

## Look for the Signature: Personal Signatures as a Cue for Quality

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- *Purpose: Personal signatures are often infused into marketing stimuli as a signal of product quality. Does a vintner's signature on a wine bottle connote quality to a consumer?*
- *Design: Two studies were run using experimentation. In Study 1, we examined the effect of a vintner's personal signature on a bottle of wine on perceived quality, as indexed by willingness to pay. In Study 2, we examined how wine knowledge moderates this effect.*
- *Findings: Results demonstrate that including a personal signature in marketing stimuli influences consumer perceptions of product quality through two paths. Personal signatures act as a generic cue for quality, and also associate a particular individual's identity with the product being marketed.*
- *Practical Implications: Although a personal signature often enhances perceived quality, the present research suggests that a personal signature can have the unintended consequence of detracting from perceived product quality.*

Keywords: Brands, Promotion, Signature, Quality, Extrinsic Cues.

For decades, personal signatures have been featured prominently in the marketing of goods and services. Many prominent logos are based on their founder's personal signature, including Kellogg's, Campbell's, Disney, and (famously) John Hancock, and personal signatures are also widely used for the branding product lines (e.g., Gallo Signature Series Wine, Arnold Palmer Signature Golf Courses), on labels and packaging (e.g., Kendall-Jackson Wines, Schewepe's Ginger Ale), in promotional materials (e.g., Papa John's, Jack Nicklaus Golf), and on tangible products themselves (e.g., Kobe Bryant Signature Sneakers). Although anecdotal information suggests that personal signatures can be used as a signal of product quality (Smith 2012), to date there have been no scientific examinations of the use of personal signatures that can guide marketers in how to use these cues strategically.

In this paper, we investigate how the presence of a personal signature affects consumer perceptions of a product's quality. We theorize that a personal signature influences quality perceptions through two mechanisms. First, we posit that personal signatures act as an extrinsic cue for quality and that, *ceteris paribus*, the mere presence of a personal signature on a package, label, or advertisement enhances perceived quality of the product. Second, we further propose that a personal signature connects an individual's identity to the product or service, and that the effect of a personal signature on perceived quality is moderated by consumers' perceptions of the signor. Together, these two points imply concrete predictions about how the presence of a personal signature on a product label influences consumer perceptions. Although a personal signature generally enhances perceived quality, this research suggests that adding a personal signature can detract from perceived product quality.

## 1. PERSONAL SIGNATURES

We define a *personal signature* as the unique way that an individual writes his or her own name (Kettle and Häubl 2011). Our definition differs from that of the term *signature*, which can also refer to something that is uniquely associated with a particular individual, group, or other entity, such as an artist's signature style (e.g., Salvador Dali's surrealism style of art, Johnny Cash's deep voice and steady rhythm), signature "tiers" of brands (e.g., Gallo Signature Series wine), or signature elements associated with particular brands (e.g., Jeep's seven-slot grille with round headlights). Although the term signature is often evoked in branding efforts to signal quality, it is not necessarily associated with a personal signature (e.g., "Starbucks Signature Hot Chocolate"), and is thus not the focus of the present research.

What is so special about a personal signature? For centuries, people have used their unique handwritten signatures to identify themselves (Mnookin 2001). Consequently, personal signatures play a vital role in society: they are used as evidence of one's legal obligations (Knapp, Crystal, and Prince 2003), and are required to authorize society's most important documents, such as contracts (Knapp et al. 2003), legislation (Jackson and Roosevelt 1953) and judges' rulings (LaFave and Remington 1964). People sign their name for several purposes, including the authorization of an action (e.g., the purchase of a house), to indicate their understanding of a document (e.g., a consent form), to express their support for a cause (e.g., on a petition), and to commit to the terms of a contract (e.g., marriage, military service). Although one's personal signature is used for different purposes in different situations, it is also closely associated with one's identity. Recent research indicates that people closely associate personal signatures with identity: signing one's own name activates one's self-identity, and leads one's subsequent behavior to be more consistent with one's self-concept (Kettle and Häubl 2011; Shu, Mazar, Gino, Ariely, and Bazerman 2012). However, no prior research has examined how the presence of personal signatures influences consumer's perceptions of products. We now turn to developing the proposition that personal signatures signal quality and identity, and to outlining how we envision this to predictably influence perceptions of quality.

## 1.1. Personal Signatures as a Cue for Quality

It is well-established that consumers rely heavily on extrinsic cues (e.g., brand name, price, physical appearance) to assess the quality of a product or service (Dawar and Parker 1994; Janiszewski and Van Osselaer 2000; Rao and Monroe 1989). Consequently, marketers invest heavily in cues that signal quality, such as brand names (Argo, Poppo, and Smith 2010; Keller, Heckler, and Houston 1998), price (Rao and Monroe 1989), fonts in branding and advertising (Henderson, Giese, and Cote 2004), color palettes (Gorn, Chattopadhyay, Yi, and Dahl 1997; Labrecque & Milne 2011), and artwork (Hagyvedt and Patrick 2009). Despite the wide usage of personal signatures as cues, they have received no attention in the marketing literature.

During his company's formative years, Will Keith ("W.K.") Kellogg would personally sign each box of toasted corn flakes he produced. Although the success of Kellogg's Corn Flakes soon rendered this practice unfeasible, W.K. sought to maintain the association between the product and his signature by featuring an image of his personal signature alongside the phrase "Look for the Signature" in advertisements (Powell 1956). W.K. Kellogg's signature is now the basis for the famous Kellogg's logo. W.K. Kellogg believed that his personal signature signaled the quality of his product to consumers.

There are several reasons why personal signatures are useful as cues for quality. As early as the Italian Renaissance in the 14<sup>th</sup> and 15<sup>th</sup> centuries, artists such as Donatello, Giotto, and Michelangelo inscribed personal signatures on their artwork (Gardner 1971), and it is now standard practice for artists to sign each work as an assertion of their belief in its quality (Belk and Groves 1999; Pon 2004; Yonover 1995). Consequently, an artist's personal signature may be viewed as akin to their brand (Belk 1995), and a forged signature as akin to a counterfeit brand. Many craftsmen sign their products, including the legendary violin producer Antonio Stradivarius (Grissino-Mayer, Sheppard, and Cleaveland 2004), and renowned surfboard carver Dick Brewer (Siler 2012). Thus, there is a historical association between personal signatures and quality.

Similarly, for the large population of collectors, the value of a product is derived from its authenticity (Belk 1995), and personal signatures are commonly used to indicate authenticity (Bauman 1971; Wurtenberger 1964). For instance, personal signatures are often used on certificates of authenticity that accompany unique products, including celebrity-worn autographed memorabilia (Stever 2011). Consequently, consumers often link the quality of a product to the presence of a signature attesting to its authenticity.

Prior research suggests that the act of signing one's name is widely viewed as a meaningful act, one that is not akin to printing or typing one's name (Kettle and Häubl 2011). People seek to craft a unique signature for themselves (Bensefia, Paquet, and Heutte 2005; Kam et al. 2001), and perceive the act of forging someone else's signature as highly unethical (Lubow and Fein 1996). Critically, people view the act of signing one's name to something as very meaningful act (Shu et al. 2012).

In sum, prior work supports our premise that people associate personal signatures with quality. Stated more formally, we hypothesize that:

**H1:** A personal signature on a label should increase perceptions of product quality.

## 1.2. Personal Signatures and Identity

Research in several domains suggests that people strongly associate handwritten signatures with identity (Kettle and Häubl 2011). Personal signatures are required for many documents to be rendered official, including petitions (Magleby 1985), contracts (Balloon 2001), consent forms (Mann 1994), and tax returns (Weinberg 2003). Although the potential implications of signing one's name on the aforementioned documents vary widely, the meaning

of the signature is constant: signing one's name ties one's identity to the document. As a result, personal signatures may be used in courts of law as evidence of one's activities (Mnookin 2001; Risinger, Denbeaux, and Saks 1989; Weinberg 2003), and the courts consider forging another's signature to be equivalent to representing oneself as somebody else (Lemert 1958). Moreover, people believe that a person's signature reflects his or her personality and character traits (Briggs 1980; Hughes, Keeling, and Tuck 1983; King and Koehler 2000; Rafaeli and Klimoski 1983).

Because people associate personal signatures with identity, we propose that the presence of a personal signature leads consumers to associate the signor's identity with the product. Our premise is consistent with research that suggests that an individual's identity can be transferred to a tangible item, a process referred to as contagion (Argo, Dahl, and Morales 2008; Belk 1988; Newman, Diesendruck, and Bloom 2011). This implies that when a consumer associates the signor with high (low) quality, the presence of that individual's personal signature will enhance (diminish) perceived product quality. Stated more formally, we hypothesize that:

**H2:** The effect of a personal signature on perceived product quality should be moderated by the consumer's perceptions of the signor's quality.

To summarize, we propose that the presence of a personal signature influences consumer perceptions of product quality in two ways. First, because of the unique meaning associated with the act of signing one's name, we propose that a product marked with a personal signature will be perceived as being of higher quality. Second, because of the association between one's signature and one's identity, we propose that a consumer's perceptions of the signor will be transferred to the product. This implies that the presence of a personal signature from an individual who is associated with high (low) quality will lead to greater (lesser) perceptions of product quality.

## 2. CURRENT RESEARCH

To illustrate our model about how a personal signature influences consumer perceptions, consider Jack Nicklaus and John Daly, two renowned professional golfers and golf course designers. Nicklaus and Daly have each designed several "signature" branded golf courses, the logos for which include their personal signatures. How might the presence of their personal signatures influence consumer perceptions? Our first hypothesis predicts that the mere presence of their signature will lead consumers who are unfamiliar with Nicklaus and Daly to evaluate their golf courses as being of higher quality. Our second hypothesis predicts that the perceptions of avid golfers would be influenced by their knowledge of Nicklaus and Daly. Given that they would have favorable views of Jack Nicklaus, arguably the greatest golfer in history and renowned for his professional conduct, and unfavorable views of John Daly, who is renowned for his extremely unprofessional conduct on and off the course, we predict that the presence of each golfer's personal signature would lead golf enthusiasts to evaluate the Jack Nicklaus (John Daly) course more (less) favorably.

### 2.1. Study 1: Personal Signatures

In study 1, we examine the effect of personal signature on consumers' product evaluations in a product category for which consumers often associate production with a particular individual – wine. Prior research indicates that consumer perceptions of a wine's quality are influenced by their perceptions of the winemaker (Sáenz-Navajas et al. 2012). Based on our overall hypothesis, we predict that the presence of the winemaker's personal signature on wine label will lead to greater perceived wine quality, and that this effect will be greater when the winemaker is perceived to be more talented. We further predict that the presence of a personal signature will lead to a higher willingness-to-pay (WTP) for the wine, and that the effect of a personal signature on WTP will be mediated by perceived quality.

We manipulated three factors: whether or not the product has a signature on it, whether or not the product was touched by the producer, and the scarceness of the vintage. The first two factors (personal signature and producer touch) enable us to test our hypothesis that the presence of a signature – even if it was not handwritten – enhances perceived product quality. Because a product that has been personally signed by the producer has also been touched by the producer, it is important to disentangle the signature from the producer’s touch. We manipulated scarcity of the vintage because consumers often associate personal signatures with scarcity – simply put, signed items have limited availability, and are scarcer than unsigned items. We used two brands with family names: Florio and Fetzer. Based on recent work indicating that consumers view a difficult-to-pronounce winery name (e.g., Tselepou vs. Titakis) as being associated with higher product evaluations (Mantonakis, Galiffi, Aysan, and Beckett, 2013), we expected that participants would evaluate the winemaking ability of Vincenzo Florio (difficult-to-pronounce) as superior to that of Dennis Martin (easy-to-pronounce) of Fetzer wines.

### **2.1.1. Participants**

A total of 171 undergraduate students at a large North American university completed a series of studies for partial course credit.

### **2.1.2. Design and Procedure**

A 2 (winemaker signature: present, absent)  $\times$  2 (winemaker touch: present, absent)  $\times$  2 (scarcity: high, low) mixed design was used. Brand (Fetzer, Florio) and variety (Zinfandel, Cabernet, Sweet Marsala, Dry Marsala) were used as blocking factors.

One of the authors researched the signatures of Vincenzo Florio (of Florio Estates) and Dennis Martin (of Fetzer Estates), and replicated their signatures on the label of each variety of wine. The same author took photos of each bottle, and inserted these photos into the computer-based study.

Each bottle of wine was described as follows (manipulations shown in brackets):

“This bottle of (Sweet Marsala / Dry Marsala / Cabernet Sauvignon / Zinfandel) (a robust red wine) comes from the (Florio / Fetzer) winery in (Italy / California).

The winemaker, (Vincenzo Florio / Dennis Martin), has (personally signed the bottle to indicate / had a copy of his signature printed on this bottle to indicate / hand-selected this bottle to indicate / indicated) that he recommends it to you as one of (500 / 5000) bottles that come from an excellent vintage.”

The study was conducted in a university research laboratory. Participants began the study seated in private cubicles. The on-screen instructions read: “In this study, you will be asked to evaluate bottles of wine. You will be shown 4 bottles, one-at-a-time, and asked a few questions about each bottle.”

Each participant rated the quality of the wine (Very Low Quality = 1; Very High Quality = 10) and the rareness of the wine (Not Rare At All = 1; Very Rare = 10). After rating each bottle individually, the four bottles were placed side-by-side, and participants were asked to choose a bottle, and to indicate their WTP for each bottle.

### **2.1.3. Results and Discussion**

*Preliminary Analyses.* Product evaluations were examined with a series of linear mixed-effects models, with random effects for participant and type of wine, and the following independent variables: winemaker signature (present vs. absent), winemaker touch (present vs. absent), scarcity (high vs. low), perceived winemaker expertise, and all interactions. Regarding winemaker expertise, participants rated Vincenzo Florio as having significantly greater expertise than Dennis Martin ( $M_{\text{Florio}} = 6.3$ ;  $M_{\text{Martin}} = 5.7$ ,  $F(1,681) = 13.2$ ,  $p < .01$ ).

*Perceived Quality.* First, we examine perceptions of quality. As predicted, a significant winemaker signature  $\times$  winemaker expertise interaction emerges ( $\beta = 0.06, p < .05$ ), indicating that the effect of a signature on perceived quality was moderated by consumers' perceptions of the winemaker's expertise. A spotlight analysis (Aiken and West 1991) conducted at one standard deviation above and below the mean level of perceived winemaker expertise reveals that the presence of a signature led to greater perceived quality among consumers who rated the winemaker to be of higher quality ( $\beta = 0.13, p < .001$ ), but did not enhance perceived quality when consumers rated the winemaker to be of lower quality ( $\beta = 0.02, p = .66$ ). At the mean value of winemaker expertise, the presence of a signature enhanced perceived quality ( $\beta = 0.07, p < .01$ ), which suggests that, on average, the mere presence of a signature enhances perceived product quality. All remaining two-way and higher order interactions were not significant. Critically, the winemaker signature  $\times$  winemaker touch interaction was not significant ( $\beta = -0.01, p = .60$ ), which suggests that participants viewed the signature as a sufficient indicator of quality, and did not differentiate between whether or not it was printed or personally signed. Finally, a significant main effect for scarcity indicates that the scarcity manipulation influenced perceptions of quality, such that individuals gave higher quality ratings to the wine that was more scarce ( $M_{1\text{of}5000} = 5.9; M_{1\text{of}500} = 6.2, \beta = 0.08, p < .01$ ). However, the effect of scarcity was not moderated by the presence of the winemaker signature. Together, these results suggest that the presence of a signature influences quality perceptions independent of perceived scarcity.

*Rareness.* A significant main effect for scarcity indicates that the scarcity manipulation was effective, such that scarcer wines were rated as more rare ( $M_{1\text{of}5000} = 5.0; M_{1\text{of}500} = 5.6, \beta = 0.13, p < .001$ ). Moreover, the effect of scarcity on perceived rareness was not moderated by the presence of the winemaker signature ( $\beta = 0.04, p > .14$ ). In contrast to perceptions of quality, the winemaker signature  $\times$  winemaker expertise interaction is not significant ( $\beta = 0.04, p > .15$ ), indicating that the effect of a signature on perceived rareness was not moderated by consumers' perceptions of the winemaker's expertise. A significant main effect does emerge for winemaker signature ( $\beta = 0.10, p < .001$ ), which indicates that the presence of a signature creates the perception of rareness. Together, these results suggest that the presence of a signature influences rareness perceptions independent of scarcity.

*Willingness-to-Pay.* Due to non-normality of the WTP data (skewness<sub>wtp</sub> = 1.53; kurtosis<sub>wtp</sub> = 2.19) we applied a square-root transformation (skewness<sub>sqrtp</sub> = 0.64; kurtosis<sub>sqrtp</sub> = 0.31) prior to modeling the data. For clarity of exposition, we report means in original units (US dollars). The signature  $\times$  winemaker expertise interaction is not significant ( $\beta = 0.07, p = .16$ ), but is directionally consistent with the effect on perceived quality. A spotlight analysis (Aiken and West 1991) conducted at one standard deviation above and below the mean level of perceived winemaker expertise reveals that the presence of a signature led to greater WTP among consumers who perceived the winemaker to be of high quality ( $\beta = 0.20, p < .01$ ), but did not increase WTP when consumers perceived the winemaker to be of low quality ( $\beta = 0.07, p = .34$ ). At the mean value of perceived winemaker expertise, the presence of a signature led to greater WTP ( $M_{\text{no\_sign}} = \$24.66; M_{\text{sign}} = \$27.82, \beta = 0.14, p < .01$ ). All remaining model terms were not significant. Critically, the signature  $\times$  winemaker touch interaction was not significant ( $\beta = -0.03, p = .60$ ), which suggests that participants did not differentiate between whether the signature was printed or personally signed.

*Multiple Mediation Analysis.* In line with Preacher and Hayes (2008), we conducted a multiple mediation analysis (using the product-of-coefficients approach) to examine whether perceived quality and rareness both mediate the effect of personal signatures on WTP. This approach yields a z-score of 3.95 ( $p < .001$ ), which indicates that both quality and rareness are mediators. When quality and rareness are included in the model as predictors of WTP, both terms are statistically significant (quality:  $\beta = 0.49, p < .001$ ; rareness:  $\beta = 0.50, p < .001$ ), and all remaining terms are not significant; this indicates that that quality and rareness fully mediate the effect of personal signatures on WTP.

*Choice.* We also asked participants to choose a bottle of wine from the set of four bottles they had been shown. Participants chose a signed bottle 70% of the time. A mixed-effects logistic regression reveals a significant signature  $\times$  winemaker expertise interaction ( $\beta = 0.24$ ,  $p < .05$ ). A spotlight analysis (Aiken and West 1991) conducted at one standard deviation above and below the mean level of perceived winemaker expertise reveals that the presence of a signature led consumers to choose the wine bottle whether they perceived the winemaker to be of high quality ( $\beta = 0.85$ ,  $p < .001$ ) or low quality ( $\beta = 0.60$ ,  $p < .001$ ), which indicates that the mere presence of a signature can increase consumer preference for a product.

#### **2.1.4. Discussion**

Consistent with our theoretical account, the presence of a personal signature on wine labels predictably influenced consumers' perceptions of product quality, WTP, and product choice. Participants rated wine bottles marked with a personal signature as being of higher quality, indicated a greater WTP for those bottles, and chose a bottle with a signature 70% of the time. Critically, when the personal signature was included on the wine bottle, participants' perceptions of wine quality was influenced by their perceptions of the winemaker's expertise, a finding that is consistent with our theoretical account that one's signature has a unique association with one's identity.

### **2.2. Study 2: The Effect of Product Knowledge on the Signature Effect**

The goal of study 1 is to examine how product knowledge moderates the effect of personal signature on consumers' product evaluations. Prior research indicates that product knowledge moderates the extent to which consumers rely on extrinsic cues to assess quality, such that greater product knowledge leads consumers to rely more (less) heavily on intrinsic (extrinsic) cues (Rao and Monroe 1989). Based on our overall hypothesis, we predict that consumers with greater (lesser) product knowledge will rely less (more) on the presence of the winemaker's personal signature to infer quality. The study design was identical to study 1, with one exception: at the end of the study, we measured wine knowledge by asking participants "How knowledgeable are you about wine?" (on a scale from 1 to 10), and by administering the Wine Knowledge Questionnaire (hereafter WKQ; Hughson and Boakes 2001).

#### **2.2.1. Participants**

A total of 215 participants (128 female, 77 male;  $M_{\text{age}} = 31$  years) were recruited from an on-line subject pool and through social media.

#### **2.2.2. Design and Procedure**

A 2 (winemaker signature: present, absent)  $\times$  2 (winemaker touch: present, absent)  $\times$  2 (scarcity: high, low) mixed design was used. Brand (Fetzer, Florio) and variety (Zinfandel, Cabernet, Sweet Marsala, Dry Marsala) were used as blocking factors.

The manipulations were identical to study 1. The study was conducted on-line. The procedure was identical to study 1.

#### **2.2.3. Results**

*Product Knowledge.* On average, participants scored 2.9 out of 8 on the WKQ (Min = 0.50, Max = 7.9, SD = 1.8), and rated their own wine knowledge as 5.0 out of 10 (Min = 1, Max = 10, SD = 2.6). A regression reveals that self-assessed wine knowledge predicts WKQ performance ( $\beta = 0.35$ ,  $p < .001$ ); therefore, we will use self-assessed wine knowledge as our measure of product knowledge.

*Preliminary Analyses.* Product evaluations were examined with a series of linear mixed-effects models, with random effects for participant and type of wine, and the following independent variables: winemaker signature (present vs. absent), winemaker touch (present vs. absent), scarcity (high vs. low), perceived winemaker expertise, and all interactions. Regarding winemaker expertise, participants in this study rated Vincenzo Florio as having greater expertise

as compared to Dennis Martin, although this difference was not statistically significant ( $M_{\text{Florio}} = 6.6$ ;  $M_{\text{Martin}} = 6.4$ ,  $F(1,815) = 1.67$ ,  $p = .20$ ).

*Perceived Quality.* First, we examine perceptions of quality. A significant wine knowledge  $\times$  winemaker signature  $\times$  winemaker expertise  $\times$  winemaker touch interaction emerges ( $\beta = -0.12$ ,  $p < .05$ ), indicating that product knowledge moderates how the interplay between personal signatures and perceptions of the winemaker influence perceived quality. A significant wine knowledge  $\times$  winemaker expertise  $\times$  scarcity interaction ( $\beta = 0.18$ ,  $p < .01$ ) also emerges. Furthermore, a significant wine knowledge  $\times$  winemaker expertise interaction ( $\beta = 0.24$ ,  $p < .01$ ) and a significant wine knowledge  $\times$  scarcity interaction ( $\beta = 0.10$ ,  $p < .05$ ) indicate that product knowledge moderates the utilization of these cues in assessing quality. To examine the moderating role of product knowledge, we conducted spotlight analyses (Aiken and West 1991) at one standard deviation above and below the mean level of wine knowledge.

First, among high knowledge consumers we find a significant scarcity  $\times$  winemaker expertise interaction ( $\beta = 0.28$ ,  $p < .01$ ) as well as significant main effects for winemaker expertise ( $\beta = 0.90$ ,  $p < .001$ ) and scarcity ( $\beta = 0.20$ ,  $p < .01$ ), which indicates that high knowledge consumers rely heavily on their perceptions of winemaker expertise and the size of the vintage to infer quality. By contrast, low knowledge consumers rely less heavily on their perceptions of winemaker expertise ( $\beta = 0.42$ ,  $p < .01$ ) and not at all on information about scarcity ( $\beta = 0.004$ ,  $p = .95$ ) when inferring quality.

Second, we find a significant winemaker signature  $\times$  winemaker expertise  $\times$  winemaker touch interaction among low knowledge consumers ( $\beta = 0.65$ ,  $p < .01$ ) but not among high knowledge consumers ( $\beta = -0.04$ ,  $p > .70$ ). Contrasts reveal that, on average, low knowledge consumers infer quality from the presence of personal signatures (main effect:  $\beta = 0.19$ ,  $p < .01$ ). When they view the winemaker as having a high (as compared to low) level of expertise, the effect of a personal signature on perceived quality is greater when the signature is handwritten as compared to printed (winemaker signature  $\times$  winemaker touch interaction at high level of winemaker expertise:  $\beta = 0.32$ ,  $p < .01$ ; winemaker signature  $\times$  winemaker touch interaction at low level of winemaker expertise:  $\beta = 0.06$ ,  $p > .75$ ). Similarly, high knowledge consumers, on average, infer quality from the presence of personal signatures (main effect:  $\beta = 0.11$ ,  $p < .10$ ), and also perceive a handwritten signature to be a stronger signal of quality (winemaker signature  $\times$  winemaker touch interaction:  $\beta = 0.15$ ,  $p < .05$ ). However, among high knowledge consumers the effect of the personal signatures is not moderated by their perceptions of the winemaker's expertise. Together, these results suggest that personal signatures signal quality differently to high versus low knowledge consumers. Together, these results suggest that the presence of a signature influences quality perceptions independent of perceived scarcity.

*Rareness.* A significant main effect for scarcity indicates that the scarcity manipulation was effective, such that scarcer wines were rated as more rare ( $M_{1\text{of}5000} = 5.2$ ;  $M_{1\text{of}500} = 5.6$ ,  $\beta = 0.31$ ,  $p < .001$ ). The effect of scarcity on perceived rareness was not moderated by the presence of the winemaker signature ( $\beta = 0.01$ ,  $p > .85$ ), nor was it significantly moderated by product knowledge ( $\beta = 0.09$ ,  $p > .10$ ). A significant main effect for winemaker signature ( $\beta = 0.25$ ,  $p < .001$ ), a significant main effect for winemaker touch ( $\beta = 0.13$ ,  $p < .05$ ), and a significant winemaker signature  $\times$  winemaker touch interaction ( $\beta = 0.13$ ,  $p < .05$ ) together indicate that the presence of a personal signature creates the perception of rareness, and that the effect of a personal signature is greater when it is handwritten versus printed. In contrast to perceived quality, product knowledge does not moderate how personal signatures influence perceived rareness.

*Willingness-to-Pay.* Due to non-normality of the WTP data (skewness<sub>wtp</sub> = 2.01; kurtosis<sub>wtp</sub> = 4.62) we applied a square-root transformation (skewness<sub>sqrtp</sub> = 0.46; kurtosis<sub>sqrtp</sub> = 1.53) prior to modeling the data. For clarity of exposition, we report means in original units (US dollars).



A significant wine knowledge  $\times$  winemaker signature  $\times$  winemaker expertise  $\times$  winemaker touch interaction emerges ( $\beta = -0.12, p < .05$ ), indicating that product knowledge moderates how the interplay between personal signatures and perceptions of the winemaker influence consumers' WTP. To examine the moderating role of product knowledge, we conducted spotlight analyses (Aiken and West 1991) at one standard deviation above and below the mean level of wine knowledge.

Among low knowledge consumers we find significant main effect for winemaker signature ( $\beta = 0.24, p < .01$ ), and a significant winemaker signature  $\times$  winemaker touch interaction ( $\beta = 0.12, p < .05$ ). Contrasts reveal that the presence of a personal signature increases their WTP, and this effect is stronger when the signature is handwritten as compared to printed. Among high knowledge consumers, we find a significant main effect for winemaker signature ( $\beta = 0.11, p < .05$ ), a significant winemaker signature  $\times$  winemaker touch interaction ( $\beta = 0.17, p < .01$ ), and a significant winemaker expertise  $\times$  winemaker signature  $\times$  winemaker touch interaction ( $\beta = -0.21, p < .01$ ). Contrasts indicate that the mere presence of a personal signature increases the WTP of more knowledgeable wine consumers, and that a handwritten signature has a greater impact on WTP as compared to a printed signature, but that there is no additional effect of a handwritten signature when the knowledgeable consumer views the winemaker as having higher (vs. lower) expertise.

*Multiple Mediation Analysis.* In line with Preacher and Hayes (2008), we conducted a multiple mediation analysis (using the product-of-coefficients approach) to examine whether perceived quality and rareness both mediate the effect of personal signatures on willingness-to-pay. This approach yields a z-score of 4.10 ( $p < .001$ ), which indicates that both quality and rareness are mediators. When quality and rareness are included in the model as predictors of willingness-to-pay, both terms are statistically significant (quality:  $\beta = 0.47, p < .001$ ; rareness:  $\beta = 0.30, p < .001$ ). In contrast to the results of study 1, the winemaker signature  $\times$  winemaker touch interaction remains significant ( $\beta = 0.09, p < .09$ ) as does the main effect winemaker signature ( $\beta = 0.10, p < .01$ ), which suggest that, among this population of wine consumers, the effect of personal signature on WTP is not fully mediated by perceived quality and rareness.

*Choice.* We also asked participants to choose a bottle of wine from the set of four bottles they had been shown. Consistent with the results of study 1, participants chose a signed bottle 70% of the time. A mixed-effects logistic regression reveals a significant main effect for winemaker signature ( $\beta = 0.55, p < .01$ ) a significant main effect for winemaker touch ( $\beta = 0.23, p < .05$ ), and a marginally a significant main effect for winemaker expertise ( $\beta = 0.17, p < .10$ ). Consistent with the results of study 1, spotlight analyses reveal that the presence of a signature led consumers to choose the wine bottle whether they perceived the winemaker to be of high quality ( $\beta = 0.60, p < .001$ ) or low quality ( $\beta = 0.51, p < .001$ ), and whether they were high knowledge consumers ( $\beta = 0.44, p < .001$ ) or low knowledge consumers ( $\beta = 0.67, p < .001$ ), which points to the robustness of the effect of a personal signature on consumer preference.

#### **2.2.4. Discussion**

Consistent with our theoretical account, the presence of a personal signature on wine labels predictably influenced consumers' perceptions of product quality, willingness to pay, and product choice. Participants rated wine bottles marked with a personal signature as being of higher quality, indicated a greater willingness-to-pay for those bottles, and chose a bottle with a signature 70% of the time.

### **3. GENERAL DISCUSSION**

Consumers often make purchase decisions in situations where they have uncertainty about product quality. There are many sources of uncertainty about quality: consumers may not be able to observe quality prior to consumption, such as with experience goods and services (Parasuraman, Zeithaml, and Berry 1985), actual quality may be inherently difficult to evaluate

(Hsee and Zhang 2010), such as with foods and beverages, or the accurate quality information may not be attainable due to the information asymmetry between the firms and consumers (Erdem and Swait 1998). Likewise, consumers may find that the cost of acquiring quality information exceeds the potential benefits (Erdem, Swait, and Valenzuela 2006). Consequently, individuals rely heavily on extrinsic cues – such as brand name, price, and advertising – to make inferences about unobservable product or service quality (Hagtvedt and Patrick 2009; Rao, Qu, and Ruckert 1999; Zeithaml 1988), to the extent that extrinsic cues are often weighed more heavily than intrinsic cues such as tangible attributes and past performance (Rao and Monroe 1988; Richardson, Dick, and Jain 1994).

The ubiquity of handwritten signatures and named “signature” brands clearly suggest that marketing practitioners view signatures as brand-enhancing characteristics. What is less clear is (a) the mechanism that underlies any enhanced value derived by signatures, and (b) whether signature branding necessarily enhances value. Building on research that suggests that a signature is associated with one’s identity, we have proposed that the presence of a personal signature on a product label affects consumer perceptions of a product’s quality through two mechanisms. We have demonstrated that personal signatures act as an extrinsic cue for quality, and that, on average, the presence of a personal signature on a label enhances the perceived quality of the product. We have also shown that the effect of a personal signature on perceived quality is moderated by consumers’ perceptions of the signor. In sum, the presence of the producer’s personal signature on a label enhances consumers’ willingness-to-pay, but only to the extent that they associate the producer’s identity with high quality.

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