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Reaching the Millennial Generation

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Preface

Throughout high school, college and graduate school, I have been intrigued by the relationship between historical factors and the art and design of the time. I am fascinated by the fact that new technology can lead to new forms of expression and design. The advent and development of Cubism was arguably influenced by early photography. The Bauhaus was influenced by the proliferating machines of its time. It follows, naturally, that contemporary designers would be influenced by current technology. Greg Lynn writes about the influence of computer modeling on his architectural aesthetic. Other designers such as Marc Newson and Karim Rashid are also influenced and enabled by these new design methods.

In my thesis, I have outlined my thoughts on an emerging aesthetic influenced by current computer modeling software. It should be noted that the computer modeling software that I am most familiar with is Alias Wavefront’s Studio Tools. This is a state of the art computer-modeling package commonly used in the field of industrial design. This is also the software favored by some architects such as Greg Lynn. Its advanced tool set has a steep learning curve. Once the software is mastered, however, it provides great freedom for designers to develop their own design language.
My research consisted of reading various design journals in the fields of industrial design as well as architecture. There were also a few books on the subject. These proved invaluable in my study of this area. Some of the aesthetic concepts that I discuss were inspired directly by working with Alias Studio Tools, and some were influenced by my observations of contemporary design objects. The writings of designers that most directly influenced the scope of this work have been cited in the footnotes and bibliography. Those that wish to learn more about the terms and concepts in this discussion of contemporary design should consult these sources.

The thesis that follows is intended for publication in "Innovation," the Journal of the Industrial Designers Society of America. It was written with this publication’s readership and length limitations in mind. After approval by my thesis committee, it will be submitted for publication. My desire to publish is equally attributable to a thirst for recognition and a desire to discuss my ideas with my contemporaries. I would like to thank Professors Arnold Lewis and Walter Zurko of the College of Wooster, as well as Professors Craig McArt, Doug Cleminshaw, Houghton Wetherald and Marcus Conge of the Rochester Institute of Technology. Thanks also to classmates Tim Gallant and Aniket Vardhan.
## Illustrations

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Reaching the Millennial Generation

By Scott Doty

In the coming decade, a new generation of consumers will come of age. At three times the size of Generation X, it is nearly as large as the infamous Baby Boomer Generation, clearly a force to be reckoned with. This generation has been referred to as Generation Y or the Nintendo Generation, but prefers to be called the Millennial Generation.¹ The term *Millennial* alludes to its members’ comfort with technology, emphasizes their distinctiveness from previous generations, and highlights their optimism.² It follows that Millennials will be drawn to an aesthetic that expresses their positive view of technology.

In the Internet age, it becomes increasingly difficult to capture a consumer’s attention.³ Web designers refer to a site that holds a consumer’s eyeballs for any length of time as “sticky.” If we hope to create products that capture the attention of the Millennial Generation, we will need to understand how its members communicate, how its members work and how its members play. We need to design “sticky” products.

² Neil Howe and William Strauss, 7-12.
I do not intend this article to be a design cookbook. It is meant to get designers thinking about how to communicate visually with the Millennial Generation. To accomplish this goal I will examine some qualities in objects that I feel are increasingly present in the computer-modeled landscape. These qualities include: coincidence, use of immaterials, use of topological geometry, complex surfaces, texture mapping and utilization of the slice.

**Coincidence**
When two objects occupy the same space they “coincide.” This is not possible in the real world, but it is afforded in virtual space. Combining smaller, simpler objects to create a complex whole is one of the main ways of creating objects in computer modeling software.

**Immaterials**
Immaterials are materials that lack qualities that we commonly associate with the real. Most objects have substantial mass, are opaque, occupy space, and resist the body. Immaterials, in contrast, seem to have little or no mass, are transparent or translucent, seem not to occupy space, and conform to the body. They may have one or more of these qualities. Immaterials include glass, translucent plastic, carbon fiber, fiber optics, gel, air cushions, and luminescent materials.

**Topological geometry**
Topological geometry is the language of video games, computer animation and
increasingly, product design. Greg Lynn gives an excellent introduction to this geometry in his book *Animate Form*. There he explains that when using topological geometry, forms are defined by the continuous curves of calculus rather than by the discrete points of Cartesian geometry. These forms and the objects designed with them can have a flowing, transient feeling. Anyone who has used computer-modeling software that utilizes NURBS,\(^4\) has adjusted the flow of a curve by moving control points that this curve approaches but does not reach. The results are often identifiable as computer-modeled forms.

**Complex surfaces**

The proliferation of complex surfaces in today’s products is a more obvious result of the increasing use of computer modeling in design. NURBS-based surfaces can be smoothed, twisted and tweaked by adjusting the curves that comprise them. Because these surfaces are defined mathematically and can be communicated directly to engineers, products with increasingly complex surfaces are being put onto the market. This can lead to grotesque complexity for its own sake, or a more subtle complexity that aids in balancing aesthetics with utility to create a harmonious whole.

**Texture mapping**

Texture mapping is the application of a two-dimensional pattern to a three-dimensional surface. It is often used in computer rendering to approximate an

object without using as much processor power as a fully three-dimensional surface texture would require. This process can add a sense of realism or artificiality to an object, depending on the relationship of the texture map with the form that it is superimposed upon. For example, in a piece of wood, the grain pattern of the side continues onto the top. If this does not occur, the viewer will sense that the object is less than real, though it depends upon one’s experience whether one will be able to articulate why this is the case.

Post Modernism, Pop Art and Formica countertops have familiarized us with the idea that the surfaces of objects may be independent of what is underneath. Computer designed, printed, or painted surfaces and fabrics enable one to portray wildly patterned surfaces reminiscent of Memphis furniture or the subtle changes in hue of a Rothko painting. Computer designed objects may take delight in their artifice, they may attempt to imitate another material, or they may express clearly their true materials. Current computer technology allows designers to explore any of these aesthetic subtleties in greater depth.

**The slice**

Just as objects can be created by the additive process, as in coincidence, they can be created by subtractive processes. When an object is intersected by a plane and the resultant geometry is trimmed to create a new form, the new form contains clues to the modeling process that was used to create it. It may also reveal the relationship between the object and its supporting structure.
refer to this as a slice, as a slice of an orange is both a new geometric form and an indicator of the composition of the orange.

**Conclusion**

The terms that I have described above are useful to me in describing my impressions of our increasingly computer-modeled landscape.\(^5\) I hope this inspires designers to consider their own take on this emerging aesthetic, whether or not they choose to embrace it.

I feel that if we wish to design products that will appeal to Millennials or any other market segment, we will need to create products that communicate with them on their own terms and capture their attention.\(^6\) I feel that bonding with the user in this way is as important a part of a well-balanced design process as meeting their physical and functional needs.

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\(^5\) By landscape, I mean the products and buildings that surround us.

\(^6\) We will need to speak the emerging visual language of the computer-modeled landscape as fluently as its natives.
**Figure 1** - Combining smaller, simpler objects to create a complex whole is one of the main ways of creating objects in computer-modeling software.

**Figure 2** - Immaterials are materials that lack qualities that we commonly associate with the real. Most objects have substantial mass, are opaque, occupy space, and resist the body. Immaterials, in contrast, seem to have little or no mass, are transparent or translucent, seem not to occupy space, and conform to the body.

**Figure 3** - The use of topological surfaces by designers has lead to increasingly complex surfaces in product design.
Figure 4 - Texture mapping is the application of a two-dimensional pattern to a three-dimensional surface.

Figure 5 - When an object is intersected by a plane and the resultant geometry is trimmed to create a new form, the new form contains clues to the modeling process that was used to create it. I like to refer to this as a slice.
Bibliography


