Marketing Function and Form: How Functionalist and Experiential Architectures Affect Corporate Brand Personality

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How are the designs of corporate buildings used to create meaning and project a corporate image and personality? We distinguish functionalist architecture (“form follows function”), which focuses on the primary, utilitarian function of a building, from experiential architecture (“from function to form”), which uses the form of a building to communicate symbolically about the organization. A large-scale quantitative study including 150 buildings shows that four architectural design types (“solid,” “balanced,” “expressive,” and “disruptive” designs, emerging from a mix of functionalist and experiential architectures, lead to distinct corporate brand personalities (e.g., competence for functionalist architecture and excitement for experiential architecture). We validate these findings in a qualitative study and discuss how this research contributes toward the development of a consumer-oriented design theory.

Keywords: corporate architecture, design, corporate image, brand personality, experience
1. Introduction

Corporate buildings are omnipresent in our daily lives. We encounter these buildings by sight, by visiting them, and through the media. Corporate buildings are the physical manifestations of the organizations within them and shape and define our landscapes and the skylines of our cities. Most importantly, in today’s consumer society, many organizations use corporate buildings to project a corporate image and personality to their current and potential customers.

Prior research has largely neglected the issue of the relation between corporate architecture and brand personality. Marketing scholars have established that visual expression is a form of communication and have shown that design elements contribute to the formation of brand beliefs and influence brand strength. This research focused largely on micro-level issues of design and meaning, examining logos (Henderson & Cote, 1998, p. 23), typefaces (Henderson et al., 2004, p. 64), packaging (DeBono, Leavitt, & Backus, 2003; Leder et al., 2007; Orth & Malkewitz, 2008; Underwood & Klein, 2002; Underwood, 2003) and product design (Brunel, 2006).

Architectural design, however, is far more complex than any of the prior design stimuli investigated. Architectural language comprises a continuum, ranging from very concrete, construction-related, technical terms to abstract, impression-related, stylistic terms. It is therefore important to examine how consumers view architectural stimuli, such as corporate buildings and company headquarters, and how companies may use their buildings to create meaning and project a corporate image and personality. Moreover, insight into the complex designs in
architecture may add to the research findings emerging from simpler designs found in logos, typefaces and products.

In this article, we distinguish two general design types of corporate architecture that we expect to create corporate brand impressions and personalities. We present a large-scale quantitative study that relates architectural design dimensions (e.g., degree of elaborateness or harmony) and design types (e.g., functionalist and experiential) to corporate brand personality. We subsequently validate and extend our findings through a qualitative study. In both studies, we focus on the external shape rather than the interiors of corporate buildings because consumers define an image of a company based on the exterior appearance.

2. Two Key Architectural Design Types and their Variations

The rise of the modern organization following the industrial revolution of the nineteenth century was accompanied by architectural styles that reflected the spirit of the times. Originally, corporate architecture followed the principle “form follows function” that was first formulated by American architect Louis Sullivan in 1896. Sullivan’s principle, which became closely associated with the functionalist movement in architecture, states that the shape—or “form”—of a building should be based solely on its intended function or purpose. The architects of the influential Bauhaus school, such as Walter Gropius and Mies van der Rohe, popularized the functionalist view of architecture, which influenced architectural design throughout most of the 20th century, and into the 21st century, through the International Style (Le Corbusier and, later, Philip Johnson) and the works of I.M. Pei and Richard Meier.
As the economy shifted from production to consumption and toward an “experience economy” (Pine and Gilmore 1999) and as marketing shifted from a focus on features and benefits toward “experiential marketing” (Holbrook and Hirschman 1982; Schmitt 1999), the established functionalist language of corporate architecture gave way to a new aesthetic, emphasizing expression, symbolism, the plurality of form, and experience (Venturi, Brown, and Izenour 1977), which we will henceforth call “experiential architecture.” Experiential architecture constitutes a shift “from function to form” (Klingmann 2007), with corporate architecture now emphasizing the brand instead of the functionality of the building (Bahamón, Cañizares, and Corcuera 2009). Corporate buildings are viewed explicitly as a form of communication (Hattenhauer 1984). While the functionalist style of architecture is still widespread, experiential architecture is increasingly being used in the design of new corporate buildings today. Experiential architecture is associated with the postmodern and deconstructivist movements and with architects such as Frank Gehry, Rem Koolhaas, Daniel Libeskind, and Zaha Hadid.

Well-known functionalist and experiential buildings are shown in Figure 1a. Some of these buildings are considered classics; others are fairly recent buildings. Examples also refer to different movements, e.g., the early industrial orthogonal look of the Bauhaus; the rounder, more natural looking buildings of the later phases of functionalist architecture; and the experiential architectures of the so-called “blobitecture” and deconstructivist movements. Figure 1b contrasts functionalist and experiential buildings of three organizations—BMW, a German car manufacturer; CCTV, mainland China’s television broadcaster; and Columbia Business School, a business school in New York. BMW Welt, a multi-purpose facility built in Munich by the renowned architectural firm CoopHimme(l)au in 2007, uses visual analogies of a tornado
followed by a cover of clouds to elicit consumer perceptions of dynamism and challenge—the core brand values of BMW (Feireiss and Kwinter 2007). In comparison, the BMW headquarters, completed in 1972 in the midst of the modernist movement, is a functionalist office building, visually representing components of automotive engines. Similarly, star architect Rem Koolhaas’ new building for CCTV, completed in Beijing in 2008, is supposed to express the value of “collective inhabitation” (Zalewski 2005), and the newly planned building of Columbia Business School in New York City is described by the architects as “an open and inter-disciplinary model [that] replaces the top-down logic of industrial-age knowledge transfer” (http://www.unstudio.com/research/iop/beyond-the-classroom-research-on-knowledge-spaces).

In contrast, CCTV’s earlier headquarters and Columbia Business School’s 1961 building are purely functionalist designs.

We view functionalist and experiential architectures as “architectural ideal types,” emerging from multiple building design dimensions, including, for example, a certain degree of elaborateness, harmony, transparency, and colorfulness. Depending on the exact values on each dimension, an architectural design may be perceived as more or less typical of the functionalist or experiential categories. As a result, in our empirical studies, more than two design types may emerge. For example, based on the specific values of the dimensions, there may be a stark, solid design type that is largely functionalist and a softer version that uses functionalist elements in a more relaxed and balanced way. Similarly, there may be an exaggerated, deconstructive and disruptive experiential design type and a softer, still expressive, yet less aggressive experiential design type.
3. Research Framework

Which brand images and personalities might be associated with which architectural
design dimensions and design types? In a seminal essay on the semiotics of architecture, the
Italian semiotician Umberto Eco distinguished between what he calls the “denotation” of a
building (its primary utilitarian function) and the “connotation” of a building (its symbolic
meaning) (Eco 1997). Functionalist architecture, with its simplified and proportional forms,
horizontal and vertical lines, and stark, unornamented, rational, and industrial look (Le Corbusier
1986; Wolfe 1981), focuses primarily on the denotative function. In contrast, experiential
architecture, with its eclectic forms, multiple references, and complex, ornamental, and playful
design elements, which are inspired by postmodern ideas (Jencks 1987), emphasizes the
connotative function.

Indeed, functionalist architectural designs gained prominence during early market
capitalism, when the modern corporation began to use rational rules with homogenous analytical
procedures and implemented a model of production, utility, and efficiency (Weber 1922/1978),
resulting in a “disenchantment of the world” (Weber 1922/1978). Functionalism thus stood for
the capitalist philosophy and projected an overall image of rationality and utilitarianism in its
architecture (using denotative elements such as vertical lines and a rational, industrial look).

With the emergence of a postmodern society, society and the organization became
“(re)enchanted” (Jenkins 2000; Firat and Venkatesh 1995). In addition to rational elements,
organizations began to stress hedonic, emotional, creative, and innovative elements (Balmer and Greyser 2003; Gobe 2001), and the emerging experiential designs (using connotative elements and an ornamental and playful look) reflected this change in organizations.

As a result, we expect that people form different brand personality impressions about organizations based on the organizations’ corporate architecture. Brand personality—defined as the “set of human characteristics associated with the brand” (Aaker 1997, 347)—captures trait-like associations and inferences about commercial symbols. Perceptions of brand personality can be formed by any direct and indirect contact that a consumer has with a brand (Aaker 1997; Johar, Sengupta, and Aaker 2005). Research has shown that brand personality impressions result not only from exposure to the brand name and advertising but also can be formed on the basis of product design (Govers and Schoormans 2005), typeface design (Henderson, Giese, and Cote 2004), package design (Orth and Malkewitz 2008), and retail design (D’Astous and Lévesque 2003; Martineau 1958). Upon viewing photos of the interior and exterior of homeowners’ dwellings, respondents were able to infer the personality of the home owners (Sadalla, Vershure, and Burroughs 1987). Similarly, we expect that people infer the personality of an organization when shown an image of its corporate building.

While corporate architecture may affect all dimensions of brand personality, we expect two personality dimensions—competence and excitement—to be particularly relevant and formative in the consumer representations and images of the architectural dimensions and designs. The competence dimension, which is strongly associated with traits such as reliable, responsible, dependable and efficient (Aaker 1997, 351), is conceptually closely related to the ideas of predictability, efficiency and rationality, which following Weber (1922/1978) are essential elements of early capitalist society and inherent values of functionalist architecture. In
contrast, the excitement dimension, which is associated with traits such as excitement, imagination, spiritedness and trendiness (Aaker 1997, 351), appears closely related to postmodernism and is expressed in experiential architecture. Thus, we expect design dimensions and design types to affect corporate personality. In particular, we predict that empirically emerging design dimensions that are characteristic of functionalism (for example, proportional horizontal/vertical lines and lack of elaborateness) and empirically emerging functionalist design types should evoke an impression of competence. In contrast, design dimensions that are characteristic of experiential architecture (such as elaborate designs) and experiential design types should evoke an impression of excitement.

To summarize, the purpose and contribution of this article is to address two interrelated empirical questions. First, which architectural design dimensions are empirically related to which personality dimensions? Second, which design types are related to which personality dimensions? Answers to these questions are not only of theoretical interest; they also provide guidance for architects and marketers. Architects may become aware of the specific marketing impact of their designs on consumers, and marketers may ask architects for certain designs if they intend to project a certain corporate personality.

4. Study 1: Relating Architectural Design Dimensions and Design Types to Corporate Personality

Study 1 examines how architectural dimensions and styles project corporate images and personalities through design. The study was conducted as a quantitative, mixed-sample online
survey with architectural experts and consumers and included 150 buildings from around the world.

Following prior marketing research on visual design that has related design attributes and dimensions of typefaces and packaging to consumer impressions (Henderson, Giese, and Cote 2004; Orth and Malkewitz 2008), we measured specific design attributes (e.g., the color or form of a building) and extracted broader architectural design dimensions (elaborateness or harmony) that are part of a building’s architecture. We then created architectural design types (both functionalist and experiential) and correlated the design dimensions and types with different corporate personality impressions. Because we used a large sample set of buildings, this study enabled us not only to examine design types at a general and broad level as functionalist and experiential designs but also to test whether there are other design types and whether there are, perhaps, subtypes of functionalist and experiential designs.

4.1. Method

A total of 652 architectural experts (i.e., architects and architecture students) evaluated 150 buildings in terms of their design attributes, and 566 ordinary consumers (i.e., non-architecture students) evaluated the same 150 buildings in terms of their corporate personality impressions. The buildings were presented on a computer screen next to the items. Each building was presented individually on the left side of the screen; the respondents scrolled down the scale items on the right. This procedure ensured that the building was in full view throughout the rating process. The experts rated an average of two to three randomly assigned stimuli. The task took an average of 18 minutes. In total, the 652 experts provided 1,934 design ratings. Each building received an average of 13 participant evaluations. Following the methods described by Holbrook & Batra (1987), we assessed inter-rater reliability by computing coefficient alphas for
each of the 64 design attributes. We regarded the expert ratings as the “items” and computed coefficient alphas across the ratings for each attribute. Inter-rater reliabilities averaged .78 with a median of .82, which provides justification for further analyses at the stimulus level.

The non-expert consumers rated an average of three to four randomly assigned stimuli. In total, they provided a total of 1,917 brand personality evaluations. Again, each building stimulus was evaluated by approximately 13 participants, with inter-rater reliabilities averaging .65 (median of .72), which was considered acceptable. As an incentive, the respondents participated in a lottery to win prizes.

Architectural stimuli. To include a broad range of buildings as stimuli, we reviewed architectural publications (Ileonart 2009; Messedat 2005), conducted extensive Internet research and consulted professional architects. An initial pool of 100 buildings was generated. In a pretest, we asked eight architects to rate the stimuli (25 buildings per architect) on 64 building design attributes (see below). Because not all attributes appeared to be well represented by the stimuli and because the variance among the buildings was not sufficiently large, we added another 50 buildings to the initial set. In the actual study, these 150 corporate buildings were presented as two-dimensional, high-resolution images. Company names were not mentioned to avoid confounding architectural evaluations with name-induced impressions. The images were standardized regarding illumination, image details, image section, and size (a width of 340 pixels, a resolution of 72 dpi).

Measurement of primary and secondary design attributes. Architects and architectural critics have described building designs at various levels of abstraction. For the purpose of mapping meaningful architectural design descriptions to personality associations, it appears most appropriate to describe architectural designs at intermediate levels to avoid the extremes of
excessively detailed descriptions (such as the pitch of a roof) as well as highly abstract
descriptions (such as a particular era), both of which may be useful to architects but not to
marketing researchers. Intermediate-level descriptions in the architectural literature include
impression-like bipolar items of design attributes that are linked to physical attributes of
architecture; these so-called primary design attributes include color (e.g., “warm vs. cold”),
material (e.g., “natural vs. artificial”), form (e.g., “technological vs. organic”), and façade (e.g.,
“simple vs. complex”). In addition, intermediate-level descriptions include impression-like
semantic descriptions of the architecture as a whole; these so-called secondary design attributes
include “calm vs. lively,” “exclusive vs. ordinary,” and “urban vs. rustic.” A total of 159
intermediate-level items were initially selected from architectural research (Canter 1969; Devlin
rounds of pretesting with architects and architectural students, the number of items was reduced.
The final scale consisted of 64 items.

**Measurement of corporate brand personality.** Brand personality was measured on a 44-
item trait scale. The scale was broadly based on prior brand personality research; approximately
half of the items were drawn from Aaker (1997). Several items were added from D'Astous and
Lévesque’s (2003) store personality scale. Some items were reworded and adapted, and some
items were added to fit the architectural context.

**Additional measures.** Architectural knowledge and expertise was assessed based on a
self-report measure by Flynn and Goldsmith (1999). The mean competence was significantly
higher for experts (M = 5.18) than non-experts (M = 2.55), p < .001. In addition, experts and
non-expert consumers rated each building on two separate 7-point scales in terms of its
plausibility as a corporate building and its overall aesthetic appeal. The responses of participants in the architecture experts sample that indicated that they were not expert architects were excluded, as were the responses of participants in the non-experts sample that indicated that they were experts in design fields. Furthermore, the responses of participants who indicated high recognition values for a building (an evaluation of 6 or 7 on a 7-point recognition scale and/or a correct identification in an open-ended question) were excluded because building recognition could bias the attribution of brand personality traits.

4.2. Data Analysis

The data analysis was based on procedures previously established in visual design-related research (Henderson and Cote 1998; Henderson et. al. 2003; Henderson, Giese, and Cote 2004; Orth and Malkewitz 2008). All analyses were conducted at the stimulus level. To obtain a score for each stimulus, we computed the mean of each building’s individual ratings. All remaining analyses were conducted using such mean scores. This procedure allows both datasets to be integrated. Hence, the sample size of each analysis is the number of buildings rated by experts and consumers (n = 149). One stimulus was excluded because it had much higher recognition ratings than the other stimuli.

4.3. Results

Creating design dimensions and brand personality dimensions. Conducting two separate factor analyses, we first created broad design dimensions and brand personality dimensions. Using the “elbow” criterion, a five-factor solution emerged for the design dimensions, explaining 62% of the variance. The first factor, interpreted as “elaborateness” based on its highest factor loadings, encompasses mostly secondary design attributes that are perceived as personal, unique, and imaginative. Elaborateness is not considered banal, monotonous or rational but instead is
considered exclusive, striking, expressive, playful, and progressive. On the primary design attribute level, elaborateness is characterized by free-flowing forms and a nonfunctional façade. The second factor, interpreted as “harmony,” is considered harmonious, comforting, and coherent. Harmony is also considered clear and elegant. At the primary level, a proportional building form is the highest-loading variable on this factor. The third factor, interpreted as “natural feel,” is characterized mostly by two primary design-attribute types: materials (natural, absorbing, rough, unrefined) and colors (dull, warm). Regarding secondary design attributes, this factor received high ratings for rustic and cozy attributes. The fourth factor, labeled “transparency,” is considered open in its façade and transparent in its use of materials. This factor is not weightless and graceful. Finally, the fifth factor was interpreted as “colorfulness” because it received high loadings from several color-related primary design attributes.

The factor analysis conducted on the corporate personality traits revealed a four-factor solution, explaining 83% of the variance. The four dimensions that emerged from our research—excitement, competence, stylishness, and naturalness—corresponded closely to Aaker’s (1997) brand personality dimensions; namely, excitement, competence, sophistication and sincerity. In particular, the items with high ratings on the first factor, which was interpreted as “excitement,” referred to arousal- and change-related items (such as exciting, forward-looking, revolutionary, unique, imaginative, lively). The second factor, which was interpreted as “competence,” included items with high loadings referring to reputation (reputable, competent) and reliability (technical, responsible, reliable). The third factor, which was interpreted as “stylishness,” included items referring to attraction and appeal from an aesthetic and high-end point of view (glamorous, elegant, charming, good-looking, upper-class). Finally, the fourth factor, which was interpreted
as “naturalness” (in both a concrete and more abstract sense of honesty and sincerity), included
four items with high loadings (down-to-earth, natural, honest, and real).

Relating design dimensions and personality dimensions. A canonical correlation analysis
was conducted to examine whether, overall, the design and brand personality dimensions are
significantly related. The full model across all functions was statistically significant
(Wilks’ λ = .051, F(20, 465.28) = 33.65, p < .001). Multiple linear regression models were
applied to assess each design dimension’s contribution to the consumers’ impressions, using the
design factors as predictors. All four regression models were significant at p < .001. The
explained variance of the brand personality dimensions was large, with an adjusted R² ranging
between .421 and .583, except for stylishness (R² = .175). The results are shown in Table 1.

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Insert Table 1 approximately here

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Considering the regression coefficients, excitement is most strongly predicted by
elaborateness in design, followed by lack of natural feel and harmony as well as transparency.
Competence is predicted by harmony, lack of elaborateness, and lack of colorfulness. Stylishness
is predicted by lack of natural feel and elaborateness. Finally, naturalness is predicted by all
design dimensions but is most strongly predicted by a natural feel in the design.

Creating architectural design types. Next, we identified architectural design types based
on the similarities of primary and secondary design attributes emerging from experts’ ratings to
see whether functionalist and experiential designs emerge as major architectural design types and
whether there are other design types or subtypes of functionalist and experiential designs.
A two-step cluster analysis, which considers holistic perceptions of visual designs, was used to form homogeneous design types. The optimal number of clusters was determined by Akaike’s information criterion. Based on a log-likelihood distance measure, a four-cluster solution of prototypical architectural designs emerged. The cases were relatively evenly distributed among the clusters.

To facilitate the interpretation of the design clusters, the design factors (or dimensions) were used to describe and interpret the previously identified design clusters. A MANOVA, with design factor scores as dependent variables and the design clusters as the independent variable, indicated that, overall, the design dimensions differentiated the design clusters (Wilks’ \( \lambda = .085, p < .001 \)). Subsequent ANOVAs (all \( p \) values < .01) followed by t-tests provided information on the factor scores that differed significantly from the mean factor score across all clusters. The strongest design differentiators were elaborateness and harmony, while the weakest differentiating factor was colorfulness. Table 2a shows the four architectural design types that emerged from the cluster analysis and the corresponding design dimensions. Table 2b shows the relation between design types and brand personality dimensions, which will be discussed later. Table 2c provides typical examples of buildings for each cluster.

Insert Table 2 approximately here

Cluster 1 is distinct from all other clusters based on its below-average harmony scores. All the other factors are not significantly different from the z-standardized sample mean of 0. As we know based on the factor loadings of the primary and secondary design elements discussed earlier, this lack of harmony means that the buildings in this category are perceived as dissonant,
confusing, clumsy, improvised, and faddish. The buildings are associated with negative evaluations, such as intimidating and threatening. The building shapes are not seen as proportional. This cluster, which included 45 buildings, may be interpreted as representing the architectural design type of “disruptive design” and includes several examples from the deconstructivist movement (see Table 2c).

Cluster 2 is differentiated on the elaborateness dimension, which is above average, and the natural feel dimension, which is below average. These buildings evoke a personal, unique, and imaginative impression, and they are considered intriguing, exclusive, and lively. The building form is free-flowing and nontechnical, and the façades are nonfunctional and seen as three-dimensional. The harmony values are slightly below average. In terms of the primary design elements within the natural feel dimension, these buildings are considered artificial, reflective, smooth, bright, and refined. We will refer to this cluster, which includes 30 buildings, as “expressive design.” Examples include many “blobitectural” buildings, such as the Guggenheim Museum in Bilbao (Spain) designed by Frank Gehry (see Table 2c).

Cluster 3 is differentiated from other clusters by four dimensions—elaborateness, harmony, natural feel, and transparency—with above-average scores. The perception of harmony is particularly high and differs significantly from all other clusters. The design is perceived as harmonious, comforting, and coherent and is clear, elegant, planned, timeless, and protective. The building form is seen as proportional and is also characterized by a natural feel dimension. In contrast to Cluster 2, the buildings in Cluster 3 are perceived as natural in terms of their materials and as rustic and cozy in terms of their secondary design attributes. In terms of the transparency dimension, the buildings are considered open, transparent, weightless, and graceful. We will refer to this cluster, which includes 38 buildings, as “balanced design” because of the
well-balanced, harmonious, and overall pleasing design components of the buildings within this cluster. Examples include the Wieshaupt Forum designed by Richard Meier in Schwendi (Germany) (see Table 2c).

Finally, Cluster 4 has below-average elaborateness values. The building design is impersonal, common, unimaginative, banal, ordinary, and monotonous. The building design is considered geometrically bound and technical in its form, with a functional flat façade design; however, the building design is also considered slightly harmonious. The building impressions include a lack of transparency (that is, closed, opaque, weighty, and firm building impressions) and a lack of colorfulness (that is, a bland, discreet, and monochrome color scheme). We will refer to this cluster, which includes 36 buildings, as “solid design.” Contemporary building examples are again shown in Table 2c.

Moreover, while the experts felt that all design types were equally plausible as corporate architecture (M = 5.18 - 5.53; no significant differences), the experts evaluated balanced and expressive designs (M = 5.28; M = 5.05, respectively) as being significantly more aesthetically appealing than disruptive and solid designs (M = 4.05; M = 4.30, respectively), p < .001. There was no significant difference in the means of disruptive and solid designs or between balanced and expressive designs.

How are the four prototypical architectural designs that emerged related to functionalist and experiential architecture types? It appears that solid and balanced designs are two subtypes of functionalist architecture, whereas expressive and disruptive designs are two subtypes of experiential architecture. This view appears justified based on the visual examination of the buildings and the empirically driven interpretations of the clusters. More importantly, we conducted an additional two-step cluster analysis with a forced two-cluster solution. The first
cluster included 93.4% of the disruptive and expressive architectures; the second cluster included 94.5% of the balanced and solid architectures.

**Relating design types and personality dimensions.** We conducted a MANOVA, using the previously identified design clusters as independent variables and the brand personality factor scores as dependent variables. The MANOVA was significant (Wilks’ $\lambda = .314$, $p < .001$). Subsequent ANOVAs (all $p$ values < .05), followed by t-tests comparing each value against the sample mean, indicated that disruptive design was associated with excitement and a lack of competence (see Table 2b). Expressive design was associated with excitement and a lack of competence as well as with stylishness. Balanced design was associated with naturalness. Finally, solid design was associated with lack of excitement, competence, and lack of naturalness. Conversely, post hoc tests conducted row-wise indicated that the brand personality dimensions of stylishness and naturalness were each clearly associated with one architectural design—expressive design and balanced design, respectively. Excitement was strongly associated with expressive design and somewhat with disruptive design (though significantly less), and both expressive and disruptive designs were significantly more “exciting” than solid design, which strongly lacked excitement. Competence was quite strongly associated with solid design (and somewhat with balanced design) and was significantly different from disruptive and expressive design, which lacked competence.

Similar to the experts, consumers also considered all four designs to be equally plausible for company buildings; differences were not significant. Furthermore, similar to the experts, consumers evaluated the balanced and expressive designs as aesthetically more appealing than the disruptive and solid designs ($M = 4.81$, $M = 4.70$ versus $M = 4.41$, $M = 4.50$). The corresponding contrast was significant at $p < .05$. 
4.4. Discussion of empirical findings

The empirical study identified several relevant design dimensions (elaborateness, harmony, natural feel, and transparency) and design types (solid, balanced, expressive, and disruptive) and showed how they relate to brand personality impressions of excitement, competence, stylishness, and naturalness. The results indicated that there appears to be a trade-off between competence and excitement: if a design was associated with competence, it was not considered exciting, and vice versa. In addition, we presented evidence that expressive and disruptive architectural designs appear to be subtypes of a superordinate experiential architecture, whereas balanced and solid architectural designs are subtypes of a superordinate functionalist architecture. Thus, generally speaking, excitement appears to be associated with experiential architecture, and competence appears to be associated mostly with functionalist architecture.

One might consider functionalist and experiential architectures as a continuum, with solid architecture being the functionalist extreme, followed by balanced design as the moderate version of functionalism, followed by expressive design as the moderate version of experiential architecture, and, finally, followed by disruptive design as the extreme form of experiential architecture. Thus, solid design appears to be starkly functionalist, and disruptive design appears to be excessively experiential. Interestingly, when the design dimensions were used to describe the two extreme designs, the designs were primarily characterized negatively by what they are not: solid design is not elaborate, transparent or colorful and disruptive design is not harmonious. In comparison, the moderate designs were described positively by what they are: balanced design is harmonious, natural, and transparent and expressive design is elaborate.
Both expert architects and non-expert consumers considered the two extreme forms of functionalist and experiential architectures, solid and disruptive designs, to be less aesthetically appealing than the two moderate forms of functionalist and experiential architectures, balanced and expressive designs, resulting in an inverted-U effect of the architecture type on aesthetic appeal. Furthermore, in terms of personality associations, while competence tends to be associated with the two functionalist design subtypes and excitement tends to be associated with the two experiential design subtypes, the two other personality dimensions appear to be associated only with the more appealing design types (naturalness with balanced design and stylishness with expressive design). A similar inverted-U effect has been found in research on aesthetics (Berlyne 1970), where a moderate level of arousal was experienced as being rewarding and pleasant. Furthermore, in prior research on typeface and logo design, moderately compressed typefaces were considered more pleasing and moderately elaborate logos were considered as having a more positive affect than high and low levels of elaboration (Henderson and Cote 1998; Henderson, Giese, and Cote 2004).

To examine whether the concept of a functionalist-experiential continuum (from solid architecture to balanced design to expressive design and disruptive design) that we proposed here holds true and to further validate the proposed inverted-U effect of architectural design on aesthetic appeal, we conducted a second study with a group of prominent, professional architects.

5. Study 2: Qualitative Validation of Architectural Categorizations
5.1. Method

Ten professional architects (nine prominent architects in leadership positions and one city planner) participated in Study 2. Zaltman and Coulter (1995) have shown, across 20 projects, that for qualitative-visual studies, relatively few (average = 5.6) interviewees are needed to generate 90% of the qualitative constructs. We first showed participants groups of five buildings for the four architectural design types identified in Study 1 and asked them to form two superordinate categories. The examples provided to participants have previously been shown in Table 2. Next, we asked participants to articulate the differences between the two superordinate groups that they formed and, subsequently, the differences within each superordinate group particularly focusing on the desired consumer impressions associated with each design group.

5.2. Results and Discussion

In creating superordinate categories, all ten architects included expressive and disruptive designs in one group and solid and balanced designs in another group. The descriptions of the superordinate groups mirrored closely the concepts of functionalist architecture (abbreviated as “FU” below) and experiential architecture (abbreviated as “EX” below), as the following representative examples illustrate:

“[EX] buildings are intentional objects, like sculptures, and monuments. [FU] architecture is simply built mass.” (Interview 4)

“[EX] architectures build identity; they have a clear “face;” a very striking layout, which clearly goes beyond function.” (Interview 3)

“[FU] buildings use classic, archetypical forms, such as a wall and a roof. In [EX] architecture, these differences dissolve: the wall is the roof. It's a hybrid. Moving from [FU] to [EX], the architecture looks more and more like a logo.” (Interview 6)
In addition, respondents’ descriptions of the two groups within each superordinate group confirmed our proposition that there is a continuum, with disruptive and solid designs being polar extremes and expressive and balanced designs as moderate forms. Disruptive design was described as being exaggerated, illogical, disproportional, and arbitrary and therefore was considered to be an extreme form of experiential architecture that is less appealing than expressive architecture. Accordingly, architects expected that expressive design would lead to desirable consumer impressions such as harmony, originality, and dynamics. In contrast, disruptive design was expected to be perceived as cold, egoist, and “harsh.”

“[Disruptive] is unique but in a very dictatorial way. It has nothing to do with the product. It’s just [for] show-off. It’s cold and egoistic. [Expressive] is unique and emotional. It’s dynamic. It’s designed for people.” (Interview 10)

Similarly, solid design was described as precise and serious but also as anonymous and reduced. Balanced design, in contrast, was considered to be precise, serious, conservative, and thoughtful but also inviting, open, transparent, and friendly.

“[Solid] is anonymous. (...) It displays solidity but also stagnation. [Balanced] is similar but somehow more humane.” (Interview 3)

“[Solid] is focused, thoughtful, not egocentric. [Balanced] is a little bit more open, more inviting.” (Interview 7)
Moreover, participants drew inferences about the type of organizations and even industries that might use the different designs and their staff, culture, corporate brand image and personality.

“[Solid] seems like architecture for administrative buildings. For those companies that employ cold and unemotional people. It is simply functional. [Balanced] is for pharmaceutical companies. For companies that try to be innovative and to do scientific research. The buildings have a certain originality. Could also be for a publisher or media company.” (Interview 10)

“[Expressive] may be used by a global, innovative player. [Solid] reminds me of companies located in an industrial area.” (Interview 8)

“[Disruptive] seems to be for corporations that want to attract attention to themselves at all cost. This is very showy.” (Interview 7)

6. General Discussion

6.1. Toward a consumer-oriented design theory

Examining our research in a broader context, Table 3 presents a consumer-oriented model of architectural design, and Table 4 presents the key similarities of design types across design domains (logos, packaging, typeface, and architecture). The content of the two tables may serve as a basis for developing a consumer-oriented design theory that covers architectural design, as well as other design domains.

----------------------------------------
Insert Table 3 approximately here
As shown in Table 3, starting at the top of the table, out of the individual design attributes of buildings, several design dimensions emerge empirically; these design dimensions differentially characterize architectural types. Solid architectural design appears to be closely associated with the traditional functionalism described in architectural theory, which avoids elaborateness in design, transparency and color but has a fairly harmonic structure. Balanced design appears to result from relaxing some of the original principles of functionalism by focusing on harmony, transparency and a natural feel and even allowing some elaborateness in the design. Expressive design appears to represent the postmodern turn in architecture, focused on elaborateness and multiple allusions. Finally, disruptive design represents contemporary deconstructivist architecture, which is intentionally not at all harmonious. These four types may be viewed as subtypes of functionalist and experiential architectures. The core brand personality associated with functionalist architecture appears to be competence and, for its later “balanced” variety, naturalness; the core brand personality of experiential architecture is excitement and, for its “expressive” variety, stylishness. Moreover, as mentioned earlier, there appears to be a trade-off between competence and excitement. Although the two experiential design types (expressive and disruptive) were considered exciting, neither was considered to be competent. Similarly, whereas the two functionalist design types (solid and balanced) were considered competent, the “solid” type was considered unexciting and the “balanced” type was considered neutral in terms of excitement. As shown in Table 4, several consumer responses to architectural designs in the present studies are comparable to consumer responses to other visual stimuli found in prior research. In particular, the design dimensions of study 1 share similarities with the design characteristics established in previous research on logo (Henderson and Cote 1998), typeface
The research within these three design domains established the design dimensions of “elaborateness,” “harmony,” and “natural feel,” as we have done here for architecture. The architectural design factor “transparency” may be considered the equivalent of the design factor “weight” that was identified for typeface and package design. Finally, while “colorfulness” emerged as a separate dimension in the present research, it may be considered as contributing to harmony and naturalness in other visual domains. Alternatively, colorfulness may not be a shared dimension across design dimensions, similar to “flourish” or “compressed,” which emerged only in typeface and packaging design, or to “round,” “proportion” and “repetition,” which emerged only in logo design.

Moreover, as shown in the columns of Table 4, the four architectural design types (disruptive, expressive, balanced, and solid) show considerable overlap with similar types identified in related visual design research. Particularly, based on the visual examples and terminologies shown, in each visual design domain there appear to be functionalist and experiential designs, and even subtypes that show similarities across domains. Finally, the trade-off between competence and excitement found in this research was also observed in some prior design research (Henderson, Giese, and Cote 2004; Orth and Malkewitz 2008).

Such similarities in visual design perceptions across vastly different domains (from small elements, such as typefaces and logos, to products, packaging and large-scale corporate buildings) raise the question of whether there may be a general design language. This design
language may consist of universal design elements related to elements of space, vertical and horizontal lines, and solids and wholes, as discussed in the classic work on visual thinking by the Gestalt psychologist Arnheim (1969). Semiotically, these design elements may form the text and provide the communicative sign language of all visual design. Non-design experts may perceive these elements not individually but collectively along certain common design dimensions and may categorize them into certain design types, of which functionalist and experiential appear to be the most superordinate.

6.2. Future Research on Consumer Behavior and Architectural Design

The general consumer-oriented design theory that we have described herein needs to be further developed conceptually and empirically tested. First, researchers should explore whether the proposed design dimensions, design types and personality impressions can be cross-validated in design domains that have thus far not been empirically examined, such as in interior design, event design and graphic web design. Second, studies should examine the process through which consumer perceptions of designs occur. For example, do consumer perceptions occur in a sequential fashion (e.g., starting with a rather holistic perception of design elements, which are then perceived along design dimensions, then categorized into design types, and finally matched with personality associations)? Most importantly, research should move beyond the study of individual design domains (typeface, logo, product, packaging, architecture as well as interior spaces, event, and web design) and explore whether consumers perceive visual similarities across domains. Such visual similarities across domains may be a prerequisite for developing a visual style for a brand that facilitates cross-functional integration in corporate communications.

In addition, future research should also move from architecture to interior design. Such an extension would allow the examination of the effect of architecture on employees (Raffelt,
Littich, and Meyer 2011), for example, by examining actual behavioral outcomes of functionalist and experiential designs in service settings. Functionalist designs, associated with competence, may result in more confident service by employees, and experiential designs, associated with excitement, may lead to a more engaging service.

Several limitations of the present studies should also be addressed in future research. First, the relationship of design and personality dimensions (for example, competence or excitement) may depend on the type of company. A shipping company or bank company might be considered more solid and functional whereas a fashion or entertainment company might generally be more stylish and exciting. Therefore, the effect of product category and industry should be explored in future research. Second, in our studies, the buildings were presented as images and could not be experienced in their full dimensionality and context. Although there is no reason to expect that a three-dimensional experience of the architecture would change the direction of the effects, experiencing the architecture in this manner might affect the strength of the effects because the relevant architectural design elements that evoke associations may be more salient. However, the context of the architecture, including variables such as crowding, proximity to other buildings, and the area in which the building is situated, may change the direction of some effects. For example, functionalist and experiential buildings may be perceived differently in industrial, urban or rural contexts because of the assimilation and contrast effects between the buildings and their immediate surroundings.

Finally, although not explored in prior research (e.g., Aaker 1997), the personality dimensions of competence and naturalness (or sincerity) associated with functionalist designs appear to be structurally different from the dimensions of excitement and stylishness (or sophistication) that are associated with experiential designs. The former personalities appear to
be rather cognitive-analytical or intellectual, whereas the latter personalities appear to be hedonic or sensory-affective in nature (Brakus, Schmitt, and Zarantonello 2009), which may be an essential, structural difference between these dimensions. Furthermore, another structural difference may be that competence and naturalness is considered as inherently belonging to objects whereas excitement and, to a large degree, stylishness appear to refer to an active relationship between the object and the observer (the object provides excitement for the observer; the object provides style and aesthetic appeal for the observer). Thus, future research should examine whether functionalist design may be perceived and evaluated in an analytical, object-centered fashion, whereas experiential design may be perceived in a sensory-affective and relational fashion.

6.3. Managerial Implications

The present research provides specific recommendations for management and architects on how to use the architecture of a corporate building to project a specific corporate image and personality. Once management has decided on the desired corporate brand image and personality and is working with an architect on the building project, management should ask architects for functionalist designs if they want the organization to appear as rational and competent and for experiential designs if they want the organization to be considered exciting.

More generally, the present article adds a much-needed multi-disciplinary perspective, bringing together the fields of architecture and design and marketing. For a long time, architecture and marketing have developed as separate disciplines, and there has been little communication between them (Ostrander 1974). The current research bridges these two disciplines by presenting consumer-centric and marketing-based views of architectural designs. Our research may thus be viewed not only as a conceptual and empirical model but also as an
inventory that architects may use to better communicate with managers about design.

Conversely, managers can use the inventory to better communicate the intended personality of their corporations to architects. In addition, our research may be useful for city planners who use architecture to position entire cities or city districts, as many Asian and Gulf State cities as well as European (e.g., Bilbao) and U.S. cities (e.g., Baltimore) have done recently. To be sure, image or personality is only one criterion for planning a project for a city; other key considerations in such ventures may include financial and opportunity costs, as well as the sustainability of the project. We hope that the future corporate or public buildings, which will result from collaborative processes between architects, designers and marketer, will use form and function more effectively to create the desired corporate and civic personalities for consumers and citizens.
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Modern Architecture: A Lens Model Approach for Understanding the Aesthetic


Asia: Selecting the Visual Components of Image to Maximize Brand Strength.


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### Functionalist and Experiential Architectures

#### (a) Well-known examples of functionalist and experiential architectures

<table>
<thead>
<tr>
<th>Functionalist architecture</th>
<th>Experiential architecture</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Le Corbusier</strong>&lt;br&gt;Villa Savoye&lt;br&gt;Poissy-sur-Seine, France (1931)</td>
<td><strong>Zaha Hadid</strong>&lt;br&gt;Vitra Fire Station&lt;br&gt;Weil am Rhein, Germany (1993)</td>
</tr>
<tr>
<td><strong>Mies van der Rohe</strong>&lt;br&gt;Seagram Building&lt;br&gt;New York City (1958)</td>
<td><strong>Frank Gehry</strong>&lt;br&gt;Guggenheim Museum&lt;br&gt;Bilbao, Spain (1997)</td>
</tr>
<tr>
<td><strong>Oscar Niemeyer</strong>&lt;br&gt;Congresso Nacional&lt;br&gt;Brasilia, Brazil (1960)</td>
<td><strong>Foster + Partners</strong>&lt;br&gt;High Court of Justice&lt;br&gt;Madrid, Spain (2006)</td>
</tr>
<tr>
<td><strong>Henn Architects</strong>&lt;br&gt;Bugatti Manufactory&lt;br&gt;Strasbourg, France (2005)</td>
<td><strong>Daniel Libeskind</strong>&lt;br&gt;Royal Ontario Museum&lt;br&gt;Toronto, Canada (2007)</td>
</tr>
</tbody>
</table>

#### (b) Contrasts between functionalist and experiential architectures

<table>
<thead>
<tr>
<th>Functionalist</th>
<th>Experiential architecture</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>“BMW Four Cylinders,”</strong> Munich, Germany (1972)</td>
<td><strong>“BMW Welt,”</strong> Munich, Germany (2007)</td>
</tr>
<tr>
<td><strong>Former CCTV Building,</strong> Beijing, China (1987)</td>
<td><strong>New CCTV Building,</strong> Beijing, China (2008)</td>
</tr>
<tr>
<td><strong>Columbia Business School,</strong> New York City (1961, addition 1984)</td>
<td><strong>Planned new building for Columbia Business School,</strong> New York City</td>
</tr>
</tbody>
</table>

**NOTES.**—Underneath each picture are listed: architect (Figure 1a only), common building name, building location, year of construction.
## Table 1

### Brand Personality and Design Dimensions

<table>
<thead>
<tr>
<th>Design dimensions</th>
<th>Excitement</th>
<th>Competence</th>
<th>Stylishness</th>
<th>Naturalness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elaborateness</td>
<td>.634***</td>
<td>-.339***</td>
<td>.221**</td>
<td>.180**</td>
</tr>
<tr>
<td>Harmony</td>
<td>-.153**</td>
<td>.450***</td>
<td>.111</td>
<td>.275***</td>
</tr>
<tr>
<td>Natural feel</td>
<td>-.305***</td>
<td>-.157*</td>
<td>-.313***</td>
<td>.593***</td>
</tr>
<tr>
<td>Transparency</td>
<td>.126*</td>
<td>-.044</td>
<td>-.018</td>
<td>.169**</td>
</tr>
<tr>
<td>Colorfulness</td>
<td>.013</td>
<td>-.277***</td>
<td>-.126*</td>
<td>.307*</td>
</tr>
</tbody>
</table>

### Adjusted $R^2$

|              | .518 | .421 | .175 | .583 |

**Notes.**—Table shows the results of multiple linear regressions. The Watson-Durbin statistics for all regression models are around 2, indicating no autocorrelation of residuals. Since the predictors (design factors) are orthogonal, there are no multicollinearity problems. Significance refers to difference from the sample mean: * $p < .10$, * * $p < .05$; * * * $p < .01$; * * * * $p < .001$. 
Table 2

Relation of Architectural Design Types and Design Dimensions to Brand Personality

<table>
<thead>
<tr>
<th>Design dimensions</th>
<th>Cluster 1, n = 45</th>
<th>Cluster 2, n = 30</th>
<th>Cluster 3, n = 38</th>
<th>Cluster 4, n = 36</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elaborateness</td>
<td>-.06</td>
<td>1.21</td>
<td>.25</td>
<td>-1.20</td>
</tr>
<tr>
<td>Harmony</td>
<td>-.81</td>
<td>-.35</td>
<td>1.00</td>
<td>.25</td>
</tr>
<tr>
<td>Natural feel</td>
<td>-.05</td>
<td>-.56</td>
<td>.52</td>
<td>-.02</td>
</tr>
<tr>
<td>Transparency</td>
<td>-.04</td>
<td>-.11</td>
<td>.56</td>
<td>-.45</td>
</tr>
<tr>
<td>Colorfulness</td>
<td>.17</td>
<td>-.26*</td>
<td>.32*</td>
<td>-.33</td>
</tr>
</tbody>
</table>

(b) Brand personality dimensions

<table>
<thead>
<tr>
<th>Personality dimension</th>
<th>Cluster 1</th>
<th>Cluster 2</th>
<th>Cluster 3</th>
<th>Cluster 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excitement</td>
<td>.25*</td>
<td>.87b</td>
<td>-.00a</td>
<td>-1.03c</td>
</tr>
<tr>
<td>Competence</td>
<td>-.31a</td>
<td>-.40a</td>
<td>.17bc</td>
<td>.55bc</td>
</tr>
<tr>
<td>Stylishness</td>
<td>-.11a</td>
<td>.46b</td>
<td>-.07a</td>
<td>-1.18a</td>
</tr>
<tr>
<td>Naturalness</td>
<td>-.24a</td>
<td>-.22a</td>
<td>.77b</td>
<td>-.33a</td>
</tr>
</tbody>
</table>

(c) Examples of stimuli

NOTES.—Design dimensions and brand personality dimensions are z-standardized (M = 0, SD = 1). T-tests refer to differences from the sample means (bold indicates p < .05; * indicates p < .10). In addition in (b), within each brand personality dimension, different superscripts identify pairs of designs that score significantly (p < .05) different on this factor on the basis of a Tamhane post hoc. Positive numbers indicate positive values on each dimension, e.g., high elaborateness or high excitement.
Table 3

A Consumer-Oriented Architectural Design Model

<table>
<thead>
<tr>
<th>Design attributes</th>
<th>Primary (form, façade, material, color) and secondary design attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design dimensions</td>
<td>No Elaborateness, No Transparency, No Colorfulness, Harmony, Harmony, Elaborateness, No Natural Feel, No Harmony, No Harmony</td>
</tr>
<tr>
<td>Subtypes of architecture</td>
<td>Solid, Balanced, Expressive, Disruptive</td>
</tr>
<tr>
<td>Type of architecture</td>
<td>Functionalist, Experiential</td>
</tr>
<tr>
<td>Sign language</td>
<td>Denotative, Connotative</td>
</tr>
<tr>
<td>Architecture as functional object</td>
<td>Architecture as symbolic object</td>
</tr>
<tr>
<td>Brand personality</td>
<td>Competence, No Excitement, No Naturalness, Naturalness (Competence), Excitement, Stylishness, No Competence, No Excitement, No Competence</td>
</tr>
</tbody>
</table>
Table 4

<table>
<thead>
<tr>
<th></th>
<th>Type 1</th>
<th>Type 2</th>
<th>Type 3</th>
<th>Type 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Architecture</strong></td>
<td><img src="image" alt="Disruptive" /></td>
<td><img src="image" alt="Expressive" /></td>
<td><img src="image" alt="Balanced" /></td>
<td><img src="image" alt="Solid" /></td>
</tr>
<tr>
<td><strong>Logos</strong></td>
<td><img src="image" alt="Unproportioned" /></td>
<td><img src="image" alt="Elaborate" /></td>
<td><img src="image" alt="Harmonious" /></td>
<td><img src="image" alt="Not Elaborate" /></td>
</tr>
<tr>
<td><strong>Product/ Packaging</strong></td>
<td><img src="image" alt="Contrasting" /></td>
<td><img src="image" alt="Delicate" /></td>
<td><img src="image" alt="Natural" /></td>
<td><img src="image" alt="Massive" /></td>
</tr>
<tr>
<td><strong>Typefaces</strong></td>
<td><img src="image" alt="Unharmonious" /></td>
<td><img src="image" alt="Elaborate" /></td>
<td><img src="image" alt="Natural" /></td>
<td><img src="image" alt="Weighty" /></td>
</tr>
</tbody>
</table>

**NOTES.**—Terminology and images are from Henderson and Cote (1998, 16-17) for logo design, Orth and Malkewitz (2008, 71, 77) for product packaging design, and Henderson, Giese, and Cote (2004, 68-69) for typeface design.