Something that is not Moving is Hard to Perceive
On the primacy of universal human principles in design

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Abstract: Designers often look at trends and developments and over-emphasize (cultural) differences between people. But, things that are not moving are hard to perceive. Next to all the things that are changing or in change at a certain point in time, many things simply stay the same. Human universals have been studied and identified in the behavioral and social sciences over the last century and current theories in evolutionary psychology show how these psychological mechanisms have become part of the human repertoire. In this paper we will argue that constants and commonalities in people’s behavior, thinking and feeling need to be understood first before we can start to look at and design for cultural and individual differences.

Key words: Human Universals, Evolutionary Psychology, Cultural Differences, Design Thinking

1. Introduction
Designers – like all people – are mostly focusing on what is changing (from before) or what is different (between people). Inspired by marketing research, they are inclined to look at trends in people’s values and behaviour, such as ‘because of a concern with environmental pollution and scarcity of resources, people increasingly tend towards sustainable behaviour’; ‘fewer and fewer people buy CD’s and download music from the internet for free’; ‘people are increasingly concerned with health issues’. In a steadily growing global economy, designers and design researchers alike have also started to emphasize (cultural) differences between people: ‘Saudi Arabians dress differently from the Chinese and have much larger families’; ‘Germans tap beer differently than the Dutch’; ‘in the US, PC penetration is much higher than in Latin America’ [all examples from 28]. This focus on changes and differences is not surprising. After all, the human visual system has been trained to perceive things that are in motion and is very sensitive to contrast and fine-grained differences [14]. Things that are not moving or commonalities are much harder to perceive. “Similarity is the shadow of difference” [22, p. 7].

Currently, and this is not restricted to the field of design, cultural diversity is a prominent topic. In Holland, believers and non-believers of a multicultural society tend to enlarge upon the differences between ‘native’ Dutch citizens and immigrants from various origins, mostly Islamic countries. To strike a completely different note, Sara Emami designed a memory game. In this popular game, pairs of identical cards are randomly put upside down on the floor
(or table if you like) and players are required to turn two at a time till a matching pair is found. Instead of making pairs completely identical, Sara made pairs of cards referring to similar phenomena in the Dutch (Western) and Middle Eastern cultures (see Figure 1). Yes, there are superficial differences between these two cultures, but don’t you think the underlying similarities are much more striking?

![Figure 1: Cross-cultural memory game designed by Sara Emami.](image)

Products are designed for people. Designers therefore need to understand people: why do people think, act, live, behave, feel, reason, and respond the way they do? And what do people aspire, expect, like, need, value and dream of? To answer these kinds of questions, design researchers nowadays tend to dive into the lives of ordinary people. They go out and interview and observe them and they use all kind of creative techniques to map (the contexts of) people’s everyday experiences [e.g. 24]. These efforts may bring us insights into some people’s daily routines, in a particular cultural and social context, at some point in time. To understand people in a more profound and fundamental way, we need to understand why people do what they do and feel what they feel in the first place. In sum, we have to understand human nature. Human nature becomes manifest in universal principles; principles all people, in all cultures, through all ages have in common.

2. Human Universals

Next to all the things that are changing or in change at a certain point in time, many things simply stay the same. Researchers looking for intercultural differences, based on the premise that culture is an arbitrary and distinct phenomenon and the fundamental determinant of human behaviour [5], have mainly dominated the field of
anthropology. “Because everybody likes to hear that “they” are different from “us”, anthropologists dwell on the differences” [5, p. 5]. But even the godfather of this movement already admitted “We find not only emotion, intellect and will power of man alike everywhere, but also similarities in thought and action among the most diverse peoples. These similarities are … detailed, … far reaching, … vast, … and related to many subjects.” [3, p. 154]. And he was right. The following random list of some human universal traits is, unless otherwise stated, borrowed from Brown [5].

People of all cultures and through the ages ...
... like to share and give gifts,
... look for adventure, diversity and kicks,
... are more likely to help attractive people and less likely to ask good-looking people for help [12],
... have etiquette and moral sentiments,
... aesthetically prefer order in chaos or unity in variety [16],
... use figurative language such as metaphors and metonyms,
... get bored over time,
... infer the mental states and intentions of others [2],
... need authority,
... are prone to altruistic behaviour [30],
... wish to stand out from others,
... impose meaning on the world [11],
... tend to overestimate the objectivity of their thought,
... rarely know the causes of their own behaviour [31],
... engage in magic, poetry, and pretend play,
... are prone to learn and explain the unknown,
... are able to recognize pictorial representations without previous training [19], etc, etc.

Human universals (sometimes they seem ‘near universals’; e.g. men nearly universally find lighter skin pigmentation attractive in women) like these have been studied and identified in the behavioural and social sciences over the last century. They hold for people in general, men and women alike. Some universals have been coined that separate the sexes: men are physically and verbally more aggressive than women; women everywhere predominate in child care; men have a greater ability to manipulate three-dimensional objects in space in the mind; women experience basic emotions more intensely; men have a higher tolerance for pain, etc. [see 21, Chapter 18 for an overview].

In this paper we will argue that these constants and commonalities in people’s behaviour, thinking and feeling can be powerful drivers for product development and need to be understood first before we can start to look at and design for cultural and individual differences.
In a recent graduation project at Delft’s faculty of Industrial Design Engineering, Simon Akkaya [1] explored if new design concepts could be developed by taking a single universal principle as a starting point: people’s tendency to promote the well-being of the other, primarily for the other person’s sake. This principle of altruism can for example be seen on the Internet, where thousands of people put a lot of effort in contributing to an online encyclopaedia (Wikipedia) for the sake of others being able to find the correct information they are looking for. Simon looked at the potential of this principle in three different contexts: food, garbage and immigration. In figure 2, the results for the garbage context is shown. It is a garbage bag, especially designed to invite people to throw away stuff they no longer need, but think might be of value to other people.

![Altruistic garbage bag](image)

Figure 2: Altruist garbage bag, designed by Simon Akkaya.

3. Adaptations and By-products

In line with current thinking in evolutionary psychology [see 7 for an overview], these universal traits or psychological mechanisms have become part of the human repertoire through hundreds of thousand years of human evolution. Just like biological mechanisms have evolved to serve a particular function, such as our intestines to digest food, the heart to pump blood and the liver to detoxify poisons, so has our brain been ‘designed’ to process information and with it a range of specialised functions. To understand why particular evolved psychological mechanisms have come into being, we need to go back to our ancestors, the hunter-gatherers. The functional architecture of the mind is formed as a result of problems our ancestors had to solve under the conditions of our ancestral environment, not by the kind of problems modern humans are dealing with today [27].
Faced with adaptive problems – to survive, to protect themselves, cooperating with others, looking for food, finding shelter, avoiding predators, protecting children, etc. – the hunter-gatherers have acquired specialised mechanisms to solve these problems through a process of adaptation or natural selection. These mechanisms vary from specific sensory systems and neural programs for language acquisition, to traits for emotional communication, stranger anxiety, kin recognition, incest avoidance, mate preference, altruism, morality, sibling rivalry, etc. Take for example mate preference. Hundreds of studies have demonstrated that males generally prefer symmetrical women with high cheekbones, glorious mane of hair, and a specific waist-to-hip ratio [e.g. 6]. All these female features point at youth and high reproductive fitness and that was all our male ancestors needed to know. Not all mechanisms are true adaptations in the sense that they were selected for; many of them are by-products that are causally coupled to traits that were adaptations. Take our sense of beauty. It has been extensively argued that we aesthetically prefer certain properties in our environment because the properties serve the functioning of our sensory systems [e.g. 15, 20, 21]. Our sense of beauty can thus be regarded as a by-product of our sensory systems, which are clear adaptations.

Whether an adaptation or a by-product, the psychological mechanisms have become part of our repertoire and govern our behaviour. Our behaviour is not a direct response to the selection pressure our ancestors were facing (i.e. to a need to increase our reproduction), but we simply execute the adaptation. That explains why those able to afford more children often choose to have fewer children [29]! In fact, the behaviour generated by these evolved mechanisms may have been adaptive in ancestral environments; there is little guarantee that it will be so these days. “Domain specific programs organize our experiences, create our inferences, inject certain recurrent concepts and motivations into our mental life, give us passions, and provide cross-culturally universal frames of meaning that allow us to understand the actions and intentions of others. They invite us to think certain kinds of thoughts; they make certain ideas, feelings, and reactions seem reasonable, interesting, and memorable. ... That is, they play a crucial role in shaping human culture” [27, p. 18].

4. Universal, Cultural and Individual

“The social and cultural are not alternatives to the biological. They are aspects of evolved human biology ...” [26].

“There is no question of opposing nature versus nurture; nurture is just one of the many forms that nature may take.” [25, p. 55].

“Behaviour is not just emitted or elicited, nor does it come directly out of culture or society. It comes from an internal struggle among mental modules with differing agendas and goals.” [21, p. 40].

What these three citations from leading thinkers in the field of evolutionary psychology share is the conviction that social or cultural phenomena could only be understood and predicted in the light of the aforementioned evolved mechanisms. As it makes no sense to oppose nurture versus nature, so we should not oppose culture (or social patterns) against nature: Cultural or social manifestations result from an interaction between the psychological
mechanisms and the world people are living in. “... the circuit logic of each evolved mechanism contributes to the explanation of every social or cultural phenomenon it influences or helps to generate” [27, p. 7]. If the (natural, economical, political, societal, environmental) circumstances are different or change, so will the way these principles are manifested, leading to variants at a group level (society/culture) and maybe even at an individual level (see Figure 3).

![Figure 3: Interdependence of universal mechanisms, cultural phenomena and individual behaviour.](image)

To illustrate how cultural and individual manifestations can be explained (and predicted) on the basis of universal, psychological mechanisms, we turn to two universal principles in the field of user experience. Designing for user or product experience\(^1\) has received much attention over the last two decades [e.g. 10, 23]. Recognised as one of the components of product experience, Hekkert, Snelder and van Wieringen [18] found evidence for the operation of the MAYA principle in people’s aesthetic response. This principle holds that people aesthetically prefer objects that maximize their novelty or originality (advanced) while maintaining an optimal level of familiarity or typicality (acceptable). The evolutionary logic behind this principle is that both exposing oneself to the new enhances fitness, in that it facilitates learning, and staying close to the familiar also has survival value, by decreasing the risk of jumping into a life-threatening adventure [4]. Striking an optimal balance between novelty and familiarity does seem to be the most effective strategy from a hunter-gatherer point of view. Yet, what is novel to one may be very familiar to someone on the other side of the mountain (and vice versa). One’s subjective assessment of a stimulus’ novelty or familiarity depends on a range of context (e.g. frequency of appearance) and background (e.g. previous experiences) variables. Thus, people differ to large extents on what objects they see as novel or typical for a particular product category. As a result, predictable differences in aesthetic preference arise at a group (culture, expertise, etc.) or individual level.

Another, much investigated component of product experience is our emotional response [e.g. 9]. As most psychologists in the field of emotion nowadays agree upon, emotions are evolutionary hard-wired, adaptive responses that make us approach something that is beneficial and avoid events that may harm us [13]. These action tendencies have clear survival value (e.g. fear makes you freeze or run away from the snake) and result from a

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\(^1\) These two concepts can and have been used interchangeably: it is the user who does the experiencing, hence ‘user experience’, it is the product that evokes the experience, hence ‘product experience’. 
cognitive, but mostly automatic and unconscious appraisal process. In this process, we estimate the extent to which an incoming stimulus, a product, corresponds or conflicts with one or more of the many concerns we have in life, such as goals, values, and needs (see Figure 4). As humans, we share a number of basic concerns, such as to survive, to socialize, to not be blamed for something we did not do, etc., and stimuli that conflict with these concerns will universally lead to negative emotions like fear, grief, or indignation. However, many of our concerns are not this basic and partly reflect the social or cultural group to which we belong or characterize us as an individual. As a result, predictable differences in emotional responses arise at a group (culture, social group, etc.) or individual level.

![Figure 4: Model of product emotions](image)

5. Conclusion

Universal human principles are the driving forces of our being human and should therefore be central in new product development. If designing is seen as an activity in which the generation of an idea is as important as the translation of this idea into a manifestation, universal principles should play a main part in this first step. This is actually one of the assumptions underlying the so-called Vision in Product design approach [17]. Following this approach, the designer first ‘designs’ the context, the set of starting points or considerations, which form the basis of the final design. These considerations can be all sorts of trends and developments that are currently in action. Most of all, and especially when the design is projected into the not so near future, this context consists of a number of human principles that are regarded as relevant and interesting for the domain at hand. Where marketers find their role in new product development by investigating all kind of changes in the market and pinpointing (target) group differences and engineers develop and promote the latest technological solutions, designers could find their role in the process by appointing themselves as masters and protectors of the human condition. This would give them a unique and autonomous position in the process and prevent them from being squeezed in by the other two players in the process. Since these other players, i.e. marketers and engineers, are more and more claiming ownership of the new product
idea, designers are in need of such a driving position (rather than presenting themselves as mere integrators). In ownership of these universal principles, designers are (back) in charge of the design process since the final design finds its main ‘raison d’être’ in these same universal principles.

6. References


