar, R., Schwarz, N. and Simonson, I. (2007), "Preference Fluency in Choice," *Journal of Marketing Research*, Vol. XLIV, pp. 347-356.
- Oliver, R.L. (1980), "A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions," *Journal of Marketing Research*, Vol. 17, pp. 460-469.
- Orth, U.R. and Wirtz, J. (20xx), "Consumer Processing of Interior Service Environments," *Journal of Service Research*, manuscript under 2<sup>nd</sup> review.
- Orth, U.R. and Malkewitz, K. (2012), "The Accuracy of Design-based Judgments: A Constructivist Approach," *Journal of Retailing*, Vol. 88 No.3, pp. 421-436.
- Orth, U.R., Campana, D. and Malkewitz, K. (2010): "Formation of Consumer Price Expectation based on Package Design: Attractive and Quality Routes", *Journal of Marketing Theory and Practice*, Vol. 18 No.1, pp. 24-40.
- Ozanne, J.L., Brucks, M. and Grewal, D. (1992), "A Study of Information Search Behavior during the Categorization of New Products," *Journal of Consumer Research*, Vol.18, pp.

452-463.

- Page, C. and Herr, P.M. (2002), "An Investigation of the Processes by Which Product Design and Brand Strength Interact to Determine Initial Affect and Quality Judgments," *Journal of Consumer Psychology*, Vol. 12 No.2, pp. 133-147.
- Pieters, R., Wedel, M. and Batra, R. (2010), "The Stopping Power of Advertising: Measures and Effects of Visual Complexity," *Journal of Marketing*, Vol. 74 No.5, pp. 48-60.
- Preacher K.J. and Hayes, A.F. (2004), "SPSS and SAS Procedures for Estimating Indirect Effects in Simple Mediation Models," *Behavior Research Methods, Instruments & Computers*, Vol. 36 No.4, pp. 717-731.
- Putrevu, S. and Lord, K.R. (1994), "Comparative and Noncomparative Advertising: Attitudinal Effects under Cognitive and Affective Involvement Conditions," *Journal of Advertising*, Vol. 23 No.2, pp. 77-91.
- Rousselet, G.A., Fabre-Thorpe, M. and Thorpe, S.J. (2002), "Parallel Processing in High-Level Categorization of Natural Images," *Nature Neuroscience*, Vol. 5, pp. 629-630.
- Schoormans, J.P.L. and Robben, H.S.R. (1997), "The Effect of New Package Design on Product Attention, Categorization and Evaluation," *Journal of Economic Psychology*, Vol.18 No.2-3, pp. 271-287.
- Schwarz, N. (2004), "Metacognitive Experiences in Consumer Judgment and Decision Making," *Journal of Consumer Psychology*, Vol. 14 No. 4, pp. 332-348.
- Skowronski, J.J. and Carlston, D.E. (1987), "Social Judgment and Social Memory: The Role of Cue Diagnosticity in Negativity, Positivity, and Extremity Biases," *Journal of Personality and Social Psychology*, Vol. 52 No.4, pp. 689-699.
- Stayman, D.M., Alden, D.L. and Smith, K.H. (1992), "Some Effects of Schematic Processing on Consumer Expectations and Disconfirmation Judgments," *Journal of Consumer Research*, Vol.19 No.2, pp. 240-255.
- Sujan, M. (1985), "Consumer Knowledge: Effects of Evaluation Strategies Mediating Consumer Judgments," *Journal of Consumer Research*, Vol. 1, pp. 31-46.
- Sujan, M. and Bettman, J.R. (1989), "The Effects of Brand Positioning Strategies on Consumers' Brand and Category Perceptions: Some Insight from Schema Research," *Journal of Marketing Research*, Vol. 26 No.4, pp. 454-457.
- Taylor, S.E. and Crocker, J. (1981), "Schematic Bases of Social Information Processing," In E.T. Higgins, P. Herman, and M. Zanna (Eds.), *Social Cognition: The Ontario Symposium (1)*, Hillsdale, N.J.:Erlbaum.
- Tesser, A. and Leone, C. (1977), "Cognitive Schemas and Thought as Determinants of Attitude Change," *Journal of Experimental Social Psychology*, Vol. 13 No.4, pp. 340-356.
- Thomas, A., and Pickering, G. (2003), "The Importance of Wine Label Information", *International Journal of Wine Marketing*, Vol. 15 No. 2, pp. 58-74.
- Unkelbach, C. (2007), "Reversing the Truth Effect: Learning the Interpretation of Processing Fluency in Judgments of Truth," *Journal of Experimental Psychology: Learning, Memory, and Cognition*, Vol. 33 No. 1, pp. 219-230.
- Van Rompay, T.J.L., Pryn, A. and Tieke, P. (2009), "Symbolic Meaning Integration in Design and it's Influence on Product and Brand Evaluation," *International Journal of Design*, Vol. 3 No. 2, pp. 19-26.
- Vasniadou, S. (Ed.) and Ortony, A. (Ed.) (1989), "Similarity and Analogical Reasoning," New York, US: Cambridge University Press.
- Verhoef, P.C., Lemon, K.N., Parasuraman, A., Roggeveen, A., Tsiros, M., and Schlesinger, L.A. (2009), "Customer Experience Creation: Determinants, Dynamics and Management Strategies," *Journal of Retailing*, Vol. 85, pp. 31-41.
- Winkielman, P., Halberstadt, J., Fazendeiro, T. and Catty, S. (2006), "Prototypes are Attractive Because they are Easy on the Mind," *Psychological Science*, Vol. 17 No.9, pp. 799-806.