

The Beauty of Simplicity

Kristiina Karvonen

Department of Art History, University of Helsinki
and

Department of Computer Science, Helsinki University of Technology

P.O.Box 9700 HUT Finland

+358 9 451 5785

kristiina.karvonen@hut.fi

ABSTRACT

In this paper we show how discussion about design quality or even usability is often discussion about aesthetics. First, we introduce some definitions of beauty in aesthetics. Then, we introduce how the beauty of the Web design affects the feeling of online trust, and bring forth observations about this design quality as an aesthetic notion. As a result, we present how simplicity and beauty affect the user's experience and interpretation of the design, and contemplate on how this perception may vary according to cultural background, age, and the amount of user experience. We will also envision some future trends for the aesthetics of user interfaces.

Keywords

Aesthetics, beautiful, design quality, pleasure, trust, Web usability, user interface design, cross-cultural HCI

INTRODUCTION

Quite recently, Jacob Nielsen has suggested simplicity as a key factor behind creating usable design [17]. At present, this notion of simplicity seems to be coming up frequently in other studies across the HCI field also (e.g., [2],[4],[10]). According to Nielsen, "simplicity" means, first and foremost, that users on the Web are able to get what they came for. According to him, users are extremely goal-driven on the Web, and will not tolerate anything standing between them and their goal. Simplicity, then, for him, is the lack of obstruction, or lack of complexity. But simplicity is also a notion that is, among other things, an aesthetic one. However, in the studies mentioned, simplicity has practically nothing to do with beauty and aesthetic considerations. Functionality, and concordance across content and layout, and other such matters are all

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that is being talked about, whereas aesthetic terms, such as pleasantness, are not really mentioned. Why?

There are only few studies reporting on the influence of aesthetic judgment on the evaluation of a user interface [25]. One reason might be the strong suspicion of visual pleasure in intellectual circles [15]. Not only professionals, but the "common people" as well share these beliefs – as has been so memorably and humorously cited by Donald A. Norman in his groundbreaking studies on every-day design [21]. If some device is difficult to use, its perceived beauty may turn against it: beauty is often seen as inversely proportional to easiness-of-use, and very doubtful indeed. Some have suggested that the suspicious nature of beauty considerations might also rise from the attempt to make HCI more *user-oriented*, instead of being *customer-oriented* – that is, to differentiate the field from advertising, or marketing [25].

Let us give a few examples on how aesthetic matters are usually dealt with, when talking about usability. Usability is often defined as "the extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in specified context of use" [7], [22]. From these, satisfaction measures the extent to which users are free from discomfort when using the product, as well as to overall attitudes to the use of product. Previously, Nielsen has defined usability as consisting of five attributes. These are learnability, efficiency, memorability, errors and satisfaction [18]. No explicit mention of aesthetics here, but what is meant by "satisfaction"? Could it include, among other things, the kind of pleasure we get, when encountering with a pleasurable, beautiful object? In fact, could there really be satisfaction without the beauty element, in the first place?

Questionnaires, such as SUMI, measure user preference in terms of software comparison [13]. These questionnaires focus on finding comparable differences on users' perception of quality of software they have used. User preference is usually assumed to have strong correlation with efficiency [19], or successful completion of tasks [24]. Yet, in quantitative Web usability testing, Spool & al. has

found out that user preference of Web pages is not so strongly affected by success, nor by the amount of graphical elements, than it is by interest to content [24]. From the aesthetic point of view, “perception of quality” is what raises questions here.

Also, often we come up with the phrase “design quality”, when making usability assessments of, say, a service on the Web (e.g., [4]). But what does this actually mean? Design quality is frequently described as “professional design”, referring to the perceived skillfulness of the end result [4]. Design quality also seems to mean “pleasantness” – when we encounter quality design, we experience pleasurable feelings towards it [12]. Design quality gives pleasure.

“Simplicity”, “design quality”, and “pleasantness” are all aesthetic notions. To better understand what we are talking about, when we make these quality assessments, it is high time to start talking of these notions with their real names. We should strive to make use of hundreds of years’ efforts in aesthetics on trying to find out, what it is that our aesthetic experiences are made of – of where the beauty of the design lies. In this paper, we make an initiative to do exactly this – to bring the world of aesthetics into HCI and user interface design.

The rest of the paper is organized as follows: First, we will shortly have a look at the tradition of aesthetics, and see how it might be applicable to Web design – this means concentrating, for the most, on the aesthetics of the visual: on the philosophy of art, and especially on the aesthetics dealing with beautiful objects that attract the eye. Next, we will present a case from real life, where these kinds of beauty assessments are made in the Web – of how the feeling of trust is promoted through beautiful design. Finally, we bring together the results of our research, combine them with the theory of the beautiful, and give some suggestions for beautiful design for the Web designer. We will also envision some directions for future work on the way to a more beautiful Web.

WHAT IS BEAUTY?

Beauty gives blissful pleasure – which is why it is sought after. We all seem to possess an inner need for beauty that is both primitive and rather intensive. Everybody wants to experience beauty, and to be beautiful – whole industries are built on these needs. We are ready to make sacrifices, some small and some great, in our pursuit for beauty; we travel to the other end of the world to experience the beauty of nature, or some famous work of art; we buy high prices for penthouse apartments with wonderful views, as well as for works by well-known masters – examples of appreciation of aesthetic qualities are plenty, and easy to find. According to the French writer Anatole France, “beauty is the greatest power in this world”. Obviously, then, it is a power to be reckoned with, and only a fool would neglect trying to understand such might.

When going through the existing literature on aesthetic considerations in user interface design, it soon becomes evident that no real reference is actually made to the tradition of aesthetics (with the notable exception of Brenda Laurel’s writings, [14]). In those studies that try to analyse aesthetics, the aesthetic principles are, for the most, made up *ad hoc*, without any justification from existing theories of the aesthetic that have been around and available for years (see, for example, [26]). The challenge for current research is to put an end to these “solipsistic aesthetics” and try to link them to the more formal study presented by aesthetic theories. This way, we may be able to generate a standard form to speak about, and analyse, the aesthetics of the Web. A more formal analysis will also be more useful for the Web designer.

Aesthetic Examples

Let us give a few examples on how the know-how of aesthetics might have helped to come more quickly to the statements made today. These include the areas of 1. Simplicity, 2. The type of knowledge we are dealing with, and 3. Categorizing this knowledge.

The Praise of Simplicity Dates Long Back

In aesthetics, the notion of simplicity has been revolving around for long, and usually, simplicity has been praised. In the 18th century, beauty, according to Johann Joachim Winckelmann, a German aesthete, was “plurality in simplicity” [27],[28]. He considered simplicity to be the most difficult way to accomplish beauty. According to him, it was easy to use a lot of means to produce insignificant works, but difficult to do the opposite – to create significant, that is, beautiful works of art with simple means. This, when reached, however, would for him, be the sign of a real masterpiece. The corollary to Nielsen’s – and others’ – agenda for promoting simple design is loud and clear. What Nielsen is telling us now about simplicity, was already told by Winckelmann almost three hundred years ago. So why invent the wheel anew?

The Type of Knowledge We Are Dealing With

Other points of interest provided by aesthetics include the definitions of Immanuel Kant on analysing the type of knowledge we are dealing with, when talking about aesthetics. In his *Kritik der Urteilskraft* in 1790, Kant separated aesthetic knowledge from other forms of knowledge, namely the theoretical and the practical [9]. In his opinion, then, the knowledge of aesthetic matters was fundamentally different from the other two. This Kantian division is clearly reflected in the way we often separate between knowledge about *rational* things, and knowledge about *emotional* things. Many feel that these are fundamentally different types of reactions, and that somehow, it would be more difficult, if not impossible, to get precise information about the latter. This, in part, may be one more reason why there are not so many studies on aesthetics on the Web. Realizing this might have helped us

pay more attention to the emotional aspect in Web design from early on.

Aesthetics and emotions share a common quality: they have often been mystified, and this is why it has been claimed that they cannot be really studied, at least not in the same way as more rational things can be studied. Furthermore, aesthetics, if not emotions, have often been considered to be unique - everyone has a taste of their own, so universal beauty assessments do not hold. However, people might not be so independent in their preferences and likes, but often follow some general principles of "styles" or "trends" or "fashions", in what they consider to be beautiful, so some generalizations can be made.

Categorizing and Context

The *context* of making beauty judgments is of importance, for the category we perceive the object of our evaluation to fall in, strongly influences the aesthetic demands it should fulfill in order to be considered beautiful. It is more than likely that we pose different questions in front of an art work inside a museum than we do when we find a graphical painting on the wall of a metro station.

In the case of Web design, it clearly matters how we interpret the meaning or purpose of a Web site - what our point of view happens to be. Some suggestions for how to understand a Web page as an object of aesthetic inquiry might include seeing it as a text, seeing it as a view (as a picture), or seeing it as a film (moving picture). As the media is reaching maturity, it will, more and more, become independent of these correlations and will develop aesthetics of its own. An excellent analogy can be found in the slow acceptance of photography as an area of fine arts in its own right, and with its own aesthetic rules and principles.

But what kind of aesthetics would be most relevant for us? Aesthetic preferences vary through time and place, and may change abruptly. Winckelmann was the aesthetician who made us once again appreciate the classical works of antiquity, and the kind of beauty they presented, above anything else. Winckelmann's writings made antiquity the prime example for beauty in the fine arts, instead of the ideals of Baroque and Rococo of his own time [28]. In our times, the same thing is happening all over again - we choose our own aesthetics. In this era of praising individuality (at least in the so-called Western society), we have a plurality of aesthetic worlds around us. Still, it might be possible to find something to combine and bring together this variety. Simplicity might be the key to do this.

To conclude, we have seen that knowledge about aesthetics might indeed be helpful. We will also learn, just how important it is to understand just how effective beauty can be in the Web. This knowledge is of relevance in a very surprising way - beauty may be the decisive factor when wondering whether or not to trust a service enough to conduct business online. The future of e-commerce may lie thin without understanding this.

Simple Design Recommended: Designing Trust

Trust has become one of the hottest issues in usability, especially in e-commerce (e.g., [4], [8]). Without trust, the future of e-commerce lies thin. It is essential to find out and analyse, what makes users trust a service-provider on the Web. Here, we show how beauty assessments bear relevance to the decision-making in whether or not to trust a service-provider on the Web.

In our previous studies, we have found design quality to be among the features that enhance the feeling of trust in the users, when doing transactions online [10], [20]. Also, in the Ecommerce Trust Study by Cheskin Research et. al. [4], the six most prominent features promoting online trust included "design quality". But what is meant by this phrase? It does not take much to realize that there are many options. In the Ecommerce Trust Study, the concept is unfortunately not analysed any further, so we are left on our own. What, then, is "trustworthy design"? Does it mean conservative look? Or official look? Or perhaps clarity, artistic touch, familiarity, or what?

It seems rather commonplace to conclude that design quality must be "different things in different worlds". With our Finnish users, clarity of design was most frequently mentioned as key to enhancing trust towards the service provider on the Web [10]. The same was true, when we repeated the study with users in Sweden [11] - also they appreciated "clear" or "clean" design, as they defined it, and since the design was pleasing to them, they were also ready to trust it more easily. What may be surprising in this world of ours that so admires the assumed rationality of the *homo sapiens*, is that such an issue as trusting a service to be reliable and secure is, at least partially, based on something as irrational as aesthetics seems to be. If a Web site strikes me beautiful, I will gladly give away my credit card number - is that how it goes? With our Swedish users, this is exactly what we experienced: users admitted to making intuitive, and rather emotional, on-the-spot decisions to trust a service provider when shopping online. A user comment included: "if it looks pleasant, I just trust it" [11]. Even if things are always not quite as simple as that, this brief look into the makings of trust in e-commerce situations clearly shows us just how important the visual pleasantness may be.

Furthermore, the Web page will be considered according to its functionality. Is it an advertisement? Is it of scientific nature? Is it a personal homepage? The interpretation of what the Web page basically is all about will be very decisive for the category of aesthetics that it will fall into. Singh and Dalaj [23] speak of Web pages as advertisements, and what consequences this has to their design and usability. Now, in the case of trust, if a Web site is perceived as an advertisement, its trustworthiness is perceived as considerably lower than when it is perceived as a fully functional service [10]. Also, when a UI is considered beautiful or aesthetically pleasing in the

beginning of use, users are likely to perceive it more easy-to-use, also after using it for some time [25]. What we argue here, then, is that aesthetic experiences matter, even when – or especially when – we are not conscious of making them.

DISCUSSION

When thinking of the examples of Norman about products that are beautiful but difficult to use, one can think that this holds also vice versa: ugliness on the outside may seem to connote effectiveness and functionality on the inside. Thus, it is often implicitly assumed that if a product is effective, it does not have to be beautiful – it can do without. Here, beauty is seen as a complementing feature, something that is needed only when the functionality of a product is not quite what it should be. The argument goes like this: Beauty is used to disguise this defectiveness, and beauty, then, is seen as almost the opposite of effectiveness [21]. Thus, quality may in fact be regarded as “good” on the basis of missing beauty. Ugliness connotes effectiveness.

The Plurality of Users

The media-aware, experienced, and aesthetically conscious users will crave for an aesthetics that is different from the “basic” aesthetics. A simple example from real world could be the black clothing worn by practically everyone working in the field of fashion – extreme simplicity amongst the flock of fantastic, and colourful, designs. Another example would be the different styles of different places named after their locations. For example, the sophisticated, simple, functional, black-and-white “New York style” is highly different from the flashy, easy-going, sporty “Californian style”.

In the world of trust relations in the Web, this plurality shows in the way user preferences vary according to the amount of experience the users’ have. For example, in demands for privacy – a necessary precondition for trust forming – users can be categorized into roughly three groups with different privacy needs that require different user interface design solutions [2]. Interestingly enough, both those very interested in their privacy, usually experienced users, and those only marginally interested, usually novices, might according to this study require same kind of user interface design to satisfy these needs, that is, simple design.

Technical Aesthetics?

In the Ecommerce Trust Study [4], two of the six main features promoting trust are aesthetically relevant here: one is the already mentioned “design quality”, the other is “technical refinement”. Technical refinement means that the perceived high-tech features of a service on the Web will make the user more prone to trust the service provider. We argue, however, that this is the case only for the

experienced user, who alone will possess enough knowledge to understand and evaluate, what is technologically advanced and what is not, in the true sense of the word.

This leads us to an interesting proposition: it seems to us that the visual design of a Web page operates on two different levels. Firstly, in the case that is more simple in a way, it acts in itself as proof of excellency of design. The Web page is treated as a self-supporting object that lends itself to aesthetic consideration and evaluation. It is viewed as a simple object that is completely visible. This would be equal to the situation where the common man visits an art museum and views a painting by, say, Picasso. He either likes it or not, but tries not to seek for any intrinsic meaning in it. For a new user the beauty of an application is evaluated aesthetically in this simple way. (However, the aesthetic evaluation is affected by cultural issues [25], so everyone will not appreciate a Picasso.)

In the case of the technically experienced user, however, the way the visual design operates on the aesthetic level might not be as simple as this. We argue that here, it acts as a sign of technical refinement that lies underneath the visual layout, on the level of the infrastructure of the system behind the user interface. In Web design, a knowledgeable user will look for and recognize the high-tech features of the Web service through the visual layout of the pages which, for her, will act as visual cues or signs of this refinement, and will trigger the aesthetic experience. In the case of seeing a work of Picasso in an art museum, an expert will be looking for more in the painting: she will search for references, principles of harmony, stylistic coherence, or what have you. She might consider the work as a minor work or not aesthetically pleasing at all, whereas for the common man the famous name of Picasso may be enough to consider the work beautiful.

This aesthetics may indeed be very different from the “basic” one – traditionally, the aesthetics of technology seems to be aesthetic of the grotesque, or ugly. One look at the grey, box-like machines of today will tell you that a very special kind of aesthetics has been used here, if indeed beauty ever was one of the preset goals. Fear of beauty that would connote defects in the functionality of the underlying system, is what has dominated the technical field for a long time, as already mentioned before. Yet, it is some kind of aesthetics, and to be successful, it is necessary to have some insight into what kind of aesthetics one is dealing with. Is it aesthetics of the beautiful, or aesthetics of the ugly? What gives pleasure may vary, but we all do want pleasure.

So, to describe this difference across users with differing amount of use experience, it is helpful to refer to the semiotic notions of understanding the visual design of a Web site as “sign”. Using a semiotic analytical machine might prove fruitful in understanding Web design rules, when designing for the technically experienced user.

FUTURE WORK

In the future, it would be interested to further investigate into what kind of simplicity would be right for creating trustworthy design. Graphic designers often complain that usability experts always want design that is too simple, that is, boring. Simplicity in this sense is a kind of “stripped” simplicity – the design is stripped naked of all fancy features, colours, and flashy, moving objects. Is this what users really want? Or could there be a second kind of simplicity that they actually mean, “designed” simplicity – clear, and “clean” like the Swedish users wanted, but in a stylistic and beautiful way that does not lessen the pleasure provided, even if it lessens the elements the page consists of? We think it is this latter form of simplicity that is asked for.

Cultural variation

The question of cultural variation is an interesting and pressing one also on aesthetic matters. On a truly global environment like the Internet, to fully succeed in creating beautiful services is not possible without taking into account the variation in aesthetic taste across continents [25]. Traditionally, cultural variation has been treated as a nation-dependent factor. Tractinsky comments on the differences of Japanese aesthetic tradition and the Israeli action orientation. We could add to the list the Finnish sense for simplicity and functionality so well known, for example, through the works of the Finnish architect and designer Alvar Aalto. The same need for simplicity came up with the Swedish users also. However, with aesthetic issues the national borders may not give the right outlines for areas aesthetically similar, but they may be wider, or narrower, in scope.

Subcultures

The multitude of various sub cultures also needs to be addressed - these have, very often, their very own aesthetic taste - punk culture is one of the most striking examples of this. The aesthetic notions of what is beautiful and attractive is also age-dependant. To give an example, a recent study by Cheskin Research on teenagers on the Web tells us that blue colours are most attractive to these young users [3]. Also, the elderly users will bring in their own specific demands [6].

Novel Interfaces, Novel Aesthetics

We have considered only visual aesthetics here. This is due to the fact till this day, most user interfaces have been and still are equipped with visual user interfaces, realized with graphical elements - with GUIs. However, in the not so distant future, there will be novel user interfaces that make use of different modalities. We will have voice and haptic user interfaces embedded in our devices, in our clothes, or even in our bodies. These will bring with them great many new challenges for user interface design, and it is clear that the aesthetic dimensions will be among the most important ones. These novel means of interaction may promote the

aesthetic experience to its peak through turning this experience into a more complete total experience [16].

In this paper, then, we have only scratched the surface of a huge bundle of problems of beauty - of what makes things beautiful, different tastes for beauty, and so on. It is also of interest to investigate, where these aesthetic evaluations stem from. Are they transferred from the physical world – this would mean that a page on the Web is evaluated according to the standards for whatever is seen as its counterpart in the physical world, be it a book, a photo, or a painting [5] – or has the Web already reached maturity as a media enough to have an aesthetics of its own? Instead of trying to answer all these intriguing questions here and now, we are trying to make a point of suggesting a multi-disciplinary approach into the area of aesthetic assertions that would take into account and make use of the existing knowledge on aesthetic issues. It is, in our opinion, a first step into a more beautiful cyberworld, a beautiful Web that is more pleasant and, thus, more easy to use.

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