THE ART/DESIGN EXCHANGE REVITALIZED

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Abstract
Current trends in new technology and contemporary practice are a strong justification for a renewed exchange of ideas between the increasingly divided fields of studio art and product design. This paper argues that both disciplines can benefit when there is a cross-pollination of processes and ideas between studio art and design. These areas of benefit are divided into seven sections covering the following categories: Shared Fundamentals, Thinking by Doing, Adding Value, Drawing as Thinking, 3D Visualization of Things That Don’t Yet Exist, Rapid Prototyping = Rapid Sculpting, and Historical Context & Relevance Beyond the Functional. With an increased interplay of ideas and methods between the art and design disciplines potential advancement in each can take place.

Introduction
In a competitive and rapidly changing world the available tools and methodologies used by practicing artists and designers continue to grow. This can create increasing pressure to specialize these areas of study into further divided disciplines, yet the contemporary environment with its diversity of global perspectives is also an increasingly knowledge driven and interconnected space. For artists and designers operating in this context, tacit craft-based knowledge and theoretical information-synthesis abilities are vital. Cross-disciplinary thinking between art and design would add greater potency to both.

Design practice has a growing need to understand changing tools, research methodologies, and ways of thinking. These include Computer Aided Design (CAD), Computer Numeric Controlled (CNC) machines, an ever-changing array of graphics software, and qualitative and quantitative research techniques capable of informing the design of complex systems and services, to name just a few. Given specialization within the field of design at large, from product design (or industrial design) to fashion design to interaction design, and so on, it is easy to see how practical pedagogical constraints require depth and breadth throughout the various areas of focus.

The field of fine art includes its own disparate areas of material study including drawing, painting, fibers, metals, digital graphics, ceramics, sculpture, performance, photography, video, and sound, all of which can, and often do, intersect with each other due to the disintegration of boundaries that took place with the advent of postmodernism. Design has been slower to follow the postmodern erosion of art disciplines that took place in the 70s. Yet with growing leaps in technology and the hybridization of design we see a similar trend, combining products, fashion, interiors, vehicles, furniture, graphics and software. Today the fluidity of thinking that happens in both the art and design fields could each be expanded to include the other.

Although it is relatively rare today, there is strong historical justification for the integration of design and art, a synthesis that blurs categorical boundaries and dates back to the Arts and Crafts movement of the 1800s (at least). Moreover, the environmental, manufacturing and aesthetic concerns that were relevant at the beginning of modernism have resurged to become equally if not more compelling today.

This paper argues that maintaining healthy discourse between the interdisciplinary fields of art and design is a valuable and worthwhile endeavor. In this era of rapidly changing technology, globalization and highly evolved critical theory and thinking, there is new potential for cross-disciplinary exchanges between art and design. To leverage the benefits of such transactions, the interplay between practicing artists and designers should be more porous, and a shift must occur in how artists and designers envision the relevance of their counterparts. In many instances this appreciation can be fostered in the realm of art and design education. With this in mind, an investigation of relative literature and current trends in art and
design practice were used to identify seven areas of productive overlap between art and design. The results are described in the following sections.

**Shared Fundamentals**
Hal Foster discusses the recent art/design interplay as being similar to the Arts and Crafts movement and ideas of Gesamtkunstwerk or “total art” (Foster. 2002). He observes that, “from jeans to genes,” most aspects of our existence can now be designed. Similar to the Frank Lloyd Wright architecture of the first half of the 20th century, it is not uncommon today to find environments that are designed from the architecture including interior architecture right down to the objects. From the experiences created through the wildly optical yet usable interior installations of Tobias Rehberger to Tom Dixon’s dining environment at the Royal Academy of Art in London, a holistic approach to functionality, conceptual meaning and mechanized production is demonstrated to be a relevant concern for contemporary art and design. And, as exemplified by the genetically modified glow-in-the-dark “GFP Bunny” by artist Eduardo Kac, these trends extend beyond the traditional media into biological manipulation as well.

In the education of creative practices, experienced teachers know that having a student group with diverse backgrounds adds a variety of viewpoints and ideas that increases the potential for exciting dialogue. Many schools have integrated art and design students in their fundamental design foundations courses. This is a good thing, and gives a wide array of various visual problem-solving strategies to undecided students, and students focused on a specific discipline alike (Graeme, 1996). Instructors of these courses from diverse professional backgrounds can also add exposure of new ideas to students who are focused on a specific discipline. Formally speaking, the art and design aesthetic building blocks come from the same place, and ensuring a broad variety of participants adds richness to the educational discourse. This approach is practiced in many schools and has a longstanding basis.

**Thinking by Doing**
Any person engaged in creative practice will acknowledge that doing is a form of thinking. Having extensive experience with a material will expand one’s understanding of how that material can potentially be used, and this in turn leads to new ideas (Adamson. 2007). Likewise, hands on experiences with a wide variety of materials can enhance one’s understanding of creative possibilities. The ability for design students to be exposed to specialized art equipment like a foundry, ceramics lab, or weaving studio and for art students to be exposed to CNC routers, 3D printers and CAD software greatly improves each discipline’s creative potential. In addition, the academic environment is a perfect place for this knowledge to be shared because the equipment is often expensive and if there is a system in place for students to be exposed to specialized equipment then more doing and thinking will flourish.

Many well-known artists and designers like Isamu Noguchi and Le Corbusier incorporated interdisciplinary ways of working that combined drawing, painting, sculpting and designing. Creative people synthesize disparate ideas using their subconscious, so it follows that the more compartmentalized and specialized creative practitioners become the less chance they have to dream and connect disparate phenomena to come up with something new (Moggridge, 2007).

There are many examples of this type of collision of ideas. One such example is the skeuomorphism that was designed into Apple’s operating system to give users an illusion of dimensionality to help convey specific functions. On the pre iOS7 iPhone operating systems, there was a sophisticated and strategic convergence of animation, sound, perspectival, and shading illusions all working in conjunction to help the user compensate for the lack of tactile feedback when touching the glass touch screen (Cava. 2013). Many of these graphic tropes are found in trompe l’oeil paintings dating back to frescos of the Italian Renaissance. Another example is the work of Abigail Anne Newbold who uses cutting-edge materials and industrial design sensibilities in her elaborate art installations that evoke a rustic survivalist lifestyle.

**Adding Value**
Art and consumerism are also very closely linked. Beauty and art are typically valued in their distance from utility. Joe Scanlan argues that when the lines are blurred between the two, when art becomes “functional” and when design becomes so famous as to be “art”, then the utility of the objects is nullified in both examples due to the increased value (Scanlan et al. 2001). This argument illustrates why art that
becomes design often “fails”, as any “classic” piece of functional design can assume the elevated status of collectible, where as few art owners actually use “functional art” since this devalues the work. Taken to an extreme, Scanlan’s argument implies that there is no point in ever designing something expensive like a Louis Vuitton handbag or a Ferrari supercar because they become increasingly less functional as their price tags increase—people want to preserve their worth by using them less. In reality, of course people do consume these items because they have value. Scanlan’s point is important, however as it must be acknowledged that art has an increased value due to both its pedigree of authorship and its limited quantity.

Design firms often state that good design adds value to a product (Brown et al. 2009). This seems to be true but it is sometimes difficult to tell if the good design is adding value, or if the pedigree of authorship or brand recognition is actually what makes something perceived as more valuable. In either case, it is important for designers to remember that there is value in authorship for its own sake. In the United States there has been much less emphasis on individual designers than in Europe. With a few notable exceptions like Apple’s Jony Ives, most contemporary designers in US companies remain anonymous. In contrast, Europe has a thriving economy of small design studios with recognizable name brand designers at their helm. The US based company Target is one noteworthy example to demonstrate the potential for a designer’s name to be a mass marketing tool for products. With a few exceptions, the US design industry could learn from European design culture and contemporary art practice that crediting design authorship along with good design can create intrinsic value. Art educators often do a much better job cultivating an individual artist’s voice than most US based design programs. Perhaps this is because artists tend to view each project along a trajectory of a connected body of work. Some designers look at their work this way, though often each project’s specific constraints tend to complicate a cohesive progression of personal conceptual development (Dorst. 2003). The notion of authorship in design and its potential advantages is an interesting avenue to be explored for individual designers in the US production process.

**Drawing as Thinking**

Generally speaking, art students are taught how to draw what they observe. These skills date back to the time of the Renaissance when drawing reality accurately was the ultimate goal. Out of this tradition Art Academies across Europe developed observational drawing skills and knowledge, such that students would learn to study the body and reproduce life-like drawings. Most of the strategies employed by these artists—such as proportion, shading methods, and the study of anatomy—are simplified down when taught in beginning and intermediate drawing courses today. Building hand eye coordination, definition of volume through shading, and accurate sense of proportion when drawing from observation are all stressed in foundation level and introductory level courses. Less emphasis is placed on drawing things that one cannot see. While one can intellectually grasp the ideas and methods taught in drawing classes like this, it is an investment of time and practice that makes one able to draw well (Sale et al. 2004).

In most product design drawing classes the inverse is true. Focus is placed on accurately representing forms that have not yet been created, and therefore cannot be seen until drawn. Heavy emphasis is placed on perspective theory and accurate simulation of believable invented forms and shading rules are learned which roughly approximate the way that materials look in reality (Steur et al. 2011). Like the studio art drawing methods discussed above, for a designer to accurately draw things that have never existed is an in depth process that takes considerable time and practice to master.

Both of these drawing methods are vital ways to improve thinking and technical ability, yet most academic programs do not have time to teach both effectively. Generally speaking students take the type of drawing classes that pertain specifically to their area of focus. While this is an efficient use of class time, it presents serious downsides for both aspiring artists and designers.

The design student knows with reasonable certainty that when they graduate and become a designer they will be drawing objects (or increasingly for interactive work, narrative storyboards), an eventuality that they are prepared to take on. In the field of art, however, all bets are off. In post-modern art practice there are limitless possibilities as to how one’s work could be created. Such practice may involve some observational drawing, though it could just as easily involve numerous other aspects of visual
communication including those that have never been seen or imagined before. The ability to accurately
draw and communicate forms and ideas that have not yet been created, and are therefore impossible to
observe in order to draw, is something that most art students are not prepared to do well. The idea of
planning ones artwork prior to making it is not a new idea, but it is one area that most art curriculums do
not emphasize to a healthy degree.

Observational drawing is also a benefit to design students and can greatly help their ability to draw
human figures and other more complex organic forms that are not covered in basic perspective theory. In
addition, hand eye coordination and the physical craft of manipulating various media by hand is a
valuable skill that will benefit any creative person. The design duo Ronan and Erwan Bouroullec generate
distinctive drawings due to their combined backgrounds in design and fine art and their design sketches
have become elevated to the level of exhibition artwork, not in the sense of historical significance (as
might be found in some design-related drawings), but for their artistic merit alone.

For both art and design, drawing is a valuable tool when applied to ways of thinking about what could be.
When drawing is used for thinking it is a way of giving shape to ideas outside of the mind. Visualized
ideas give rise to new ideas and an iterative conceptual development of thought can be achieved (McKim.
1972). Increased collaboration between art and design approaches to drawing appears to be an area of
significant potential benefit to both groups.

3D Visualization of Things That Don’t Yet Exist

Three-dimensional (3D) computer modeling through the use of a software program like Rhinoceros, or
SolidWorks, is a necessary skill for contemporary product design. Typically designers turn to 3D modeling
after ideation sketches and prototypes have honed a design concept down to the point where decisions
are ready to be finalized in a computer model. Depending on the form, computer models can be more or
less complex to create. This approach could be exceedingly valuable to the field of sculpture, depending
on the complexity and materials that are being worked with. In the academic setting sculpture students
often jump from a sketch or maquette, or possibly a found object, to a full-scale sculpture building making
changes as they go. While this is a valuable way of working, it also has limitations as sculptures become
more ambitious and materials become more expensive. The ability to visualize and react to a sculpture
prior to completing it would be greatly aided by the use of 3D modeling software such as SolidWorks and
Rhinoceros, along with rendering software such as Keyshot. In combination these programs allow quick
and accurate photo realistic simulation of a digital model from any angle and in various colors and
materials. Powerful visualization tools like this are not something that most sculpture students are
exposed to in school, though some progressive programs like The School of the Art Institute of Chicago
do offer 3D computing for art students.

Rapid Prototyping = Rapid Sculpting

Once 3D modeling is embraced by art programs at a larger scale, a wide variety of low volume rapid
prototyping materials and methods become available for use. For product designers outsourcing some
elements of a model is the norm. It is also quite common in professional art production as well. Sculptors
like Jeff Koons, Anish Kapoor, Richard Serra and Takashi Murakami, outsource the production of
complex sculptures to professional fabricators on a regular basis.

For some artists (depending on the media and type of work) the benefits of the 3D software modeling
skills common in product design could greatly streamline the process if third party fabrication is needed.
This will result in cheaper production costs for a few reasons: (1) Artists will be able to visualize the
sculpture much more accurately via 3D rendering; (2) Artists will not be paying for someone else to 3D
model their concept prior to fabrication; and (3) There will be less changes and iterations needed to get
the final sculpture correctly designed prior to fabrication, reducing billable planning time. Ultimately this
ability has the potential to put greater control back into the hands of the artist.

In addition, because product design usually necessitates a physical model to be generated from a digital
one, the design and manufacturing fields have developed many methods to transform digital plans into
physical form. These methods are readily available to artists and some have used them to great effect.
Many computer aided output devices such as laser cutters, CNC routers and 3D printers are cost-
effective ways for designers to output their creations as models for evaluation. Whereas most rapid prototyping methods are too expensive for designers to use as the actual means of production for creating their product, they may be economical for unique works of art. Online vendors like Shapeways can 3D print in a variety of plastics, metals and ceramics, bypassing the need for an artist to buy or use specialized equipment. While artists such as Richard Dupont and others have utilized 3D modeling and printing in their work (see the recent Out of Hand, Materializing the Postdigital exhibition at the Museum of Art and Design in New York, for example), it is typically not available to fine artists in school.

**Historical Context & Relevance Beyond the Functional**

Art programs emphasize the importance of an artist’s work being part of a larger historical and cultural dialogue. The relationship of contemporary work to a rich and long standing history seems to be inherently understood in studio art programs. Design also has a very rich and important history, yet the direct reference to a larger dialogue or historical significance is often lost when young designers develop their projects. Often these projects are required to consider numerous constraints including user needs, cost, or material limitations, and it can be challenging to justify additional complicating factors. Nevertheless, design that strives to situate itself in a historical context can result in work that is less redundant and of greater quality. This can be seen clearly when considering Apple’s reference to the clean and minimal yet futuristic design work of Deter Rams, for example. Given the success with which art has been able to justify its contribution to a larger historical story, it is interesting to consider the potential significant contributions that designers could make if their work were to engage in a larger cultural dialogue about its meaning. Recent trends in Discursive Design and other experimental ways of thinking about the role of design in culture demonstrate the potential of this notion (Tharp et al. 2014).

**Conclusion**

Practice-based professions like art and design necessitate a continued dedication to learning by doing, so it is critical that artists and designers are doing things that are relevant to the future potential of their work (Dewey. 1934). The architecture of Frank Lloyd Wright set a high bar for collaboratively combining architecture, design and art to create strong visions of what the future could be. Increased overlap between areas of art and design practice, like the highly speculative technological creations of designers Dunne and Raby (2014), help to widen the possibilities of diverse thinking about potential futures. The field of art has the benefit of limitless potential while it is simultaneously highly conceptual and contextual. This mentality can inject an exciting level of experimentation into product design development. Conversely, because art has no bounds, some practical design visualization and production methodology might help focus the vast potential of the creative possibilities of the discipline. Through thinking by making, awareness of the relevance of authorship, drawing to think, visualizing things that have never been created, using new technologies to create new physical reality, and a healthy historical context artists and designers share a close kinship. As the art of design continues to progress, clearly the design of art will too.

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