# How the embedding of products in stylistic ensembles affects the products' perceived value

**Katrin Talke**
TU Berlin
**Miriam Deufel**
Technische Universität Berlin
**Saskia Walz**
Technische Universität Berlin

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**Abstract:**

In advertising or sales contexts, a product can be presented either on its own or in constellation with other products. Interestingly, research comparing the effect of each type of product presentation on the price attributed to a product is rare. Building on design research and conditioning theory we first argue and then use four experiments to demonstrate that the embedding of a product in stylistic ensembles can substantially increase the price consumers attribute to that product. In two additional experiments we show that the price increase can be explained by the value attributed to the stylistic ensemble.

Keywords: *Product constellations, stylistic ensembles, conditioning theory*

Track: *Consumer Behaviour*

## 1. Introduction

In marketing research, it is well known that the way a product is presented has an influence on how the product is perceived. Numerous studies show that factors of the visual environment of products, such as the grouping of products, or the space on the shelf can have a strong impact on product perception and subsequent behavior (e.g., Hussain, 2015).

In an e-commerce and advertising context, products are frequently shown either in isolation or in constellation with other products (Bell, Holbrook, and Solomon, 1991). Interestingly, the consequences of the different presentation modes are not well understood. This may be due to the fact that there is surprisingly little research on product ensembles. Product ensembles can be assembled based on either a functional or aesthetic complementarity. Functional complementarity refers to the combination of products based on an inherently operational necessity (Lai, 1994). For instance, for a barbecue outside, one needs a garden table, benches, crockery and cutlery. Aesthetic complementarity, on the other hand, relates to products being grouped predominantly for their aesthetically pleasing relationship (Bell, Holbrook, and Solomon, 1991; Deng and Hui, 2010). In an interior context, a pillow may be placed on a sofa because "it goes well" with the color scheme of the entire living room, the pattern of the blanket, or the material of the sofa.

We focus on the latter kind of ensembles. To contribute to a better understanding of aesthetically complementary ensembles, we turn to design research. Design research regularly uses design styles to characterize aesthetic coherence of ensembles. Coherent stylistic ensembles are assembled based on items of the same design style. Design styles, such as Minimalism, Boho, Punk, or Hip Hop in fashion design (e.g., Blackman, 2012) are defined by a specific set of formal-aesthetic attributes, such as the form, materials, colors, etc., and the symbolic associations evoked by these attributes (Chan, Mihm, and Sosa, 2018). These associations can be value-related (Mumcu, 2015), making an ensemble appear more or less valuable.

With this research, we are interested in the questions whether and how much the price attributed to a product can be increased when embedding it in a stylistic ensemble. Drawing from conditioning theory, we propose that the value of an ensemble as unconditioned stimulus can be transferred to a product. By temporal-spatial pairing of a product with that ensemble, the product is conditioned, that is, loaded with the value-related meaning associated with the ensemble (Unkelbach, 2019). Therefore, we argue that the price attributed to a product is likely to increase when embedded in a valuable stylistic ensemble, as opposed to being presented in isolation. In addition, we propose that the price increase can be explained by the transfer of value from the ensemble to the embedded product.

We investigate and confirm these propositions with a series of experimental studies in the domains of interior and fashion design. Our results demonstrate that consumers attribute a higher price to products when embedded in an ensemble than when presented in isolation (studies 1 to 4). Our results also show that conditional on the design style, ensembles are perceived as having different value, which in turn influences the price attributed to the embedded

product. Hence, we find that the value associated with a stylistic ensemble mediates the relationship between that ensemble and the price attributed to the embedded product (studies 5 and 6).

Our research makes a number of theoretical and empirical contributions to design and marketing research and provides implications for marketers supporting their decision of whether and in which type of stylistic ensembles a product should be embedded.

## 2.    Presentation of products: Embedded in ensembles or presented on their own

### 2.1.    Theoretical background on aesthetic ensembles and product presentation

As a starting point, we were interested in understanding how practitioners make decisions about how a product is presented. For this purpose, we conducted structured interviews with marketing experts. We learned that these decisions are rarely data-driven (e.g., by A/B tests), and that practitioners had widely varying, yet on average rather conservative expectations about the difference an ensemble-embedded product presentation versus a detached one makes.

A review of the literature for a comparison of both types of product presentations reveals that products presented on their own may catch consumers' attention better and appear more special than products embedded in ensembles. In addition, presenting products separately is simpler, faster, and less expensive. However, the presentation is less realistic, as products are regularly encountered in constellations (Brylla, 2018). Research in the e-commerce context has shown that the presentation of products in constellations leads to a more efficient processing compared to a presentation of isolated products on a white background. Especially when a product is intangible or cannot be physically experienced at the time of the purchase decision, consumers require additional information to understand its meaning and make assessments about quality and price (Orth, 2007). Specifically, consumer's price response is highly dependent on contextual information (Rajendran, 1994). Ensembles can provide such information, thereby increasing value judgments (Alter, 2008), as well as quality-related price perceptions (Chang, 2013).

Coherent ensembles in particular can be significantly more effective in communicating symbolic meanings than individual products (Bell, Holbrook, and Solomon, 1991), and can increase the likelihood of consumers finding added value for a focal product within such ensembles (Shocker and Bayus, 2004; Zhang, 2020). In this research, we are interested in coherent aesthetic ensembles, compiled primarily according to aesthetic considerations. To better understand the idea of aesthetic coherence, we turn to design literature. Design literature uses design styles to characterize aesthetic coherence of ensembles. Design styles are defined by a specific set of formal-aesthetic attributes, such as the form, materials, colors, etc., and the symbolic associations evoked by these attributes (Chan, Mihm, and Sosa, 2018). In fashion design, for instance, Minimalism, Boho, Hip Hop, Punk, Glam, or Goth are well-established design styles (e.g., Blackman, 2012), whereas common styles in interior design are Scandi-

navian, Pop, High-Tech, or Postmodern design (e.g., Bhaskaran, 2009)). A coherent stylistic ensemble would be compiled of different items each from one of these design styles. A coherent Punk outfit, for instance, would be composed of primarily black or dark colored items. Dominating materials for the jacket or pants would be leather or jeans with details such as studs, rips, and holes, or prints related to themes, such as violence, rebellion, or death. Such a Punk outfit may appear rebellious, aggressive and unadapted (Blackman, 2012; English, 2007). Some associations evoked by stylistic ensembles can be value-related (Mumcu, 2015). The "filthy" look of a Punk outfit may be associated with a low value, whereas a coherent Glam outfit may appear elegant and expensive due to the consistent use of luxurious materials, elaborate tailoring, and excessive decor. Previous studies indeed provide initial evidence that aesthetic elements can increase the perceived value of a product (e.g. Orth, 2007). Hence, we propose:

**H1:** The price attributed to a product is higher when embedded in an ensemble than if presented on its own.

### 2.2. Experiment 1: Impact of product presentation ("embedded" vs "detached") on the price attributed to a product

*Subjects and Design.* Our first experiment is in the interior design domain. It is a single factor experiment, where we vary the type of product presentation ("embedded in a product ensemble" vs "presented on its own") and measure the price consumers attribute to the product for both conditions. Using a between-subjects design we collected data from a sample of 157 undergraduate students (62.4 % male, $M_{age}$ = 22.25, $SD_{age}$ = 3.93). The students were enrolled in an introductory marketing course at a German University and participated in the online survey for course credits.

*Stimuli and Procedure.* As stimulus for the focal product we selected a cactus, as a rather neutral, unbranded product. For the "presented on its own"-condition, the cactus was presented on a white background. On the left edge of the frame was a tape measure to clarify its size. For the "embedded"-condition, we designed a reading corner in High Tech design, equipped with an armchair, a shelf, a carpet, a wall hanging, and a side table, on which the cactus was placed. We chose High Tech as a design style because it should be familiar to our subjects, timeless, and thus associated with moderate value. In a pre-test, we could validate our expectations. In the main study, participants were randomly assigned to one of the two conditions: Cactus presented on its own vs. embedded in the reading corner in High Tech design style. Initially, participants were asked to attentively look at the stimulus for 10 seconds. They should then indicate at what price they believe the cactus will be offered. As controls, we also asked for their involvement in interior design and their demographics.

*Results.* The cactus was assigned a significantly higher price when embedded in an ensemble compared to when presented on its own ($M_{isolated}$ = 12.04, $M_{ensemble}$ = 25.02, t(155) = 1.655, p< .001). Neither control variable had a significant influence.

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*2.3.   Experiment 2: Replication with a different product in the domain of interior design*

Experiment 1 provides initial evidence for hypothesis 1. In order to validate our findings with a different product, we selected a floor lamp as stimulus. Again, we chose a lamp with rather neutral looks and without visible brand or logo. As in study 1, we either presented the lamp on its own on a white background or embedded in the identical reading corner. Participant recruitment, measures and the experiment procedure were conducted in the same manner as in study 1. Again, we find that the price attributed to the lamp is significantly higher for the embedded than for the detached condition ($M_{isolated} = 102.63$, $M_{ensemble} = 123.67$, $t(278) = 1.655$, $p< .01$), lending further support for hypothesis 1.

*2.4.   Experiment 3: Validation with multiple interior design styles*

We now investigate if we can not only replicate the effect for a different product, but also for different ensembles. Hence, we conducted a third study where we embedded the cactus in two different reading corners, each quipped with an armchair, a shelf, a carpet, a wall hanging, and a side table, of one of the two design styles: Regency and Scandinavian Design. Then, we compared the price assigned to the detached cactus with those assigned to the ones embedded in the three reading corners, and found that the prices of the embedded conditions were in both cases significantly higher than the price in the detached condition ($M_{isolated} = 12.04$, $M_{regency} = 21.34$, $t(149)=-3.632$, $p< .001$ $M_{scandi} = 21.51$, $t(172)= -5.495$; $p<.001$ differences each significant on the .001% level).

*2.5.   Experiment 4: Validation in the domain of fashion design*

To lend further support to our first hypothesis, we now investigate whether our results can be replicated in a different domain. Therefore, we conducted a fourth study in the domain of fashion design. As focal product we selected a white top, which again looked rather neutral and did not exhibit any brand cues. For the "embedded"-condition, we compiled three outfits consisting of a jacket, a pair of pants, shoes, a handbag, a hat, sunglasses, and a necklace, one in each of the design styles Minimalism, Boho and Hip Hop. Again, the results showed that the top was perceived to be significantly more expensive when embedded in the Minimalism, Boho and Hip Hop outfits than when presented on its own. ($M_{isolated} = 17.29$, $M_{minimalism} = 27.14$, $t(279)=-4.840$, $p< .001$ $M_{boho} = 20.66$, $t(277)= -1.800$; $p=.04$, $M_{hip\ hop} = 57.23$, $t(276)=-4.677$, $p< .001$.

Results from all four experiments thus provide empirical support for hypothesis 1, suggesting that the price attributed to a product is increased when it is embedded in an ensemble. However, since the mean prices attributed to the embedded products vary quite a bit between design styles, we now take a closer look at which role the particular styles and its associated value plays in that process.

### 3.  Value transfer from an ensembles to the embedded product

*3.1.  Theoretical background on the value transfer from an ensemble to the embedded product*

Studies from several research fields have shown that properties of objects or persons from the environment of a product can transfer to that product (e.g., Lam and Ho-ying Fu, 2017). Such effects can be explained by conditioning theory suggesting that attributes of one stimulus can be transferred to another through temporal-spatial pairing (Unkelbach, 2019). A transference of evaluative meaning may occur on the basis of symbolic associations (Allen and Madden, 1985). For instance, the attribute "athletic" may transfer from one unconditioned stimulus (e.g., an athlete, a shoe, or a brand logo) to an initially neutral stimulus (Unkelbach, 2019). Design research suggests that design styles are associated with value-related symbolic associations (Mumcu, 2015), and that design styles can differ considerably in their perceived value (Barnard, 2014). We therefore expect that the value associated to a particular design style should transfer to the embedded product and affect its value perception. For instance, a room may not look particularly valuable if it is designed in a Pop style due to the characteristic use of bright, intensive colors, chunky shapes, and the dominance of plastics as a material. By contrast, a room designed in High Tech style is characterized by straight, reduced shapes in grayscale tones and the use of glass and chrome. As a result of the value transfer, a product embedded in a Pop environment should thus be perceived as less valuable than when embedded in a High Tech environment. Hence, we put forward the following hypotheses:

**H2:** The design style of the ensemble a product is embedded in determines the price attributed to the embedded product.

**H3:** The relationship between the style of the ensemble and the price attributed to a product is mediated by the perceived value of the stylistic ensemble.


*3.2.  Experiments 5 and 6: Ensemble value as a mediator on the impact of ensemble design style on perceived product value*

*Subjects and Design.* In study 5 we investigate whether the attributed value of an ensemble can explain the different prices attributed to the embedded product. It is a single factor experiment in the interior design domain, where we deliberately selected two design styles of different value for the ensembles (reading corner in "High Tech" design for the high value condition and in "Pop" design for the low value condition) and measure the price consumers attribute to a product (cactus), when embedded in either condition. Using a between-subjects design we collected data from a sample of 160 undergraduate students.

*Stimuli and Procedure.* As stimuli, we used the High Tech reading corner we had designed for studies 1 and 3. For Pop Design, we created a reading corner in the same manner. In a pre-test, we validated that the reading corners differ significantly in their perceived value. For the first two conditions we prepared the two ensembles without the embedded product. We randomly assigned participants to either of these conditions and asked them to rate the value of the reading corners. For the other two conditions, we used the same two reading corners,

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now with the cactus placed on the side table. Again, we assigned participants randomly to one of these conditions and asked them to provide a price estimation of the cactus. As control variables, we also asked for participants' interior design involvement, expertise, centrality of visual product aesthetics (CVPA), and demographics.

*Results.* We then ran a mediation analysis (PROCESS model 4, Hayes 2018) with the design styles of the ensembles as dummies, the perceived value of the plain ensemble as mediator, and the price attributed to the embedded product as dependent variable. We found that the High Tech room was associated with a significantly higher value than the Pop room (b = 1.09, SEb = .21, 95% CI[.6753,1.5113], $R^2$ = .11, F(2,231) = 14.14, p<.001). The mediation analysis further revealed that ensemble value (b = 8.03, SEb = .49, p<.001, 95% CI[7.0729,8.9875]) was a significant and positive predictor of the perceived value of the product, $R^2$ = .57, F(3,230) = 100.07, p<.001. A bootstrap analysis with 5000 samples confirmed a significant indirect effect for High Tech vs. Pop(indirect effect = 8.78, SEb = 1.93, 95% CI[5.1913,12.7060]).

In study 6, we again replicated our results in the fashion domain with a sample of n=103. The stimuli development and study procedure again closely followed the approach from the previous study. For the fashion context, we selected Punk as a low value style and contrasted it with Minimalism. Again, we find that the Minimalism outfit was associated with a significantly higher ensemble value than the Punk outfit (b = 1,32, SEb = .25, 95% CI[.8287,1.8028], $R^2$ = .21, F(2,148) = 19.40, p<.001). The mediation analysis further revealed that ensemble value (b = 16.42, SEb = 1.75, p<.001, 95% CI[12.9580,19.8779]) was a significant and positive predictor of the perceived value of the product, $R^2$ = .34, F(3,147) = 30.51, p<.001. A bootstrap analysis with 5000 samples confirmed a significant indirect effect for Punk vs. Minimalism (indirect effect = 21.60, SEb = 4.87, 95% CI[12.9075,32.2815]).

### 3.3. Next steps

As a next step, we will focus on contingencies of the investigated relationships. Based on Holbrook and Zirlin (1985) and Bell, Holbrook, and Solomon (1991) we expect that the aesthetic fit between the design style of an ensemble and the embedded product may have an influence on the value transfer. So far, we deliberately selected rather neutral products, which were not iconic of a certain design style. We will conduct further experiments, where we select design icons as focal products to analyse changes in the effectiveness of a value transfer from the ensemble to the embedded product.

## 4. Discussion

Our research makes a number of contributions to design and marketing research. In particular, we first build conceptual arguments and then demonstrate empirically that the price attributed to a product can be increased when embedding it in a stylistic ensemble instead of presenting it on its own. We show that this effect is robust for different product types, various design styles and manifests in two different domains, namely interior and fashion design.

Drawing from conditioning theory we further propose and then confirm empirically that the value increase results from a transfer of the aesthetic ensemble's value to the embedded product. Thereby, we add to the hitherto rather sparse research on stylistic ensembles (e.g., Bell, Holbrook, and Solomon, 1991; Lai, 1994) by providing insights into the role design styles play in the value attributed to aesthetic ensembles.

Our findings should be highly relevant for marketers making decisions on product presentation modes in advertising and sales contexts. Particularly, our findings suggest that when compiling product ensembles, marketers should consider the symbolism associated to different design styles. They should also take deliberate embedding decisions, in order to make use of the value transfer from a stylistic ensemble to an embedded product. This transfer can lead to large increases in the price attributed to an embedded product compared to a detached product. In our studies, we saw that the price can increase substantially, on average around 85% and in one case up to 231%. Between design styles the price differences observed can be substantial as well, 230% in one case.

Our literature review revealed a plethora of gaps in our understanding of stylistic ensembles. Their seemingly large economic impact on the perception of individual products underlines the need for more research and may stimulate further research in this understudied domain.

**References**

Allen, C. T., & Madden, T. J. (1985). A closer look at classical conditioning. *Journal of Consumer Research*, 12.3, 301-315.

Alter, A. L., & Oppenheimer, D. M. (2008). Easy on the mind, easy on the wallet: The roles of familiarity and processing fluency in valuation judgments. *Psychonomic Bulletin & Review*, 15.5, 985-990.

Bell, S. S., Holbrook, M. B., & Solomon, M. R. (1991). Combining esthetic and social value to explain preferences for product styles with the incorporation of personality and ensemble effects. *Journal of Social Behavior and Personality*, 6.6, 243.

Barnard, M. (2014). *Fashion theory: An introduction*. Milton Park: Routledge.

Bhaskaran, L. (2009). *Designs of the times: Using key movements styles for contemporary design*. Brighton: RotoVision.

Blackman, C. (2012). *100 years of fashion*. London: Laurence King Publishing.

Brylla, D. E., & Walsh, G. (2018). Floating Products in Online Shops: Exploring Negative Effects of Isolated Product Depictions on Attitude and Purchase Intentions. *Research*

*Papers*, 75.

Chan, T. H., Mihm, J., & Sosa, M. E. (2018). On styles in product design: An analysis of US design patents. *Management Science*, 64.3, 1230-1249.

Chang, C.-J. (2013). Price or quality? The influence of fluency on the dual role of price. *Marketing Letters*, 24.4, 369-380.

English, B. (2007). *A cultural history of fashion in the twentieth century: From the catwalk to the sidewalk*. Oxford: Berg Publishers.

Holbrook, M. B., & Zirlin, R. B. (1985). Artistic creation, artworks, and aesthetic appreciation: Some philosophical contributions to nonprofit marketing. *Advances in Nonprofit Marketing*, 1.1, 1-54.

Hussain, R., & Ali, M. (2015). Effect of store atmosphere on consumer purchase intention. *International Journal of Marketing Studies*, 7.2.

Kahneman, D., & Tversky, A. (2013). Prospect theory: An analysis of decision under risk. *Handbook of the fundamentals of financial decision making: Part I. World Scientific*.

Kim, M., & Lennon, S. (2008). The effects of visual and verbal information on attitudes and purchase intentions in internet shopping. *Psychology & Marketing*, 25.2, 146-178.

Lai, A. W. (1994). Consumption schemata: Their effects on consumer decision making. *ACR North American Advances,* 21, 489-494.

Lam, S. Y., Ho-ying Fu, D., & Li, J. (2017). The influence of thematic product displays on consumers: An elaboration-based account. *Psychology & Marketing,* 34.9, 868-883.

Landwehr, J. R., McGill, A. L., & Herrmann, A. (2011). It's got the look: The effect of friendly and aggressive "facial" expressions on product liking and sales. *Journal of Marketing*, 75.3, 132-146.

Meyers-Levy, J., & Peracchio, L. A. (1995). Understanding the effects of color: How the correspondence between available and required resources affects attitudes. *Journal of Consumer Research*, 22.2, 121-138.

Mumcu, Y., & Kimzan, H. S. (2015). The effect of visual product aesthetics on consumers' price sensitivity. *Procedia Economics and Finance*, 26, 528-534.

Orth, U. R., & De Marchi, R. (2007). Understanding the relationships between functional, symbolic, and experiential brand beliefs, product experiential attributes, and product schema: Advertising-trial interactions revisited. *Journal of Marketing Theory and Practice,* 15.3, 219-233.

Pappu, R., Quester, P. G., & Cooksey, R.W. (2005). Consumer-based brand equity: improving the measurement–empirical evidence. *Journal of Product & Brand Management*,

14.3, 143-154.

Rajendran, K. N., & Tellis, G. J. (1994). Contextual and temporal components of reference price. *Journal of Marketing*, 58.1, 22-34.

Richins, M. L. (1994). Valuing things: The public and private meanings of possessions. *Journal of Consumer Research*, 21.3, 504-521.

Shocker, A. D., Bayus. B. L., & Kim, N. (2004). Product complements and substitutes in the real world: The relevance of "other products". *Journal of Marketing*, 68.1, 28-40.

Spangenberg, E. R., Sprott, D. E., Grohmann, B., & Tracy, D. L. (2006). Gender-congruent ambient scent influences on approach and avoidance behaviors in a retail store. *Journal of Business Research*, 59.12, 1281-1287.

Thaler, R. (1985). Mental accounting and consumer choice. *Marketing Science*, 4.3, 199-214.

Turley, L. W., & Milliman, R. E. (2000). Atmospheric effects on shopping behavior: A review of the experimental evidence. *Journal of Business Research*, 49.2, 193-211.

Unkelbach, C., & Högden, F. (2019). Why does George Clooney make coffee sexy? The case for attribute conditioning. *Current Directions in Psychological Science*, 28.6, 540-546.

Venkatesh, R., & Kamakura, W. (2003). Optimal bundling and pricing under a monopoly: Contrasting complements and substitutes from independently valued products. *The Journal of Business,* 76.2, 211-231.

Yoo, J., & Kim, M. (2014). The effects of online product presentation on consumer responses: A mental imagery perspective. *Journal of Business Research*, 67.11, 2464.

Yoo, J., & Kim, M. (2012). Online product presentation: the effect of product coordination and a model's face. *Journal of Research in Interactive Marketing*, 6.1, 59-72.

Zhang, M., & Bockstedt, J. (2020). Complements and substitutes in online product recommendations: The differential effects on consumers' willingness to pay. *Information & Management,* 57.6, 103341.