

Nudging

How human behavior is affected by design

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ABSTRACT

A statement in this article expresses that there is no such thing as neutral design, and that the way something is designed will affect the person using it in one way or another. With a basis in this idea it becomes interesting to look at how design affects people in ways they do not necessarily recognize momentarily. Nudging, as a method, aims to create predictable behavioral outcomes through the premises of how the human brain perceives the world and makes decisions. This article presents this term and its theoretical background before placing it in a service design context. Alongside several different examples of public nudging, a case study is briefly mentioned to illustrate a project where nudging is beneficial to reach the intended goal. The article shows that there is an important ethical discussion related to this subject, and both the arguments criticizing and defending the method are presented before this is discussed further. The aim of the article is to highlight the importance of being aware of the effect design might have on people, and to encourage designers to reflect on their responsibility when designing new solutions.

KEYWORDS: Nudging, Behavioral change, Service Design, Human behavior, Ethical concerns

1. INTRODUCTION

As humans we constantly make choices that do not always support our long-term goals or ethical values. This is explained through psychology by the fact that our brain works on two levels; one automatic and one reflective. The automatic level bases its decisions on our subconscious urges and needs. It is highly energy effective and therefore often used on all our daily challenges.

With this knowledge of the human mind, the people in charge of shaping the human environment, both physically and socially, have a great tool in guiding human behavior in predicted directions. This insight also involves a great responsibility of using the knowledge in ways that benefit society and the people involved. In behavioral economy a term for shaping behavior with the basis in this knowledge is called nudging.

The act of guiding user behavior in intended directions is not an unfamiliar tool in the field of design either. Defined affordances of products and deliberate placing of information on interaction surfaces, as well as the field of design for sustainable behavior, are evidence of such. Despite all this, the term nudging is most commonly found when talking about the field of behavioral economics or political projects. As service design is getting increasingly recognized as an important method in resolving the kinds of issues that economics and politician deal with, insight into the knowledge and theory behind the term becomes highly relevant for service designers as well.

This article will present central theories and views around the term nudging and how these methods are carried out. It will then relate these approaches to the field of service

design and discuss the issues related to ethical concerns associated with the use and effect of nudging. As a conclusion the article highlights the importance of ethical awareness when designing for behavioral change. The core aim of the article is to enlighten designers of the possibilities as well as the responsibility related to the understanding of the human way of behaving.

2. METHODS

This article is written as a literature review of several articles and books related to term nudging and human behavior in design. The book “Nudge – Improving Decisions about Health, Wealth and Happiness” by Richard Thaler and Cass Sunstein has been an essential basis for the background of this article. The other articles are chosen to support or challenge the theories presented by Thaler and Sunstein, but also to highlight other aspects related to designing for behavioral change. Most of the articles were found in economic and business journals, but articles collected from the field of design are also represented.

As a case study, the use of nudging in a project intended to improve the school health care system in Norway is also presented.

3. THEORY

3.1. What is nudging

The literal meaning of the word nudge, retrieved from the dictionary [1], is a gentle touch or push. As a method in behavioral economics nudging aims to do just this; gently push people in a preferable direction. Through nudging, public policy makers have the opportunity to alter people’s behavior in ways that are inexpensive and that intend to benefit both the user and the society simultaneously. These results are otherwise most effectively achieved through laws, regulations and injunctions [2].

The original definition of nudging as a method is set by Richard Thaler and Cass

Sunstein [3]. They define nudging as “any aspect of the choice architecture that alters people’s behavior in a predictable way without forbidding any options or significantly changing their economic incentives”. In short you can say that a nudge is a tool that intends to actively guide people to live the way they picture themselves living, but fail to achieve due to their own automatic thinking and pre-set biases [4]. This understanding highlights how prone we are to being affected by our social and physical environment when we make our decisions [5].

An important aspect of nudging, highlighted by John Balz, is that, as opposed to other types of behavioral steering done by authorities, the focus and end goal of the person behind the nudge should always be to promote the alternative most aligned with the long-term goals of the person who is being nudged [2]. In the words of Thaler and Sunstein; a nudge should “only get designed to help people live according to their own best interests” [3].

In their book, Thaler and Sunstein stress a set of preconditions for a nudge to be in line with their theory of libertarian paternalism [3]. Libertarian paternalism is a term describing paternalism that “tries to influence choices in a way that will make choosers better off, as judged by themselves”. The freedom to choose is therefore naturally one of these conditions. A nudge should not eliminate any alternate choices or make choosing against the intent of the nudge extremely difficult.

Moreover a nudge should also always be transparent, meaning that the intended behavioral outcome, as well as its reason, should be available to the person being nudged. Thaler and Sunstein refer to philosopher John Rawls and what he called ‘the Publicity Principle’. What this implies is that the one nudging should never apply a nudge that he or she is not able or willing to explain to the people affected.

Another aspect of nudging that Thaler and Sunstein talk of is that a nudge should guide those in need of guidance and cause as little obtrusion as possible to the people who do not need, or want, such help. Ideally the people that are not interested in any nudging should not be affected at all.

To understand the basic principle of nudging, one needs to get a certain insight into how the human brain works and why we sometimes choose to make decisions against our own ambitions.

3.2. How our brain works

The act of nudging utilizes the known information about the human brain and tries to align its design with the natural ways of human decision making. The human brain is said to work on two levels. We separate between automatic and reflective thinking. Automatic thinking is very energy effective and bases its judgments on a preset of biases and our previous experiences. This happens quickly and without depending on our awareness to react. Reflective thinking, on the other hand, is based on rational reflections, and uses our cognitive abilities to understand and consider situations before reacting and responding to them. As this way of thinking demands quite a lot of our energy and attention, and considering that our bodies are biologically wired to save as much energy as possible, we tend to rely on our automatic system for a great deal of our daily encounters with decisions and impressions. This is especially true in situations where a quick response is required or lack of sufficient information, feedback or experience is present [4]. Thaler and Sunstein mention four examples of situations where people make decisions that compromise their rationality. These are (1) situations where we can enjoy the benefits now without having to deal with the costs until later, (2) situations we don't usually find our self in and therefore have no experience to back our decision on, (3) situations where there is no immediate feedback and (4) unfamiliar situations where it is difficult to relate the outcome to anything known or seemingly relevant.[3]

Mostly all of this activity happens beneath our consciousness.

It is this automatic thinking that makes us act in ways that do not always align with our values or long-term goals. As Stewart [6] states "humans have "bounded rationality" and therefore make biased decisions that sometimes run counter to their best interests". Most of us will, for example, have a tendency to consider a present gain more rewarding than a future gain even though future gains might be greater in actual value. Our default bias will nudge us towards choosing the default setting, if one is present. This is partly due to wanting things to stay the same (our status quo bias), partly because we assume this to be the most common setting and therefore supporting our pack-mentality, partly because we assume the designers behind a solution know what the best setting is, and finally, partly because this requires no own reflection or opinion, and therefore limited mental energy [7, 8].

The British Institute of Government and Cabinet Office have discussed the effectiveness of aligning policies with natural human behavior to achieve desired policy outcomes and to avoid restriction by law. In their work they outlined nine elements that affect the human behavior in a framework called MINDSPACE [9]. This framework consists of the following influences: Messenger, Incentive, Norms, Defaults, Salience, Priming, Affect, Commitments and Ego.

In his article '21st century design - shaping behavior for preferable outcomes' [7], Rob Girling lists a selection of common cognitive biases. These are, amongst others, our bias to overestimate how probable events were in hindsight (hindsight bias), our habit of aligning experiences with prior expectations (placebo effect), our dislike of losses (loss aversion) and our tendency to rationalize or modify evidence that does not support the choices we made through cognitive dissonance. The list continues, including clustering illusion (finding patterns where

none exist), framing affect (the way data is presented affects the conclusions drawn from it), hyperbolic discounting (the tendency to value present gains over future gains) and anchoring (the fact that decisions often tend to be based on previously introduced information regardless of the relevancy of this information).

All these sets of biases and influences are the shortcuts that our brain uses to help us deal with the world and the endless set of choices we are presented every day, in a more manageable fashion. By understanding how these mental shortcuts work, choice architects can better design for expected behavioral outcomes.

3.3. The act of nudging in service design

A designer's role is not only to create desirable products, but in a larger degree to craft and design for futures with positive and preferable outcomes. Service design has, over the past years, become increasingly involved in the development and improvement of public and political issues [10-12]. Entwining the methods of service design into these areas of public welfare aligns well with Stefan Mortiz definition of what service design is. According to him "service design helps to innovate or improve services to make them more useful, usable, desirable for clients and efficient as well as effective for organizations. It is a new holistic, multi-disciplinary, integrative field" [13].

In its nature the design of a service is greatly dependent on the people using the service [14]. The work of the designer is very much focused on the touch points where the user interacts with the design. It is mostly through these points the designer can influence the outcome of the service and the behavior of the user.

In the work service designers do to improve situations and make a service outcome more delightful and valuable for the users, a gentle nudge towards a different practice might be needed to actually have the behavioral outcome intended. Rob Girling [7], co-founder of the design firm Artefact,

encourages designers of the 21st century to shift their focus from giving form, defining user experiences and brand values, and rather use their energy and skills on designing for positive outcomes. He says "You can give people all the facts, which may change their attitude toward something, but it will not necessarily get them to change behavior".

In her study on nudging in a design context, Bree Galbraith [15] writes of how design has always been influencing people. The recent change, she says, lies in the fact that we are now stepping into a new era where designers can refocus their abilities and combine their methods with the knowledge of human behavior. In this way designers can not only affect human choices, but also understand the reasoning behind how the choices are made. This insight gives designers more power and also more responsibility in shaping societal behavior.

Through her study Galbraith sums up 9 tips from several designers on important factors when designing for behavior change [15]. These are as follows:

1. Make it easy
2. Engage people's emotions
3. Make the default option the desired one
4. Use priming to put people in the right state of mind
5. If you want people to act benevolent, make them feel like they are not alone
6. Identify and remove external barriers
7. Emphasize associated gains rather than losses
8. Reduce complexity
9. Draw attention to the sensible behavior of other people that the user feels connected or similar to

The combination of the user-centered focus that lies in the core of service design, and the knowledge about human psychology that creates the fundament of nudging, forms an approach where the two methods can bring forth the best in one another.

3.4. Equivalent terms and methods used in service design

The term nudging might not be excessively used amongst designers, but similar knowledge of human psychology is found as basis for already well-established directions in the design field. In these circles this way of thinking is referred to as “design for sustainable behavior” [16-18] and “design for emotions” [19, 20], among others.

Within the field of design for sustainable behavior Dan Lockton has developed a toolkit existing of a set of cards that all contain different questions and statements about various situations of human lives. The intention behind the toolkit, named “Design with Intent”, is to challenge designers to reflect on how they can influence people through the way people naturally act [21]. As with the theory of nudging, Lockton also focuses a lot of his methods on the automatic and unaware aspect of human behavior with the goal of playing along with people’s natural actions and reactions to gain the intended behavioral result. Lockton points out the importance of engaging people’s emotions. He believes there are great things to be achieved if you make people emotionally connected through their behavior [15].

Another example of the discussion is found in a paper by Debra Lilley et al. [22]. They define three ways designers can influence the sustainability of users. These are: (1) through script and behavioral steering, e.g. a layout that intentionally and directly guides the user, (2) through eco-feedback where products aim to affect behavior through information, and (3) through “intelligent” products and systems that take responsibility for the decision themselves.

The mentioned examples portray the background of nudging as quite similar to the background already existing in design. The road to bringing the mindset into the act of service design does therefore not have to be too long or too winding. A few examples of

nudging being used in public affairs might illustrate this further.

3.5. Examples of nudging

Bonell et al. [23] gives a few examples of how nudges has been used to guide people’s decisions and behavior in predictable ways. The examples include subconscious clues, like a fly painted in urinals to make men want to aim and in this way reduce spilling in men’s toilets, correction of misapprehensions about social norms (by for example telling us that most people do not drink or smoke excessively), or by altering of the way choices are displayed (making the salad bar a more prominent choice in the cafeteria to promote healthy eating).

An effective way of nudging is to tell people what other people are doing, and how their own behavior compares to this. This has proven to be a useful way to get people to decrease their energy usage. An experiment where energy bills would tell the receiver how much energy their household had been using compared to similar houses nearby led people to lower their consumption. This is explained through social psychology and our need to be like the herd, and also our bias to believe we should be amongst the better half of the population in areas we view as important [4].

An organization by the name Greenudge [24] aims to promote sustainable and green choices through behavioral psychology and small nudges. One study they did showed that by reducing the plate size in restaurants people would serve themselves less, and by this leave less left-overs after finishing the meal. The restaurants participating in the study reduced their food waste with 19,5% during the course of the experiment [25].

A fun example of nudging people to choose the healthier option of taking the stairs over the escalator is found in Sweden. A design team at Volkswagen transformed a set of stairs up from the Swedish subway into an enormous piano keyboard. Each step was tuned to play the corresponding note when stepped on. As people walked up and down

the stairs their walking would create a melody. While the stunt was active Volkswagen recorded an increase in staircase use by 66% [26].

3.6. A brief case study: Improving the school health care system in Norway

The school health care system in Norway is intended to be an available, free and open place for students to come with all of their questions and concerns, both related to their physical and mental health. Because an increasing amount of youth seems to be struggling with problems related to their mental health, e.g. depression, anxiety and loneliness [27-29], there is a need to ensure that the school health system works the way it is intended.

In a project looking at the current high school health system from a user-centric perspective, it became apparent that some of the issues with the current service were related to the attitudes students have towards the system. Many students experience a visit to the school nurse as embarrassing. This is partly due to lack of information on what the school nurse can help with, leaving students assuming it is a sign of weakness or critical conditions behind someone's visit. Another reason youth feel reluctant to use the health care facility is the feeling of being alone in needing someone to talk to. The irony in this is that in schools with well-established health care systems an average of 50% of the students are actually using the service [30].

As well as making sure the health care system performs well in being available, visible and trustworthy, there is a need to ensure that using the system becomes acceptable and "normal". In a project touching on such personal issues, and involving youth in a vulnerable time of life, it might help to make the service appeal to the sub consciousness as well as the conscious attention.

By enhancing the way students interact with the service, the attitudes towards it might follow. Besides the framework presented by Galbraith, other small nudges can include personalizing the service by giving it a face,

guiding students to where they can find either the service or information on it, and creating an environment at the service which invites to trustworthy communication.

Another helpful factor might be to invite all students to a short one-on-one talk with the school nurse to establish a relationship. This talk should of course be voluntary, but with the criteria that you let the nurse know if you would like to skip the appointment. Making it an opt-out system might encourage more people to pay the nurse a visit and this way learn that he or she is an alright person to talk to.

4. ETHICAL CHALLENGES

4.1. Challenges and ethical issues

In being a method that intends to alter the behavior of other people, nudging naturally awakes criticism and skepticism.

Oliver and Brown [31] are amongst the critics of nudging as a means. They argue that the way nudging attempts to alter people's way of life is at worst both patronizing and condescending. In the cases when this is done on a political level they assert that this is an intrusion of people's private lives and violates people's integrity and autonomy.

In their article, Evan Selinger and Kyle Whyte [4] address several critical standpoints arguing against the use of nudges. Some critiques say nudging undermines people's own abilities and assumes humans are too stupid to act in our own best interest. They also question if this way of deciding behavioral outcome actually diminishes our own freedom to choose. A different approach that challenges the use of nudging concerns people's own need to develop a moral character. If society steers people in the right direction at every moral crossroad, this might weaken our ability to individually learn what the right choices for our community, and for ourselves, would be. Critics claim it might make the ones that are already morally lazy even more dependent on society to take responsibility for all important choices. Selinger and Whyte refer to Whitman who takes this a step further questioning what will

happen when we get so used to being nudged that we don't notice when bigger and more controlling decisions are being taken on our behalf [4].

Yet another point brought up in their article reflects on how the intention of a nudge might be understood differently in different countries and how this might alter the final outcome to be something that is not at all in the cultures best interest.

The final issue addressed in their paper is that of the subjectivity of a choice architect. Through the position they have, there lies a great opportunity to project their own personal values and thoughts on what is right and what is wrong on to the subject of their design. This can be done both deliberately as well as unintentionally, and to a certain extent it is unavoidable.

4.2. Arguments defending nudging

The main point Thaler and Sunstein brings forth to defend the act of nudging is their belief that there exist no such thing as neutral design [3]. Being in the position to design solutions for people the designer has to make decisions on what happens when the user does nothing. This choice, as well as the choices concerning how the users go ahead to interact with the solution, will affect the behavioral outcome either way. Rob Girling [7] supports this belief. According to him there are three ways to react now that we know what we know about the human brain and how it can be steered in different direction. We can either ignore what we know, and this way, potentially design for a behavioral outcome that gains no one or even has an undesired outcome, or we can take responsibility for what we know and intentionally design for a preferable outcome. Thirdly we can quietly use what we know to manipulate people's behavior in manners that only benefit ourselves. Stewart summarizes it by saying that "once you know that every design element has the potential to influence choice, then you either close your eyes and hope for the best, or you take what you know and design programs that are helpful" [6].

Their arguments imply that design without any nudging is impossible. Through offering possibilities and limiting outcomes with constraints our environment has always affected the way we behave[5]. The examples mentioned are only the tip of the iceberg seeing as it is in the nature of nudging to take place in the shadows of our consciousness. The point of designing is in many cases primarily to make a difference, improve an existing solution or solve a problem. In other words design is done to provide people with a new or improved tool to enhance their own lives. In the core of a lot of design lies the desire to alter human behavior for the better.

5. DISCUSSION

5.1. Beneficial value of nudging

From a user's standpoint a nudge can be beneficial because it might guide him or her towards their own best interest and self-declared goals. When understanding how the human brain functions it becomes clear that the way our environment is built today it is often easier to make choices that prevent us from reaching a beneficial behavior, than actually making the right decisions for future wellbeing. Most of us want to live healthy lives where we exercise, eat right, save our money for rainy days and act according to environmental beliefs. Unfortunately, in too many of these instances our reflective system is required throughout the entire process to reach these goals, making it mentally exhausting to live according to our own wishes. As choice architects get greater insight into these facts it should be possible to design environments that make choosing for our own greater good a more frictionless and straightforward way of life.

Examples of cases where our automatic system overrides our long term goals include situations where there is no immediate feedback, and therefore easier to go with the choice that gives instant pleasure, and delays the consequences until later. Flossing, dieting, smoking and also several environmental considerations are a few examples of such. There is no direct way to see the effect your car has on air pollution.

Making this information more salient might make it easier to choose public transportation, or even better; your bike.

From a societal standpoint design encouraging people to live healthier, smarter and more planned according to their future needs, would be favorable for all. If less governmental time and money had to be used in the effort of getting people's lives back on the right track, more effort could be used on promotional work developing our society further. With regards to the environment, a united effort is needed to alter the current negative development. Nudging people to contribute in such a manner is undoubtedly a preferable way to experience such change.

Another benefit from a societal view is that nudging might decrease the need for bans and incentives. If the government can gain the same effect by nudging people in preferred direction, they can maintain the freedom of those who wish not to live by these rules, and still get a similar behavioral outcome from the majority [15].

The importance of designing for behavioral change is highly relevant in the pressing issue related to tendencies in global health and global environment. The way a major part of the human population is living today is not in line with the steps needed to improve the current situation. An environment designed to guide people into more sustainable living, based on the natural way of human decision-making, has the potential to be the beneficial way of turning things around. In this area there are many opportunities for designers to apply their abilities. Through design methods lies great potential for merging a user-centered focus to protect and maintain individual needs, with the knowledge of human behavior and the global urgencies that lie before us. This combination can create an environment that promotes both peoples instant wishes and their long-term ambitions.

5.2. Discussion around the ethics of nudging

As presented earlier the critics of nudging

worry it will diminish our personal freedom of choice, undermine our abilities as reflected human beings and potentially make us less reflected and more dependent on authorities to make smart decisions for us. These are all valid and important aspects worth reflecting on.

Thaler and Sunstein answer some of these concerns by stressing the preconditions for a nudge to be in line with its intent. When nudging, no choices should be made unavailable to the chooser, nor should the non-preferable options be difficult to choose. In cases of default settings and automatic enrollment, there is always the possibility to opt-out. Thaler and Sunstein points out that the opt-out-alternative should, ideally, be as easy as a one-click solution. This is to ensure that freedom of choice is fully intact and available for all. The choice needed for the intended behavior change should only be the most salient and the one most accessible to the automatic system.

Rob Girling defends nudging by emphasizing that no alternative is forced upon the user as no choices are removed and no certain behavioral outcomes are required [7]. Nudging gives people a gentle push or an easier way of choosing what is commonly viewed as the better choice, but the opposite choice or the opportunity to behave differently is always present. As already mentioned the potential of a nudge is greater if it is aligned with the best interest of the person being nudged.

An argument that is harder to defend is the one claiming that nudging will lead mankind down the road of authority dependency. It is a common agreement that we must learn from our mistakes to grow as humans and develop our own moral standard. Thaler and Sunstein reflect on this by bringing forth the occasions where our choices are infrequent. This, they claim, is often the case in our most life-altering decisions, like choosing education or who to marry. A second view on the matter relates to the cases where we never see the outcomes of our actions ourselves. It is difficult to learn from mistakes, when the

consequences affect the future generations and not the present world that we live in today. This can make it harder for people to align their subconscious biases with the behavior that might be essential for a sustainable future. As Sunstein states “structuring choice sometimes means helping people to learn, so that they can make better choices on their own” [15].

Another critical view worth reflecting on is the one concerning transparency. When making sure transparency is present it is important to consider that what might be very apparent to one, might not fall as clearly for another. It is important to keep in mind that people have different cultural cues, different background experiences and different levels of cognitive abilities. When assuring transparency, critical overview of the possible affected people needs to be mapped out and taken into account.

5.3. The importance of awareness

As designers we are constantly making choices that affect how people using our designs will behave. It is hard to argue against Thaler and Sunstein when they claim there is no such thing as neutral design. Even without explicit intention all decisions made to complete the design has the potential to affect the user in some way or another. Just the act of deciding the default standards of the design, is severe choice of information architecture. As this article discusses keeping the default settings is often the predictable behavioral choice many of us would make.

As mentioned earlier in the article the risk of not taking a stand on what the intended behavioral outcome might be, can lead to unintentionally harmful consequences. As designers it is crucial to consider how the finished result will play a part in the lives of people interacting with it.

Being a designer implies having a set of skills and a mindset that has the potential to guide people in a desired direction that can benefit them in their attempts to reach their goals, and also the society as a whole to live in a more sustainable fashion. This holds true for all fields of design, but it is especially true in

the sense of service design as this approach is increasingly used in the public sector. By understanding human error and automatic human behavior we can avoid unintended outcomes and rather use these findings in a promotional way.

With the potential of designing for behavioral change there are no excuses for why designers should not take a deliberate stand to use this information and design for the best interests of society.

With this power, the responsibility to avoid manipulative use of the same information follows. For a nudge to have the intended effects it is important to consider the ethical concerns, and design according to the criteria recommended for nudging.

6. CONCLUSION

This article has introduced a set of theories around the term nudging, as well as presented arguments both supporting and criticizing the use of such methods. The word nudging has previously been mostly related to the field of behavioral economics and politics, but as this article displays the way of thinking is just as relevant and common in the area of design.

To summarize the criteria listed in the article, a nudge, if used correctly, should be; voluntary, avoidable, easy or passive and low cost. They are also intended to promote the better choice as seen by the person being nudged as well as supporting his or her long term goals.

There are valid and important ethical concerns criticizing the misuse of the knowledge presented about human sub consciousness. These ethical aspects are important issues for designers to reflect upon when proposing a new contribution to society through design. It becomes especially urgent as the use of design thinking is evolving into the realms of solving public and societal concerns. The methods and the reflections around such ways of designing for behavioral change could create great and maybe necessary outcomes, if used correctly.

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