Chairs, Cars, and Bridges

Teaching Aesthetics from the Everyday

It is very typical for students in K-12 art education to study aesthetics based on artistic objects. Artistic objects, however, need not be the sole source for aesthetic investigation. Designed objects that surround us daily could also be used in discussion of aesthetic concepts. Consider the variety of chairs you encounter in a typical day.

The ubiquitous presence of chairs makes it easy to take them for granted. But take a moment to study a chair. In addition to the functional purpose of providing a resting place, the chair may also be imbued with social significance. It may sit at the head of the dinner table to indicate the prominence of the host or it may be an upholstered, comfortable living room chair that welcomes guests. The chair may be in a courtroom where a judge is seated as an indication of authority or a throne for royalty as a symbol of hierarchy and power. It may also be a simple wooden classroom chair intended to keep students uncomfortable enough that they pay attention rather than nap. There is a substantial difference in status between a simple wooden chair and a throne made with expensive materials and embellished with decorative elements. Laden with purpose and suggestion, the properties of a designed object imply meaning.

Crilly, Moultrie, and Clarkson (2004) synthesize ideas about the cognitive response of aesthetic thinking. The authors identify three classifications that describe cognitive response: *aesthetic impressions, semantic interpretation,* and *symbolic association.* The aesthetic experience results from the perception of the qualities that appear attractive or not (aesthetic impression), what a designed object says about its function, mode of use and qualities (semantic interpretation), and what the object indicates about the personal and social significance attached to the design (symbolic association). In a discussion about aesthetics, it is useful to discuss parts of these classifications.

Because people use designed objects on a regular basis, it is easy for them to understand when something functions properly. Beyond the functional qualities of an object, we respond intuitively, in some cases, or more conditionally, in others, to the aesthetics of objects. In the form and function of a designed object, what works well does not necessarily look good and enhance life (Papanek, 1984). Consider early television sets of the 1950s that, to some, looked like clumsy, out-of-place objects located within the same space as attractive living room furniture. Despite the fact that the TV fulfilled its function, to some, it did not do so as an aesthetically appealing form. A well-designed functional and aesthetic object will enrich the environment, foster communication, hold attention, and/or add emotional depth to an experience. Teaching students about aesthetic impressions, semantic interpretations, and symbolic associations, I suggest, will allow them to

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better understand a designed object and to determine criteria for evaluating its worth. Such a process centers on visual appearance, or form, as well as on the purpose it serves, or function. This method draws on sources external to the object, which are important in learning about the role objects play, the environment from which objects emerge, and the influencing factors that elicit response.

How Aesthetics Fit into the Seven Components of Design

To frame the discussion about design aesthetics, it helps to understand the seven components of design as defined by Victor Papanek (1995): use, methods, need, standards, association, milieu, and aesthetics. Using the example of cars, I will define each design component. Of these components, the first three deal with function that is primarily the purview of the engineer, while the last four relate to aesthetics and are linked to the overall look, feel, finish, and style, which are more common to the domain of the designer. There is value in considering divergent aspects because design is complex and multi-layered. The following definitions with examples demonstrate how these aspects may apply:

1) Use: How the designed item works when used as a tool, communication, symbol or combination of these. Example: The primary use of a car is a means of transportation. Additional factors that determine the design of the car may include whether it will be a sports car or family car; used off-road as a utility vehicle or on-road to haul few or many passengers; a luxury statement; environmentally efficient, and so on.

2) Method: The techniques, tools, materials, and processes needed to make a product. Example: Car designers address issues related to aerodynamics, ergonomics, safety, technologies, production, materials, and design for recycling, among others. The early "horseless carriages" were wooden bodies on metal sub-frames until manufacturing processes allowed aluminum and steel to replace wood. Assembly-line mass production, a process started in the 1920s, has changed little in the past 85 years. Materials for the chassis now include carbon-fiber, graphite, silicon carbide, and polymers (Sparke, 2002). The modern automobile was a potent symbol of this technological revolution (Sparke, 2002).

At this time in history, the global automotive community is aware of the need for recycling. Laws related to recycling have been enacted to diminish the discarded cars and tires that fill landfills. Designers respond to recycling through a new capability to design for both assembly and disassembly (Seshasi, 2004). As oil, a nonrenewable resource, is being depleted or as oil-producing companies control production to the public's disadvantage, it is becoming necessary to manufacture cars that are more efficient or use other energy sources. Lighter weight materials are used in cars because less wind resistance boosts gas mileage. Hybrid cars were developed to increase fuel economy and there is a significant research effort being made to test the safety of hydrogen-powered vehicles (Stoffer, 2005).

3) Need: What is required to survive, to express an identity, or to reach a goal. Henry Petroski (1992) explained that the form of products may be perceived as having shortcomings based on a *need* for improvement, but it is really a *want* for change. Needs and wants are different. Genuine need relates to physical, economic, psychological, spiritual, social, technological, and intellectual necessities of a human being. Wants and desires are usually based on fads and fashion. For example, beyond transportation, the need for a car varies. A small car may be needed to drive short distances to work but larger, sturdier cars are needed for highway driving. Cars with large trunks or cargo areas are needed to haul objects and individual seats with seat belts are needed for each passenger. The primary goal is to purchase a car that is in one's price range and safely transports passengers, beyond that one's wants and desires are being satisfied. Luxury satisfies wants and desires as cars are equipped with high tech, computerized accessories, faster speed, deluxe materials, and a corporate identity.

4) Standards: The expectations a culture has for a product. Standards shift according to new technologies, social changes, and materials (Margolin & Buchanan, 1995). Example: At the onset of World War II the mass produced automobile had become central to modern life in the Western industrialized world. There was a shift in thinking—from a car being looked at as a machine prior to 1938, to a car as a symbol of democracy once World War II had started (Sparke, 2002). Current thinking moves beyond the car as a democratic symbol

to more of an entitlement, with expectations that all people should be able to have a car and it should run maintenance-free for long periods of time. A recent statement from a *New York Times* advertising supplement reflected this thinking in stating that Americans expect every car should run like new for 100,000 miles (Taylor, 2004). Two other examples exhibiting standards or values are present in those who promote "buying American" with the justification that it helps to strengthen the economy or shows patriotism. For a high school student to own a car is not only a convenience but also a status symbol. Those examples demonstrate that expectations emerge from informal standards created in a culture.

5) Association: Deep-seated drives that are part of being a person and their reactions that reveal these drives. A representative example of association is shown through deep-seated responses to nature. Example: Curves and rounded shapes imply nature because angles do not exist in nature, angular shapes suggest machine-made. Appreciation of the living world is evident in the oldest designs (Conran, 1996), such as carved legs resembling those of animals on chairs or wall coverings with flora motifs, as seen in the earliest Egyptian and Greek societies.

The streamlined raindrop shape found in cars originating in the 1930s was the most streamlined shape found in nature (Jordan, 2004). The early experimenters of aerodynamics used fish as inspiration, watching their efficient movements through water and applying the sleek shape to cars. My daughter recently commented to me that the front of the newly resurrected Volkswagen Beetle looks like a simplified version of a baby's face. Upon investigation, I agree that the headlights represent the eyes, the rounded body looks like cheeks with a short forehead and the fender or grill looks like a smile. This may appeal to a deep-seated response toward a love for babies or to a friendly, smiley face. Another example to a deep-seated response relates to certain colors, such as the color red, which on a car reminds us of speed. Colors may strike a chord, awaken a memory, or suggest something soothing or cooling (Conran, 1996).

6) Milieu: A reflection of the times and conditions from which the design emerged. Example: In the 1920s, the automobile became more sophisticated but still had the square look of a wagon (Jordan, 2004). Then came the streamlining of airplanes so they would move through the air with efficiency. Streamlining was then applied to cars, discarding the boxy shape, to add increased speed. By the 1930s, the car evolved into a streamlined teardrop shape similar to an airplane. After World War II car designers adopted a futuristic look with rocket-like fins added to the rear of the car. During the 1950s car styling was used for conspicuous status. At that point in history, the connection between automobiles and contemporary popular culture was most evident (Sparke, 2002). Fears about pollution and safety in the 1960s, followed by an oil crisis in the 1970s, started a movement to make cars as functional as possible. This changed the innovative and optimistic styling of the 1950s to a less showy, utilitarian look called the "razor edge" in the 1980s (Sparke, 2002). Currently there are "retro" style cars being produced that are reminiscent of the 1960s or 1970s, because they "look back" at a time when the baby-boomers were young drivers and address the growing market of classic car enthusiasts (Conran, 1996). Presently in new car design, there is a return to considerable interest in style combined with simplicity and compactness for efficiency (Sparke, 2002). The appearance of a car is a representative image of the times (Petroski, 1992).

7) Aesthetics: The use and arrangement of shapes and colors that create an object that moves us, delights us, enhances life, and/or gives meaning. Often this is called *style* when referring to products. Example: In spring, 2005, the Boston Museum of Fine Art organized an exhibition entitled "Speed, Style, and Beauty: Cars from the Ralph Lauren Collection." The cars ranged from a 1929 Blower Bentley to a 1996 McLaren F1. In an interview with the collector and fashion designer, Lauren mentioned "one of the criteria for beautiful design is that it never looks dated" (Kauronen, 2005, p. 2). The "classic look" or style is suggested when an object looks as good today as the day it was designed. Csikszentmihalyi (1995) stated that if the system of symbols used in the design is relatively universal to the culture in which it was created then it will be judged as classic. It is hard to define the qualities of timelessness but in cars there are certain styles, such as the 1957 Chevrolet, 1961 Mustang, or the 1954 Porsche, that are considered enduring (Papanek, 1984). Other examples include descriptions of cars as aggressive looking, sensuous, bold and powerful, sleek and sophisticated. Standards of efficiency, safety, road-worthiness, and reliability are expected in automobiles today, which leaves style as the defining factor for differentiating one car from another (Conran, 1996).

Appearance or Style and Preferences or Taste

Currently American society places a great deal of emphasis on surface quality or appearance, often called *style* (Postrel, 2003). Fashion is one example. The fashion industry prospers by offering new styles each season, playing on people's tendencies to seek variety and reduce boredom. A common kitchen object, the toaster, is another case in point. The inner working mechanisms of the toaster largely remain the same. There is little retooling or rebuilding, but the outer color or knobs change. The benefit to the manufacturer is that it is less expensive to make surface changes or add embellishments than change the operating mechanism (Papanek, 1984). New toasters sell because resurfacing may be just as satisfying to a public that demands change, even if the mechanism is faulty.

Industry in a capitalist society promotes the idea that products showing age or wear and tear need to be replaced. The thinking that is promoted is that objects are to look new; once a deformity is identified, if at all possible, another needs to be purchased. Victor Papanek, a designer, cautioned that " neither a creature or product can survive long if its skin and guts are separate" (Papanek, 1984, p. 293). The personal choices we make about our style define who we are to ourselves and to others and individual choices place us into a particular category. Thinking is not advanced, for the user or the designer, if an insignificant change is made (Caplan, 1982).

We may come to believe that things are in good taste or in bad taste by the psychological conditioning that occurs in one's sphere of influence. Ideas of what is beautiful or ugly evolve and develop depending on the values of a particular time and place. People select objects based on their taste and exercise their opinion about other people's tastes. These convictions determine how we shape our identity. Making aesthetic judgments is a normal part of human social interaction, a sign of the importance we place on looks and touch (Postrel, 2003).

Aesthetic Experience

In discussing product aesthetics it is important to talk about aesthetic experience, which relates to the cognitive response based on the perceptions that regard an object as pleasing or not (Crilly, Moultrie, & Clarkson, 2004). Aesthetic experience refers to the judgment a person makes about the design based on the information perceived through the five senses and an inner intuitive sense (Crilly, Moultrie, & Clarkson, 2004; Papanek, 1984). The aesthetic experience may involve viewing something in a new way; provoking an instinctive response that promotes well-being; reflecting personal goals and a hope to fulfill those goals; and/or leading to deeper knowledge.

Some authors who have written on the topic of aesthetic experience believe that it may be based on a set of societal rules but there are not any universal principles adhered to by all societies. Many historical examples in art and architecture are based on aesthetic principles that emphasize symmetry, similarity, repetition, proximity, and geometric proportion (Lewalski, 1988; Scott, 1951). Crozier (1994) suggested that it is difficult to believe in universal aesthetic principles because of demonstrable differences between people's judgments. The visual appeal of objects is highly influenced by historical, social, economic, and technological factors. The standards accepted in one culture may account for cultural taste and may not be appreciated by other cultures.

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Questions for the Study of Aesthetics

The 1990s marked an increase in design awareness in the media, in businesses, within the government, and in the greater culture (Blauvelt, 2003). The plethora of design choices demands a responsiveness to everyday surroundings and a rethinking of the assumptions regarding what is possible and why. Questions that could be used as a guide for discussing the aesthetics of designed objects focus on appearance and experience. In the seven components of design that were described earlier, the first three: use, methods, and need, correlate most closely with function. The concept of function has important relevance to design, so by asking questions such as the following that focus on function, a foundation is provided for later discussion of aesthetic factors. *Does the designed object work well for the specific task for which it is to be used? What materials, processes, and tools are selected for creating the object or system and why? Are the materials and processes healthy for the environment and humans? Was the object or system created for a need or for a want or desire?*

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The aesthetic ideas common to design are related to those in art. Marilyn Stewart (1997) discussed aesthetic ideas that include viewing aesthetics through the context from which the object emerged, the creation of and responses to the created object, the role of the object in society, and the standards for judging the object's significance and interpreting its meaning. There are questions that could assist students in discussing aesthetics and design, which extend beyond the idea of a trendy style or simple appearance. Questions such as the following may push student's thinking into areas of psychology, biology, sociology, and elements of art: *What are some characteristics in a designed object that reflect deep-seated associations? What things in nature may have influenced the design of an object and why? What are the symbols that suggest the context from which a design emerged? What is the difference between good and bad design?*

Final Example and Conclusion

A final design example will be used in an attempt to tie together the ideas that have been presented in this article. The bridges designed by Spanish architect Santiago Calatrava are considered beautiful because he accomplished a remarkable integration of function and aesthetics. A Calatrava bridge is a visual statement that enriches the environment because it blends with the surroundings yet reduces boredom through novelty. Calatrava's bridges interact with the surroundings and the seasonal changes (Calatrava, 2005). They are designed with such referential features as seagulls or ship masts. The water over which the bridge spans often appears to blend with the materials, colors, and shapes of the bridge itself. The materials and processes allow for the construction of sturdy, well built features that lessen fears of using the bridge, thus reducing stress. The design suggests the milieu or historical time it was created through the use of technologies and materials available when it was built and the standards of the culture in which it existed. Calatrava's bridges are an elegant design solution because a complex problem is simplified in such a way that adds beauty and transforms a common task of crossing a body of water into an extraordinary, life-enhancing experience.

Students, as consumers and possible future designers, should be exposed to the concept of design as functional and as an extension of human capabilities that allows us to expand our physical limitations. Design function and the integration of aesthetic factors enrich life; they support the values of a community or an individual by making tangible examples of ideas and beliefs of the community or individual.

The framework of the seven components of design may be used to teach about aesthetic impressions, semantic interpretations, and symbolic associations. Aesthetic choices are unspoken powerful communication tools that relate messages to others through the senses. Creating an awareness of the influences that play on our thinking and on our decision making processes may guide us to make purposeful choices to improve the quality of our lives.

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