The Aesthetics of Design: A Model of Beauty for Designers

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Introduction

Many would agree that Michelangelo's *David* or Monet's *Water Lilies* is a masterpiece of beauty, compelling casual admirers and expert critics alike to gaze in awe. This implicitly Western conception of beauty has evolved historically and culturally along the path of Classical Platonism (i.e., ideal forms), Aristotelian metaphysics (i.e., imitation), and turn-of-the-century emphases on nature and emotion (i.e., the gothic and sublime). These sources provide the lingo to describe the "beautiful". But is it sensible for a digital product or consumer appliance to be characterized as beautiful in the same way? Should that qualification depend upon the relation between a user and the value of her interaction (i.e., experience)? Indeed, how should one articulate beauty in terms of design, supportive of academic and business aims, driving new product development as an "aesthetic imperative"?

While industrial designers have traditionally advocated aesthetics in their work, with evocative forms and materials, recent advances in design philosophy about "user experience" suggest a deeper analysis. Thus, the purpose of this paper is to explore beauty as an experiential aesthetic value, dependent upon user-product interactions. The goal is to offer designers a valuable tool: a systematic, extensible model for describing beauty for design, with powerful insights drawn from other disciplines, including psychology, philosophy, computer science, and architecture.

Beauty: It's All the Rage!

There is no question that beauty has recently become very popular in the design community. Just consider Karim Rashid and Yves Behar, impresarios who have elevated industrial design to fine art, complete with haute couture exhibitions of their stylish concepts at SF-MOMA. Meanwhile, researcher Patrick Jordan extols the need for creating a "pleasurable" human factors, suggesting a closer link between human emotion and usability metrics.[1] And even Donald Norman, once the grand curmudgeon of (im)practical design, has begun advocating "fun, emotional design" to enhance perceived usability.[2] Finally, cultural commentator Virginia Postrel argues there's a "rise of aesthetic consciousness" in the broader American public, thanks to the mainstream success of Target, Starbucks, and Apple.[3]

Clearly, the pursuit of beauty in designing products and services is no longer in question. It has become the de facto expectation of product design. However, while aesthetics becomes more prevalent as a cultural and business element, a key question arises—how does one articulate beauty for design? There is a need to progress the agenda for design aesthetics by refining the way to describe beauty not mired in casual "cool" and "stylish" buzzwords but suggesting legitimacy in office conversation and cultural criticism. This hints at the broader issue of interpreting beauty as a *matter of user experience*.

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[1] Jordan, P. *Designing Pleasurable Products: An Introduction to the New Human Factors.* CRC Press, 2002.

[2] Norman, D. *Emotional Design.* Basic Books, 2003.

[3] Postrel, V. *The Substance of Style: How the Rise of Aesthetic Value Is Remaking Commerce, Culture, and Consciousness.* HarperCollins, 2003.

Framing the Experience

A glance at existing products, environments, and living patterns reveals *quality of experience* is fast becoming a central point for designers. Recent readings confirms this: Rothstein's novel (x4) methodology for discovering user experience "moments" is quite timely for industrial designers.[4] Carnegie-Mellon scholars Forlizzi and Ford provide a framework supporting experience goals in product design.[5] Nielsen and Norman often underscore the variety of products hampered by unhealthy ergonomics, ugly aesthetics, or improper interfaces.[6] And Pine and Gilmore offer a robust business case for designing experiences, as the next major economic value offering.[7] Clearly, the connection between industrial design and user experience is becoming unavoidable. Consequently, aesthetic value can and should be part of the industrial designer's effort, including her ability to achieve a "total integrative experience". To frame this discussion, I offer the following hypothesis of experience:

Experience involves a "subjectively interpreted, continuous stream of psychological and physical phenomena brought into awareness through an interaction or communication".[8] This depends upon the following elements:

- The relationship between a person and an object
- The process of being drawn to that object and engaged on multiple levels: physical, behavioral, and emotional
- The value that arises from the attractive encounter

These essentials may be labeled broadly as *attention*, *attraction*, and *beauty*; additional insights from other disciplines will deepen our understanding of beauty as a matter of experience. Regardless of labels, what emerges is the central theme of an "aesthetic imperative", a cultural initiative predicated upon designers to humanize technological expressions (e.g., computers, systems, services, etc.) so that human activities (e.g., communication, interaction, etc.) are satisfying.[9] In this paper we will explore the notion that beauty—an emergent value of human attention and emotional attraction—can help designers plan and craft products that offer a rewarding, memorable encounter. To begin, a model is offered to provide the language to systematically and intelligently understand beauty as an experiential phenomenon.

The Model: Deconstruction and Examples

What follows is the deconstruction of a model of beauty based upon the writings of Dewey, Cziksentmihalyi, Gelernter, and Gropius (philosophy, psychology, computer science, and architecture, respectively). Several product examples will be described to reinforce the four interpretations: products that invite personal fulfillment, that promote lifestyle enhancement, that convey functional elegance, and that engender spiritual/cultural harmony.

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[4] Rothstein, P. 2001. "A (x 4): A User-centered Method for Designing Experience." *IDSA 2001 National Education Conference Proceedings* 13. (winter).

[5] Forlizzi and Ford. 2000. "The Building Blocks of Experience: An early framework for interaction designers." *DIS2000 Conference Proceedings*. (summer).

[6] Norman, D. 1999. *The Invisible Computer*. MIT Press.

[7] Pine and Gilmore. 1999. *The Experience Economy.* Boston, MA: Harvard Business School Press.

[8] Gajendar, U. 2001. "Design for Beauty: Exploring the human experience of interaction design." *Master's Thesis*. School of Design, Carnegie Mellon University.

[9] Gajendar, U. 2004. "The Aesthetic Imperative." Austin, TX: Information Architecture Summit 5 at Austin Convention Center.
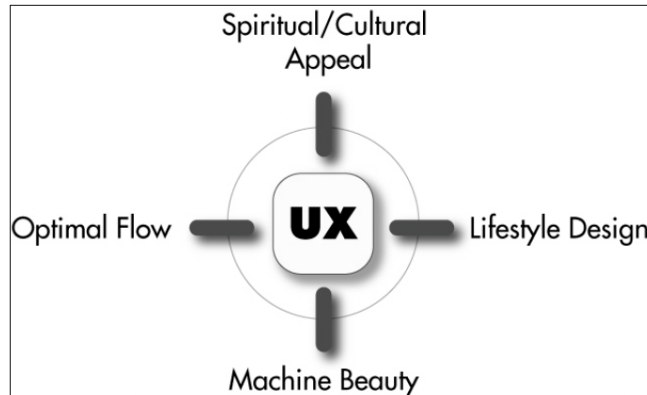
Figure 1. Four Insights into Beauty
This model should serve as a tool to guide discussions about a product's aesthetic value, centered upon user experience. Avoiding the temptation to declare a grand theory of beauty, this model offers insights into beauty as a matter of experience, to help drive the aesthetic imperative for industrial designers, whether in the classroom or in a client meeting. Please note that no one insight is preferred, nor are they exclusive of one another in evaluating a product as "beautiful"

Optimal Flow : Mihaly Cziksentmihalyi

Csikszentmihalyi is a social psychologist who regards human-product interactions as a pathway to personal achievement amid daily concerns for speed, efficiency, and materialism, which may engender a disconnected way of life. His theory of optimal experience—or flow—is predicated upon self-directed efforts to focus one's attention. This concern for attention suggests useful design possibilities. Using Csikszentmihalyi's language and approach, one may consider designed artifacts as systems of interaction, whereby the invitation to participate evokes a harmonizing response. The artifact expresses its "rules of engagement" of how to approach and use an object through its form, all directly perceived by one's attention. Such rules may include the visual semantics and product affordances that convey a manner of use. Thus, these rules shape the experience, or attractive relationship, between the user and artifact. The user subsequently enters a process of participation in which flow conditions may emerge, if there is a suitable matching of goals, skills, and feedback for the user. The proper balance enhances the utility, usability, and desirability of the product overall.[10]

Everyday Examples

A flow encounter of profound personal fulfillment is commonly associated with games, movies, puzzles, and stories, particularly those that offer serendipity or playfulness. There is an immersive quality in which the user becomes fully engrossed in the form and activity. Emergence from the experience often yields a renewed understanding of the event, which may lead to repeat visits.

For instance, the classic computer game *Myst* was purposefully designed to lose the user in a visually absorbing virtual environment complete with increasingly challenging puzzles to unlock levels of gameplay. A similar assessment could be made for board games like *Risk, Monopoly*, or *Trivial Pursuit*. The player may lose her sense of time while accomplishing engaging but fun game tasks along the way.

On the web, e-commerce sites like *ebay* or *amazon* offer extensive inventory information (as well as community links, wish lists, commentaries, etc.) readily visible and clickable. These content-driven aspects can provide a nice opportunity for site visitors to become "lost", while shopping and browsing, even perusing items not initially sought (i.e., peripheral links via serendipity). The user interfaces offer levels of complexity for different kinds of users (i.e., novice or power), which supports varying navigation styles.

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[10] Csikszentmihalyi, M. 1991. *Flow: The Psychology of Optimal Experience*. New York, NY: Harper Perennial.

Movies offer very rich examples of narratives that seize a person's attention for extended time periods. On a smaller scale, Vodafone's online scenarios of mobile computing provide conceptual narratives that captivate a user's imagination with stories of an upcoming digital bonanza. Clicking through the Flash-driven interface, the user can learn about assorted personas and anticipated digital experiences.

Lifestyle Design : John Dewey

John Dewey was an American pragmatist philosopher focused on the process of interaction between a conscious being and her environment—the "sustaining or frustrating" conditions that define the activities of a person, such as the tools, spaces, materials, or other people. Dewey shifted the emphasis of interaction from a reflexive communicative exchange—such as flow—towards an outward relationship of growth and renewal. Every experience has a structure and pattern, found in a rhythmic "doing and undergoing". Dewey was especially concerned with recovering aesthetic experiences, which feature a dynamic integration of thought, action, and emotion into a unifying whole, that he termed "an experience". Dewey avoided the term *beauty* due to its Romantic origins, but he pursued what may be construed as *experiential beauty*—a harmonious balance of the maker's intent and the perceiver's expectations towards a meaningful consummation of movement of emotion from inception, carried through development, and ending with an artifact that lives in experience.[11]

Everyday Examples

With the famed Walkman, Sony pioneered what may be called "lifestyle design", where the artifact operates within a certain aspect of one's life, changing behaviors, attitudes, and perceptions, exemplifying Dewey's notion of experiential beauty.[12] What transpires is a rich dynamic among the user's altered perception of not only the product, but also of herself and of the activity. The Walkman series was extended for athletes (the Sports line), audio enthusiasts (the Freq line), and ordinary consumers in a variety of contexts. The lines are bound by the Sony approach to unify emotion with performance, a merging of sensual beauty and functional power, to achieve a pleasing artifact and user experience. Former head of The Sony Design Center, Nobuyuki Idei, declared, "The design should draw our hand, create a fire in the mind and make us smile as we pick it up".[13]

Likewise, Apple's recent slate of multimedia "i-products", such as iLife, iTunes, and iPod, exhibit Apple's agenda of enriching consumer lifestyles with "cool" and seductive products, at home, the office, and (with the iPod and Airport), anywhere on the go. The seamless interoperation among iLife's applications (iPhoto, iMovie, iDVD) with the iPod and iBook/iMac hardware suggests how smart, stylish digital products can enliven ordinary activities—whether it's traveling, cooking, writing, or even waiting for a bus.[14]

Machine Beauty : David Gelernter

For computer scientist David Gelernter, "machine beauty"—the union of power and simplicity in innovation—is key to developing products that helps users "break free" from the confines of a

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[11] Dewey, J. 1980. *Art as Experience*. New York, NY: Perigee Books.

[12] Gajendar, U. 2001. "Design for Beauty: Exploring the human experience of interaction design." *Master's Thesis*. School of Design, Carnegie Mellon University.

[13] Kunkel, P. *Digital Dreams: The Work of the Sony Design Center.* New York, NY: Universe, 1999.

[14] Gajendar, U. 2004. "The Aesthetic Imperative." Austin, TX: Information Architecture Summit 5 at Austin Convention Center.

machine's internal logic towards a "creative symbiosis" between the user and her activity.[15] In other words, the device should be an extension of a user's intention to accomplish a task, like stapling papers, dialing a phone, washing clothes. A loss of awareness of the structure and mechanics results, leading to a direct engagement of the material, akin to Cziksentmihalyi's "illusion of disembodiment" and a singular unity of being. However, such beauty does not live in the environment of one's lifestyle or absorbing one's attention but in the execution of the logic of the product's functions in relation to a user's activities. Does the product enable her to perform her task, so that it does not become the burden her attention? To achieve functional elegance, there needs to be a transparency of use and directness of effect, turning the product and ensuing experience into something simple yet empowering.

Everyday Examples

Target's Michael Graves' collection of kitchen utensils, OXO's Good Grips series, and Google's search interface all represent inspired examples of simplifying form and function into paragons of utility. Each features pleasing styles, and functional elegance of tools that serve specific, dedicated tasks with minimal learning curve. The OXO potato peeler, a hallmark of design ingenuity, combines simplified form with detailed attention to material, texture, and shape to provide a powerful and fun utensil. Similarly, the original PalmPilot (borrowing lessons from Apple's Newton) distilled information management into four discrete essences: calendar, to-do list, memo, and address book with a lightweight form and intuitive interface, based upon pen input. The Google search interface is the ultimate of simplicity with a lone field and a button and some branding. In these cases, the functional value is self-evident, amplifying the user's body and mind, transcending the objective materials towards positive experiences.[16]

Spiritual/Cultural Harmony : Walter Gropius

Finally, the fourth view takes a holistic look at the relationship between a user and her product and how that impacts personal beliefs, cultural values, and even a sense of "spirit". This is drawn from Walter Gropius' idea of a "scope of total architecture". Gropius, was the influential founder of the Bauhaus, based upon principles of integrating art and design, to inspire industry with clean, rational forms. Gropius described his vision of design planning as "the art of coordinating human activities towards a cultural synthesis," a reunification of the self with the natural environment, beyond the perils of mechanization.[17] Amid the "atomizing effects" of an increasingly mechanized society, there is a segmentation of human lives. Therefore, Gropius' approach sought to achieve balance, order, and unity within one's life, collectively and personally. There is an internal movement that connects a person to something greater than herself, perhaps ideals that speak of a cultural synthesis. She may feel like a member of a community that elevates what has been experienced into something personally intimate yet outwardly relating to a collective whole. To design products that inspire the human spirit and awaken cultural connectedness is a powerful variation of experiential beauty.[18]

Everyday Examples

The Showtime cable brand motivates the viewer with dramatic movements of type, color, and imagery to communicate the idea of "no limits", the company's tag line. The result is evocative and haunting, living in the mind of the viewer after initial contact, stirring a desire to see more.

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[15] Gelernter, D. 1998. *Machine Beauty: Elegance and the Heart of Technology*. New York, NY: Basic Books.

[16] Op. Cit.

[17] Gropius, W. 1955. *Scope of Total Architecture*. New York, NY: Harper and Row.

[18] Gajendar, U. 2001. "Design for Beauty: Exploring the human experience of interaction design." *Master's Thesis*. School of Design, Carnegie Mellon University.

The brand mark thus identifies a certain media culture and asks the viewer to join through sensorial appeals to various aspirations she may hold, relating to the hope to transcend ordinary limits with new kinds of cable entertainment.

From a different field, Daniel Libeskind's Freedom Tower concept and master plan is inteded to regenerate the devastated area of Ground Zero in New York City. This bold concept embodies patriotic ideals of nationalism as well as resurrection over tragedy. The main spire's 1,776 foot height symbolizes this nation's birth and prevalence over violent transgressions of this nation's deepest values. In doing so, the startling design elevates the personal spirit, much like the Gothic cathedrals of the Middle Ages, while connecting to a collective need for healing.

The Model's Implications: School and Work

This model should serve as a basis for fostering vital conversations about the aesthetic value of designing new products, services, and experiences. Consequently, beyond the philosophical metaphors, there are notable implications for both design education and practice.

For the classroom, educators may use this set of insights to foster critical dialogues about a design, particularly its sensual, behavioral, and reflective qualities. By nurturing a critical language for discussion, instructors are enabling a new workforce of designers who can speak confidently about a typically nebulous topic, helping them become productive influence agents in an organization. In the end, the hard part about design is not necessarily solving the problem, but persuading key stakeholders about the value of a solution. By giving students the tools to shape a conversation about aesthetics, educators will be helping usher the aesthetic imperative in a variety of organizations. The model also provides points of reference for coherent debates about features, branding, and the experiential quality as a whole, backing "trendy" buzzwords with substantive rhetoric.

In the workplace, spreading the value of beauty in design will involve educating non-design stakeholders, armed with their own competing demands, usually centered on profit, customers, and feasibility. Aesthetics is likely to be considered a "nice-to-have" filed away for some vague future date. However, designers can help ensure that consideration of beauty is not abandoned, with the following action items:

- Create high quality, well-crafted deliverables. Nothing indicates a commitment to beauty like putting forth visible, tangible effort into internal deliverables, which can inspire external designs.
- Make aesthetic character a user experience goal. Establish this in the group mission statement or project objectives brief as its own unequivocal statement, using specific terms offered by this model.
- Raise questions about beauty and emotion at internal reviews. This will encourage non-designers to consider its merits and make them notice your commitment.
- Change the misconception that beauty is just "surface" for visual designers; beauty is everyone's concern, from engineering to marketing to business development to quality control. How is the corporate culture and ideological appeal of your brand supported by the aesthetics of design?
- If designing international products, consider broad and local cultural contexts and value systems. How are the reflected in our product affordances, brand, and marketing?

Finally, this model helps legitimize discussions of beauty by providing a systematic, thoughtful construct, relating to repeat sales, emotional responses, and positive customer testimonials. This will be deemed valuable to the business of the company. The framework proposed here is an

important beginning to what will be a lifelong strategic conversation, in both academia and industry, about the deepening role of aesthetics in designing experiences.

Final Thoughts

The underlying goal of this paper is to a) explore beauty as an experiential aesthetic value, dependent upon user-product interactions, and b) offer designers a valuable tool—a coherent, extensible model for describing beauty, with insights drawn from other disciplines. In doing so, the reader should walk away with the following:

- *an expanded perception of design beyond the physical artifact towards the aesthetics of the user's experience.*
- *a systematic structure for describing user experience in aesthetic terms with business implications.*
- *a reminder of design's obligation to provide an experience that is rewarding, empowering, and worthy of sharing and re-living.*

Ultimately, industrial designers and their peers, including educators, should be increasingly concerned with aesthetics as the environment of human experience becomes rapidly shaped by digital, networked, multifunctional products that influence lifestyles, values, and cultures. Humanizing technological expression must be a critical goal and duty of designers, as part of an overall effort to make life enjoyable and meaningful in everyday experience—the aesthetic imperative, described above. To combat the ugliness of dehumanizing, alienating artifacts that deprive humans of their ideational, cultural, and personal aspirations should be the driving motive for those who wish to create beauty in design.[19] The model offered here can help advance that agenda.

The guiding ideas behind the model are continually in progress, to foster productive debates in design practice and education. Constructive feedback is welcome and appreciated.

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[19] Ibid.