

Mindful Design
Cassandra Reese
Kent State University

Author Note

This paper was prepared for Design Theory, taught by Professor Gretchen Rinnert.

Abstract

This paper explores the modality of mindful design and its potential to increase societal awareness and promote conscious decision-making. To better understand the idea of mindfulness, mindlessness is first described to indicate how design influences one's level of thought. The communication method of persuasion is discussed to understand how the thoughtfulness of the individual alters how messages are received. The elaboration likelihood model (ELM) is referenced to understand how one's level of thinking impacts how people are persuaded. Mindless strategies are included to elaborate on how design affects mindful awareness. The second half of the paper describes the origins and benefits of mindfulness and explains how these insights are currently being applied to the field of graphic design. The difference between attitude change and behavior change are differentiated to clarify the function of the mindful method. Mindful technologies are explored to demonstrate the various ways design can increase individual awareness. While meditative practice is commonly associated with this term, additional examples showcase the vast, perhaps unexpected, potential of the method. The paper concludes by giving the reader techniques that designers can utilize to create moments of mindful attention.

Keywords: mindful design, mindfulness, mindlessness, attitude change, graphic design, persuasion

Mindful Design

The notion that design affects individual perceptions is not a new one. Advertising strategies have long used graphic design for the purpose of persuasion. Well-crafted brands communicate the potential for an improved experience and influence how people make choices. In this way, design has been used as a tool to shape underlying motivations and perspectives—both consciously and subconsciously. Much of the design that influences behavior does so by creating persuasive motivations that may or may not align with society's highest good. Individual recognition of these incoming, persuasive messages exists on a continuum ranging from mindlessness to mindfulness. What this means is that some of the information design conveys is not being consciously processed. Perhaps Ellen Langer, Harvard psychology professor, put it best when she stated that, "We're unaware of when we're mindless...when we're not there, we're not there to know we're not there" (Langer, 2013). The movement toward a mindful form of design seeks to draw attention to this pervasive, unaware state by waking people up to what is happening both in and around them. This modality encourages conscious decision making by shifting the locus of control back to the individual. In a culture where mindlessness abounds, mindful design recognizes the potential design has to act as a catalyst for greater awareness and conscious decision-making.

1. Mindlessness

To fully grasp the concept of mindfulness, it may be helpful first to understand what it means to be mindless and how this state of being has permeated modern culture. Mindlessness, also known as *auto-pilot* mode, refers to an inactive mindset that calls upon past distinctions to respond to present situations (Langer, 2014, p. 11). From this space, a person is not fully interacting within the current moment, but rather living in the mental space of past experiences, schemas or overlearned behaviors. Considering all of the choices a person makes in the span of one day, it is natural that some choices are repetitive. The nature of life is that it is constantly in a state of flux. When one is unaware of the subtle changes happening around them, they assume a passive mindset and lose the ability to respond differently (Langer, 2014, p. 9). In today's world, the average American encounters over 3,000 promotional visual messages each day

(Berman, 2008). With this barrage of persuasive messaging, one's repetitive, mindless processing could leave them open to inadvertent behavioral changes from external influences.

Mental constructs that support a low thought mindset include shortcuts, inferences, schemas and heuristics (Luttrell et al., 2014, p. 258). These rules or routines govern, rather than guide, the thinking process and are dominant factors in the decision-making process. One example of a mental script is a schema. Schemas are mental concepts that inform an individual on what to expect and how to respond within any given context (Mandler, 1984). Another well-known example of a mental script is a rule of thumb, or heuristic. When one encounters a new situation, they might call upon best practices to use without giving it too much thought. In the field of design, some designers prefer to use the same typefaces for all of their work. While this choice is not to be dismissed, as golden rules can certainly be useful and many times successful, the drawback occurs when one abandons contextual awareness and relies too heavily on what has worked in the past. When individuals are *too* certain, there is a lack of understanding that can limit one's ability to make different, perhaps better, choices. Not to mention, repetitive actions inhibit potential opportunities for innovative solutions. Langer (2014) points out "when we think we know, there is no reason to find out (pp. 8–12)."

1.1 Mindless Persuasion

Persuasion is a method of communication that seeks to sway a person's attitudes or behaviors. Attitudes refer to one's judgment of an object, place, issue or person. These evaluations impact how people make decisions. For instance, if one perceives a source as credible and trustworthy, they are more likely to put their trust in the message being communicated and make choices based on that trust. Based on the "expectancy-value perspective," attitudes are comprised of two aspects—both what one believes and how one feels regarding a subject. How a person regards a message plays a role in any actions, or behaviors, they decide to take. In some cases, individuals will thoughtfully consider their attitudes and the implications of their actions. Attitudes can guide behaviors, but behaviors can also guide attitudes. While it is a complex area of psychology with many factors to consider, the key understanding is that persuasion seeks to influence a person's attitude as means of impacting behavior. The primary goal of most persuasion is changing behavior (Perloff, 2003; Petty & Brinol, 2008). An important aspect to consider with

persuasion is how mindful a person is to the messages they are receiving. One's mindfulness plays a pivotal role in how individuals can be persuaded, as well as the formation of the resulting behaviors and attitudes.

Mindless persuasion can be linked to the *peripheral route* theory from the elaboration likelihood model (ELM) in social psychology (Petty & Cacioppo, 1981, 1986). The ELM theory states the level of thought an individual has impacts *how* they are persuaded. To elaborate is to ponder or think through one's options. This model describes how attitudes are formed based on the level of attention to what is occurring. When thinking is low, any reasoning, no matter how meaningless, can elicit a behavioral response (Luttrell, 2014, p. 266). Less awareness can increase one's susceptibility to meaningless messages. In a study by Langer (2014), people waiting in line to make copies were interrupted by others also wanting to perform the same task. If interferences provided any reason, no matter how irrelevant, individuals were more likely to allow the person to cut ahead of them. The research sought to understand how often individuals actively think about their experiences, rather than passively respond from a place of low awareness (Langer, 2014). While there are various factors that play a role in the persuasion of behavior, a mindless disposition has proven to be a significant variable.

There are a plethora of marketing techniques that depend on mindlessness as part of their strategy ranging from simple cues to more elaborate processes. Some examples of design that promote mindlessness include sources that are seen as credible, irrelevant, catchy or attractive. When messages come from reliable sources they are more likely to interpret the information as absolute truth, and less likely to have awareness within the moment (Langer, 2014). Even if the information is trivial, when paired with an attractive form or credible source, a person is more likely to be persuaded (Petty & Brinol, 2008). Quantity also plays a factor in persuasion. If there are more examples to substantiate any message, it is less likely to be questioned. If a message induces a heightened emotional state, it is more influential (Petty & Brinol, 2008, p. 140). An example of this is the fear-then-relief technique. The research in this area found that if a source generates anxiety and later relieves the induced stress, a person is more likely to comply with the source's requests. The evidence suggests that the withdrawal of the anxiety-provoking stimuli produces a mindless state where behavioral changes are likely to occur (Dolinski & Nawrat,

1998, p.27) Less obvious influences can include something as natural as a nod of the head or the flex of an arm. However, these changes in attitude are more temporary in nature and more open to future change (Luttrell, 2014, pp. 266-267). While various factors can promote conscious awareness, persuasion can occur at any level of mindfulness. A person does not need to be mindless to be persuaded. However, the mindfulness level of a person is foundational to the dynamics of the entire persuasive process.

2. Mindfulness

Contrary to the robotic nature of mindlessness, mindfulness is an active state of mind that focuses on the present moment. When a person is fully present, they can immerse themselves in the moment-by-moment realizations as they arise. Rules and routines that previously governed the mindless state are now used as informative guides (Langer, 2013). Langer (1997) defines mindfulness as “a mindset of openness and alertness, which regards any information as novel, pay attention to the specific context and considers the information from different perspectives, in order to enable the creation of new categories.”

2.1 Origins and Benefits of Mindfulness

The term “mindfulness” originated from the language of Buddhist psychology. The meaning is derived from two words, Sati that means “awareness” and “Samprajanya” that means “clear comprehension.” Mindfulness refers to having clear awareness of what is happening. The term is commonly associated with Eastern ways of thinking, although the origins of mindful practices—including meditation and prayer—have its roots in nearly all religions including Hinduism, Judaism, Christianity, Buddhism and Sufism (Grecucci et al., 2014). Though its roots are in religion, the act of being mindful transcends belief. A growing body of scientific evidence is recognizing its ability to reduce stress, manage pain and improve overall well-being. John Kabatt-Zinn (1990), creator of the Stress Reduction Clinic at the University of Massachusetts Medical School, is a leading expert on the topic of mindfulness and has outlined a list of attitudes to live a more conscious life. These habits include (1) nonjudging; (2) patience; (3) beginner’s mind; (4) trust; (5) not striving; (6) accepting; and (7) letting go (Grecucci et al., 2014, p. 2; Kabatt-Zinn, 1990). All of these dispositions seek to fully bring a person into the moment. When one releases preconceived notions, judgments, grudges, and expectations, they

can *see* more completely. Research in the area of neuroscience has discovered that mindfulness affects psychological and neural processes, body awareness, as well as cognitive control processes (Grecucci et al., 2014, p. 3). It is now understood that the brain is plastic, malleable to change (Falk, 2014). Like any muscle, it seems the brain can also be trained to be more conscious.

2.2 Mindful Design

In response to the mindlessness that permeates society, the question becomes whether design can be used for the benefit of creating a more conscious culture. Research in the field of merging mindfulness with design has gained more attention in recent years. The term “mindful design” has been used both in the field of design education (Rojas et al., 2015) as well to understand design’s imprint on society (Niedderer, 2007, 2013, 2014; Akama & Light, 2015). For the purpose of this paper, the primary focus will remain on the relationship between design and the awareness level of the individual. Unlike design that uses low-thought persuasion to achieve a particular goal (i.e., purchase bottled water), mindful design prompts the viewers to think about the significance of their actions—and perhaps move their choices toward what is important to them. The focus is not on controlling behavior, but on the conscious awareness it cultivates. The consciousness generated by the product or system moves beyond its direct function or use (Niedderer, 2013). An example of a company that is creating mindful packaging for water is Boxed Water (see Fig. 1). Through the use of a strong message on an unexpected packaging, people stop to consider how the choices they make impact the environment. The company is not just using mindless persuasion to sell water for the sake of profits; they are encouraging global awareness to reduce the use of plastic. The decision to purchase then becomes an ethical choice regarding how their purchasing decisions influence the world around them.



Figure 1. Boxed Water uses mindful design to generate awareness on the global use of plastic.

Kristina Niedderer (2013, 2014) describes mindful design as a two-part experience that both disrupts the expectations of the user and directs their awareness toward what requires attention. Through the addition or removal of an expected element, the experience promotes mindful awareness. In the example of the boxed water, the buyer expected the packaging to use plastic. The changing of this expectation causes them to pause and possibly reconsider their decisions.

One of the main differences between mindless and mindful persuasion is that the former seeks behavior change while the latter aspires for attitude change. When the goal is behavior, persuasive influences may be used to coerce people to act in a desirable manner. In these circumstances, the drive is external. Attitudinal shift still occurs, but it is not the primary goal, and the results are more temporary in nature. When the goal is impacting attitude, the focus is on higher levels of thinking and voluntary participation of the individual. The drive is internal and transcends the ethical concerns surrounding design for behavior change. Awareness, rather than a particular action, is the primary function (Niedderer, 2013, pp. 4565–4567). An example of mindful design that intervenes an expectation is the design of a traffic junction in the Netherlands. To reduce the high number of accidents, the government put up signs and traffic lights. Yet, it was only when they removed the directional elements that the number of accidents decreased. By shifting from automatic, mindless method, they inadvertently heightened the awareness of the drivers (Tromp et al., 2011).

Mindful persuasion can be linked to the *central route*, rather than the *peripheral route*, from the elaboration likelihood model (ELM) in social psychology (Petty & Cacioppo, 1981, 1986). It was previously mentioned that the ELM describes how attitude are created based on one's level on mindfulness. The central route process involves higher levels of thinking and cognitive processing (Perloff, 2003). Everything that influenced a person at lower level of thought still applies, but when thinking is higher, more substantial arguments are required (Petty & Brinol, 2008, p. 140). In the example of an advertisement, once persuasive elements are recognized, the messaging is then analyzed and the value considered. Any attitudinal shifts that occur are more likely to result in lasting change—which is the premise of mindful design (Luttrell, 2014). This critical, heightened mindset could either support or hinder a campaign depending on its objectives.

2.2.1 Mindful Technology

Technology plays an ever-increasing role within how people live their lives. A study by Buie and Blythe (2013) found that there are approximately 6,000 applications created under the umbrella term of spiritual or religious activities—mindfulness being included in this category. Through the creation of training apps, the premise is that individuals can be trained to learn mindfulness as a tool to reduce stress, increase productivity, promote focus or manage stress (Akama & Light, 2015). While some of these technologies specifically seek to teach meditation techniques, others concentrate on creating opportunities to lift the overall thoughtfulness and well-being of the individual. A few examples include Headspace, Happify, and The Mindfulness App. Headspace (see Fig. 2) is a popular meditation application that asks the user to think of their app as “gym membership for their mind.” The company website provides users with the science behind their methods and states that by practicing as little as 10 minutes per day, users can see improved health and happiness in their life (headspace.com). Another example of mindful technology is the app company, Happy Tapper. Carla White, designer for NASA and the founder of this business, focuses on using mobile technology to improve lives. Happy Tapper’s apps include Gratitude Journal, Vision Board, and Little Buddha. White states, “it is not our reality that shapes us, but the lens in which we view the world that shapes our reality...if we can change that lens, we can change our world and [improve our creativity and innovation levels] (White, 2014).” The goal of Happy Tapper’s apps is to improve *how* people are looking at the world around them, essentially making them more thoughtful individuals.

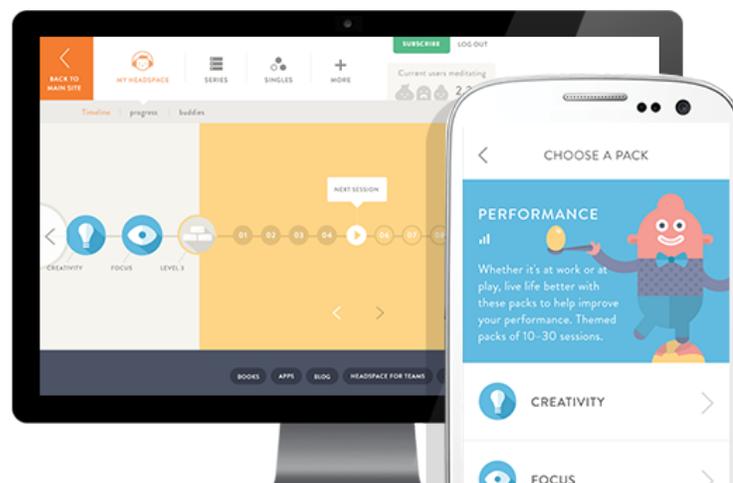


Figure 2. The interface of the Headspace progress tracker. Users can select what skill they want their meditations to improve. *Headspace.com*.

While there is value to these tools, Akama and Light (2015) point out that the mere endeavor to approach mindfulness as another goal to achieve can result in the opposite effect (p. 627). *Trying to be mindful goes against its very foundation.* The reason is that mindfulness is less about an action, or behavior, and more about a state of mind, or attitude. In their research, Akama and Light were hesitant to provide users with instructions on how to be more thoughtful, but rather explored how design can create moments to bring about heightened awareness. They focused on the creation of portals or routes that could be opened to allow thoughtfulness to arise. Akama and Light use the example of the Australian app *Welcome to Country* (see Fig. 3) that identifies the Indigenous Nation country or land in their current location. The function of this app is not only informational; it brings attention to other cultures that have also lived within that same area. While this app can generate awareness for some, for others it may not. Akama and Light state that “technology alone cannot make use mindful, but it can potentially help to trigger, shift, remind or invite us towards fostering practices of mindfulness.” (2015, pp. 631–632). Apps are not immediate fixes, like pills we can take to make everything better. If one is incredibly stressed out, simply downloading a mindfulness app will not automatically transform them into a peaceful, Zen master—but it *could* create a moment that an individual can choose to step into.

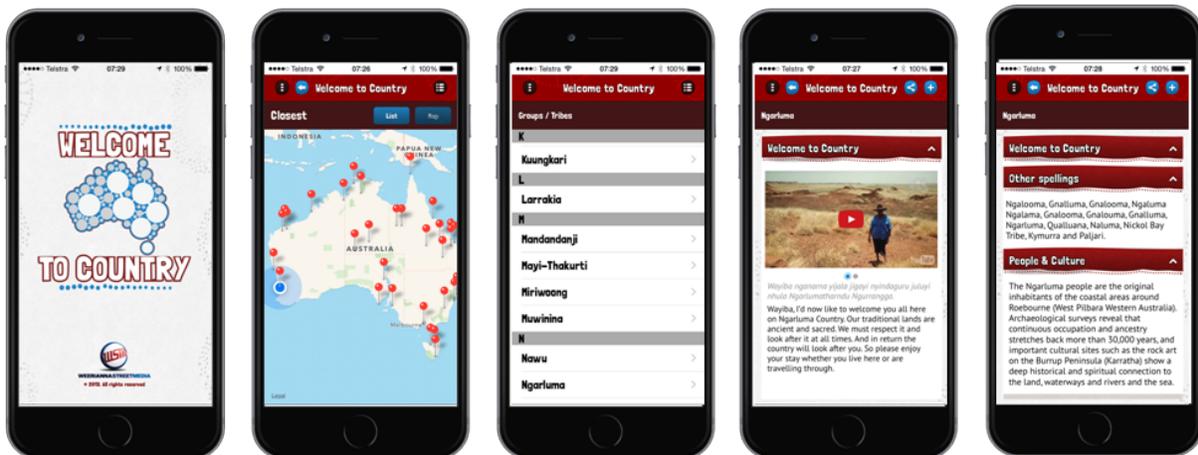


Figure 3. Welcome to Country. *Welcome to Country.mobi*

3. Mindful Techniques

Mindful design is all about creating opportunities for users to become more attentive to what they are experiencing. While technology has brought an abundance of comforts and amenities to today's society, it has also engendered a mindless culture. As the molders of experience, designers have the capability to impact how people experience the world. There are qualities that can be

incorporated within designs to promote higher levels of conscious awareness. These techniques can be broken down into the following: choice, interactivity, meaning, companions and novelty.

3.1 Choice

Choice is the action of discernment among alternative options (Langer, 2014, pp. 9–10). By making a selection, an individual becomes more present within their current situation. Despite the convenience of the GPS, it has created mindlessness among drivers. In the past, people would need to refer to giant folding maps to plan their ideal route. Today—as long as there is accessible WIFI—driving to unfamiliar destinations can be a thoughtless endeavor. If a wrong turn is taken, the tool will automatically reroute a new course. While this invention has taken much of the stress out of travel, the device has limited the thinking process in many ways. To better understand the impact of GPS systems, Chung and Langer (2013) tested an indoor mindful navigation system to cue individuals with real-time decisions. By requiring drivers to select between various possibilities, people perceived themselves as having more control; travel time was decreased; fewer errors were made; and more landmarks were noticed (Langer, 2014, p. 9). By actively engaging users in a formerly passive process, mindlessness was minimized, and numerous benefits were realized.

3.2 Interactivity

Interactivity is the level of engagement a person has with their immediate situation. When people are asked to participate, they feel like they have an impact over an outcome. As a result, this increases one's perception of feeling more valuable. Research conducted by Gianna Moscardo in tourism discovered that when visitors had control over the flow and pacing of the content, they were more engaged and had positive experiences. Visitors were less overwhelmed and were more likely to remember the information. When people felt disconnected from the environmental graphic, they were more liable to become mindless and have less positive experiences. Without interactivity, environmental graphics became a barrier against rather than a creator of engaging experiences (Woodward, 2003).

3.3 Meaning

When objects have meaning to the viewer on a personal level, it is more likely to produce a higher level of awareness. These are objects that people relate to their self-concept or values.

This could include anything from photographs and music to products that one identifies with in a meaningful way. Culture and individual preferences play a significant role in this aspect of mindful design. What generates awareness for one may do the opposite for another (Akama and Light, 2015; Perloff, 2003).

3.4 Companions

A companion is anything that acts as a constant presence within someone's life. The health sector has created wearable technologies—such as badges and bracelets—that monitor physical health and activity. Health-conscious mobile apps have also been developed to serve a similar purpose (Akama and Light, 2015; Niedderer, 2013). An example of a mindful companion is the Fitbit (see Fig. 4). Fitbit's line of companion products monitors one's level of physical activity, as well as sleeping patterns. Depending on the device, users can learn their number of steps, floors climbed, heart rate, and quality of rest (fitbit.com). Wearing the device makes one aware of any mindless choices they are making their life, and gives the user an opportunity to make decisions that align with their personal goals.



Figure 4. Fitbit companion devices. Fitbit.com

3.5 Novelty

Whether or not one consciously realizes it, people prefer things that are novel. Novelty refers to any change in experience that occurs outside of original expectations. When something breaks the cycle of routine thought patterns, it calls attention to whatever is happening (Akama and Light, 2015). In a study by Langer (2014), musicians were asked to play a well-known song and modify the melody in ways that only the player would recognize. They also had the option to recall a positive performance of the song and replay it. When played for an audience, individuals preferred the subtly-modified version that was mindfully performed (p. 14).

4. Conclusion

In a time of prevalent mindlessness, mindful design has the potential to empower individuals by making them aware of the personal attitudes and external persuasions that affect their daily choices. Awareness truly is the first step toward making decisions that aligns with one's personal values, beliefs or goals. Rather than going through life in a passive manner, this approach to design calls attention to how aware people are to what is occurring. Mindful technologies have created opportunities for users to actively pay more attention. This conscious method does not seek awareness for the sake of solely selling a product or forcing alternative behaviors. Moving from an external to an internal locus of control, individuals are prompted to recognize why they make the choices they do and how these decisions impact the world around them. Techniques including choice, interactivity, meaning, companions and novelty are strategies designers can employ to increase the thoughtfulness of those experiencing their designs. The power is shifted to the individual. It is up to them what they choose to do with whatever realizations arise. Mindful design is a call to humanity to *see*—and within an age containing so many persuasive messages, the benefits of this modality are worth *paying attention to*.

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