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Dark patterns – An end user perspective

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Abstract

Technology has become ubiquitous in people's everyday life. The number of websites and mobile applications available is growing, but so are various persuasive approaches to influence human behavior and decision-making in online environments. While designing for persuasion has many potential benefits, recent years have revealed different deceptive design techniques that utilize the understanding of psychological principles to nudge people in a desired direction. This thesis outlines and explores this phenomenon known as dark patterns, which favors business goals over user values. Practitioners have laid out many deceiving design strategies in the past, but it remains unclear how the end user perceives and experiences them. Therefore, a qualitative method approach was chosen to study the end users' perspectives on the subject. The analysis of the data shows that even though there was some awareness, many manipulative techniques were unknown. Participants blame the businesses, remark however to be partly responsible for their own fate. In addition, the acceptability of such techniques shifts depending on the respective dark pattern.

Keywords: Dark patterns, persuasive design, deceptive design, evil design, qualitative study

1. Introduction

Throughout the last decades, technology has advanced substantially and has spread into people's everyday lives. As a result, the number of websites and mobile applications available is growing exponentially at a high speed. User interfaces are designed with the intention of affecting the interactivity of the user in particular ways. A correlation exists between the design of elements and the way people interact with it. Good design is supposed to aid users in reaching their goals by being self-explanatory, presenting information in an understandable fashion, and allowing for an easy navigation (Sommerer et al., 2008). Design can help people to interpret situations and provide confidence in the decision-making. In recent years, methods to influence human decision-making processes through the utilization of technology have skyrocketed. It is possible to predict the behavior of people by understanding the psychological principles behind the way the human mind operates. Thereby, user experiences can be designed that influence and change people's behavior, which may have many potential benefits. Persuasive technology techniques (e.g. Fogg, 2003) can for instance seek to promote sustainable lifestyles (Midden et al., 2008), health and wellness (Orji and Moffatt, 2018), or to manage anxiety disorders (Farvolden et al., 2005). They can also increase the probability that people will interact with a certain product, potentially making a product more successful. While these persuasive design methods in themselves are nothing to be scared of, a clever utilization of cognitive science could easily lead to a malicious usage of the strategies, paving the way for manipulating people in their decision-making in a manner that is not in alignment with their goals. Those seductive design approaches that exploit the user by implementing deceiving functionality in user interfaces were termed *dark patterns*. Dark design patterns lead to outcomes that are not in the best interest of the user, misleading them into doing something they otherwise would not do (Brignull, 2013; Brownlee, 2016). The usage of such techniques might be considered lucrative from a business perspective; they are, however, on

the verge of morality and legality, oftentimes diametrically opposed to the users' desires. When interacting online, user interfaces can affect people's emotions and behavioral patterns on a deep level. It is questionable how aware the user is of existing underlying design patterns that have the intent to direct the attention to whatever a company wants the user to see or alternatively distract the attention from things meant to stay hidden. Up to this point, practitioners and media outlets have laid out and published many dark persuasive design strategies (e.g. Brignull, 2013; Jaiswal, 2018). However, dark patterns are rather understudied in academic HCI literature. Previously published work include a critical view on the dark side of proxemic interactions (Greenberg et al., 2014), a classification of regular, anti-, and dark patterns (Mirnig and Tscheligi, 2017) as well as an thorough analysis and categorization by Gray and colleagues (2018). To understand this sensation in greater detail, further research is required. Contributions of this work are two-fold. First, the present thesis takes an exploratory research approach and contributes to the generation of a comprehensive knowledge base of dark patterns and its underlying psychological tactics with a thorough literature review, thus raising further awareness of the phenomenon. Second, since it is unclear how the end user perceives, experiences and acts upon dark patterns, the thesis aims to generate a better understanding on the end user's perspective on dark patterns with the help of qualitative methods. This might for instance lead to observations concerning the awareness of such techniques, or which patterns are more ethically appropriate to be deployed by companies and which patterns are considered inexcusable in the eyes of the user. Thus, the following research question was defined, capturing the purpose of the study, which is to explore and attain a user perspective on dark design patterns:

How does the end user perceive, experience and respond to dark patterns?

2. Related Research

The related research chapter starts with an introduction to decision-making processes and the way the brain functions, leading to a description of cognitive biases and nudges as an effective tool to influence behavior. Thereafter, a brief overview of design for behavior change is given, before the following section addresses the field of Persuasive Technology, including a look into human motivational drivers as well as Fogg's behavior model and persuasive technology tools. Lastly, the subject of dark patterns is presented along with an analysis of the way dark patterns are utilized and possibilities to fight them. In addition, ethical reflections of dark persuasive designs are demonstrated before a conclusion is given that sets up the study at hand.

2.1 Decision-making processes

We are making decisions every day. Much of our behavior can be looked upon as decisions being made. Decisions and their consequences shape our life. By understanding the psychology behind the decision-making processes of the human mind, behavior of people can be predicted and user experiences can be designed that change people's behavior. Being familiar with how decisions are made by the human allows for the exploitation of that knowledge. This can for instance help in increasing the probability that people will interact with a certain product, which may lead to products being more successful.

2.1.1 Two cognitive systems

Cognitive psychology research starts from the premise that the brain functions as a dual process model. Two different systems are operating when we are making decisions, distinguishing cognitive operations that are automatic, quick and effortless from ones that are more demanding and slower. In his book *Thinking, Fast and Slow*, Kahneman (2012) refers to them as System 1 and System 2. While System 1 is working unconsciously and effortlessly, it relies on emotions and is "originating impressions and feelings that are the main sources of the explicit beliefs and deliberate choices of System 2" (ibid., p. 21). System 1 is using simplifying heuristics to make judgmental decisions, causing predictable biases. The slower and conscious System 2, on the other hand, is able to "construct thoughts in an orderly series of steps" (ibid., p. 21). The actions of System 2 are linked to the experience of concentration and choice. The two systems have different, individual functions, abilities as well as limitations. Since our conscious mind is not able to process all of the overwhelming amount of data that it faces, unconscious decision-making takes up the biggest portion of mental processing: about 95% of our cognitive activities are made in a non-conscious manner (van Rymenant, 2008). This means on the other hand that only limited amount of accessible information can be processed consciously. System 1 suggests intuitive answers to arising judgment questions and System 2 oversees the quality of the proposals, which "it may endorse, correct, or override" (Kahneman and Frederick, 2002, p. 51). A lot can be learned from looking at decision-making based on heuristics and biases when it comes to practically designing for user behavior change.

2.1.2 Cognitive biases

Several cognitive biases and heuristics are known that have a potential relevance to design for behavior change. Heuristics are mental shortcut strategies, useful for making judgements and solving problems. The application of heuristics can result in a logical fallacy based on cognitive factors: a cognitive bias. On the one hand, those effects can be used for design by countering those biases to help people carry out better decisions or, on the other hand, exploiting those effects to influence the behavior of people in whatever way it is desired (Fischhoff, 2002). Quite a few cognitive biases and heuristics exist whose effects may be important to design, for instance the confirmation bias, framing, anchoring, the status quo bias or social proof.

2.1.3 Mood and emotions

People's decision-making process is influenced by the current mood. The mood, which can be affected by numerous factors, determines whether a decision is based on rational reasons or on intuition (Devero, 2016). A specific color, for instance, can affect the mood and might lead to a change in behavior (Mehta and Zhu, 2009). Emotions influence decision-making processes as well. "Without emotions, your decision-making ability would be impaired" (Norman, 2005, p. 10). Decision-making often depends on neural substrates which are regulating emotions and feelings (Bechara, 2004). Two different types of affect have an influence on decision-making processes as explained by Västfjäll et al. (2016) and Adel (2017): integral and incidental emotions. Integral affects are emotions that are part of the internal representation of a decision and are influencing the decision directly. Incidental emotions such as a mood are unrelated to a made decision. Integral emotions can be controlled, whereas

incidental affects cannot. Incidental mood states can work as heuristics for the sake of carrying out evaluative decisions. Both integral and incidental emotions collectively and simultaneously shape the affective reaction to a target. When certain emotions are experienced, the mind and the body of a human have an intuitive reaction to that stimulus. A sense of fear makes us people less likely to take risks, whereas being angry may more likely result in bold decisions. In the long run, people regret decisions that were not made to a greater extent, while on short-term, people feel more regretful towards decisions they have made (Adel, 2017). The fear of loss lasts much longer than any opportunities of gain. Research also states that positive emotions – like happiness and pleasure – helps people to make faster decisions, think more broadly as well as in coming up with creative problem-solving strategies (Komninos, 2018). Negative affect, on the other hand, limits thinking but leads to a more attentive state of mind. Since emotions play such an important role in decision-making processes, designers should take account of them.

2.1.4 Nudge-theory

Nudges, which are "changes in choice architecture that predictably influence decisions without restricting freedom of choice" (Peer et al., 2019, p. 2), are an effective tool for influencing people's behavior, often in a positive way. Nudges increase the likelihood that a person will make a particular choice or execute a certain behavior and they have been successfully applied in many different areas such as finance, education and health. Known examples include the setting of defaults for organ donation (Johnson and Goldstein, 2003) or the displaying of social norms to fight water wasting (Bernedo et al., 2014). Even governments use nudges nowadays for the good of society. A nudge alters the environment in a way that triggers the fast and automatic cognitive decision-making processes of System 1 to promote the positive, desired outcome by using heuristics (Campbell-Arvai et al., 2014). There are various distinct methods for nudging such as defaults or social proof heuristics. Peer et al. (2019) show that through personalization that is based on the decision-making style of people, designing, evaluating and implementing nudges can be improved significantly in order to reach a maximum of effectiveness.

2.2 Design for behavior change

Design can be used to influence and shape human behavior. Designing for behavioral change is an approach that in essence draws on theories of social, environmental and behavioral characteristics as drivers for behavior change. Originally, work by Don Norman (1988) on psychology and design introduced concepts such as affordances or constraint feedback, providing principles that have the user's experience in mind. Norman (1999) advocates the importance of perceived affordance in design: the user's proper perception and understanding of potential actions. Design is able to help the user interpret a situation and provide confidence in the decision-making process when faced with a new behavior.

Basic principles, which are important aspects of human-centered design, are also relevant to design for behavior change, like for instance tailoring, making use of people's current existing knowledge of a situation, the use of challenges and storytelling, or handling user's behavioral errors in an appropriate manner (Lockton, 2013). The concept of Gamification also has to be mentioned: using elements from games when designing interfaces can act as

motivational drivers (see section 2.3.2) and might lead to user engagement and influence behavior.

Zachrisson et al. (2012) visualized the distribution of control between the user and the product in a spectrum (see figure 1). It ranges from principles where the user is in control and decides the way the behavior is changed to principles where the product is in control and forces the user to behave in certain ways. Between the extremes of informing and determining, variations enable, encourage, guide, seduce and steer towards the desired behavioral outcome. Designers can advise a degree of control a user should have in a particular situation and match it to relevant behavioral factors in order to accomplish a certain behavior change. These factors may include the degree of behavior normality, the user's desire to act in the way that the designer wants them to, and the level of attention the user needs for the task. (Lockton, 2013)

Figure 1: spectrum of control (Zachrisson et al., 2012)

Lockton (2013) describes that to understand behavior properly, both context and cognition need to be examined. Many tactics for influencing behavior seek to modify the context in which people act or aim to change people's thinking to make them behave (or not behave) in a specific manner. Design is able to address the context of the behavior as well as the way in which people translate their perception of things into decisions. The environment forms people's behavior before and after they act in a certain way. Moreover, a change in behavior is enclosed in a longer process of shaping and is not something that is concluded in a sole step.

Since the human mind is constantly making decisions, it also affects the way people interact with designs. According to Don Norman (2005), three interconnected levels of the emotional system exist, which influence how design is processed. These three levels are visceral, behavioral, and reflective. These three levels of design influence each other, shaping the overall emotional experience. Understanding these levels can contribute to the creation of successful and enjoyable user interface designs by making them visually appealing, effective, pleasurable, and memorable (Komninos, 2019).

In order to facilitate the process of design for behavior change, numerous theories such as Mindful Design (Niedderer, 2007) and guiding toolkits such as Design with Intent (Lockton, 2013) or Embedded Design (Kaufman and Flanagan, 2015) have been developed. Persuasive Technology is one of those theories and will be looked at more closely in the next chapter.

2.3 Persuasive Technology

> *"As computers have migrated from research labs onto desktops and into everyday life, they have become more persuasive by design. Today computers are taking on a variety of roles as persuaders, including roles of influence that traditionally were filled by teachers, coaches, clergy, therapists, doctors, and salespeople, among others." – B.J. Fogg (2003, p. 1)*

With digital technology, the internet, and, more recently, social media becoming ubiquitous in people's lives, new possibilities have surfaced that can influence behavior considerably. A lot of research went into looking at how the affordances and constraints on the web, computer systems and associated applications with their user interfaces could be utilized to influence behavior in numerous ways such as for commercial or political purposes. Digital architecture and interface design are also connected to societal effects, enabled by "mass communication, distribution of information, and social networking" (Lockton, 2012, p. 1). Nowadays, anyone is able to build services online that can enable different behaviors as well as influence those behaviors with ease. The psychological principles to foster behavior change of people remain the same regardless of the medium that they are applied to. Accordingly, by employing those methods to user interface design, they become subject to the field of Persuasive Technology, which represents an academic area of work that aims to influence behavior by the use of design.

Persuasive technology approaches behavior change from a human-computer interaction point of view and is broadly defined as "any interactive computing system designed to change people's attitudes or behaviors" (Fogg, 2003, p. 1). It seeks to use technology and design to influence people's behavior for some kind of benefit. B.J. Fogg coined the term *Captology* to describe 'computers as persuasive technologies'. It includes "design, research, ethics, and analysis of interactive computing products created for the purpose of changing people's attitudes or behaviors" (ibid., p. 5). The field is growing quickly and day after day more computing products such as mobile phones, websites, mobile applications and video games are designed to influence what people think and do. Fogg analyses how computers offer several advantages compared to more traditional persuaders like humans or print marketing. With their interactive character, they "can adjust what they do based on user inputs, needs and situations" (ibid., p. 6). Different from human persuaders, persuasive technology can also be persistent, process massive amounts of data, scale easily, offer anonymity and tailored responses, and adapt themselves to different contexts (Lockton, 2012). Academic literature on persuasive technology has focused a lot on the possibilities of causing positive, beneficial outcomes from the user's perspective by using computer systems to help people change their behavior in ways they would like to. Examples include health behavior change approaches (Orji and Moffatt, 2018), promoting sustainable lifestyles (Midden et al., 2008), or managing anxiety disorders (Farvolden et al., 2005). Persuasive Technology unites context and cognition, considering environmental facets ('triggers') along the side of personal aspects such as motivation (Lockton, 2013). Concerns with regard to ethical principles of persuasive strategies exist and will be examined more closely in chapter 2.4.4.

2.3.1 Fogg's behavior model

The Fogg Behavior Model (FBM) for Persuasive Design (Fogg, 2009) asserts that for a behavior to occur, there needs to be sufficient amount of motivation and the ability to perform the behavior. Finally, a trigger or prompt exists that tells a person to execute the behavior now. The behavior only takes place if all three factors occur at the same time. The higher the motivation is or the easier a task appears, the more responsive people are to triggers. The FBM (see figure 2) illustrates that "motivation and ability have a compensatory relationship to each other" (Jain, 2018) and can be traded off. If there is a huge motivation, the ability can be low for the behavior to occur and vice versa.

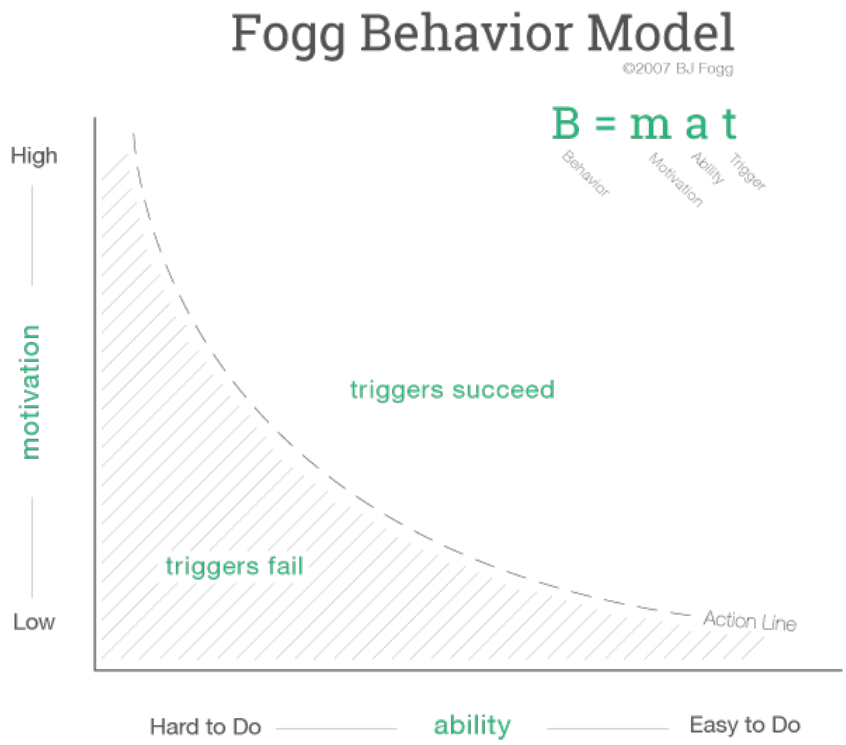

Figure 2: the Fogg Behavior Model, taken from Musso (2017)

The Fogg Behavior Model connects personal and contextual factors and represents an easy way to assess situations in order to find out what kind of aspects need to be addressed to influence behavior (Lockton, 2012). Designers can engage with all three elements: motivation, ability, and trigger. Designers have the most influence over triggers and ability. Effecting the basic elements of ability – time, resources, effort, cognitive load, social acceptance and routine – means that it is more likely to get people to do the intended behavior. Sometimes the ability is low, but the motivation is high. It is certainly possible to affect motivation through an understanding of human psychology.

2.3.2 Motivational drivers

Motivation, as Ryan and Deci (2000) define it, means to be moved to act. As stated in Lockton (2013), people are moved to do something by a lot of different factors, but in general, a person who is energized or mobilized towards a goal is characterized as motivated. Someone who has no inspiration to act, on the other hand, is considered unmotivated. Two main types of motivation exist, according to Pink (2011): intrinsic and extrinsic motivation. The first one concerns internal factors such as autonomy, curiosity or meaning, while extrinsic motivation refers to external techniques such as money, badges or rewards. Extrinsic factors are more effective for straightforward routine tasks, while intrinsic motivational techniques are more suited for complex tasks that require higher cognitive functions. Motivational drivers are based on real world observations on what gets people motivated, which can be applied to the virtual world in order to create compelling user experiences. Many behaviors exist that drive motivation such as the desire for completion, collecting and order, achievements and rewards, or feedback (Jain, 2018; Kumar and Herger, 2014). Those psychological tendencies can be

taken advantage of to design engaging experiences. Regarding motivation, Fogg (2003, p. 53) notes that "the gentler the intervention to achieve the desired behavior change, the better the long-term outcome".

It is crucial to care for the two types of motivation for people. Therefore, visualizing users' mentality and staying informed about the users' needs, their values and preferences is important. In his book, Mihály Csíkszentmihályi (2008) defines the concept of 'Flow' as "the mental state of operation in which a person performing an activity is fully immersed in a feeling of energized focus, full involvement, and enjoyment in the process of the activity". The state of flow is one of fully focused motivation. In essence, when a task has just the right level – not being too difficult which causes frustration and not being too easy which induces boredom –, people get into a state of intensive focus and immerse themselves into that state of flow (Kumar and Herger, 2014). A goal of a business might be to get their customers into this sense of being in the flow. Understanding human motivational drivers is an important part in creating an engaging strategy to influence the behavior of people.

2.3.3 Design implications

With an understanding of human psychology, various implications for design can be extracted, which are in the following based on Devero (2016) and Lockton (2013). Different contexts such as social environments or affordances integrated in digital systems affect and shape people's behavior before and after actions. Designers have a range of methods at disposal that influence the way people perceive available actions, such as the manipulation of information, affordances and choices, application of social proof, or the conditioning of behaviors. Further, people need to have a sense of control, a feeling of freedom of choice, which can for example be accomplished by providing multiple ways to complete a task. User research needs to be deeply rooted inside the design process to understand unconscious user motions and motivations. Designers must be aware of the emotions they provoke, understand how they are triggered and try to control them in order to address what the user is intuitively picking up. Within a certain context, cognitive thinking and decision-making moreover influence the behavior. Designers have many techniques available to influence cognition through design. They include providing adequate feedback in correspondence with the users' needs and expectations, displaying a reasonable amount of information to not overwhelm people and motivating users. Additional techniques are taking advantage or thwarting heuristics and biases such as the confirmation bias, framing, anchoring, recognition and defaults, displaying the right information to the right people at the right time, trying to change attitudes by evoking cognitive dissonance or Fogg's seven tools (see the following section).

2.3.4 Fogg's seven persuasive technology tools

Fogg (2003) lists seven persuasive technology tools or strategies to influence attitudes or behavior, which are summarized in an overview in table 1. Oftentimes several of these tools or strategies are used together as part of a system to create a persuasive experience. The tools can easily be transferred for usage in design contexts.

Table 1: seven persuasive technology strategies as stated by Fogg

Tool	Description
Reduction	Simplifying a task towards the user's desired outcome, e.g. reducing the required steps needed for task completion. This can lead to the user being encouraged to perform the task (correctly) and users believing in their abilities, tackling the task with a positive approach.
Tunneling	Guiding the user towards the desired outcome through a series of steps, frequently initiated by people wishing to change their own behavior.
Tailoring	Providing a personalized experience in terms of the presented interface, information, options and feedback, based on the user's needs and actions. This will increase the likelihood that the experience will be perceived as relevant. Often employed in conjunction with tunneling.
Suggestion	Giving the user suggestions at the right, opportune moment of time. Requires recognition of the user's current situation with variables (e.g. behavior monitoring) that help to find out when, where and how a suggestion should be presented.
Self-monitoring	Allowing people to track their own behavior in real time and giving them the chance to adjust their behaviors to achieve the desired outcome. "Self-monitoring technologies may be intrinsically motivating". When people know how well they are doing, they are more likely to continue with that behavior.
Surveillance	Monitoring the behavior of another party to adjust a target behavior in a particular manner. Observing others through computing technology makes the achievement of a desired outcome more likely as people will try to make the "actions meet the observer's expectations".
Conditioning	Providing rewards or punishments to shape behaviors and help the user towards a desired outcome.

2.3.5 Interim conclusion

Persuasive design techniques have been used in the commercial sector since a long time, as they ultimately can help companies to generate revenue, growth and competitive advantage. More recently, persuasion methods have put a big focus on causing positive outcomes for the human, such as health improvements or promoting sustainable lifestyles. Fogg (2003) displays how computing technology such as websites, mobile devices and software applications have the ability to change people's attitudes and behavior. The techniques mentioned increase the chance to influence people in certain ways and are in play while designing user interfaces as well. In terms of design strategies, this means to incorporate people's strengths and weaknesses into the process by examining the brain activities and human decision-making. When used responsibly, persuasive design can leverage a good understanding of psychology, add value to the user's experience, and increase the user engagement. The persuasive design strategies directly raise questions about other aspects: Who benefits in the end from the employed persuasive techniques? Are people sometimes intentionally misled? Where is the ethical line? While the concepts in themselves are nothing

to be scared of, a clever utilization of cognitive science could easily lead to a malicious usage of the strategies, paving the way for manipulation of the user. The next chapter addresses *dark patterns* – a seductive design approach, which draws on human's susceptibility to persuasive techniques and how those can be utilized to mislead and trick people.

2.4 Dark Patterns

Today, people spend a big amount of time interacting with screens, in front of computers, laptops or smart devices. When interacting with the online world, people are mostly not aware of existing underlying design patterns that are crafted with the goal of directing the attention to whatever a company wants the users to see or alternatively distract the attention from things meant to stay hidden. By designing interfaces strategically and manipulatively, users end up interacting towards the desired outcome of another party. One has to differentiate between honest mistakes in the design of an interface which lead to unintended outcomes, or if the results are intended to be deceiving for the user. Based on an understanding of design psychology, it is possible to see and recognize how these concepts might potentially be applied in a malicious way to influence the users' interactivity patterns.

2.4.1 Definition and categorization

This phenomenon of exploiting the user was termed "dark pattern" by Harry Brignull who defined it as "a user interface carefully crafted to trick users into doing things they might not otherwise do" (Brignull, 2013). There are many articles by practitioners and press about dark patterns (e.g. Brownlee, 2016; Jaiswal, 2018; Singer, 2016), but very little academic HCI literature has been published on the topic, implying that the subject is somewhat understudied. Recently, researchers at Purdue University began studying the issue (e.g. Chivukula et al., 2018; Gray et al., 2018), putting a focus on ethical considerations. For this thesis, dark patterns will be defined as follows: *With the help of psychological insights, functionality is implemented in user interfaces that is deceptive to the end user and not in their best interest*.

When first coming up with the term and definition of dark patterns, Brignull formulated twelve different categories describing different deceptive strategies. Gray et al. (2018) contributed to clarifying dark patterns for an academic audience by analyzing samples of the practitioner-coined phenomenon and segmenting them into five different categories. This results in a stronger connection to HCI literature and makes the patterns more tractable and controllable for usage by practitioners. The five categories are named nagging, obstruction, sneaking, interface interference, and forced action and are visualized in figure 3. They incorporate previously established classifications by Brignull[1]. Each pattern category is described shortly below. Some strategies might very well fall into more than one category.

Nagging is defined as a "redirection of expected functionality that persists beyond one or more interactions" (Gray et al., 2018, p. 5). Nagging oftentimes occurs as the user is pursuing a goal when interacting with a user interface and the task suddenly is interrupted by an action

[1] Brignull's documentation of dark patterns is available online at http://darkpatterns.org

not related to the task the user is concentrating on. Examples of this are pop-ups blocking the interface and asking something from the user, sound or video that is automatically played when not expected and other functions that aim to redirect the user's attention.

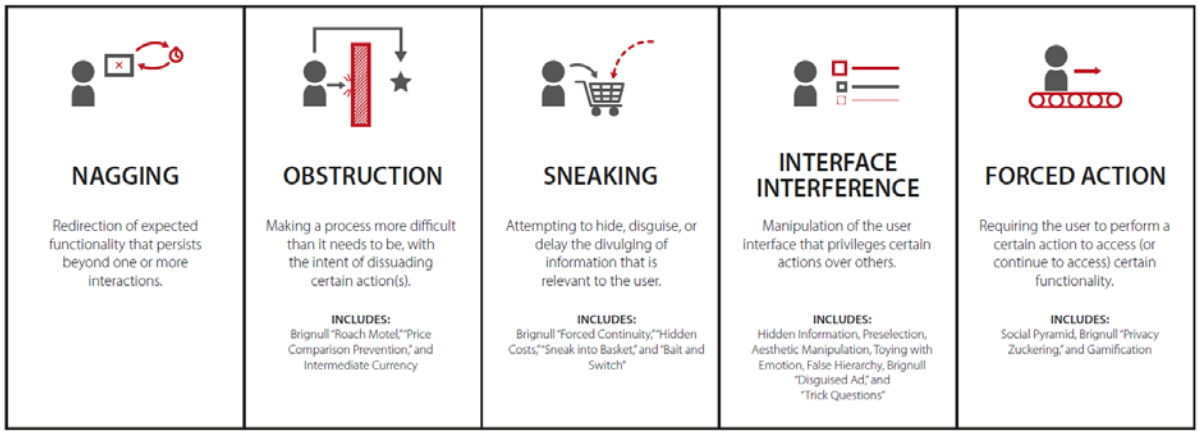

Figure 3: Summary of dark pattern strategies, taken from Gray et al. (2018)

The *obstruction* category is defined as "making a process more difficult than it needs to be, with the intent of dissuading an action" (Gray et al., 2018, p. 5). Thus, tasks are deliberately made harder for the user. An example is the common habit of companies to make it difficult to access and change privacy settings. Another example is the limited functionality websites often have compared to what is possible with a paid subscription.

Sneaking is implemented in user interfaces to try to "hide, disguise, or delay" (ibid., p. 6) information that is of interest to the user. It baits the user into carrying out something they maybe would not do if they would be aware of it. This includes, for instance, disguised additional costs. An example would be an "X"-button in an interface that instead of closing the window performs another unexpected action.

The category *interface interference* is defined as a "manipulation of the user interface that privileges certain actions over others" (ibid., p. 7). This often results in the end user being confused and possibly missing to detect specific actions. This includes hidden information that is not readily accessible, the preselection of deviant user choices and other deceiving visual interactions.

The last dark pattern category is called *forced action* and concerns situations that push users into carrying out an activity in order to get access to certain functionality. Without obliging, the user might be not able to continue in the process. A well-known example are the forced updates on Windows operating systems, where the user cannot shut down the computer without granting the execution of an update.

Brignull (2011, 2013) shows how easy it is to take well-known usability heuristics (e.g. Nielsen, 1994) and the understanding of human psychology that they are based on and turn them around into manipulative design. Table 2 recreates an overview of honest and dishonest design possibilities derived from psychological insights, based on Brignull.

Table 2: Heuristics applied honestly and deceptively based on psychological insights

Psychological Insight	Applied honestly (benefits users)	Applied deceptively (benefits businesses)
"We don't read pages. We scan them." – Steve Krug	*Aid rapid comprehension*: ensure key content is shown in headings, subheadings (etc), using a strong visual hierarchy.	*Hide key information*: Bury facts within paragraphs of text, so some users will proceed without fully understanding the trans-action.
"People tend to stick to the defaults" — Jakob Nielsen	*Prevent mistakes*: Default to the option that is safest for the user. In important contexts, do not use defaults and require the user to make an explicit choice.	*Benefit from mistakes*: Ensure default options benefit the business, even if this means some users convert without meaning to.
"People will do things that they see other people are doing" — Robert Cialdini	*Show unedited feedback*: Allow real customers to share their experiences, so they can make accurate pre-purchase evaluations.	*Bury negative feedback*: Hand-pick positive feedback and display it prominently. Bury negative feedback so it is hard to find.
"Speak the user's language" – Jakob Nielsen	*Match between system and real world*: the system should speak the users' language, with words, phrases and concepts familiar to the user.	*Confuse the user*: the system should use "weasel wording" so that it appears to say one thing while it really says another.
"User have the natural capacity to make mistakes" – Jakob Nielsen	*Help the user*: Support undo and redo.	*Exploit the user*: have them accidentally complete actions that are beneficial to the business's objective.

2.4.2 Motivation behind dark patterns

Several reasons exist as to why there is a motivation to use dark patterns. One of these arises from the continuous balance between business needs, user needs and the designer's ambitions. Dark patterns often start to appear when business needs take control. That way designer may be pressured by executives to perform unethical actions in order to pursue metrical data and thereby boost revenues. Dark patterns, while arguably unethical, perform well in multivariate tests and A/B testings (Brignull, 2011; Keith, 2017). Applying them will likely result in more sales, conversions and growth in comparison with an interface design that does not trick the human mind. We live in a data-driven world, which means that decisions eventually are reduced to whether they work or not. This makes dark patterns a valuable, highly effective

asset in trying to reach business-oriented goals. However, that may lead to a reduction of customer happiness in return (Brownlee, 2016). The positive results in metrics can be short-term as users find out about these dark practices, diminishing the trust of the user as well as leading to loss in credibility of a company and damaging the brand. Long-term success comes by providing actual value and a great user experience (Estevão, 2017). According to Hoa Loranger, vice president of the Nielsen Norman Group, "any short-term gains a company gets from a dark pattern is lost in the long term" (Brownlee, 2016).

In the field of search engine optimization (SEO), two different practices can be identified: white hat and black hat SEO. Both are aiming to boost the relevancy of a website, but while the former refers to recommended techniques as part of a good design, black hat SEO is a matter of aggressive strategies (e.g. automated link building) that typically violate the guidelines of search engines (Malaga, 2010). Brignull (2016) brings *white and dark* persuasive design techniques in correlation with white and black hat SEO. User experience experts have similarities with white hat practitioners, whereas black hat SEO methods are comparable with the usage of dark patterns. The difference is, however, that black hat SEO techniques are identifiable by search engine providers and result in penalties. The practice of utilizing dark patterns on the other hand is part of a gray area as of now. It is easy to make use of dark patterns with impunity, since it is not easy to discover websites using these manipulative techniques unless people report them.

2.4.3 Fighting dark patterns

One of the key ways to fight dark patterns on the web is to raise awareness and to spread the word about the phenomenon. In his dissertation on Motivational Design Patterns, Lewis (2013) came up with the concept of *manipulation literacy*. It comprises the idea that a person who is aware of manipulation techniques can recognize dark patterns in user interfaces, which would make them ineffective. For a dark pattern to reach its purpose and deceive the user, the manipulations have to happen without the user's consent. When the user acts consensual, however, they can make a choice independently. That works, if the user is aware of environments in which exploitation and general deceptive actions appear. This requires a "manipulation literacy". In its definition, it expresses the "ability for users to identify manipulative techniques" and their potential consequences and according to that "make consensual, informed choices" in their user journey (ibid., p. 184). A user with manipulation literacy may be able to successfully identify and handle dark patterns, making them an ordinary encounter in an interactive environment and thereby ineffective. User with low manipulation literacy on the other hand, are prone to be coerced and misled.

A few people have tried to create a kind of database online to display dark patterns and thus raise awareness of them. Harry Brignull, as the practitioner who came up with the term dark patterns, started to categorize these deceptive patterns and post examples of them on the website darkpatterns.org in 2010. Today, occurrences discovered by users are retweeted by the associated Twitter account[2]. In his master thesis about "Persuasive User Experience Design

[2] https://twitter.com/darkpatterns

Techniques", Miroslav Kolesár created an online persuasive patterns library[3], where his primary focus is set on 'white' patterns, but he also has a section dedicated to unethical dark patterns and thereby contributes to raising awareness of manipulative techniques. In the recent year, Colin Gray and his research group at Purdue University have started to study dark patterns. They display the five categories of dark strategies they have created together with examples on the website darkpatterns.uxp2.com, where it is moreover possible for anybody to send in a dark pattern to extend the corpus.

Since nowadays people's understanding of persuasive technologies and the effects it has on decision-making processes is limited, an improvement of the literacy would contribute to recognizing persuasion and deception in a digital environment. This may prove beneficial in case of choosing the right environment to interact within and as a protection against applications that try to manipulate users in undesired ways. In terms of dark patterns, this means that a literate user that understands the effects of manipulative techniques and gives consent, makes the pattern ineffective and consequently no longer dark (Lewis, 2013).

Exposed scandals like the case of Cambridge Analytica and Facebook as well as dark pattern concepts becoming known to the public in general (e.g. through social media, see Fansher et al., 2018) are leading to positive changes regarding user protection. There will always be opposing instances that will fight against the concepts of dark patterns. This can be illustrated by looking at laws that were established in the past and which protect the customer from certain deceptive techniques. In 2014, the EU's new consumer rights law banned several dark strategies concerning e-commerce. Because of that legislation, companies are not allowed to 'sneak' additional items into a shopping basket anymore by way of example (Brignull, 2014). Further, the recently approved General Data Protection Regulation (GDPR) strengthens the privacy rights of people in Europe and requires companies to maintain a high standard of collecting and processing personal data. Companies also have to provide transparency in how the data is handled. Individuals can additionally seek compensation in case of any data privacy breaches (Hern, 2018). These laws are a step towards the direction of people attaining power rather than organizations and thereby a step towards diminishing the utilization of dark design patterns.

2.4.4 Ethical considerations of (dark) persuasive design

Information technologies always had an effect on people's lives and their behaviors. Ethics and values in technology, and their importance for the field of human computer interaction have been studied sufficiently and with increasing awareness in the past. Sundry design research methods take an ethical stance (e.g. critical design, reflective design), but designers and developers experience difficulties in adopting such ethical guidelines. An understanding of ethical implications in system engineering is crucial as there have been many cases where ethical norms have been violated to manipulate the behavior of users through approaches based on nudge theory or persuasive technologies (Mulvenna et al., 2017).

[3] Located at https://persuasive-patterns.herokuapp.com

Critical design, coined by Dunne and Raby (2001), is a research approach that aims to foreground ethics as well as societal concerns of design practice. It tries to make people more aware and critical about their actions, questioning designs and the "assumptions, values, ideologies and behavioral norms" they contain and express (Bardzell and Bardzell, 2013, p. 1). Critical design is supposed to reveal hidden values and societal norms and explore, interpret and question them. However, its central methods remain difficult to adopt and are not widely used in HCI (Bardzell et al., 2012). Sengers et al. (2005) came up with the reflective design methodology that draws on critical theory and aims to guide the designer in reflecting on values and cultural assumptions as well as to engage people dialogically in the very same critical, reflecting manner. In a broader sense, Friedman and Kahn (2002) list human values with ethical importance (e.g. trust, ownership, security, accountability). A well-known approach to connect the design process with ethical considerations is the framework value-sensitive design (VSD; (Friedman et al., 2002)), that addresses human values and whose adaptation has focused a lot on privacy concerns. VSD tries to predict and explore unintended outcomes of persuasive technology (Davis, 2009). The method *Values at Play* by Flanagan and Nissenbaum (2014) advocates the inclusion of ethical concerns in the design development process of game designers, which consists of identifying user values early on and shaping them into concrete design choices. Shilton's (2013) concept of *value levers* tries to link values with design decisions through ethnographic engagement.

In their paper on ethical mediation in UX practice, Gray and Chivukula (2019) contend that fostering ethically-aware design practices requires an "ecological model of ethical engagement" that – besides ethical practices – considers both personal and organizational factors to model the mediating relationships that will potentially lead to "lasting and sustainable change". Mulvenna et al. (2017) created an 'ethical by design' manifesto that includes a set of principles, which are supposed to establish an understanding of how design can inherently address ethical concerns. Creators of persuasive technology can therewith consider the needs of everyone and ensure that a design promotes ethical behavior and empathy by drawing attention to aspects worth considering, discussing, and supporting. Berdichevsky and Neuenschwander (1999) have also developed a set of eight ethical principles of persuasive design, including the "golden rule of persuasion" which states that someone seeking to persuade others through persuasive technology should only do so if they would consent to be persuaded to do the same themselves. Berdichevsky and Neuenschwander challenge designers to critically evaluate ethical issues when creating persuasive designs. They also mention that knowledge of the existence of persuasive strategies may diminish their efficacy and sensitize people to them.

While these approaches have been effectively used for the research of understanding ethics in design and have the potential to manage ethical issues with persuasive technologies, it remains unclear whether they are efficient in "increasing ethical awareness and decision-making" in professional practice (Gray et al., 2018, p. 2). Methods and tools to strengthen ethical awareness and guide practitioners through their ethical role and the relevance of values in design are rare (Chivukula et al., 2018). It is hard to determine how many practitioners know of such ethical frameworks and have the ability to integrate them into their design process. Oftentimes the realistic, practical needs of professionals are not met in alignment with

the accessible methodologies (Gray et al., 2014). Consequently, a clear form of implementing the academic research into design practice is missing. Overall, it is essential that the field of HCI starts to incorporate widespread education of ethical considerations into their fabric in order to make sure that future practitioners have knowledge of all the consequences that can possibly occur when designing. When expertise exists, a focus on ethics can be integrated into everyday practice of UX designers.

Gray et al. (2018) highlight some ethical dilemmas and open questions concerning dark patterns, setting an agenda for future studies of (un-)ethical implication of dark persuasive practices in the field of user experience design. They reason that even if the design intentions and motivations were not meant to be deceptive, they nevertheless are potentially causing poor user results or making people carry out undesirable actions, making them ethically questionable. It has to be noted that there are cases of dark patterns that test well in terms of usability (e.g. nagging), yet at the same time are affecting the choice of the user. Gray and colleagues also foreground ethical design responsibilities of practitioners related to dark patterns. It is stated that "design is rarely a solitary endeavor", but rather a complicated mix between "design responsibility, organizational pressures and neoliberal values" which often leads to profitability being the top priority rather than certain social motivations. There is a difficulty in assessing whether a designer is culpable for dark designs. Fansher et al. (2018) explored the place of ethics in design practice by collecting and analyzing posts by practitioners that are related to dark patterns on Twitter. They conclude that design and user experience practitioners use social media like Twitter as a way to raise awareness of unethical, dark design practices, to condemn business for using them and in return promote a more ethical usage. Most importantly, practitioners on Twitter do not support or approve the incorporation of dark strategies into design.

If design outputs are serving the needs of the user, ethical principles need to be incorporated. Creators of persuasive technology need to recognize, discuss and understand design-related ethical implications (Mulvenna et al., 2017). To get a better understanding of how ethics and values are considered and addressed in a real professional work practice environment, more in situ research needs to be conducted. Users need to be informed about the persuasive intent of technology and consent to being persuaded for the persuasion to be ethical (Davis, 2009). The question of when influencing behavior is accepted and when not remains difficult to answer because of the subjective nature of persuasion and control. There is no clear right or wrong when the effectiveness of a technique depends on the person being influenced.

2.4.5 Related research summary

An ethical product supports people's autonomy by default, meaning that the needs of people are taken into consideration (Mulvenna et al., 2017). The process of designing interactive systems has gotten much more user-centered in the recent decades, with approaches like User Centered Design which has been successfully applied in many design projects and is endorsed by standards (Garrett, 2011; ISO, 2010). Since designers want to understand the people that they are designing for, it is crucial to involve them throughout the creative process (Jendryschik, 2013). It is the aim of the designer to make appropriate decisions based on the gathered knowledge in order to create better user experiences. With dark patterns, however,

that same collected knowledge is used to manipulate the user and deceive the user experience. People are susceptible to influences from persuasive technology and that susceptibility remains even after learning that they are in existence (Weinschenk, 2013). Does that principle also apply for dark patterns, design decisions that might actually harm the user in one way or another? Up to this point, practitioners have laid out many dark design strategies. It remains unclear though, how the end user notices dark patterns and experiences them. Do people recognize manipulative techniques, or do they think they are at fault that a system is designed in a distorting way? A better understanding on how the end user perceives, experiences and responds to dark patterns is needed. This could lead to better policies concerning which techniques are appropriate and which are not. The present thesis thus aims to explore the user perspective on dark patterns with the help of focus groups and individual interviews.

3. Methodology

In this section, applied research methodologies will be briefly examined. The foundation for this study was laid out by an exploratory research strategy to help to get a better understanding of the field of dark persuasive design, find a research gap and formulate an adequate research question. Exploratory, formulative research allows for an exploration of the research topic to develop an understanding through collected information and helps to formulate hypotheses. It also enables changes in direction as a result of new insights. (Saunders et al., 2016; Singh, 2007) Singh (2007, p. 64) describes exploratory research as “the initial research, which forms the basis of more conclusive research”. This foremost included a comprehensive literature review, which the related research chapter is based on. After it was determined that a more in-depth study is feasible, a research question was developed and a qualitative approach to gather and collect data was chosen. Qualitative research methods are applied to “answer questions about experience, meaning and perspective” (Hammarberg et al., 2016, p. 499) from the participant’s point of view. They are supposed to “provide a deeper understanding of social phenomena” (Gill et al., 2008, p. 292) compared to quantitative methods. The gathered data is rich and broad (Maxwell, 2009) and researchers can oftentimes learn more from participants than they anticipated in the beginning (Hammarberg et al., 2016). For these reasons, focus groups and one-on-one interviews were found suitable for the study as a means to researching a subject people are not overly familiar with, to attain a user perspective on the topic of dark patterns and to answer the raised research question.

3.1 Data collection

Data collection was conducted through focus groups and individual structured-interviews – which are the most common methods for collecting data in qualitative research (Gill et al., 2008) – with a variety of participants, all described in the subsections below. The combination of these two techniques was useful. The focus group allowed for a broad overview about all ideas and issues about the subject, generally yielding the context and the language as well as perceptions of people. Following that up with semi-structured individual interviews has the advantage that some areas and aspects are already known and can be dived deeper into, acquiring more details and generating complementary views (Lambert and Loiselle, 2008).

3.1.1 Focus Groups

The overall goal for the focus groups was to find out how the end user perceives, experiences and responds to dark patterns and certain behavior manipulation in user interfaces. The method was chosen because it helps in exploring what users believe or feel and why they act in a certain way, in this case towards manipulative design techniques. The goal is to identify what influences the "feelings, attitudes and behaviors" of people (Rabiee, 2004, p. 655) and to generate a "rich understanding of participants' experiences and beliefs" (Gill et al., 2008, p. 293). A further reason for choosing this method is that participants in a focus group might help each other to identify the dark pattern phenomenon that they are not too familiar with and generate some initial thoughts about it, unraveling the subject together in a conversation. After some initial questions, the participants were presented with a quick overview of dark patterns on web and mobile environments together with a brief definition. This helped the attendees to recognize the subject matter and form perceptions about it. Due to time constraints and the sheer amount of dark pattern strategies, it was impossible to present examples from all subcategories. Therefore, only selected examples of each category were shown, at least one per main category. After planning the structure of the focus group, an initial pilot round with three people was conducted before the actual planned focus group to see if the schedule is clear, the prepared questions were understandable and appropriate, to find out about potential improvements to the process and to check if the set time was reasonable. Since this pilot round produced interesting insights already, the collected data was later used as part of the results in the analysis stage. There were no differences in the layout of the focus group between the pilot study and the main focus group, which had six participants attending. Going forward, 'focus groups' will refer to both the trial pilot session and the actual one. The outcome of the focus groups was a catalogue of experiences and reactions from different persons. The complete, preplanned script of questions can be found in Appendix 1. Unique to focus groups, as Rabiee (2004) describes it, is the aspect of social group dynamics through which data is collected, which are often more insightful and richer compared to simple one-on-one interviews. In focus groups, ideas might come to light that people have about certain areas of interest as well as discussing those within a group, producing a lot of data in a short space of time. Krueger and Casey (2000) state that it is important to have a homogenous group of participants in order for them to feel comfortable and be able to get fully involved into the discussion. This homogeneity was achieved by recruiting university students with "similar socio-characteristics" who were within the same age-range, which further makes the participants "comfortable talking to the interviewer and each other" (Rabiee, 2004, p. 655). To cater for a relaxed atmosphere that makes the participants encouraged to engage in the conversation, a quiet setting without any disturbing sounds was chosen and snacks plus coffee and tea were additionally provided. According to Nielsen (1997), focus groups – even though being a powerful tool – should not act as "the only source of information about user behavior". Thus, one-on-one interviews were conducted in the next step to attain more qualitative results.

3.1.2 Interviews

In addition to the focus groups, five semi-structured interviews were conducted. For the interviews, several key questions were formulated, seeking to explore ideas, perceptions and experiences of dark patterns in more detail. Since little is already known to date about the user

perspective on the phenomenon of dark patterns, interviews are a suitable choice to gather detailed insights from participants (Gill et al., 2008). The chosen semi-structured interview style allowed the prepared questions to be easily reworded as appropriate, making a smooth, free and spontaneous interaction between moderator and participant possible (Benyon, 2014) and also letting the interviewer "diverge in order to pursue an idea or response in more detail" (Gill et al., 2008, p. 291). The interviews made it possible to elaborate on information important to the participants. All interviews were conducted in distraction-free areas, the questions were open-ended and got more difficult and sensitive the further the interview progressed, as it is recommended by literature (e.g. Gill et al., 2008). Interviews are a good method to combine with focus groups as they get people to reveal feelings, thoughts and experiences, which they possibly would not mention in front of a larger audience (Kitzinger and Barbour, 1999). In the course of the interviews, the five main dark pattern categories were introduced to the participants along with different examples illustrating the deceptive attempts of the patterns. The initial outline of the semi-structured interview questions is attached in Appendix 2. In the end of the interview, participants were asked for any additional comments, as it gives them time to engage in issues and thoughts they consider important but have not been mentioned by the moderator, potentially "lead[ing] to the discovery of new, unanticipated information" (Gill et al., 2008, p. 293).

3.1.3 Participants

The participants for the study were chosen randomly based on availability and a competency in using the internet out of a university environment. All of them were acquaintances of the author. They were, however, recruited from several different university departments to gather input from a variety of educational backgrounds and wide-ranging blend of minds. Since the perspective of a normal end user was wanted, it was especially attempted to prevent the attendance of too many participants with a background in design or similar fields that might make them view the phenomenon of dark patterns from a designer's perspective. Nevertheless, eventually one design student attended an interview-session. There were no overlaps between the groups, meaning that no person attended more than one session. Seven undergraduate or graduate student as well as one PhD candidate took part in the focus group meetings (3 female, 5 male, ages 20-37), while three female and two male students were questioned in the five semi-structured interviews, with a narrow age range from 23-27.

3.2 Methodological reflections

This section shortly reflects on the methodological aspects of the study. Even though the term dark pattern itself was new to the respondents, all of them were able to relate to the explicit examples shown to them through a short presentation. The presentation helped the participants to recognize the phenomenon as an everyday occurrence. Consequently, they were capable of expressing their perception, feelings and reactions towards the topic in a tight timeframe, although there being certain categories, which they had never encountered before on their own. All participants of the study had an academic background as either university or PhD students, which along with the narrow age range creates an implicit bias. A greater variety of academic and cultural backgrounds as well as people from different age groups could possibly cater for additional insights that might add to the research question. However,

recruiting younger participants who were likely to be proficient in technology and the online environment was practical, as the concepts of the evil design phenomena did not need much explanation. In general, collecting qualitative information and interpreting such kind of data is subject to bias (Norris, 1997). Usually, it is difficult to generalize results from qualitative research to a wider population, since they make use of samples in a scope that does not represent all target users adequately (Polit and Beck, 2010), which also applies to the study at hand. The collected qualitative data was useful for generating a broad catalogue of impression from the perspective of an end user, on which further future research can be based on, potentially preceding quantitative procedures. In contrast to the executed qualitative research, a quantitative approach to the study would provide objective empirical data (Yin, 2009) that could for instance explore the average end user's perspective on dark patterns, statistics about what user group is the more susceptible to certain behavior manipulation in user interfaces, or information about varying reactions from different groups of people. The present research does not intend to answer the research question final and conclusively but simply explores the topic of dark patterns from a user perspective with varying levels of depth. For an understanding of the full scope, additional research is required.

3.3 Gathered material and ethical considerations

The focus groups as well as the interviews were recorded on audio and the tapes were later transcribed verbatim, which protects against bias and compiles a list of evidence of what has been said and what has not (Gill et al., 2008). Additionally, written notes were taken during both the focus groups and the interviews about observations, thoughts and ideas. Ethical considerations for the research study were made, following criteria published by Vetenskapsrådet (2017). In order to conduct an ethically sound study, assurance about ethical principles such as a confidential and anonymous handling of the gathered material was given and oral consent to record the audio and analyze the data was obtained from each participant before the focus group or interview had started. Since all participants were grown-ups, no parental consent was needed. Transcriptions did not include any names of participants or anything else that would have allowed a backtracing, which makes them unrecognizable to third-party readers. All data was saved locally inside a folder on a personal computer and was never uploaded anywhere.

3.4 Data analysis

For analyzing the gathered qualitative data, the thematic analysis method was chosen. It is a flexible method for "identifying, analysing and reporting" themes within a data corpus, describing the data set in rich detail (Braun and Clarke, 2006, p. 79). The method was chosen for its straightforward structure, for the fact that it goes well with exploratory research questions, and because it was described by Braun and Clarke (2006, p. 83) as especially useful when "investigating an under-researched area, or [...] working with participants whose views on the topic are not known", which matched the purpose of the present study. Thematic analysis provides a rich overall description of important themes and includes in itself six separate steps as stated in the work of Braun and Clarke (2006): familiarization with the data, generating initial codes, searching for themes, reviewing and lastly naming themes. In

practical terms, this was applied by first transcribing the audio recordings and repeatedly reading through the material including the annotations in the search for patterns. Next, quotes from participants or short sentences to describe interesting data were annotated on sticky notes. Those notes were afterwards sorted into potential themes and pinned on a blank wall. Data that seemed neither relevant nor related to the study aim was cut out. The themes were then reviewed, the volume of information was reduced, the data was categorized and ultimately significant connections and patterns were identified. In the end, a total of three themes with six subcategories were established from which meaning was drawn.

4. Results and Analysis

This chapter will present the main findings of the qualitative research and the subsequent thematic analysis. The following chapter (5) will then discuss the analyzed data thoroughly, leading to answers to the research question. The goal of the study was to generate a catalogue of perceptions, experiences, thoughts, impressions and responses that people have concerning dark persuasive design patterns. Data was collected through two focus groups and five individual interviews. After the audio recordings of those sessions were transcribed, the analysis of the data led to a type of affinity diagram comprised of quotes from participants or short sentences describing the statements (see Appendix 3). The diagram bundled and clustered the information into themes based on their relationships. After further reviewing, drawing of connections, pruning and categorizing, the result was a diagram consisting of three different themes and six categories. Figure 4 shows the generated diagram illustrating the found themes, categories and their connections to one another. While the themes perception and conduct were composed by the author to form a heading to the respective categories, which are based on the participants' answers, the theme countermeasures is simply derived from the participants' feedback without any associated categories. In the following, each theme and category is described in individual subsections. In case a participant is quoted, the participant's label is added in brackets behind the quote. Focus Group attendees are identified by FG[1-9], whereas interview respondents are labeled as P[1-5].

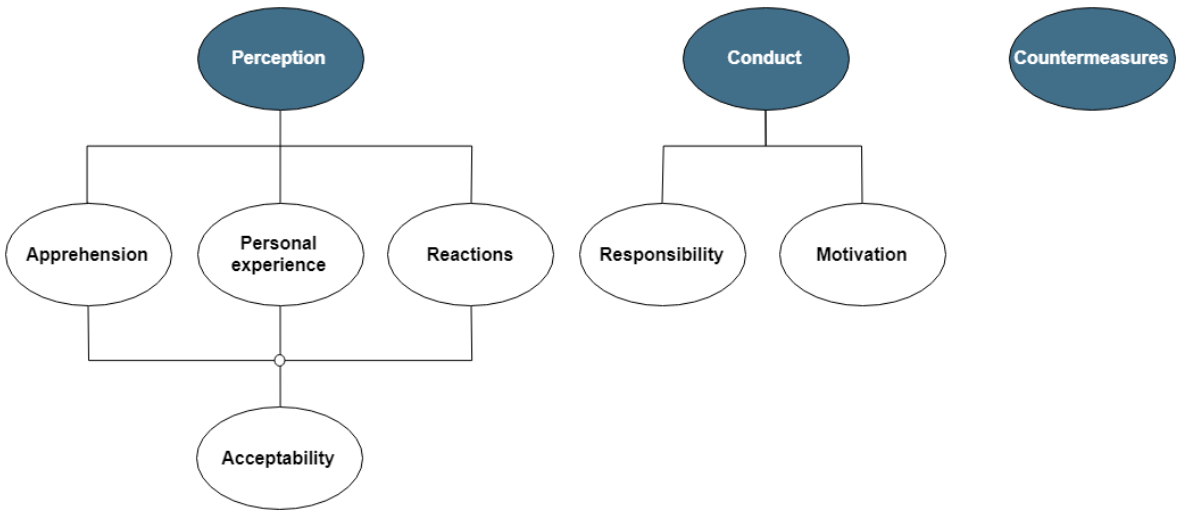

Figure 4: Themes, categories and connections as a result of the thematic analysis

4.1 Perception

The heading perception includes the categories apprehension, personal experience, reactions and – premised on insights from the former three – acceptability, which are based on the responses of the participants.

4.1.1 Apprehension

This section covers how users comprehend dark patterns, what their thoughts are and what their general understanding of the matter is. To start with, participants recognize the subject as a "difficult topic" (P1) that "many don't know about or don't want to know about" (P1), with the specific term *dark pattern* being completely unfamiliar to users. The concepts of some of the presented examples of dark patterns were recognized. Interviewees "encountered them before" (P1), and a few were doomed as "pretty obvious" (P1) and predictable, especially techniques that toy with emotion and try to pressure people into doing something. Others were new to the participants and left them astonished.

In general, the respondent were "somewhat aware" (FG7) of the existence of manipulative techniques on the web. This awareness has increased in recent years and mostly originates from the continuous media coverage of scandals, with the Facebook–Cambridge Analytica data incident leading the way. Those media reports – that also reached participant's social media timelines – were a starting point to discuss about the collection of information by companies and about browsing the internet safely and with caution. The EU legislation on cookies, which requires informed consent from people through cookie prompts, also sensitized participants on "what happens with your data" (FG2) just as the 2018 passed General Data Protection Regulation (GDPR). Because of that, there is also awareness of some of the patterns' prohibition by these laws: "some of them were outlawed" (FG2).

Overall, dark patterns are viewed as sneaky, hidden, intentionally implemented and strategic and are considered a "dishonest way to conduct business and interface design" (P3). According to FG3, the patterns are "usually noticed afterwards, after they tricked you". It is acknowledged that they exist to trick people, that applying dark patterns is "in the company's best interest, not the user's" (P4) and that "they trigger you with certain things and then profit from that" (FG5). One participant boils it down to the following: "they are forcing me to do something like buy stuff, click or see something, get some data from me, get advantage of me, and influence me in my behavior" (P2). Respondents see no way to fully avoid dark patterns and have the belief that people have to live with it. A reason for that is that users seem to "depend on websites" (P3) At that point, participants project their personal apprehension onto the general population. Since there is a need to use certain interfaces – "some companies are just too big and you need them" (P4) –, running into dark patterns on those sites can oftentimes hardly be prevented. Interestingly, two attendees of the second focus group had the shared opinion that such techniques will appear more and more in the future, that the internet is becoming a darker place that will grant the users less and less freedom. Therefore, people need to "use the internet in a functional way, with awareness" (FG1), always pay attention, think about if a service is interested in manipulating the user, and find the "best strategy to minimize the damage" (FG4). It was noted that with experience people would ultimately learn how to deal with them.

4.1.2 Personal experience

Every participant of the study experienced at least one of the dark pattern examples or rather a variation thereof that was shown in the presentation before. In the following, some incidents the respondents experienced are listed. Nagging seems to be perceived a lot by the interviewees and is always considered annoying. The preselection of checkboxes is also an omnipresent phenomenon and was for instance experienced when installing computer programs, which entailed the risk of unintentionally installing something that was not asked for (e.g. a toolbar). Another very common pattern for the participants was that of some kind of psychological pressure being applied on them through toying with emotions (e.g. “only three rooms left” on booking.com). One interviewee encountered many fraudulent buttons or phony notifications that were meant to get interaction going. Techniques from the category Forced Action were also experienced, for example when websites demand certain actions of the users so that they can access all the functionality (e.g. deactivating the ad blocker). P1 describes an unpleasant sneaking-incident with a flight company: “the price that they put in the advertisement didn’t apply for me in the end, because it was just for a special payment option. [...] I had to go all the way in the process, through putting in my personal information to just realize ‘oh this price doesn’t apply for me’”. It can be said that the personal experiences that the participants had influenced their perception, especially their emotion, towards the subject.

4.1.3 Reactions

In terms of what emotions were felt when interacting with dark design patterns – they are obviously not always spotted –, it became evident that everybody participating in the study was feeling annoyed. This annoyance was encouraged by the reoccurring character of some of the patterns. Other emotional monosyllabic reactions included feeling stupid, angry, irritated, pressured, frustrated, worried (especially for data security) and stressed. The common point of view of the participants was that the reaction always depends on the experienced damage. While the experience of facing behavior-influencing elements makes some participants want to leave the website completely, it seems that if the benefits of using a website or application outweigh the encountered negative aspects, users will most likely continue to use a service. If the damage is minor, people “just get annoyed and live on with it” (FG3), one participants remarks that she has “gotten used to it, because so many do it” (P1) and there seems to be a feeling that one “has to accept it” (FG6). However, if dark patterns on user interfaces are “interfering with the original task too much” (FG4) or are frustrating enough, participants would consider to “stop using it” (FG1), “might just abort” (P2) or “try to avoid it as much as possible” (FG4). Another immediate reaction to encountering dark patterns from one participant was that it “makes me not trust services”, while another one “tr[ies] to reverse the steps” (P1) mentally to check what triggered the experience. The willingness to counter the dark patterns is low, according to P2, since it is “effort I have to make and a waste of time, so I just ignore it”.

4.1.4 Acceptability

This section looks at how participants accept or reject dark patterns and based on what reasons. In general, answers from the interviewees suggest that implementing deceiving techniques into user interfaces is “always shitty behavior” (P3) regardless of the company

applying it. However, it appears that such behavior is excused more when coming from certain companies and when there is knowledge of "what kind of intention they have behind it" (P1). If users benefit from a company in different, valuable ways and maybe even are dependent on a service, they are inclined to accept possible minor negative aspects, especially if companies "provide a free service to the user" (FG1). There is an understanding that the purpose of many services is to keep the user engaged – "and I accept it when I enjoy it" (FG4). The opinion is that more established, bigger-sized companies can afford the implementation of dark patterns more, because they can manage potentially losing users. A focus group attendee expresses that by saying: "with companies I trust, at least I know the worst-case is that they want to steal my time or data, but their behavior is not malicious nor are they trying to cheat me out of 50 bucks with some hidden fee" (FG2). Specific dark patterns considered more acceptable to most of the respondents include the categories nagging and forced action. This is particularly the case because they are most of all thought to be clearly visible as well as rather annoying than dangerous. Many variations of these techniques leave the user with a choice because of their visible character: "here you can just choose to wait or close the page" (P4). P3 remarks that they are "enough to make me leave, but are not really hurting me". Further, P1 notes that "giving me trouble to unsubscribe is not as bad in comparison to if it's something really important that I'm going to miss". Moreover, methods that can be compared to the classic salesmanship-like toying with emotion are considered commonplace and ordinary and are therefore widely accepted amongst all study participants. Those patterns are viewed as annoying, but "not too dangerous" (P4). P3 adds that "those are not really malicious, so I think they are ok".

In contrast to that, deceiving behavior is not excused if coming from institutions that handle personal, sensitive data: "I wouldn't excuse it from my bank" (P1). People find the utilization unacceptable if it could have more severe consequences or if "it is something really important that is missed" (P1). Therefore, the hiding of information is generally considered more dangerous to the user since the patterns are hard to detect and invisible. As one participant expresses: "I can't excuse dark patterns that can cause more damage in the future" (FG7). However, two interviewees remarked that since they probably would not notice that information was hidden from them, they would inherently accept the pattern, even though it does "not make it ok" (P2). P4 adds: "if it's in the background and you can't see it and it is not obvious, then I accept it more". Furthermore, trust of a company is weakened and the credibility is compromised if they utilize too many manipulative techniques. Participants especially do not excuse the sneaking or hiding of additional charges as well as the sharing of personal information. In regards to specific dark patterns, it becomes clear that it is difficult to generalize which techniques are accepted more and which are rejected the most. Some might care about particular techniques that others might not mind at all. However, the participants could not imagine a scenario in which they actually desire being influenced in their behavior by dark patterns. Only interviewee P2 tried to see a positive side of techniques pressuring people through emotions: "they may help me to decide faster, which is sometimes good because it reduces my time-wasting".

When discussing if an open, honest approach that has companies admittingly communicating that they are utilizing dark patterns would contribute to increasing the

acceptance of the behavior, participants were a little cautious in answering the question with certainty. In the end, it obviously depends on the degree of the deception. On the one hand, people might take it in a bad way. It could hurt the company's reputation and might eventually "lead to a decline in revenue" (P5). On the other hand, people might be more inclined to ignore and excuse such manipulative behavior compared to "not knowing what is happening behind the scenes" (P1). An honest communication could make companies "look better and give them credibility" (P4) and ensure that users know what is happening and why they do it. Additionally, it naturally also depends on the type of user, which has to decide whether to keep using a service despite of the knowledge of deceptive design patterns. The participants agree that they will presumably keep using a service if it "still has good information, benefits or if friends use it" (P2). P1 formulates additional reasons by saying: "I know that it is influencing me in some way and I still use some of the services, because sometimes there is no alternative, sometimes it is just convenient, sometimes I just don't care and accept it". Furthermore, today's generation has the fear of missing out on something if they don't use a service. This means in effect that if there is enough reason to keep using a service, they will do that, even if it means encountering dark patterns.

To conclude, the participants feel that they as well as people in general have become more critical when interacting with user interfaces in recent years. They look out for deceiving techniques and try not to be tricked. However, they oftentimes still fall for them. Such inexcusable behavior can quickly result in them turning their backs on these services. Nevertheless, they sometimes end up accepting them, by choice.

4.2 Conduct

The theme conduct consists of the categories responsibility and motivation, described below.

4.2.1 Responsibility and motivation

When considering the instances responsible for utilizing dark patterns, all participants agreed that it is mostly the business owner's fault in view of them making the conscious decision to apply manipulative techniques and benefiting from that. Two participants note that even though an individual person might have the original idea, they are usually not solely responsible for the application. Lower level employees like designers or programmers that might actually implement the dark pattern can hardly be blamed as they probably just execute orders from their bosses. If a higher ranked employee agrees to utilize a technique, "then the whole company is to blame" (FG2). However, participants remark that people are at least partly responsible for their fate and should view websites and mobile applications in a critical way at all times. Many dark patterns potentially could be avoided if enough attention is paid. Since the most effective dark patterns are those that remain undetected by the user, it was acknowledged that the user cannot be at fault for running into those.

Regarding the intention and motivation behind implementing dark patterns, participants agree that the main reason is to turn them into money. They further list numerous additional explanations as to why dark patterns are applied. They include growth in general, gaining (psychological) influence and control over users, enhancing popularity, promoting a certain ideology or goal, getting people's attention, accessing people's data, marketing and the selling of items.

4.3 Countermeasures

A great variety of possibilities to fight dark patterns in user interfaces came to the attendee's mind in both focus groups and individual interviews, even though the common thread was that the endeavor is difficult and regulating certain patterns might just lead to companies coming up with different schemes. Additionally, it was noted that while stopping them completely is next to impossible, it is "all about how to best live with them" (FG4), which can be best achieved by being careful and thinking critically when interacting in an online environment as well as always having in mind that someone might be interest in manipulating you. Nevertheless, several actual countermeasures were identified. For one thing, bringing the topic to awareness of people was a big subject of discussion during the focus groups. According to the participants, this could be achieved by educating people on the topic, "getting the message out there" (P4), and even warning them about existing dark patterns through media articles, posts on social media (e.g. Facebook, Twitter and YouTube) or documentaries. Raising awareness for dark patterns could even start at educational institutions, as one participant mentioned. In addition, "official objective channels" (P1), possibly even governmental agencies, could provide more information on the subject. For another thing, the development of some kind of software was mentioned along with ad blocker and scripts, which can act as a shield to protect users from dark patterns. Moreover, all participants refer to laws or some kind of consumer protection regulation as perhaps the most suitable way to fight manipulative design as companies otherwise would "just keep on using them because they profit so much from it" (P4). As a participant expresses: "if you want to get rid of them, laws might be the best solution" (P3). One focus group attendee was even aware that regulations already have been implemented in the past: "some of them are now outlawed with the new GDPR" (FG2). Another possible countermeasure considered was to apply pressure on companies by denouncing them publically for utilizing dark patterns (e.g. through the use of social media) or boycotting websites and mobile application that make use of dark patterns in their interfaces, maybe even building "a community to fight the patterns" (P4). One participant agreed by saying: "if I see some articles or news that some companies do bad stuff, it increases chances that I stop using them" (P2). Additionally, "using alternatives that don't utilize dark patterns" (FG5) will also potentially help in influencing companies to change their behavior. Rather drastic solutions to dodging behavior influencing techniques on the web were also discussed and included, besides "leaving the internet" (FG1) completely, the idea of "a monthly flat rate to the internet" (FG2) that would incorporate several benefits such as avoiding dark patterns or masking advertisements.

5. Discussion

This section presents a discussion, which contrasts relevant research to the findings of the study and further projects those results onto day-to-day life. The study at hand expands our understanding about unethical interface design and investigates how everyday users perceive it and respond to it, as written in the research question in the introduction to this thesis.

While the term dark pattern itself was unknown to the participants, they were nevertheless moderately aware of the existence of such techniques and recognized some of the presented examples. A great deal of the presented dark patterns was unfamiliar to them, however. The personal experiences that the respondents previously had definitely influenced their perception on the topic. Different techniques were considered to be sneaky, strategic and dishonest. The reactions when coming across dark patterns included feeling annoyed, irritated, angry, frustrated, pressured, and worried. Moreover, participants believe that the reaction always depends on the experienced damage. That suggests the assumption that some patterns are thought to be much worse than others. It appears that deceptive behavior is objected to the most when the consequences are going to be severe. This can be the case when parties that manage sensitive data apply them or, more generally, when people lose something that is of actual value to them. Dark patterns remain difficult to generalize and the level of experienced deceptiveness as well as the effectiveness of the technique depends very much on the involved person. The discussion with the study participants oftentimes shifted to specific dark patterns that dealt with privacy and the moderator had to point out that those are not the only area where dark patterns can be found. This indicates that privacy concerns are omnipresent and were quickly connected to dark patterns. A reason for that is certainly the repeated media coverage of data scandals in recent years.

According to the respondents, there is no way to fully avoid dark patterns. They name the dependency on certain services as a reason for that. Therefore, bigger companies can afford to experiment with deceiving techniques and the user will not run off. Lanier (2018) suggests that addiction is a big reason why people accept to be manipulated by information technology. People are afraid of missing out. Companies and their designers effect the basic elements of ability such as effort, routine and social acceptance, with the aim of getting people over that activation threshold (see the Fogg Behavior Model in section 2.3.1) and influencing the user in their intended behavior. Digital platforms deliver value and benefits to its users. Alternatives disappear because many benefits only appear when everyone uses the same service, which in return leads to people being stuck with it. The term annoyance was omnipresent throughout the study and it can be argued that people first are angry towards certain patterns, then get used to them (e.g. the ‘salesmanship’ pattern) and they just become annoying, and eventually, those patterns become normal. The indication is that people might feel better when that happens and if they do not know about the existence of the pattern at all. An invisible dark pattern is therefore accepted more.

Most of these websites or mobile application have a business model that has the main goal to make money. This often is achieved by finding customers and influencing them so that they are ready to pay. It seems that many companies consider behavior modification to be almost the only possibility to survive. The assumption is that people values must be supplanted in favor of business needs in order for a service to work. I argue that that is not true and makes

no sense. In the long term, customer happiness, trust and credibility is reduced (Brownlee, 2016), which damages the brand and eventually leads people to stop using a service. Nowadays, especially with social media platforms being used extensively, a company can easily and visible for everyone be accused of doing something wrong by consumers. Eventually, deceiving techniques will be exposed and the business will have to deal with the consequences.

The question of when influencing behavior is accepted by people and when not remains difficult to answer because of the subjective nature of persuasion. The results indicate though that the acceptability of dark patterns increases, when they are visible, when the user is left with a choice, enjoys the interaction and does not miss out on anything of importance. Manipulative techniques might even be ignored if users benefit from the service in other, valuable ways. However, this does not exclude the general disapproval of utilizing such deceptive techniques. If people start to accept dark patterns that let them have the freedom in making a choice, then what about the invisible behavior modification? Weinschenk (2013) states that people are susceptible to influences from persuasive technology even after learning that they exist. This clearly also applies to the phenomenon of dark patterns, to design decision that might actually be harmful to the user in one way or another. The impression is that participants were not shy in making a case for the reasons they continue to use a website or mobile application even if they are being tricked by them. As previously mentioned by Kahneman (2012), knowledge of people's own biases does not make it easier to act against them. This means that a 'manipulation literacy' – the ability to recognize deceptive techniques – as suggested by Lewis (2013) is just a starting point in terms of countermeasures against dark patterns. Media coverage about dark design practices (e.g. in the wake of scandals) as well as people talking about it on social media to promote a more ethical usage or to condemn businesses clearly raises awareness to the subject. The existent of data corpuses such as from Brignull or Gray and colleagues further contributes to the generation of a knowledge base and sensitizes people to them. However, the knowledge of the existence of a dark pattern alone does not protect people from being deceived. As history has shown with the consequences of smoking for instance, literacy alone does not always lead to the desired results. Since raising awareness of the phenomenon to the public cannot be enough, it can be argued that one has to go further to properly fight such manipulative techniques. That can be a difficult endeavor, however.

Therefore, it is important to make a case against the utilization of unethical dark design patterns. This can start at an educational level, ensuring that designers, technology developers and their place of employment understand that it is ultimately bad for business and are educated on ethical principles. A study by Chivukula et al. (2018) shows that design students apply manipulative techniques to exploit known user values f0r the purpose of stakeholder-directed outcomes if the goal is boosting conversion rates and thereby ignore ethical implications. Teaching about the effects of cognitive load, emotions, design for behavior change and persuasive technology will help to consider ethical implications connected to the utilization of certain persuasive techniques. There are various concepts and methods from scholars for integrating ethical principles into the work process such as value-sensitive design (Friedman et al., 2002) or values at play (Flanagan and Nissenbaum, 2014). The adaptation into the world of practitioners happens haltingly, however. Furthermore, business models can

be adjusted to make money in alternative ways. For instance, one participant made the suggestion to monetize services on the internet as a way to avoid dark patterns.

Brignull believes that “when most people encounter these kinds of patterns, they tend to blame themselves” (Andersen, 2016). This study shows, however, that the participants mostly see the business owner at fault, with growth (e.g. influence, popularity and eventually money) acting as motivation. In the end, participants blame mostly the company responsible for implementing dark patterns, being aware that an individual is usually not able to evade it. Albeit they do recognize that one should be critical when interacting online and pay attention at all times. Hence, interestingly participants believe that users have some responsibility on their own.

6. Conclusion

In this thesis, psychological aspects of human decision-making processes were discussed, which are an important part of understanding persuasive design. Next, the concept of dark patterns was introduced and explored based on a systematic literature review. Dark design patterns have a conscious component of deceit to them in order to nudge people towards making an irrational decision. By intentionally implementing such manipulative techniques, user values are substituted in favor of a direction that profits the business. The central added value of this work lies in the generation of a catalogue of different perspectives on dark patterns from the point of view of an end user. Participants were somewhat aware of the existence of such strategies, but nevertheless did not know about a bulk of them. In the eyes of the respondents, the business owners are mostly at fault for applying manipulative designs. They believe, however, that people are partly responsible for their own fate and should view content on the internet critically. In addition, the acceptability of such techniques shifts depending on the respective dark pattern.

Persuasive design techniques have been used in the commercial sector since a long time as they ultimately can help companies to generate revenue and growth. Before the digital age became pervasive, people used to be persuaded and convinced to buy products by salespersons on the streets or in front of their own doorstep. It did not take a long time for the population to realize that they oftentimes were tricked by the sellers and that they were mainly after making sells by any means, not caring for the benefit it would provide to a customer. This in the following led to people ignoring them on the streets or simply not opening the door when it ringed. They consciously stopped buying products that were not useful or beneficial for them. Nowadays, in the digital era, things have changed and are different from before. People use social media and other websites what they know are influencing them in their behavior. Despite being aware of persuasive and manipulative techniques, they keep on using these services, making excuses why it still has benefits for them. People accept such behavior by sellers in an online environment, triggering a different behavior compared to that in the real life. We are moving towards a point where deceptive behavior is becoming accepted and normalized.

There are nevertheless a number of solutions to fight such dark design techniques. Considering the threats opposed by deceiving strategies, such countermeasures undoubtedly

need to be pursued, by coming up with proactive approaches for undermining the harm they are causing and mitigating the usage of the patterns.

Because the topic is rather understudied in the field of human-computer interaction, further research is necessary in the future. This can include quantitative research of how people perceive and experience dark patterns and how they respond to them. This would provide objective empirical data that could for instance explore the average end user's perspective on dark patterns, statistics about what user group is the more susceptible to certain behavior manipulation in user interfaces, or information about varying reactions from different groups of people. Moreover, further qualitative and quantitative testing experiments of dark persuasive design strategies can produce insights to how these techniques function and work compared to design that is applied honestly. It would also be interesting to conduct research on where exactly one can come across dark patterns: what kind of businesses, websites and mobile applications utilize them. Lastly, there is a possibility to view these strategies outside of the online environment and investigate the application in the real-world as they exist in physical forms.

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Appendix 1: Catalogue of questions (focus group)

Pre-Intro Information:

- *Thank you* for making the time to come
- Estimated to last about *one hour*
- Conversation is *captured on audio* -> take care of *consent*
- *nobody can do something wrong, it's not you being tested, it is me trying to learn*
- Quick introduction: "Tell us who you are, what you study and what you most enjoy doing when you're not studying."
- Explain how it works.

Introduction

- Let us imagine that we are surfing the internet, on your laptop or on your phone. I reckon it sometimes happens that u do not trust the website/application you come across.
    - What things make you mistrust a website or smartphone application?
    - Do you mistrust websites/applications often?

Dark Patterns

- I'm now going to show you some examples of manipulative techniques that you can come across online and afterwards we will talk about it. -> *PowerPoint presentation*
- Questions:
    - What's the first thing that comes to mind to you about these dark patterns?
    - Did you have an (specific) experience with such dark patterns before (when you were tricked into doing something that you didn't plan to do) and if yes can u describe your encounter?
        - Who was trying to manipulate you? (social media, person, company, website, ...)
        - How do you usually react after you realize that you have been tricked into doing something you might not otherwise do?
        - How did that make you feel? (feelings/emotions)
    - Do you think it is your fault when something undesirable happens? Or do you rather think you are taken advantage of?
    - Are dark patterns intentionally designed to trick you?
    - How aware are you of such techniques?
    - When do you excuse such a manipulative behavior?
        - What kind of deception/dark pattern is excused more than other (which less)?
        - Would you say that you excuse it more often when certain companies are involved?
    - Are there instances when you desire such manipulative behavior?

- Would you say that people keep using stuff that they know is manipulating them?
- Who is to blame when you feel manipulated (User, company, designer, technical problems, ...)
    - What is the motivation behind implementing such techniques?
- Do the responsible people of such a deceiving experience see you as a normal human being or more as a potential customer?
- Anything else you would like to add about the topic?

Closing Statement

Thank you for taking the time to be here today, ...

Appendix 2: Semi-structured interview guide

Note: The questions portray the initially prepared interview questions and an overview of the addresses topics. However, due to the chosen semi-structured interview style, questions varied depending on the participants' answers.

Welcoming interviewee.

Participant number:
Age: Female ☐ male ☐ Occupation: Nationality:

First of all: You are here to help ME. You are not being tested, but I am rather trying to generate some insights for my thesis. Please think out loud, verbalize your thoughts. Be honest! Please say what comes to mind, don't be shy, good feedback is important for me.

➔ Get consent (audio recording)

Introduction:
Introducing the participants to the topic through a PowerPoint presentation. Different examples of dark patterns (grouped into the five categories) demonstrate how the behavior of people can be influenced easily and in many ways. Honest user interfaces can quickly become increasingly deceptive. Definition of a dark design pattern.

Questions:

1. What is the first thing that comes to your mind about these dark patterns?

2. When you are surfing the internet, on your laptop or on your phone, (a) what things make you mistrust a website or smartphone application? (b) how often do you come across websites/applications that you don't trust?

3. Did you have any experience in the past that you can think of right now where you were tricked into something that you didn't want to do at first?
    a. Do you usually perceive/detect/notice such techniques?

4. Based on the examples I showed you and your own experience with dark patterns, (a) which of these techniques do you accept/excuse more (the most) (b) which do you object to/reject the most?

   a. Is the Nagging techniques acceptable or unacceptable (e.g. Instagram wanting you to share your contact-list every 3 days with no option of disabling it)
   b. Is the obstruction technique acceptable or unacceptable? (tasks are deliberately made harder for the user (e.g. hiding buttons/access to content))
   c. Is the forced action technique excusable or inexcusable? (forcing users into doing something in order to get access to certain functionality)
   d. How do you feel about interference of the interfaces? (e.g. "salesmanship techniques" such as *only 3 rooms left*? Or when checkboxes are preselected, e.g. giving away your data, or signing you up to a newsletter?)
   e. What about the "*sneaking* techniques"? (hide or disguise the disclosure of information that is of interest to the user, e.g. sneaking additional charges into the basket)

5. How do these experiences make you feel
   a. Why do they make you feel like that?

6. Who is trying to benefit from you / manipulate you?

7. Whose fault is it when something undesirable happens? Yours, the company's, a designer's, a programmer, ...
   a. Why?

8. Do you sometimes have the feeling of being taken advantage of?
   a. How do you notice that?

9. How do you usually react after you realize that you have been tricked into doing something you might not otherwise do?

10. Are these techniques always intentionally implemented by a certain company?

11. What is the motivation behind implementing such techniques?

12. Earlier I asked which dark patterns you excuse more than others and which do you object to the most. Would you say that you excuse the deceptive behavior more if it comes from certain companies? Which companies are that?

    a. If you were aware of companies influencing you in certain ways or if companies even tell you about it, would that raise the acceptance of dark patterns?

13. Are there instances when you desire such manipulative behavior?

14. Would you say that people keep on using websites/applications that they know is influencing their behavior and manipulating them?

15. Would you say that the awareness for these dark patterns has increased in recent years? Why?

16. How can these dark patterns be fought? What would be your solution?

17. Can you think of manipulating techniques offline? In the real world?

18. Finally, anything you would like to add in the end about dark patterns?

Closing Statement. Thank you for taking the time to be here today, ...

Appendix 3: Affinity diagram