

# East Meets West on Flat Design: Convergence and Divergence in Chinese and American User Interface Design

By Baotong Gu, Georgia State University and Meng Yu, Georgia State University

## Abstract

**Purpose:** This study is designed to examine two design approaches: skeuomorphism and flat design, in both American and Chinese contexts. Questions explored include, What underlines this new design trend in American vs. Chinese cultures? How has this new design emerged? How will it evolve in the future? What culturally, underwritten aesthetic and rhetorical principles are at play?

**Method:** Samples of user interface (UI) design are collected from both cultures and examined to compare similarities and differences wherever possible. In-depth textual analysis is used to deconstruct particular design cases.

**Results:** Our analysis indicates that while flat design is the new trend, skeuomorphism has its place in UI design; each design has its advantages and shortcomings; and effective design may require the integration of both approaches. Our study also reveals that designs are culturally sensitive and that each particular design is contextualized and rhetorical. Flat design's popularity in the Chinese context has its unique rationale due to social, ideological, cultural, and linguistic reasons.

**Conclusion:** Savvy designers combine professional taste and culturally sensitive perspectives to produce effective designs that work for their particular contexts.

**Keywords:** user interface design, flat design, skeuomorphism, Chinese UI design, Chinese element

## Practitioner's Takeaway:

- Skeuomorphism and flat design are not mutually exclusive. They are both useful in their own right.
- Flat design and abstraction should be used with moderation and a culturally informed sense.
- Any design should be globalized in that it incorporates universal elements and allows culturally universal affordances so that it can be localized within any particular geopolitical context.
- A good design should be localized to its particular cultural context. Designs with localization capabilities will allow cultural affordances to enable contextualized user interfaces.

## East Meets West on Flat Design

### Introduction

User interface (UI) design has long grappled with the struggle to identify the most effective interface presentations. Over the last few decades, since the advent of graphic user interfaces (GUI), UI design has predominantly subscribed to a skeuomorphic approach (i.e., real life mimicking). Over the last few years, however, UI design has been evolving toward a more flat design (more abstract representations). This shifting trend in UI design (and the underlying philosophy and perception about what constitutes intuitive user interfaces) has commanded attention, and rightfully so, from UI designers, because the ultimate purpose behind such a shifting trend is to identify the most effective interface design with the greatest affordances (design qualities that lead users to intuitively select the correct action).

The focus of our study, therefore, is two-fold: 1) to examine the differences as well as respective advantages and disadvantages of both skeuomorphic and flat design, with an emphasis on the flat design approach that seems to dominate the UI design world today; and 2) to explore the various factors—social, rhetorical, cultural, and ideological—that influence designers' and users' aesthetic orientations and perceptions of intuitive interface design that have led to the shift in the current UI design trend. In examining Part 1 of our research focus, we will use contemporary UI design samples (computers, smart phones, user apps, icons, logos, etc.) in both the US and China in our attempt to deconstruct the current trend toward flat design. In exploring Part 2 of our research focus, we will examine UI design in the Chinese context in our attempt to understand what unique cultural factors are contributing to the popularity of the flat design approach.

We will first define flat design within the two different cultural contexts and discuss its respective visual and cultural characteristics. In-depth analysis of Chinese interface design samples will be conducted to ensure the validity of our findings. We will analyze certain relevant features of the traditional Chinese culture that account for such a new trend in design. We will delineate this analysis from several significant aspects, including, for example, philosophy, painting, character formation, and social status. With an in-depth analysis of such social, rhetorical, cultural, and ideological factors that drive this new trend toward flat

design, we hope to identify possible directions for the evolution of flat design from the perspectives of cultural convergence as well as divergence.

### Rationale

It is our contention that UI design informed exclusively by one or the other design approaches—whether it's skeuomorphic or flat design—may not yield the most effective or sustainable results. It is also our contention that what is more important is that UI design is contextual and dependent on its particular cultural and rhetorical situation. Only design approaches informed by sound intuitive and logical sense as well as a thorough understanding of the cultural, ideological, and rhetorical contexts of the use situation will render the interface design truly effective.

A study with such a focus, we believe, is relevant to the field of technical communication in several ways. First, it's important for both researchers and practitioners in technical communication to understand what drives users' perceptions for effective, intuitive interface design. Our analysis of current UI design practices and trends, we hope, may lead to an understanding of the logic behind such perceptions, which in turn will enable UI designers to align their design logic with users' intuitive expectations. Second, we hope our study will contribute toward a better understanding of the evolutionary path of UI design trends and shed light on the underpinnings behind the transient and evolving approaches. Such an understanding is an important first step toward identifying more effective and sustainable design approaches and preventing us from repeating our past mistakes in UI design. Third, we expect our study to contribute to an increasing awareness of the role that cultural, ideological, and rhetorical contexts play in UI design.

### User Interface Design: An Overview

Skeuomorphic design and flat design have been the dominating as well as contending forces in the UI design world. To illustrate the differences between the two approaches, we provide a brief definition of each and some illustrative examples for comparison. A more detailed account of the definitions and histories of these two design concepts will be provided later.

### Skeuomorphic vs. flat design: definitions and distinctions

The skeuomorphic design approach, simply defined, means the mimicking of real-world objects and “using realism with faux textures, drop shadows, [and] visual metaphors” (Page, 2014, p.1). The rationale behind skeuomorphic design is that users would have less cognitive difficulty in associating icons with their intended denotations and functions. Flat design, on the other hand, adopts a minimalist approach that relies predominantly on 2-D color tiles depleted of 3-D effects. Figure 1 (skeuomorphic design) and Figure 2 (flat design) illustrate the different effects between these two design approaches. Although the differences may look subtle at first glance, a close examination reveals more substantial changes than meets the eye. Figure 1 shows Mac OS X Snow Leopard version (10.6.8) in a more skeuomorphic design. First, the overall UI design uses the desktop metaphor, with a 3-D rendition of app icons placed upright on a desktop. Second, icons themselves are mostly in 3-D form, with drop shadows, heavy textures, and more realistic looking images. In contrast, in Figure 2, the Mac OS X Yosemite version (10.10.3) displays a more flat design approach as the overall UI design lost the 3-D effect, with all icons placed against a flat background. In addition, all icons are depleted of the 3-D effect, drop shadow, and heavy texture, which are replaced instead by simple shapes and colors.

If we compare the evolution of Windows UI design, the differences are more striking. In Windows 7 (Figure 3), icons are more skeuomorphic than abstract representations. The menu icons show clear evidence of mimicking real-world objects, rendered in 3-D representations. The calendar icon on the right clearly resembles real-life calendars hung on the walls in everyday houses. However, in Windows 8 (Figure 4), icons have morphed into 2-D flat color tiles with little more than an abstract image plus a color.



Figure 1. Skeuomorphic design: Apple's Mac OS X Snow Leopard version 10.6.8



Figure 2. Flat design: Apple's MacOS X Yosemite version 10.10.3



Figure 3. Skeuomorphic design: Windows 7 desktop



Figure 4. Flat Design: Windows 8 desktop

However, the distinctions between the two approaches go beyond mere visual representations; they reflect philosophical differences in underlying assumptions about human cognitive perception, about effective visual-meaning associations, about cultural contextualizations, and about rhetorical styles, all of which will be discussed later in this article. As Gessler (1998) has defined it, skeuomorphs are “informational attributes of artifacts which [sic] help us find a path through unfamiliar territory” (p. 230). The “unfamiliar territory” in this case refers specifically to the artifacts

## East Meets West on Flat Design

in technology. Kass and Lauer (2004) discuss two cases of media transition to illustrate the process of physical (skeuomorph) and conceptual metaphors on the digital products. By demonstrating the transition from wet photography to digital pictures and from surface mail to email, Kass and Lauer argue skeuomorph and metaphor play significant roles in the digital implementation of technology. As seen above, in the earlier version of Mac OS X, Apple used glass buttons on their user interface, which Ali Gajani defines as “realism” in his article “Skeuomorphism: A Design Concept on Its Way out” (2013, para. 11). Most of this realism has been clearly abandoned in the recent generation of user interfaces in both Windows and Mac OS design.

Flat design, as a response to the traditional skeuomorphic design that mimics the real-world objects, is one that “embraces a stripped-down minimalist approach and reduces textures and eschews the 3-D rendering of user interface elements” (Fichter & Wisniewski, 2014, p. 29). This design, as we have seen on Apple’s new systems such as iOS 8 and OS Yosemite, renders icons more streamlined, simple, and abstract yet without sacrificing their denotative and connotative expressiveness. Although details are being minimized, the seemingly more simplistic images are exerting more direct and intense visual impact on the user’s sensory and cognitive system, thus effecting more powerful visual-meaning associations.

### UI design: the Chinese case

With the increasing trend toward abstract and simple computer interface design in the American culture, Chinese interface designers are catching up with interesting perceptions of this new trend called flat design. What underlines this new design trend, however, differs in these two cultures. How this new design has emerged, how it will evolve in the future, what culturally underwritten aesthetic and rhetorical principles are at play, etc., are thus worthwhile issues to explore.

While it’s easy to just assume that similar rhetorical and cultural principles are underlining the flat design practice in both cultures, it would be remiss if we did not at least deconstruct such rhetorical and cultural underpinnings, thus depriving ourselves of this opportunity at a better understanding of this development. As Cynthia L. Selfe and Richard J. Selfe, Jr. (1994) assert, social spaces are where “cultures meet, clash, and grapple with each other” (p. 482) and

are never “ideologically innocent or inert” (p. 485). With globalization being an inalienable part of any technological development, it’s imperative that interface design for computers and apps incorporate more global awareness. Understanding different cultures and cultural convergence are key to any successful interface design.

In our analysis, therefore, we hope to deconstruct the changing trends in UI design and delineate what underlies such changes. Further, we hope to uncover some of the cultural, ideological, and rhetorical forces that have contributed to the changing trends.

### User Interface Design: The Past, the Present, and the Future

After years of domination in the UI design world until as recent as a couple of years ago, skeuomorphism is giving way to flat design. Apple didn’t launch its new operation system, OS Yosemite and iOS 8, until 2014. A consistent theme in recent reviews on the design patterns of this system is “flat” (Fagioli, 2014; Ong, 2014; Reschke, 2014; Smith, 2014). This flat design pattern is replacing skeuomorphic design and gaining increasing popularity. Nevertheless, both flat design and skeuomorphism are widely used in current designs of the user interfaces, icons, and logos of many name-brand products.

Will flat design take the place of skeuomorphic design? The debate between skeuomorphic design and flat design is still ongoing in the field of industrial UI design. In this section, in addition to analyzing skeuomorphic and flat designs from a rhetorical perspective, we will also summarize their respective pros and cons. By comparing the features of the two design models rhetorically, we hope to shed light on the evolution of design patterns and their future directions. Examples of both designs are used to illustrate our argument.

### Skeuomorphic design: features and problems

Skeuomorphism is a design style that takes design elements and cues from the real world. According to Wikipedia, the term *skeuomorph* originated from the Greek: *skéuos*, σκεῦος (container or tool) and *morphé*, μορφή (shape). It has been applied to material objects since 1890 and is now often applied to digital venues, such as interface and Web design. Apple and Microsoft seem to have favored skeuomorphic design dating back to the beginning of OS and Windows. With a new generation of technology, such

as iPhones gaining popularity among users, iOS 6 and earlier versions of the system demonstrated a high level of skeuomorphism. In order to allow the maximum affordances for their devices so that users can use them with the least amount of difficulty, designers introduce a lot of textures, shadows, and image assets to add verisimilitude. The 3-D effect is another feature in interfaces with skeuomorphic style because it makes the interface look more real than a flat object. Details are focused to enhance the sense of verisimilitude, too. Take iBook 3.0, for example—two features of the iBook design are typical examples of skeuomorphism: Wooden texture is used to mimic that of a real bookshelf, while flipping book pages with sound effects mimics users' reading activity.

The interfaces with skeuomorphic design are exquisite, and each application looks like a piece of artwork; however, with the advance of technology, skeuomorphic design yields several major problems. First, the excessive obsession with details results in cluttered designs. To pursue the effect of being real, designers tend to adopt excessive texture details, some of which are simply useless. As designer and coder Sacha Greif (2013) explained in Loren Brichter's interview: "Gaudy textures are just a visual design problem. . . . I hope they tone it down."

Second, gaudy textures lead to another problem of skeuomorphic design: Over-sized textures and image assets occupy storage. With the development of high-resolution display, demands on the quality of image assets increase, correspondingly. Therefore, high-quality image assets take up storage even more than before.

Third, icons and interfaces with skeuomorphic design are hard to unify because objects in the real world take varied forms and textures. The more real skeuomorphic icons and interfaces are, the harder it is to unify them in an operational system.

A fourth problem with skeuomorphic design is the cultural and temporal barriers. Some skeuomorphic icons mimic the objects that are widely used in one culture but unfamiliar to users from another culture. For example, as Rau, Plocher, and Choong (2012) point out, the US mailbox has been used as the icon for email, but a mailbox in Japan looks more like a trash can to US users (p. 71). A flip clock is commonly used in some cultures but is rarely seen in China, so when some interfaces of clock application in China use the image of a flip clock, it results in cognition issues

for Chinese users. Frequently, a culturally indigenous interface design may mislead users from other cultures. For example, the image of Archive in iOS mail adopts the common U.S document box for representation; however, some Chinese users tend to click that button to delete an email because the image of the document box looks more like a trash can in the Chinese culture (see Figure 5). Time is another barrier for users' perception: Some vintage designs may not necessarily recall the intended nostalgia effect but instead confuse younger users. For example, users born after 2000 who haven't seen the cassette tape may feel uncomfortable when it's used in music applications.

In recent years, the rising concept of responsive Web design has curtailed the wide application of skeuomorphic design (Müller, 2014; Greif, 2013; Asghar, 2014). Responsive Web design is a design model featuring flexible layouts that can adjust the screen size to different devices. With more and more devices connecting to the Internet, designers have focused on creating perfect Web page displays for screens of different sizes in different platforms. Responsive Web design aims at being applicable to all devices and browsers. Some scalable vector graphics (SVGs) are needed under the principle of responsive Web design (Turnbull, 2013). Different from pixel-based graphics, an SVG is a graphic that is comprised of paths, and these paths can form shapes and drawings. By dragging the starting or ending point of the path, the SVG can zoom in and out accordingly without losing the quality of image ("Vector Graphic," n.d.). Designers try to lower the image assets, eschew shadows and textures, and approach a simple design model. It was under these circumstances that flat design emerged and gained favor among designers.



**Figure 5. The third icon at the bottom, a folder box intended as the Archive icon in the US, is often misinterpreted as a trash can by Chinese users.**

## East Meets West on Flat Design

### Flat design: the perfect remedy?

According to some designers and critics (Turner, 2014; Kimball, 2014; Pratas, 2013; Asghar, 2014; Müller, 2014), Microsoft seems to have spurred the new design trend when it released its music player Zune in 2006. The design language focused on large typography and bright blocks of color. Even though this product wasn't successful commercially, Microsoft kept this design philosophy and formally introduced it with the publication of Windows 8 in 2012. The simple, modern-looking interface was named "Metro."

Meanwhile, Apple was still clinging to skeuomorphic design; however, in 2013, users were surprised to find a lot of flat elements in Apple's newly released iOS 7. Apple has modified its design style from skeuomorphic to flat since the release of iOS 7. Reports have even identified "iOS 7 To Be 'Very, Very Flat,' with Redesigned Apple App Icons and More" (Allsopp, 2013, para. 1) to describe this new trend. The reversed attitude of Apple enhanced the wide application of flat design in logos, icons, and interfaces. As leaders in the field of Internet technology, Microsoft and Apple's design philosophies have significantly influenced the design of websites and applications. Flat design has no doubt become one of the mainstream design styles in the recent couple of years.

By eschewing the 3-D form and pursuing a flat effect, flat design adopts minimalism as its key approach in favor of bright colors, simple elements, and clean and effective typography. Skeuomorphic illustrations are replaced by abstract images. Certain elements such as textures, shadows, and some useless graphic assets are reduced. The interface looks simple and abstract. Because of the simple nature of elements in flat design, typography and color are extremely important. A key upside to bright colors and clear typography is that they attract users' focus to the content itself instead of the extraneous visual effects. Scalable vector graphics are used for icons and images; they work especially well with different screen sizes and browsers because SVGs are resolution independent, unlike pixel graphics (or raster images) whose set resolution may render them blurry when expanded to certain sizes. As Alex Danilo (2012) has pointed out, "One of the most useful things about SVG is that it's resolution independent, meaning that you don't need to think about how many pixels you have on your device, the result will always scale and be optimized by the browser to look great" (para.

5). The size of flat applications is reduced because of fewer graphic assets. The loading time of flat websites is faster without adding any extra design elements (Asghar, 2014). Because the designer can use the same color and typography system, the design style is much easier to unify, which is important to an operational system. A good example of flat design is the colorful tiles employed by Windows 8, as shown in Figure 4.

Flat design may be many designers' new favorite now, but it is not embraced by all critics and users. Some technical reviewers critique that flat design has ruined usability (Müller, 2014). No doubt, abstract images and icons may raise the difficulty of cognitive understanding in some cases. Being flat may certainly run the risk of low or failing usability. To what extent flat design is useful and conducive to usability depends on how sensible the design is, just as is the case with skeuomorphic design.

### Skeuomorphic or flat: where are we going?

The debate on flat versus skeuomorphic design is likely to continue for some time to come. Many websites and application interfaces have switched to flat design, rendering skeuomorphism sometimes outdated. But what exactly is the future of flat design? Will it take the place of skeuomorphism? Many critics of technology have attempted to provide answers (Turner, 2014; Kimball, 2014; Pratas, 2013; Asghar, 2014; Müller, 2014; Greif, 2013). In this article, we attempt to approach this subject from the perspectives of technical communication and rhetorical studies.

Flat design may be a new concept, but the fundamental principle it's based on—minimalist design—is not new to the field of technical communication. Minimalism is a design style that originated in visual arts and music. This art style was heavily influenced by the Bauhaus art style in the 1960s (Meyer, 2015a; Bayley, n.d.). The world famous architect Ludwig Mies van der Rohe, who was also the last director of Berlin's Bauhaus, once said: "We reject all aesthetic speculation, all doctrine, all formalism" (Bayley, n.d., para. 6). In the 1980s, with the popularity of the World Wide Web, the philosophy of minimalism was adopted by the technicians and researchers of human-computer interaction. John Carroll, in the late 1980s, studied the process of novices learning to use computers. In this study, he found that users want to use the computer immediately instead

of reading the informative manual first (Mackenzie, 2002). Consequently, Carroll proposed nine principles of minimalism in documentation and manual design (Franks & Williams, 1990), including, for example, inviting users to start the real task quickly, exploiting the prior knowledge of users, and supporting error recognition and recovery. In 1995, Jakob Nielsen included minimalist design principles in his ten usability heuristics and advocated eliminating irrelevant information from interfaces (Meyer, 2015a). After 20 years of development, when the Web interface design stepped into the 21<sup>st</sup> century, it brought with it the principles of minimalism. Google was considered the pioneer of minimalist design (Meyer, 2015a). The home page of Google has had few changes since 1999. The simplicity and limited color palettes have become the identifying feature of Google's interface design.

What exactly, then, is the connection between minimalist design and flat design? According to research by Nielsen Norman Group, a consulting group focused on evidence-based user experience research, many of today's most popular design trends (including flat design) are directly or indirectly influenced by minimalism. The Nielsen Norman Group analyzed 112 minimalist websites recently, discovering that 96% are flat (Meyer, 2015b). However, the Nielsen Norman Group's research also indicates that not every minimalist or flat design lends to good usability. A balanced design style could embrace both flat and skeuomorphic designs. Such a conclusion aligns with Carroll's minimalist theory in technical communication: cutting the elements and reducing redundancy to serve the needs of users.

However, minimalist design is part of a more important concept in technical communication: user-centered design (Mackenzie, 2002). Therefore, it may be more productive to analyze flat design from the perspective of user-centered design. If we look at design from a rhetorical, contextualized perspective, skeuomorphic design and flat design serve different audience groups. Flat design requires designers to think about the essence of function in the interface. Highlighted typography and big and bright color blocks aim at attracting the attention of audiences; on the other hand, abstract and minimal representations may raise the degree of difficulty of audiences' cognitive interpretation. Flat design tends to be favored by younger to middle-aged users because of its simple and contemporary appearance, according to a study of 48

participants conducted by William Robbins (2014): "It was found that at 27–45 years of age users tend to strongly prefer a flat design approach to mobile application icons with a strong majority of 65% choosing flat design over skeuomorphic design" (p. 3). Users of this demographic catch on easily with abstract images and typically experience less of a learning curve than older users. Skeuomorphic design, on the other hand, is easy to understand and operate when taken as a whole, so it is more user-friendly to children, elders, and novice users.

A good interface is easy to navigate and yields high affordances so that users can accomplish an intended purpose. The skeuomorphic interface works well on some applications that require operations by users. It results in high resemblance between design objects, such as some earlier versions of the digital calculator and calendar books, and their real-world counterparts. At the same time, however, real-world objects are often wrought with an excessive amount of details and do not lend to easy cognitive interpretation by users, resulting in low readability and poor usability. Thus, skeuomorphic design does not work well with some applications such as temperatures, clocks, and book readers, because these apps require fewer operations and their main function is often to simply deliver information. For instance, the essential purpose of a reader is to enable users to read. A bookshelf design with exquisite details of wood patterns and the animation of turning pages, although vividly real, are unnecessary and essentially useless. Take another example: The purpose of the weather application is to provide users the exact temperatures and forecasts. The mimic image of a thermometer does not necessarily lend to easy readability or help users obtain more accurate temperatures. In fact, reading the scales of a mimic thermometer may raise the difficulty of temperature reading. In these cases, then, skeuomorphic interfaces don't meet the purpose of these applications. It is no surprise, then, that in designing such apps, designers are quick to abandon skeuomorphic design. The redundant textures and other details create a lot of unnecessary noise, which hinders the delivery of the correct information. Undoubtedly, the flat versions of the weather app in Figure 6 and the calculator app in Figure 7 are clearly appealing alternatives to their skeuomorphic counterparts in delivering essential information through simple and clear interfaces.

## East Meets West on Flat Design



**Figure 6. The weather app in flat design (Apple iOS 8.3).**



**Figure 7. The calculator app in flat design (Apple iOS 8.3).**

Flat design also owes its quick popularity to the fact that it stands well to the test of the measuring stick of responsive Web design (Müller, 2014). As we have mentioned earlier, fewer image assets will reduce the response time of loading Web pages, and scalable vector graphics can better accommodate different sizes of the screen. In many ways, flat design fits the purpose of responsive Web design. While flat design is clearly the new fad in the digital design world, the question is: Will it replace skeuomorphism? The answer is not an easy yes or no. A good design takes into consideration both the audience and the purpose of applications. Applications and devices with different purposes and audience groups could certainly accommodate different designs. Clearly, skeuomorphism and flat design are not mutually exclusive. Integration of elements from both designs is not an uncommon practice. Take Apple, for example. Its earlier iOS design was heavily skeuomorphic. It switched to a more flat design in its iOS 8. In so doing, however, Apple didn't totally reject skeuomorphism in its new version of iOS but instead combined elements from both. For instance, as shown in Figure 6, the interface of the weather application in iOS 8 is a combination of flat and skeuomorphic design: On the flat end, the temperature is in plain but very readable numbers, whereas on the skeuomorphic end, the animation of forecast is much more real than the one in the previous version.

So far, we have examined flat design in the American context. While it is important to do so, we believe an

analysis of flat design practices in the Chinese context would allow us to explore and possibly determine whether cultural factors are at play behind the flat design approach. We chose the Chinese culture as the contrasting counterpart to the American cultural context because the former is representative of Eastern cultures whereas the latter is a prototype of Western cultures. These two cultures possess different aesthetic, ideological, and rhetorical traditions. An examination of flat design in both cultural contexts would test our assumptions about the second part of our research focus: What cultural factors are at play in driving the flat design trend (or any design trend) in UI design?

### Flat Design In The Chinese Context

Interface design in China has evolved more or less along the same lines: While skeuomorphic design once was the norm, the field is clearly witnessing a trend toward flat design. In this section, we'll first examine various designs and their distinct characteristics. We'll then explore what cultural factors could possibly account for this willing acceptance of flat design.

Interface design in China is demonstrating some distinct characteristics. First, the overall trend seems to coincide well with Western developments in the field. For example, there has been a clear trend toward flat design in the evolution of logo designs in the West. Mercedes' logo design lost both the color and the 3-D effect in the course of its evolution, with the current logo clearly a product of the minimalist approach<sup>1</sup>. The Pepsi logo, although it has retained color, has shed both the 3-D effect and the fancy text<sup>2</sup>. The Windows logo<sup>3</sup>, likewise, also shed its 3-D effect during its evolution process, but what's interesting is that the first logo it used in 1985 is very much a flat design, much like the current logo, suggesting that Windows has switched from flat design to skeuomorphic design and then back to flat design again.

Similarly, in China, logos, icons, and general user interfaces are demonstrating an incredibly flat design

<sup>1</sup> For an evolution of Mercedes's logo design, please see <http://www.logodesignlove.com/mercedes-benz-logo-evolution>

<sup>2</sup> For an evolution of the Pepsi logo design, please see <http://www.logodesignlove.com/pepsi-branding-and-logo>

<sup>3</sup> For an evolution of the Windows logo design, please see <https://allisonrookeefe.wordpress.com/2014/02/19/the-evolution-of-brand-name-logos/>

trend. Figure 8 includes samples of typical icon design in China. Although many of the icons have retained the rough shape of the object they represent, the actual visual representation is strictly two-dimensional and abstract. Logo design in China exhibits the same proclivity toward flat design. For example, logos displayed on the portfolio page of a logo design company are all purely flat design<sup>4</sup>. If one company is not representative enough, then a



**Figure 8. The flat icon design in Chinese apps.**

Google search with the term “Chinese logo design” should be convincing evidence that over 90% of the logos found in the search results are flat (see Figure 9). Logo design in China is increasingly adopting the flat and minimalist approach. Such a trend is also in line with the basic design principle: Less is more.

User interface design in China is also following suit in adopting the flat approach. Figure 10

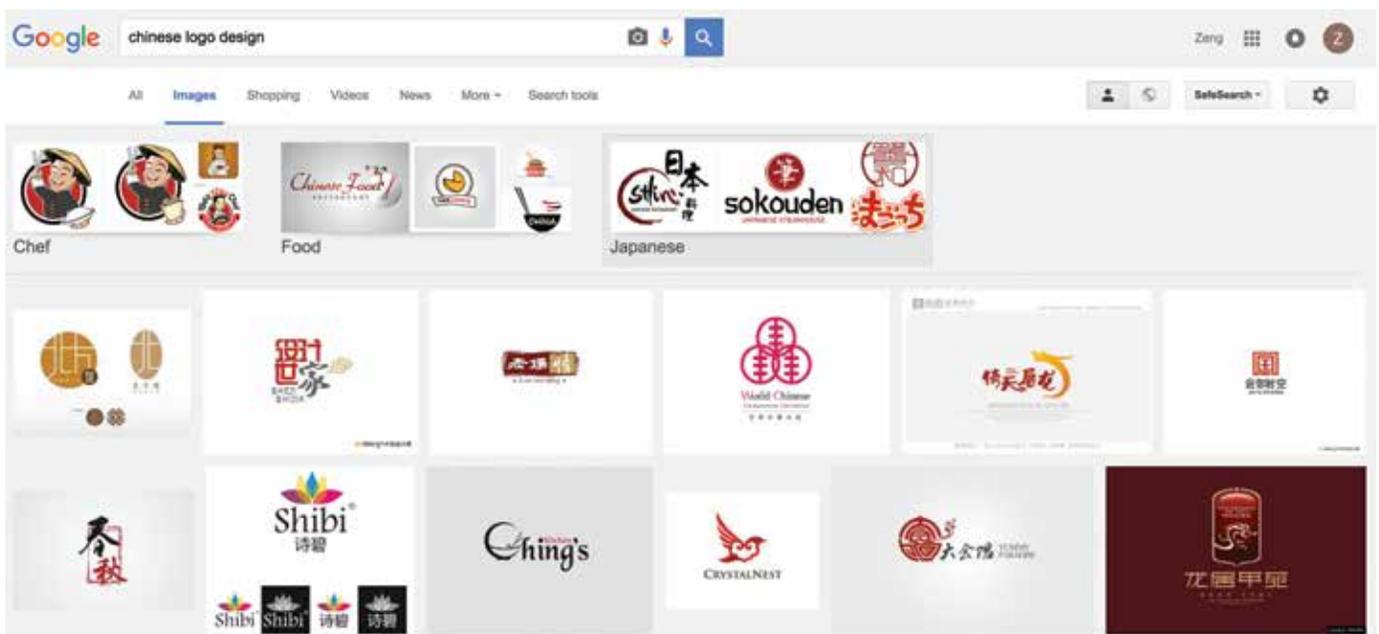
<sup>4</sup> See <http://www.logo-asia.com/logo-design.html>

features the technology company FHZ’s website that is purely flat in design. This design goes very far in its abstract representation without sacrificing readability and usability. It must be noted, though, that the icons on this website interface rely heavily on the text that goes with each icon. Icon and text complement each other. Without either one of the two, their readability and usability would be greatly undermined.



**Figure 10. The flat user interface for a technology company’s website.**

This doesn’t mean, however, that skeuomorphic design no longer has its place in UI design in China. The website interface for a wedding planning business



**Figure 9. A Google search of “Chinese logo design” turned up over 90% flat design logos.**

## East Meets West on Flat Design

in Figure 11 features a design very characteristic of the skeuomorphic approach. As we can see, the design relies heavily on actual photographs of actual people and objects, from the two models to the umbrella, the chair, the lamp, etc. There's very little abstraction in the design. What's more interesting, however, is the integrated design in Figure 12. This design for the Didi Chuxing company, the Chinese version of Uber, features a realistic-looking light and picture frame, both of which are quite skeuomorphic. At the same time, the app icon in the center uses more abstract visual representations typical of flat design and has shed many of the details of an actual automobile. Figure 13 presents a more intriguing case as it combines skeuomorphic and flat designs in a more subtle way. On this website of the National Palace Museum of Taipei, the abstract and conceptualized representation of the Chinese cultural element (flower painting) is undoubtedly reflective of flat design principles, while the 3-D rendition of the vase suggests a skeuomorphic slant.

A second distinct feature of UI (especially logo) design in China is its play on words (Chinese characters), especially those employing the flat design approach. Many Chinese characters, especially in their earliest originating forms, are hieroglyphic, meaning the character is representative of the object it denotes in its form and shape. The design for the logo for



**Figure 11. A website for a wedding planner featuring skeuomorphic design.**



**Figure 12. Interface design for Didi Chuxing, the Chinese version of Uber, featuring an integrated design with both skeuomorphic and flat features.**



**Figure 13. Website of National Palace Museum of Taipei featuring both skeuomorphic and flat designs.**

2008 Beijing Olympics<sup>5</sup>, for example, plays on the hieroglyphic character 京, which is the second character in “Beijing” and which also represents a running person. Figure 14 shows a similar play on Chinese characters. In this figure of the website for Dingcheng Group, a science and technology company in China, the logo on the top left of the webpage features, on the top half, a pictographic combination of the two characters 鼎城 (Dingcheng). This pictographic representation is shaped much like what the character 鼎 denotes: a vessel often with a tripod base. Apart from this denotative meaning, the character 鼎 (ding) often carries the connotative sense of a very stable object due to the tripod support base, thus implying stability for a company. This play on the characters in logo design, we believe, has contributed to the move to the flat approach in UI design in China in that Chinese characters themselves are simple and abstract in nature, however hieroglyphic they might be, and their representations, therefore, are inherently simple and abstract as well.

A third distinctive feature about interface design in China is that it often incorporates elements from the traditional Chinese culture, the so-called Chinese element. But what defines the Chinese element? According to Zhen Tan (2010), the Chinese element is something that's uniquely Chinese, recognized by most Chinese, something that represents what China is, and something that allows others to know and understand China (p. 2). A Chinese element could mean a number of different things: Chinese calligraphy,

<sup>5</sup> The 2008 Beijing Olympics logo can be found by a Google image search with the term “2008 Beijing Olympics logo.”



**Figure 14.** Logo on top left of this website for Dingcheng Group plays on the Chinese character ding in its design.

Chinese seal carvings, Terracotta warriors, a Chinese knot, Qin bricks and tiles, Peking opera face masks, Chinese lacquer, red lanterns, dancing lions, oracle bone inscriptions, books with a vertical layout, a Chinese teapot, Chinese porcelain, or Chinese painting. The list is endless. Incorporating such elements into UI design makes things a little intriguing because many of these traditional Chinese culture elements tend to be detail heavy and may often push the design toward the skeuomorphic. A flat design that incorporates such traditional elements, then, poses a special challenge for the designer.

For example, Figure 15, the website for the exchange platform for studying ancient Chinese literature contains several distinctive traditional Chinese cultural elements: the ancient book, the traditional architecture, the boat, the bamboo, and the overall frame that looks like the frame for traditional Chinese painting or calligraphy. The entire interface is designed to resemble a traditional Chinese painting. While there's a high resemblance between the intended objects and their representation in the interface, details have been simplified and streamlined to avoid cluttering the page. The main

element—the book—is accented to highlight the theme of the website: Online Exchange Platform for Studying Ancient Chinese Literature, while the other Chinese elements are more or less simplified and deemphasized so as not to be too overwhelming. Such a treatment renders the design a combination of flat and skeuomorphic designs with the latter slightly more dominant than the former.

The blue and white porcelain design background in Figure 16, on the other hand, does a better job at integrating the Chinese element—the blue and white porcelain—into its flat design. This is a Web design template offered by a Web design company. While details from traditional blue and white porcelain are often very elaborate, the designers in this case only incorporated some key elements and presented them in a more abstract fashion. The overall design, therefore, manages to avoid being skeuomorphic despite the slight cluttering of the page with a few too many elements.

Overall, incorporating elements from the traditional Chinese culture into UI design is a rather common practice in China. Since traditional Chinese cultural elements tend to be wrought with details and lend more

## East Meets West on Flat Design



Figure 15. Online platform for studying ancient Chinese literature incorporating uniquely Chinese elements: an ancient Chinese house, an ancient Chinese boat.



Figure 16. Blue and white porcelain as the unique Chinese element in this interface design.

naturally to skeuomorphic design, they pose a special challenge to those who favor the flat design. However, as we have shown in our discussion above, flat design that incorporates such elements can nevertheless be effective if the design is carefully thought out.

So far in this section, we have shown that while skeuomorphic design still has its place, there's a strong tendency to move toward flat design in UI design in China. This move toward flat design, although coinciding with the development in Western UI design, is more than just a blind following of the Western trend. We hope our discussion has demonstrated the intricate connections between this design approach and Chinese cultural elements.

### Rhetoricizing The Chinese Context: Why the Flat Design?

Flat design is clearly making its waves in the Chinese UI design field, although skeuomorphic design still has its rightful place. What has accounted for the popularity of flat design in China is, in some respects, also a uniquely Chinese phenomenon. While numerous factors could be attributed to the rise and popularity of flat design in China, we attempt to approach our analysis from the following four aspects: ideological (philosophy), cultural (painting), linguistic (character formation), and social (status). However, we should preface our analysis with the disclaimer that pinpointing the exact reasons behind the popularity of flat design in China is downright impossible, much like pinpointing the exact logical relationships between cultural thought patterns and rhetorical styles, between rhetorical styles and philosophies. Such relationships are developed over centuries and are intertwined in more ways than one. Nevertheless, this should not stop us from making observations, however over-generalized, about what may have accounted for the popularity of this new trend.

First, as Selfe and Selfe (1994) have pointed out, user interfaces are social spaces where “cultures meet, clash, and grapple” (p. 482). We can therefore look to Chinese ideologies for some possible underpinnings for flat design. Chinese philosophical ideology has always been one of polar opposites. For example, while it may champion extravagance (e.g., in lifestyle, in speech, in writing) on the one hand, which could account for the skeuomorphic approach, it also advocates simplicity on the other. Taoism, one of the most influential traditional

Chinese philosophies, has always advocated the principle of simplicity as the eloquent Lao Zi, for example, has claimed: “Too many colors blind one’s eyes, and too many sounds deafen one’s ears” (translation ours). Lao Zi’s famous saying—“Less begets and more deflects”—is very similar to the Western architect Mies van der Rohe’s famous adage “Less is more.” This championing of simplicity was shared by Confucius, who argued: “Red paint should not be further ornamented, white jade should not be carved, and precious jewel should not be decorated. Why? Because abundance in quality defies decoration.” This emphasis on simplicity translates into simplicity in all aspects of life: simplicity in lifestyle (frugality), simplicity in speech (conciseness and respect for others because “silence is golden”), simplicity in writing, etc. The design field is certainly no exception.

Second, Chinese painting, in a similar fashion, endorses simplicity, which is best represented in its use of symbolism and abstraction. Two kinds of traditional Chinese painting—Chinese gongbi and Chinese landscape—both advocate simplicity. Chinese gongbi painting (see Figure 17), a kind of painting that pays meticulous attention to details, focuses on painting two-dimensional human figures. Although this kind of painting pays close attention to details, its representation of human figures is rather abstract and, often times, does



**Figure 17. Chinese Gongbi painting as a unique Chinese element is often featured in interface design.**

## East Meets West on Flat Design



**Figure 18.** Chinese landscape painting as another unique Chinese element is also featured frequently in interface design.

not concern itself with how accurate the representations are. In a similar way, although with very different forms of representation, the Chinese landscape painting also emphasizes simplicity and abstraction. As shown in Figure 18, landscapes in these paintings are often two-dimensional and abstract, with simple strokes to depict nature in its pure, simple form. Painting has probably exerted the largest influence on designers, as many designers in China started their training in design by learning painting. It's natural, then, that styles in Chinese painting will inevitably influence styles in design.

Third, we believe the unique nature of the Chinese language itself has had some subtle influences on flat design. Chinese character formation has evolved from the more realistic hieroglyphic imagery in the early days to the later, more abstract ideographic representation. Figure 19 shows the evolution of the character *jia* (home). The earlier, more hieroglyphic forms of the character on the left very much resemble a house, with a roof on the top, walls on the sides, and animals/pigs (representing food and wealth) inside. The more recent and ideographic forms on the right are apparently more abstract. Today, most hieroglyphic characters have evolved toward the more ideographic form, a trend toward simplicity and abstraction, two important qualities of flat design.

A fourth factor that has contributed to the popularity of flat design in China, in our opinion, is



**Figure 19.** Evolution of the Chinese character *jia* (home) from the early, more hieroglyphic representations on the left to the late, more ideographic forms on the right.

social and economic status that's often associated with American and European products and fads. Since the 1980s, China has witnessed a steady trend of idolization of Western culture, in spite of constant challenges from Chinese nationalism. This idolization is so significant that adopting anything Western in many fields is often seen as a sign of economic and social status. This is also the main reason why developments in the design field in China have largely coincided with those in the US. It must be noted, though, that many Chinese designers have done more than merely copy the American style but instead have actively sought ways to incorporate Chinese elements into their design to make their design integral in the Chinese context.

How exactly culture shapes our UI design approaches may not be immediately clear, given the limited scope of our study. However, as our analysis has demonstrated, there's no question it plays a significant role in our perceptions of interfaces and in how we approach UI design. The connections between UI design and cultural elements and traditions are more than mere coincidences. User interface design is by no means a random, merely technical act; it is deliberate design with rich cultural underpinnings. What constitutes logical or intuitive is often not universal but contextual. Understanding the underlying philosophy behind users' perceptions means more effective, culturally informed UI design.

## Conclusion

Some design styles come and go; others become perpetual. User interface design in both China and the US has experienced skeuomorphic and flat designs, shifts between the two styles, competition between the two, as well as integration of the two. Skeuomorphic design obviously had its heyday, and flat design is making the wave. However, it's safe to assume that neither is going away any time soon and neither will be the sole design style to the exclusion of the other. More likely than not, the two styles will co-exist, and the most effective design may well incorporate elements from both styles.

Based on our analysis and discussions, we recommend the following:

- *Understand the context.* Any interface is accessed in specific contexts. Therefore, it's imperative to understand your audience, your purpose, your constraints, the culture, etc., before you start any design. Specifically, this means understanding such factors as the demographics of your users (e.g., age group, sex, education level, expertise, cultural background, ideology, etc.), use environment (e.g., home vs. workplace), access platform (e.g., desktop, laptop, pad, smart phone), purpose of use (e.g., browsing for information, interactive transactions), etc.
- *Embrace both (in fact, all) styles.* Skeuomorphism and flat design are not mutually exclusive. Skeuomorphism is useful to the extent that the design resembles the physical object in function as well as form. Flat design is useful to the extent that the simplicity of the design does not interfere with the cognitive understanding by the user. This translates in design practice into incorporating elements from both styles that are conducive to human cognition and conceptual perception of the implied association between form and function. For example, skeuomorphism's attention to details can be integrated with flat design's more abstract representation to create icons that could easily help users identify their functions. This can be done without being overly burdened with minute details that interfere with users' understanding or overly abstract renderings that hinder users' perceptions.
- *Use flat design and abstraction with moderation and good intuitive sense.* Just because it's a new trend doesn't mean it's all positive. With flat design, there's a greater risk than with skeuomorphism to overdo it and end up with a design that leaves the reader utterly confused. Abstraction can be done up to a point where it helps, not hinders, readers' cognition. Observe the following rules of thumb when creating abstract renderings of a particular object: (a) identify the particular features that uniquely define an object because these identify the object easily; (b) incorporate these features into the design—these features are what define the object and what help the user identify it; and (c) do a simple test: If a user can't recognize at first glance what the design denotes, it should probably be reconsidered.
- *Globalize your design.* What we mean by this is that an effective design should incorporate universal elements so that it can be understood by people from different cultures. Such universal elements may include commonly recognized graphics, symbols, or even text, but more importantly, the design should allow culturally universal affordances so that it can be localized within any particular geopolitical context. Several measures could be taken to ensure a more globalized design: (a) bring a localization expert (someone with expertise about the target culture and target user group) into your design team at the very early stages of your design process; (b) use more universal, non-culture-specific graphics, icons, and symbols; and (c) use non-idiomatic language (even with English, more simple, standard English is easier to understand or translate).
- *Design your interface with localization in mind.* A good design should be able to be localized to its particular cultural context. Any design is ultimately a cultural phenomenon. The effective incorporation of cultural elements is key to successful design. As Ping Wang (2014) has argued, different cultures beget different designs, and a Chinese design should be a good representation of the Chinese culture. Designs with localization capabilities will allow cultural affordances to enable contextualized user interfaces. Again, observe a few simple guidelines: (a) avoid a design-first-location-second type of process; as mentioned above, localization experts should be brought on the design team from the very beginning because mistakes committed at the design stage would be hard to be undone later in the localization process; (b) design with options for modification and adjustment; for example, a fixed-width textbox that might be just right for English may turn out to be too big for Chinese but too small for Arabic; and (c) design your interface with flexibility in such a way so that elements on the interface could easily be replaced with elements more appropriate for the target culture.
- *Put usability first.* Whatever design approach you adopt, don't lose sight of the big picture: The overriding objective of UI design should always be usability. User interface designers should aim for ease of understanding and the simplification of execution for the user. Therefore, always conduct usability tests with your target users before putting the product

## East Meets West on Flat Design

to use. This means using the actual target users, creating genuine test environments that mimic the real-life use situation, and designing tasks that are representative of the typical tasks your target users will perform with your product or interface.

As much as we would like to be specific about these guidelines, we also understand that in actual design practice, it comes down to a designer's accurate assessment of the user context, evaluation and selection of design options, and overall execution of different design principles informed by cultural awareness.

Skeuomorphism or flat design, what will prevail as THE style is not the issue. A good professional sense plus an acute cultural perspective on what works and what doesn't is more helpful. What is ultimately more important, though, is for both practitioners and researchers to join the conversation about building a common ground that would allow diverse cultural perspectives on effective UI design.

### References

- Allsopp, A. (2013, April 30). iOS 7 to be 'very, very flat,' with redesigned Apple app icons and more, report says. Retrieved from <http://www.macworld.co.uk/news/apple/ios-7-be-very-very-flat-redesigned-apple-app-icons-more-report-says-3444827/>
- Asghar, T. (2014, July 9). The true history of flat design. Retrieved from <http://www.webdesignnai.com/flat-design-history/>
- Bayley, S. (n. d.). Why minimalism is big stuff. Retrieved from <http://www.stephenbayley.com/w/why-minimalism-is-big-stuff>
- Danilo, A. (2012, October 15). Splash vector graphics on your responsive site. Retrieved from [http://www.html5rocks.com/en/tutorials/svg/mobile\\_fundamentals/](http://www.html5rocks.com/en/tutorials/svg/mobile_fundamentals/)
- Farkas, D.K. & Williams, T.R. (1990). John Carroll's *The Nurnberg Funnel* and minimalist documentation. *IEEE Transactions on Professional Communication*, 33(4), 182–187.
- Fagioli, B. (2014, October 16). Apple releases OS X 10.10 Yosemite -flat, beautiful and free. Retrieved from: <http://betanews.com/2014/10/16/apple-releases-os-x-10-10-yosemite-flat-beautiful-and-free/>
- Fichter, D. & Wisniewski, J. (2014). Flat design travels to library websites. *Online Searcher*, 38(3), 28–31.
- Gajani, A. (2013, March 13). Skeuomorphism: A design concept on its way out. Retrieved from <http://www.mrgeek.me/insight/skeuomorphism-a-design-concept-on-its-way-out/> Gessler, N. (1998). Skeuomorphs and cultural algorithms. In V. W. Porto, N. Saravanan, D. Waagen, & A. E. Eiben (Eds.), *Evolutionary Programming VII*. (pp. 229–238). San Diego, CA: Springer-Verlag Berlin Heidelberg.
- Greif, S. (2013, February 11). Flat pixels: The battle between flat design and skeuomorphism. Retrieved from <http://sachagreif.com/flat-pixels/>
- Kass, K. & Lauer, T. W. (2004). Media transitions: The cases of digital imagery and e-mail. *Information Technology & People*, 17(3), 252–267.
- Kimball, D. V. (2014, March 31). Origins of the design language formerly known as metro. Retrieved from <http://www.davidkimball.com/blog/origins-of-the-design-language-formerly-known-as-metro>
- Mackenzie, C. (2002). The need for a design lexicon: Examining minimalist, performance-centered, and user-centered design. *Technical Communication*, 49, 405–410.
- Meyer, K. (2015, June 28). The roots of minimalism in web design. Retrieved from <http://www.nngroup.com/articles/roots-minimalism-web-design/>
- Meyer, K. (2015, July 12). The characteristics of minimalism in web design. Retrieved from <http://www.nngroup.com/articles/characteristics-minimalism/>
- Müller, F. (2014, November 7). Flat design: A history, past, present and future. Retrieved from <http://www.onextrapixel.com/2014/11/07/flat-design-a-history-past-present-and-future/>
- Ong, J. (2014, June 2). Apple announces OS X Yosemite with flat design, tight iPhone integration and more. Retrieved from <http://thenextweb.com/apple/2014/06/02/apple-reveals-os-x-10-10/>
- Page, T. (2014). Skeuomorphism or flat design: future directions in mobile device User Interface (UI) design education. *International Journal of Mobile Learning and Organisation*, 8(2), 130–142.
- Pratas, A. (2013, July 4). Flat design: An in-depth look. Retrieved from <http://www.awwwards.com/flat-design-an-in-depth-look.html>
- Rau, P. L. P., Plocher, T., & Choong, Y. Y. (2012). *Cross-cultural design for IT products and services*. Boca Raton, FL: CRC Press.

- Reschke, M. (2014, November 5). Jonathan Ive's Yosemite: The good, bad and the ugly. Retrieved from <http://www.t-gaap.com/2014/11/5/jonathan-ives-yosemite-the-good-bad-and-the-ugly>
- Robbins, W. (2014). Design practices in mobile interface design. Retrieved from <http://digitalcommons.calpoly.edu/grcsp/130/>
- Selfe, C. L. & Selfe, R. J. (1994). The politics of the interface: Power and its exercise in electronic contact zones. *College Composition and Communication*, 45, 480–504.
- Skeuomorph. (n.d.). Retrieved July 29, 2015 from Wikipedia <https://en.wikipedia.org/wiki/Skeuomorph>
- Smith, M. (2014). Apple OS X Yosemite review: Your iPhone is peanut butter, your Mac is jelly, and OS X Yosemite is the sandwich. Retrieved from <http://www.digitaltrends.com/computing/apple-os-x-yosemite-review/>
- Tan, Z. (2010, November 17). Ping mian she ji zhong de zhong guo yuan su yun yong (The application of Chinese elements in graphic design). Retrieved from [http://wenku.baidu.com/link?url=d6pMTwkBBtjoeRCnkq9MP-s4jh0rITaWRXqpN1NsdemLuKlc84JMhZL\\_MkberBklpj6PIPGM1SW\\_1ygPneyzo5qHV6AzA4TBFJAewRR3H83](http://wenku.baidu.com/link?url=d6pMTwkBBtjoeRCnkq9MP-s4jh0rITaWRXqpN1NsdemLuKlc84JMhZL_MkberBklpj6PIPGM1SW_1ygPneyzo5qHV6AzA4TBFJAewRR3H83)
- Turner, A. L. (2014, March 19). The history of flat design: How efficiency and minimalism turned the digital world flat. Retrieved from <http://thenextweb.com/dd/2014/03/19/history-flat-design-efficiency-minimalism-made-digital-world-flat/>
- Turnbull, C. (2013, August 27). Flat design, iOS 7, skeuomorphism and all that. Retrieved from <http://webdesign.tutsplus.com/articles/flat-design-ios-7-skeuomorphism-and-all-that--webdesign-14335>
- Vector Graphic. (n.d.) Retrived March 14, 2016 from the Tech Terms <http://techterms.com/definition/vectorgraphic>
- Wang, P. (2014). Qian tan zhong guo yuan su zai dang dai wang ye she ji zhong de ying yong (On the application of Chinese element in contemporary web design). *Art in China*, 1, pp. 126–128.

### About the Authors

**Baotong Gu** is an associate professor of rhetoric, composition, and technical communication at Georgia State University. His publications, including one book (*From Oracle Bones to Computers: The Emergence of Writing Technologies in China*) and five edited collections, involving such areas as theories of technology, content management, and cross-cultural technical communication. He served on the Executive Committee of the Association of Teachers of Technical Writing (ATTW) and was the program chair of the 2012 ATTW conference. He is available at [bgu@gsu.edu](mailto:bgu@gsu.edu).

**Meng Yu** is a PhD student in the Rhetoric and Composition program at Georgia State University. Influenced by her intercultural background and her study in linguistics in her M.A. program, she is interested in writing assessment, Chinese rhetoric study, and technical writing across cultures, genres, and mediums. She is available at [myu7@student.gsu.edu](mailto:myu7@student.gsu.edu).

---

Manuscript received 1 May 2015, revised 21 March 2016; accepted 12 May 2016.