

## **Struggling to be liked: Package perceptions in retail contexts**

**Ulrich R. Orth, Prof. Dr. habil.** (*primary contact*)  
Christian-Albrechts-Universität Kiel, Germany  
[uorth@ae.uni-kiel.de](mailto:uorth@ae.uni-kiel.de)

**Roberta Veale, Ph.D.**  
University of Adelaide, Australia 5000  
[roberta.veale@adelaide.edu.au](mailto:roberta.veale@adelaide.edu.au)

*Purpose: Perceptions of package attractiveness influence preferences, attitudes, and buying decisions. Three studies examine how contextual visual complexity alters consumer perceptions of a package's attractiveness in wine retail settings and how individual differences moderate this relationship.*

*Design/Methodology: Study 1 employed a 2 (inherent appeal: high/low) x 2 (context complexity: high/low) between subjects experimental design using wine packages presented on realistic retail shelves. Study 2 employed eye tracking analysis to demonstrate processing fluency correlates with patterns of attention; viewers focus less frequently and for shorter periods on targets when contexts are more visually complex. Study 3 extends the contextual scale from the shelf to the entire store interior and uses a 2 (wine retail environment: high/low complexity) x 2 (inherent appeal: high/low) experiment.*

*Findings: Findings reveal significant influences of context complexity on perceptions of a wine package's attractiveness: whereas attractiveness increased in low complexity environments compared to high complexity contexts for attractive designs, perception of less attractive designs remained essentially unaffected; field dependence and shopping motivation enhanced effects.*

*Practical Implications: A context's visual complexity has a negative impact on package attractiveness and subsequently on intention to purchase. Thus it is important for companies to avoid creating store interiors that are too highly complex, typical of many wine retail outlets, with too many distinct objects possibly of dissimilar and highly detailed design, with high degrees of asymmetry and arranged in irregular spatial patterns.*

**Key Words:** Attractiveness; Design; Field dependence; Fluency; Shopping goal; Visual complexity

# 1. THEORETICAL BACKGROUND AND MODEL DEVELOPMENT

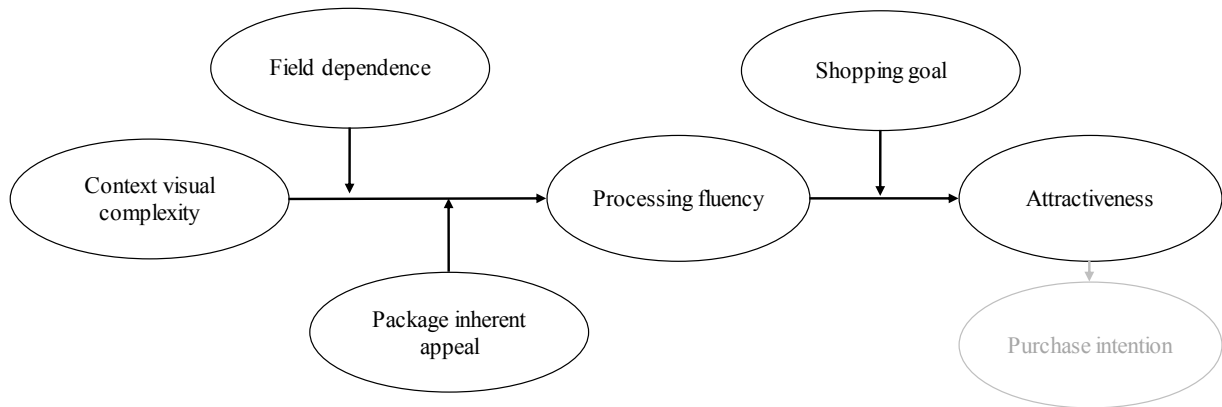
Products, labels and brand packages are often designed to visually appeal to buyers (Bloch 1995; Orth and Malkewitz 2008). Attractive designs such as those seen on wine labels seek to capture attention (Pieters and Wedel 2004), generate liking (Bloch 1995; Hirschman 1986; Veryzer and Hutchinson 1998), create value (Creusen and Schoormans 2005), support brand positioning (Orth and Malkewitz 2012), and ultimately aid in building strong brands (Henderson, Cote, Leong and Schmitt 2003). Capturing positive dimensions such as liking, goodness, and prettiness (Reber, Winkielman, and Schwarz 1998; Seamon, McKenna, and Binder 1998) attractiveness, or the hedonic value of a brand's package, may also be a starting point for the formation of consumer bonds with the brand (Chitturi, Raghunathan, and Mahajan 2008), and can extend to store choice and loyalty (Ailawadi and Keller 2004; Baker, Parasuraman, Grewal, and Voss 2002; Vieira 2010). Some authors even argue that an offer's visual attractiveness (i.e., the hedonic value) may be more important than utilitarian attributes in the process of preference formation (Stoll, Baecke and Kenning 2008) and for consumers' buying intentions and behavior (Chitturi et al. 2008; Vieira 2010). Although a deep relationship with a brand or a store hinges on extended experiences, development of meaning, and emotion (Batra, Ahuvia, and Bagozzi 2012; Park, MacInnis, Priester, Eisingerich and Iacobucci 2010; Verhoef, Parasurmann, Roggeveen, Tsiros and Schlesinger 2009), initial liking must begin at the first encounter of the brand, and this is where the attractiveness of a package plays an important role.

A key driver of attractiveness is processing fluency (the ease, speed, and accuracy of inferring meaning from design) with more fluent stimuli associated with greater attractiveness and liking (Reber, Schwarz and Winkielman 2004). Processing fluency, in turn, is effected by visual design complexity, with greater fluency associated with less complex designs (Creusen, Veryzer and Schoormans 2010). Processing fluency may also be impacted by contextual variables such as visual clutter caused by artifacts, or 'distracters' such as competing products, presented in the immediate vicinity of the target design (Pieters, Wedel and Zhang 2007) or may be extended to include the visual complexity of a retail environment overall (Orth, Heinrich and Malkewitz 2012). Individual consumer characteristics such as context sensitivity (Donderi 2006) and goals (Dhar and Wertenbroch 2000; Noone and Mattila 2009) are also likely to moderate the effects of context complexity and processing fluency respectively; although surprisingly these have not been simultaneously investigated in a retail framework previously.

Indeed, the extent literature specific to processing fluency and attractiveness consumer processing mode reveals that consumer products have often remained on the fringe of research while contextual effects as they may occur in retail environments, have been neglected outright. This is surprising given that the processing of visual objects, such as products placed close together in a shelf display, is particularly susceptible to the influence of the perceived complexity of the display. In fact, it is the nature of typical retail environments for simultaneously visible contextual cues to compete for consumer attention and processing resources (Mulhern and Leone 1990). In other words, the attractiveness of a design may depend not only on its own visual properties, but may additionally be influenced by contextual variables, such as complexity, impacting viewer processing with this influence potentially moderated by the individual's sensitivity to the nature of the context and their own shopping motivations.

In summary, this research aims to contribute significantly to three critical issues. It examines the effects of context visual complexity on a wine package’s attractiveness, providing guidance regarding making products more attractive to consumers in retail environments. It provides insight into the underlying mechanism by examining processing fluency (and attention) as a process mediator. And, finally, our work examines conditions for our hypothesized effects in terms of package inherent appeal and individual shopping situation. We explore these issues in two psychometric studies and one behavioral experiment with consumer samples and realistic simulated wine retail stimuli. Figure 1 illustrates the proposed relationships between the key model constructs and its operationalization in our three studies.

Fig. 1. Relationships between Key Model Constructs.



## 2. KEY CONSTRUCTS

### 2.1 Visual Complexity and Viewer Processing

Visual complexity is common to many retail interiors, including wine outlets (Orth, Heinrich, and Malkewitz 2012), and a key input to consumer information processing in retail environments (Titus and Everett 2002). Visual complexity combines high degrees of elaboration, activity, and depth, and captures the concept of richness or lack thereof (Creusen, Veryzer, and Schoormans 2010). In general, the complexity of a context increases both with the number of objects in a display (Burke and Srull 1988; Keller 1991; Kent and Allen 1994; Mulhern and Leone 1990), dissimilarities among them (Pieters, Wedel, and Zhang 2007), and with overall visual diversity (Stamps 2002). Environmental aesthetics has positively related visual complexity to amount of information (i.e., entropy recognized by a viewer), and experimentally established positive relationships with the number and dissimilarity of colors, scales, and shapes (Stamps 2002). In retail contexts, visual complexity can relate to the similarity of package designs presented on a shelf (Hoch, Bradlow, and Wansink 1999), and variety in shapes, signs, colors, and letters present (Nasar 1987). Visual complexity is an established influencer of processing fluency and its correlate attractiveness (Reber et al. 2004). Stimuli lower in complexity are generally easier to process, leading to higher fluency (Janiszewski and Meyvis 2001; Reber et al. 2004). At its heart, the concept of processing fluency captures the idea that people metacognitively monitor the mental effort required for processing a stimulus (Flavell 1979). Fluent processing of a stimulus instantaneously triggers positive affect because fluent stimuli -- in our evolutionary past -- signaled safety, an inherently preferred state (Halberstadt and Rhodes 2000; Winkielman and

Cacioppo 2001). In retail environments context complexity may thus affect customer processing of packages presented on shelves and in store environments. Possible contributors to context complexity may include merchandise (i.e., other packages), tags, displays, posters, furniture, or interior design elements (floors, ceilings, wall decoration; Orth, Heinrich, and Malkewitz 2012).

Hence, visual complexity should reduce the attractiveness of a design in a retail context and reduced complexity should enhance it. Fluency research, however, points to a possible asymmetry in this process. While high-fluency stimuli facilitate processing and relate to positive evaluation, low-fluency stimuli do not elicit negative responses (Winkielman and Cacioppo 2001). Consistent with the positive affective nature of processing fluency, Reber, Schwarz and Winkielman (2004) specifically report that a stimulus high in fluency elicits positive evaluation, whereas a low-fluency stimulus leaves a person rather undisturbed (i.e., unaffected). Extending this asymmetry to contextual complexity effects would imply that contexts low rather than high in visual complexity facilitate processing, and thus increase fluency and liking. This effect may, however, be contingent upon several conditions relating to the object (inherent appeal) and the individual shopping situation (context sensitivity, shopping goals).

## **2.2 Inherent Package Appeal**

Several researchers suggest that processing fluency effects may be contingent upon the valence of an object, at least when people evaluate novel stimuli (e.g., Förster 2004; Reber et al. 2004; Winkielman and Cacioppo 2001). Indeed, extant research converges on the finding that evaluative outcomes (i.e., attractiveness) are generally more positive under conditions of positively valenced stimulus and fluent processing, that is, when the affective charge of the processing experience is congruent with the valence of the stimulus. Important to note is that while the polarity of the initial evaluation (e.g., “I like the package”, “This is an appealing package”) is stable, its strength can become exaggerated as a result of affective input (e.g., through fluent processing). Positive affect induced by fluent processing is transferred to the target when its inherent appeal is congruent (Corneille, Monion, and Pleyers 2005). Integrating affect congruence research with the positive affective charge of processing fluency implies that the attractiveness-enhancing effect of low complexity contexts applies more (or perhaps only) to conditions when the target is inherently more appealing (positively valenced). In sum, context visual complexity and target inherent appeal will interact to influence viewer evaluation of target attractiveness. Specifically, a package high in inherent appeal will be perceived as more attractive when presented in a low versus high complexity context, whereas attractiveness evaluations will not differ for packages low in inherent appeal.

## **2.3 Individual field dependence-independence**

Individuals are thought to engage in different styles of perception and processing (Choi, Koo, and Choi 2007). One extreme involves an orientation to the context or field as a whole, including attention to relationships between a focal object and the field (Nisbett, Peng, Choi and Norenzayan 2001). Conversely, the other extreme involves isolation of objects from contexts, to focus on the attributes of a specific object with a preference for using categorical rules to explain and predict behavior (Nisbett et al. 2001). Because field dependent perceivers base their processing of a design more on contextual cues than less dependent ones (Donderi, 2006; Richler, Tanaka, Brown and Gauthier 2008; Zhu and Meyers-Levy 2009), we expect context effects to have a significant impact on target attractiveness for them (Donderi 2006). Hence, individual field dependence is expected to moderate the relationship between context complexity

and fluency. Specifically, the positive effect of low (vs high) context complexity and its resulting higher processing fluency on attractiveness will be stronger with individuals high rather than low in field dependence.

## **2.4 Hedonic versus Utilitarian Shopping Goals**

We propose that, in the context of a retail situation, consumer shopping motivations, or goals moderate the impact of context complexity on fluency and attractiveness. Consumers enter retail outlets with specific goals in mind, and these goals can be classified into two main categories: hedonic and utilitarian (Dhar and Wertenbroch 2000; Noone and Mattila 2009). Hedonic goals focus on the retail experience itself (c.f., Holbrook and Hirschman 1982) with the objective of experiencing positive emotions such as fun and excitement (e.g., a shopping trip with friends). Conversely, utilitarian goals are predominantly instrumental or functional in nature (e.g., the weekly shopping in a supermarket). Anything that hinders goal attainment of task-oriented shoppers is likely to cause negative responses (Eroglu et al. 2005). Therefore, we expect that the positive effect low (vs high) context complexity and its resulting higher processing fluency on attractiveness will be stronger in a utilitarian rather than hedonic shopping situation.

## **3.METHODOLOGY AND RESULTS**

### **3.1 Study 1.**

Employing realistic package display stimuli study 1 (N=358) tests the assertion that viewers will judge an inherently appealing package as more attractive when it is presented in a low rather than high complexity context. It further probes the underlying mechanism by testing the mediating role of processing fluency. Stimuli lacking inherent attractiveness may not be affected.

This was achieved in a 2 (high versus low package inherent appeal) x 2 (high vs. low context complexity) between-subjects experimental design on consumer perception of attractiveness including the mediating role of fluency using simulated wine packages on a retail shelf. Additionally, individual field dependence was assessed using Embedded Figures Tests (Alenezi, 2008). In this test, subjects must locate a simple figure within larger and more complex figures. More precisely, the simple figure is embedded in the visually complex figure. For each EFT, respondents were tasked with identifying one small figure hidden within a larger and more complex pattern. A subject's score on this test can be computed as the total number of figures correctly identified in a given time (see also Arthur and Day 1991). Given the ten EFTs in our study, larger numbers (i.e., 10) of correctly identified small figures indicate a more field independent cognitive style whereas smaller numbers (i.e., 0) indicate greater field dependency (Kühnen, Hannover, Roeder, Shah, Schubert, Upmeyer and Zakaria 2001).

The treatments consisted of digital images of a set of nine designs (three rows of three designs each) with the focal design presented in the middle, surrounded by distracters (the context). Wine was chosen as the experimental category because of the large number of more or less appealing designs in the marketplace and the established role of wine package attractiveness in consumer decision making (Orth and Malkewitz 2008). Further, wine packages are designed to be viewed from the front and retail environments commonly display bottles in rows and columns, very similar to our experimental setup. Using established designs from previous research (Orth and Malkewitz 2008) plus input from professional designer stimulus manipulations were constructed with data collected via an online survey (Appendix 1).

After indicating their choice of an offer, attractiveness of the target (Hirschman 1986;  $\alpha = 78$ ), and fluency (Labroo and Lee 2006;  $\alpha = 88$ ), with the addition one more fluency measure that assessed response latency. This is the time (in milliseconds) elapsed between the display of the design-in-context image and the submission of an attractiveness score for the focal design, respondents proceeded to the next section where they viewed the set of distractors (the context) and rated visual complexity ( $\alpha = 90$ ). Given the strong correlation between both measures for fluency ( $r=.62$ ,  $p=.001$ ) we subsequently report results for the response latency measure only.

Experimental manipulation checks were completed with significant between treatments ANOVA results. ANOVA results further indicate a marginally significant effect of context complexity on attractiveness ( $F(1,356) = 2.90$ ,  $p=.089$ ). Results of a two-factorial ANOVA indicate a significant main effect of the design type on attractiveness ( $F(1,354) = 61.30$ ,  $p = .001$ ), no main effect of context complexity ( $F(1,354)=1.93$ ,  $p = .139$ ), but a significant design type x context complexity interaction effect ( $F(1,354)=16.56$ ,  $p=.001$ ). Attractiveness for the appealing design increased ( $p=.015$ ) from the high complexity to the low complexity context ( $M=4.40$  vs.  $M=5.17$ ), but did not change significantly ( $p=.233$ ) for the low appeal ( $M=2.45$  vs.  $M=2.16$ ). Analysis shows these results are consistent with those from study 1; additionally attractiveness had a significant effect on choice ( $\beta =.40$ ,  $t=10.37$ ,  $p=.001$ ). Hence results showed that the perceived attractiveness of appealing designs increased when viewed in a less, as compared to more, complex context. Moreover, this variation related to differences in respondent processing fluency, as perceptions of the less attractive design did not vary significantly between contexts.

To test for simple mediation, we utilized Preacher and Hayes' (2004) macro. Results indicate that context complexity had a negative effect on fluency ( $B= -.19$ ,  $t= -4.59$ ,  $p= .001$ ); the positive relationship between fluency and attractiveness, controlling for context complexity, was supported ( $B=.16$ ,  $t= 3.83$ ,  $p= .001$ ). And finally, context complexity was found to have an indirect negative effect on attractiveness ( $B= -.20$ ,  $t=-4.98$ ,  $p = .001$ ). The formal two-tailed significance test (assuming a normal distribution) demonstrated that the indirect effect was significant (Sobel  $z = -2.83$ ,  $p<.05$ ).

We expected that an individual's field dependence would moderate the relationship between context complexity and attractiveness. To test for moderated mediation, we utilized another SPSS macro provided by Preacher, Rucker and Hayes (2007). Results indicate that the influence of the cross-product term between context complexity and field dependence on attractiveness was significant ( $B= 0.15$ ,  $t=2.67$ ,  $p=.008$ ). Hence, study 2 findings corroborate the results obtained in study 1 employing a different product category, a set of realistic stimuli, and a different consumer sample. Further, they support the claim that attractiveness is a subjective experience due to individual differences in field dependence that inhibit or promote fluent processing of appealing designs presented in visually complex contexts.

### 3.2 Study 2.

Having demonstrated in Study 1 the influence of context visual complexity on a package's attractiveness, the main goals of study 2 were to explore what drives these effects through a different approach (eye tracking) with a focus on attention in addition to fluency, to examine the role of individual shopping goals. To accomplish this goal we re-employed the 2 (high vs. low context complexity) x 2 (high versus low package inherent appeal) between-subjects experimental design with the wine package images previously used in study 1. Respondents

(N=120) who had not participated in the previous study were randomly assigned to one of the four conditions, each viewed the 3 x 3 packages array displayed on a computer screen while a camera tracked their eye movement.

The specific eye-tracking equipment (hard- and software) matches the information of eye movements and screen content such that the exact locations and durations of individual saccades and fixations on the array become available. Two indicators of visual attention employed in previous research (Chandon 2002; Lohse 1997; Rosbergen, Pieters, and Wedel 1997) were used: package fixation frequency and package fixation duration. Package fixation frequency is the total number of fixations that a consumer spent on a specific area of interest (i.e., the focal package). It measures how well an element in a display can retain consumer attention in its environment. Package fixation duration measures the time spent on each of the packages. After eye-movement recording, participants were escorted to another room where they completed the psychometric measures used in study 1: Hirschman's (1986) scale for attractiveness ( $\alpha=.87$ ,  $M=4.14$ ,  $SD=1.37$ ), three-item scales for fluency (Labroo and Lee 2006;  $\alpha=.87$ ,  $M=4.14$ ,  $SD=1.37$ ), and purchase intention (MacKenzie, Lutz, and Belch 1986;  $\alpha=.87$ ,  $M=4.56$ ,  $SD=1.20$ ), as well as brief versions of the shopping motivation scale ( $\alpha=.94$ ,  $M=3.36$ ,  $SD=1.12$ ), and the field dependence scale (Choi and Choi;  $\alpha=.80$ ,  $M=5.51$ ,  $SD=.76$ ,  $Range=3.63$ ).

Results of a two-factorial analysis of variance (ANOVA) are consistent with the previous study, indicating a significant main effect of inherent appeal on attractiveness ( $F(1,159)=8.28$ ,  $p = .004$ ), no significant main effect of context complexity ( $M=4.33$  vs.  $M=3.90$ ), and a significant context complexity x inherent appeal interaction effect ( $F(1,159)=8.28$ ,  $p = .004$ ). Also as with study 1, the influence of attractiveness on purchase intention was strong and positive ( $B=.68$ ,  $t=21.38$ ,  $p=.001$ ), further underscoring the relevance of our focal construct.

To explore the mechanism underlying our findings, we examined effects of context complexity on the attention given to specific display elements (i.e., target and context). Analyses of variance revealed a significant main effect of context complexity on the fixation frequency ( $F(1,119)=4.69$ ,  $p = .031$ ) and fixation duration ( $F(1,119)=10.04$ ,  $p = .002$ ) for the target package which received both less ( $M=12.00$  vs.  $M=10.44$ ) and shorter ( $M=3.19$  sec vs.  $M=2.38$  sec) gazes under conditions of high versus low context complexity. The main effect of inherent appeal on attention to the package was non-significant ( $p>.05$ ), as was the context complexity x inherent appeal interaction effect.

Computing a measure for relative attention given to a specific element of the display (as the percentage of total package fixation duration given to either the focal package or the context) permitted further detailing attentional effects of context complexity. ANOVA indicated a significant effect of context complexity on attention to the focal package ( $F(1,139)=6.34$ ,  $p=.012$ ) with more attention under conditions of a low rather than high complexity context ( $M=5.68$  vs.  $M=3.98$ ). In addition, the effect of context complexity on attention given to the context (all eight distractors) was significant ( $F(1,139)=8.50$ ,  $p=.004$ ) with more attention given to the packages representing the more rather than the less complex context ( $M=46.27$  vs.  $M=33.70$ ). The effect of relative attention given to the target package on fluency was significant and negative ( $B=-.23$ ,  $t=-2.60$ ,  $p=.005$ ).

Again employing Preacher and Hayes' (2004) SPSS macro for testing simple mediation, the results indicated that context complexity was negatively associated with fluency ( $B= 1.33$ ,  $t=17.26$ ,  $p = .001$ ). Also, the positive relationship between fluency and attractiveness, controlling

for complexity, was supported ( $B = .11$ ,  $t = 3.66$ ,  $p = .001$ ). Finally, complexity was found to have a significant indirect effect (positive) on attractiveness ( $B = .43$ ,  $t = 5.77$ ,  $p = .001$ ). The formal two-tailed significance test demonstrated that the indirect effect was significant (Sobel  $z = 3.58$ ,  $p = .001$ ). These results are also in line with previous findings

The findings provide further evidence for the influence of context complexity on attractiveness, the mediating role of processing fluency, and the moderating roles of individual differences. Analyzing eye tracking data suggests that the lower fluency of packages presented in visually complex contexts traces back to an attention consuming effect as individuals view them relatively less frequently and shorter.

### 3.3 Study 3.

Study 3 ( $N = 273$ ) extended the contextual scale of the work done thus far to the broader, practical retail environment by reusing the digital images of the wine bottle designs developed for study 1 and used in study 3. These were systematically paired with digital images of retail environments, pretested to ascertain extreme scores (high vs. low, respectively) on visual complexity. In line with the focal stimuli, wine tasting rooms were chosen as retail environments because of the large variation in visual complexity (Solf, Orth, and Wirtz 2011) and their established influence on consumer behavior (Orth, Heinrich, and Malkewitz 2012). Drawing from previous work (Orth, Heinrich, and Malkewitz 2012), and after extensive pretesting ( $N = 64$ ), images of two interiors were selected from an initial pool of ninety-six. The environment selected for scoring the highest on visual complexity was characterized by a large number of heterogeneous objects (such as furniture, wall decorations, ornate ceilings, wall, and floor structure), irregular patterns of arrangements, and multiple contrasting colors. In contrast, the low complexity environment exhibited a small number of homogeneous objects, regular and symmetric arrangements and floor plans, and harmonious colors. Data was again collected by an online survey with participants screened to ascertain the relevance of category and outlet. In conjunction with the display of the focal design, participants submitted their choice, and rated the attractiveness of the target. Individual field dependence was again assessed through a series of ten EFTs (Mumma 1993).

Results of a two-factorial ANOVA indicated a significant main effect of the design's inherent appeal on attractiveness ( $F(1,270) = 32.53$ ,  $p = .001$ ), a marginal main effect of context complexity ( $F(1,270) = 3.42$ ,  $p = .066$ ), and a significant appeal  $\times$  context complexity interaction effect ( $F(1,270) = 5.25$ ,  $p = .023$ ). Similar to studies 1 and 2, attractiveness for the appealing design increased ( $p = .023$ ) from a high complexity context ( $M = 4.67$ ) to a low complexity context ( $M = 5.08$ ), whereas attractiveness scores for the unattractive design did not vary significantly ( $p = .374$ ,  $M = 2.89$  vs.  $M = 2.74$ ). Very similar to the previous studies, attractiveness had a strong and positive effect on purchase intention ( $\beta = .64$ ,  $t = 13.78$ ,  $p = .001$ ).

When a full regression model was run with attractiveness as dependent variable and context complexity and individual field dependence as independent variables, context complexity had a significant effect ( $\beta = .35$ ,  $t = 4.06$ ,  $p = .001$ ) as did the context  $\times$  dependence interaction term ( $\beta = .20$ ,  $t = 3.06$ ,  $p = .001$ ); field dependence had no main effect ( $\beta = .09$ ,  $t = 1.02$ ,  $p = .200$ ) corroborating findings in studies 1 and 2 but in a more realistic wine retail scenario.



#### 4. DISCUSSION, LIMITATIONS AND IMPLICATIONS

In summary, findings from three studies employing different consumer samples consistently support the model presented in figure 1, indicating perceptions of a wine package's attractiveness depend significantly on the context in which the bottle is presented. Hence, the present work extends research by offering a theoretically grounded perspective on design perception in retail contexts, accounting for the inherent appeal of a package (Creusen et al. 2010; Pieters et al. 2010), the influence of context complexity (Wedell 1994), and individual differences in field dependence (Masuda and Nisbett 2001). Insights provided through these studies on how context complexity influences consumer judgment of attractiveness suggest that more attention should be given to the visual characteristics of retail contexts as an important and currently under-researched marketing parameter. Previous work has related visual complexity to processing fluency (Reber et al. 2004), judgments of attractiveness (Leder and Carbon 2005), liking (Geissler, Zinkhan, and Watson 2006), and preference (Creusen, et al. 2010). Other studies have emphasized the benefits of creating attractive designs (Lee and Labroo 2004; Novemsky, Dhar, Schwarz and Simonson 2007; Reber et al. 2004; Schwarz 2004; Mathwick, Malhotra, and Rigdon 2001). Integrating and extending these research streams, present findings suggest that consumer judgments of a package's attractiveness depend to a significant extent on the context in which a product is presented. As the visual complexity of both immediate (shelf) and more distant contexts (retail store environments) relate to differences in attractiveness judgments, issues of adapting designs to anticipated environments (or vice versa) arise. Because previous design research relevant to packages has typically presented viewers with target stimuli in closely controlled contexts (e.g., Bloch 1995; Henderson, Giese, and Cote 2004; Orth and Malkewitz 2008), this work reveals the necessity of accounting for possible changes in viewer judgments when products are displayed in the context of other visual artifacts. This is especially relevant given that wine managers typically have little influence over retail environments in terms of store design and décor, although sales may be impacted as a result of greater or lesser attractiveness.

Several managerial implications of the present research are worth mentioning. The substantial correlation between judgments of attractiveness and purchase intention suggests that retailers should pay close attention to the possible detrimental effect of context complexity. On one hand, the differences established in how a design relates to attractiveness depending on context complexity, can assist product and brand managers in better tailoring the design of their products and packages to the visual characteristics of contexts. On the other hand, the findings can aid retailers (such as in winery outlets) in creating or modifying the visual design of their shelf and retail environments to increase the attractiveness of products offered. By determining how designs and contexts relate to judgments of greater or lesser attractiveness, this research also enables designers and marketers to incorporate visual aspects of shelves and interior environments into their decision-making.

Of further importance to managing package design for enhancing attractiveness is the finding that context effects vary between individuals according to field dependence. While the notion that individuals vary in their processing of visual stimuli due to situational variables (Monga and John 2007; Zhu and Meyers-Levy 2009) or cultural background (Nisbett and Miyamoto 2005) is certainly not novel, establishing what designs generate judgments of greater attractiveness with individuals in a specific processing mode and in a specific context should assist managers in better designing products and packages to appeal to potential buyers.

Limitations of the present work start with the present focus on visual design characteristics. Research on the multisensory congruence of product and brand cues indicates that visual, haptic, and other sensory inputs interact in shaping individual judgment (Peck and Childers 2008). Because people differ in their reliance on sensory modalities (e.g., their sense of vision over their senses of touch or smell), and the sequence of sensory input varies with distance (e.g., consumers first view a design, and then proceed to touch it), examining multisensory aspects of attractiveness in context would be a logical and worthwhile extension of the present work.

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Appendix 1. Study 1. Experimental Manipulations.

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High Appeal Design



Low Appeal Design



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High Complexity Context



Low Complexity Context

