The Impact of Customizing Unhealthy Food on Impulse Purchasing

Seminar Paper

Chair of Sales and Services Marketing

Prof. Dr. Florian Kraus

Advisor:

XXX

University of Mannheim

X Term 202X

by

cand. M.Sc.

Faculty MMM

XXX

XXX

XXX

XXX

XXX@students.uni-mannheim.de

Mannheim, XX 202X

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List of Abbreviations

−OF Subtractive Option Framing

+OF Additive Option Framing

1. Introduction

Impulse purchases are an increasingly noticeable phenomenon among consumers in the United States. Notably, average monthly spending attributable to impulse purchases increased from USD 183 to USD 276 from 2020 to 2021, and further to USD 314 in 2022 (Tronier, 2022). In terms of product categories purchased impulsively, food products account for 30 % of the total purchases, ranking second behind clothing (Tronier, 2022). At the same time, product customization has gained increased relevance for managers, as it improves the customer experience, creates value for the company because consumers show a higher willingness to pay (Franke, Keinz, & Steger, 2009; Fuchs, Prandelli, & Schreier, 2010), and helps to differentiate the firm from competition (Valenzuela, Dhar, & Zettelmeyer, 2009). Because customer needs with respect to food get more and more diverse, as intolerances and different lifestyles like a vegan diet require different product variants, customization has also become an important factor in the food industry (Besharat, Romero, & Haws, 2021). Indeed, a study by Innova Market Insights found that nearly two thirds of consumers view the ability to customize food according to their requirements as a top priority (Crawford, 2020). It is thus not surprising that many restaurants have already incorporated the option to customize in their offer. Examples can be found for various dishes: At dean&david, customers can assemble their own salads and bowls, Domino's and Pizza Hut offer customization of pizzas, and Burger King, McDonald's and Five Guys offer personalization of burgers. While Five Guys offers a choice of 15 different toppings to add to their basic burger, McDonald's allows customers to customize pre-made burgers by deselecting ingredients like tomatoes or onions. The customization approach adopted by these two fast food restaurants is called option framing. The approach used by Five Guys is what research refers to as additive option framing (+OF) because customers start with a base burger and add additional toppings, whereas McDonald's approach is known as subtractive option framing (−OF) as they offer to remove burger toppings from a fully loaded product.

The current state of research concerning the impact of option framing mainly stems from the fields of psychology, consumer behavior, and marketing. Despite having been researched for several decades, existing research on option framing has primarily focused on the observation that more options tend to be chosen under −OF as opposed to +OF (e.g., Herrmann, Hildebrand, Sprott, & Spangenberg, 2013; C. W. Park, Jun, & MacInnis, 2000; S. Park & Kim, 2012). Additionally, most previous studies have used similar products, such as cars or electronic devices (e.g., Biswas & Grau, 2008; Herrmann et al., 2013; C. W. Park et al., 2000), which share in common that they are expensive and not consumable.

Therefore, the following literature review aims to propose a hypothesis whose investigation may shed light on current research gaps by introducing a novel dependent variable, impulse purchasing, and examining the effects of option framing in the context of unhealthy food. To do so, I start with introducing option framing by briefly examining key underlying theoretical concepts that help to grasp the phenomenon. Based on this conceptual framework, I will discuss several past findings on option framing effects and highlight the ones which are most important to the hypothesis development. Likewise, I will afterwards introduce the consumer behavior of impulse purchases and explain why they may occur with the help of the strength model of self-control. The findings of these two different research streams are then integrated to form the basis of formulating a new hypothesis. I conclude by discussing the findings and offering implications to managers.

2. Literature Review

2.1 Option Framing Strategy

2.1.1 Framing Effect

As the primary focus of this paper lies on the investigation of option framing effects, the following discourse presents a detailed examination of the extant literature on this research area based on prospect theory and its related framing effects. Aside from briefly outlining several effects of option framing, the discussion centers on the effects that hold significance for the subsequent integration of the three elements (1) option framing, (2) unhealthy food, and (3) impulse purchases to generate novel theoretical considerations.

According to Tversky and Kahneman (1981), a decision problem may be characterized by three main components: A decision maker is confronted with (1) multiple alternatives to choose from, which in turn will elicit (2) different possible outcomes, each of which possessing (3) unique probabilities of occurrence. While expected utility theory (EUT) assumes that consumers facing a decision problem make rational choices to maximize their utility (Von Neumann & Morgenstern, 2004), having observed consumer decisions that seem to be incongruent with the principles of EUT (Tversky & Kahneman, 1981), Kahneman and Tversky introduced prospect theory as an alternative model for describing decision-making under uncertainty (Kahneman & Tversky, 1979; Tversky & Kahneman, 1992). Among the various consumer characteristics predicted by prospect theory that impact decision-making and choice behavior, the most relevant for the following discussion about option framing are the notions of reference point and loss

aversion. Consumers do not evaluate decision alternatives in an isolated fashion but in terms of gains or losses relative to a neutral reference point. The status quo (such as the amount of money currently held in one's bank account) or expectations (such as the anticipation of a forthcoming salary increase) can serve as a reference point (Kahneman & Tversky, 1982). Further, consumers are assumed to be loss averse, thereby valuing losses higher than numerically equivalently sized gains (Kahneman & Tversky, 1982; Tversky & Kahneman, 1991, 1992). Hence, losing money is regarded as being more undesirable than winning the same amount. Whether an option is contemplated as a gain or a loss is determined by the way the alternatives are presented or, in other words, framed. This phenomenon, by which different descriptions of the same objective circumstance alter behavior because different reference points serve as basis for comparison of the alternatives, is referred to as the framing effect (Biswas & Grau, 2008; Kahneman & Tversky, 1982; Tversky & Kahneman, 1981). Levin and Gaeth (1988) provide a classic example of the framing effect. In their study, subjects were asked to evaluate beef that was labeled as either being 75 % lean (positive frame) or 25 % fat (negative frame) on dimensions such as quality (low vs. high) or taste (bad vs. good). Although the characteristics of the meat were objectively the same and only the wording used to inform about it differed, participants rated the beef higher in the positive framing condition than in the negative framing condition.

Based on the distinction between (1) what is framed, (2) what the frame affects, and (3) how the effect is measured, Levin, Schneider, and Gaeth (1998) distinguish between risky choice, attribute, and goal framing. While Biswas and Grau (2008) argue that option framing can be considered a subtype of goal framing, I oppose this view and categorize option framing as a distinct fourth type of framing effect. The reason for this distinction is that, in contrast to the other three types that frame a component (the set of available options, a single attribute, or consequences of a particular behavior) positively or negatively, option framing does not frame the valence but the actual decision process. Particularly, option framing breaks down into additive (+OF) and subtractive (−OF) option framing. As the expressions suggest, in the former, consumers add, choose, select, accept, or include options, whereas in the latter, they subtract, reject, exclude, or eliminate options (e.g., C. W. Park et al., 2000). Based on the nature of the options being added or subtracted as well as the outcome of the decision process, I differentiate between two different forms of application.

One approach is a choice task wherein participants are asked to either include or exclude options from a consideration set in order to arrive at a final set of a certain size. These options are all on a par and compete with each other if the objective is to arrive at a single choice. For

instance, when selecting a product, each option represents a complete product, not product parts or components. The literature provides numerous examples of studies on this type of option framing, whose results are consistent in that rejection of options leads to a larger choice set than addition (e.g., Huber, 1987; Krishnamurthy & Prokopec, 2010; Levin, Jasper, & Forbes, 1998). By letting students participate in a personnel selection simulation, Huber (1987) demonstrated this decision bias. Subjects were assigned the task to either identify applicants they would not invite for an interview (−OF) or the task to name applicants they would like to interview (+OF). In the +OF condition, students selected fewer candidates, leading to a smaller choice set, compared to those in the −OF condition. Option framing also holds consequences for consumption decisions. In their experiments, Levin, Jasper, and Forbes (1998) presented test persons with 24 different car models and then asked them to successively make a final choice by either stating which automobiles they would add (+OF) or drop (−OF) in several subsequent steps. Similar to Huber's findings, excluding options resulted in larger consideration sets compared to including alternatives. Furthermore, even the choice of the type of product is affected. Specifically, rejecting (vs. adding) choices implies that hedonic products are preferred over products whose utilitarian characteristics dominate (Dhar & Wertenbroch, 2000). One explanation for this effect is that giving up options in −OF leads to upward prefactual thinking, which highlights the losses involved in this decision task. In order to minimize the negative emotions that may be triggered by the task, consumers decide to keep the hedonic good (Dhar & Wertenbroch, 2000).

This paper focuses on option framing as applied in a product configuration task, in which "*subjects are asked to either add desired product options to a base model or delete undesired product options from a fully loaded model*" (C. W. Park et al., 2000, p. 187). Here, compared to the concept of option framing introduced above, it is thus not a matter of selecting or rejecting equivalent product options for a consideration set, but of adding or subtracting options in the form of "toppings", product components, or features on top of one single product. In the context of, e.g., automotive sales, a car configurator can operate in two distinct modes. Either it commences with a base model and customers may augment their selections with optional features such as heated seats and advanced sound systems, whereby the final price gradually increases, or the configurator presents a fully equipped vehicle from which one can deselect any additional features that are perceived as dispensable, which lowers the ultimate price but at the same time comfort as well. This example illustrates the three dimensions on which −OF and +OF differ: (1) the starting reference point, which is the base model or the fully loaded model, (2) the task consumers perform, which is either to add or to subtract product features, and (3) the trade-off

consumers face between gains in utility but losses of monetary resources in the +OF condition versus the conflict between monetary gains and losses in utility in the −OF condition (Biswas & Grau, 2008; Lu & Jen, 2016; C. W. Park et al., 2000).

Besides highlighting the scientific evidence particularly relevant to the formulation of a novel hypothesis that establishes a link between option framing, unhealthy food, and impulse purchases, I deem it worthwhile to simultaneously provide an overview of other theoretical work around option framing in product customization tasks. Even though these effects may not be primary target of management when integrating option framing into their strategy, they should not be overlooked as they will certainly influence the achievement of the business objectives pursued by implementing an option framing strategy. In fact, ignoring such factors that do not directly relate to my hypothesis could potentially prompt managers to hastily opt for a specific option framing strategy (−OF vs. +OF) without adequately evaluating the advantages and disadvantages. Therefore, I find it crucial to consider the possible influence of these factors to ensure a well-informed decision-making process.

Option framing in the marketing environment was initially investigated by Park, Jun, and MacInnis (2000) (Herrmann et al., 2013). To the best of my knowledge, these scientists have also studied most of the different implications of option framing. In analogy to their approach, the following findings are clustered in business impacts and psychological consumer responses (C. W. Park et al., 2000). I consider this classification to be sensible, given that it is essential for the overarching corporate success to shed light on the attractiveness of option framing from both the managerial and the consumer perspective. For companies, the use of option framing yields interesting effects related to price expectations, purchase probability, type of product features chosen, consideration of recommendations, achievable product price, and the number of options chosen. In −OF vs. +OF, consumers expect a higher price but at the same time are less likely to buy the product when buying commitment is low (C. W. Park et al., 2000). Furthermore, consumers who are exposed to −OF exhibit a greater tendency to select unimportant features as compared to those who are exposed to +OF (C. W. Park et al., 2000). Also, only when adding product options to a base product, consumers tend to take recommendations about suggested features into consideration, which results in a higher overall product price (Coker & Nagpal, 2013). This may be explained by Herrmann et al.'s (2013) findings which show that product recommendations encourage consumers to add additional options in the +OF condition they would otherwise not have selected. In addition, customization through −OF as compared to +OF results in a higher total product price (Herrmann et al., 2013; C. W. Park et al., 2000)

because customers end up choosing more product features. This leads to perhaps one of the most frequently reported findings, which has been replicated in numerous different studies: −OF as opposed to +OF leads to more options being selected, so that the final product incorporates more product features/toppings (e.g., Herrmann et al., 2013; C. W. Park et al., 2000; S. Park & Kim, 2012). The effect seems to be attributable to two underlying reasons: (1) regret anticipation and (2) loss aversion. Regret anticipation is the ability of humans to foresee how they would feel if they made what they perceived to be a bad choice (C. W. Park et al., 2000). This capability is also incorporated into the decision-making process when consumers are asked to reject options for a product (Simonson, 1992). It follows that the final product composition can be systematically influenced by manipulating the feeling of regret that consumers would experience if they made the wrong choice (Simonson, 1992). The feeling of regret is further enhanced when, due to their own action, individuals hold themselves personally responsible for this wrong choice (Kahneman & Tversky, 1982). Therefore, inaction may be more likely to occur in decision processes that potentially lead to negative outcomes, given that consumers are "afraid" of eliminating too many options, which is why −OF results in a product with more selected product features than +OF does (Herrmann et al., 2013). The other reason lies in loss aversion that has been introduced earlier. Given that loss aversion implies that individuals are more sensitive to losses than to gains (e.g., Kahneman & Tversky, 1982), it leads consumers in −OF tasks to be more responsive to the loss of utility perceived by rejecting options than to the utility gained through adding options in +OF tasks. Likewise, it follows that consumers display a stronger sensitivity to monetary losses incurred by adding options (+OF), relative to the monetary gains accrued by deselecting options (−OF). Since Hardie, Johnson, and Fader (1993, p. 388) found that "*consumers tend to be considerably more loss averse for quality than for price*", a phenomenon which Park et al. (2000, p. 188) termed "*differential loss aversion*", it may be inferred that the loss of utility that arises from rejecting options is more impactful than the monetary losses that are incurred when adding options (C. W. Park et al., 2000). While the results are relevant to our comprehensive understanding of option framing, one could certainly question the external validity of them, given the circumstances that most claims are based on laboratory experiments. By having conducted field experiments instead, Herrmann et al. (2013) have contributed towards enhancing the generalizability of the option framing effect on achievable product price and the quantity of options selected. In addition, Levin et al. (2002) replicated these two findings in two different cultures by conducting their studies in the US and Italy. Still, the majority of the literature used expensive, non-consumable consumer products, including automobiles (Biswas & Grau, 2008; Herrmann et al., 2013; C. W. Park et al., 2000; S. Park

& Kim, 2012), computers and treadmills (C. W. Park et al., 2000), or travel packages (Lu & Jen, 2016). This prompts the question whether their findings also extend to lower-priced, consumable consumer products such as food, given the distinct nature of these product categories, wherein consumers may perceive greater risk in buying high-value items such as cars as compared to smaller, more routine purchases of food, which are often undertaken without much thought (Van Kleef & Dagevos, 2015). Additionally, whereas for a car adding special features such as seat heating may have relatively minor impacts on the nature and usability of the overall product, for food products like a burger it may make a more noticeable difference if a certain ingredient is added or not as it is more incremental to the final product. Also, the ratio of the ingredients' cost compared to the total cost is higher (Levin et al., 2002). Three relevant studies investigated the option framing effect in food customization tasks: Nagpal, Lei, and Khare (2015), and Besharat et al. (2021) successfully replicated the finding that −OF causes consumers to select more ingredients than +OF does and Levin et al. (2002) could further confirm that −OF leads to a higher final product price. While Levin et al. (2002) solely focused on proving this effect for pizza, the other two studies mentioned before also investigated how option framing affects psychological consumer responses. From a psychological viewpoint, option framing influences the healthiness of the final product, estimates of caloric content as well as ultimate consumption volume in food customization tasks, and consumers' experienced pleasure in performing the task, perceived product value, and perceived task difficulty. Nagpal et al. (2015) examined the quality of the customized food in terms of its healthiness by asking subjects to either add (+OF) or remove (−OF) ingredients, some of which were healthy and others were unhealthy, to/from an unhealthy food (white-bread sandwich) and a healthy food (whole-wheat sandwich). For the healthy product, in the −OF task more unhealthy than healthy toppings were included, but no effect was found in the +OF task. However, the opposite was true for the unhealthy product, for which −OF did not affect the nature of the toppings chosen, but +OF did by leading subjects to choose a larger quantity of healthy vs. unhealthy toppings. Besharat et al. (2021) extended this and also examined the impact of the option framing task on subsequent consumption decisions. First, in tests with burritos, sandwiches, and nachos they found that −OF leads consumers to estimate lower calories in the final products compared to +OF, regardless of the health properties of the toppings; second, they showed that this underestimation of calories prompts consumers to subsequently order additional food and by doing so to prefer unhealthy over healthy food (in their study, a cookie over an apple). Another psychological effect is that individuals find the task of rejecting product features from a fully loaded product more enjoyable than adding them to a basic product, and when rejecting (vs. adding) product

features, they attribute a premium (vs. an economic) price to the final product (C. W. Park et al., 2000). Finally, option framing affects how difficult consumers find the product customization task. Both Park et al. (2000) and Lu and Jen (2016) have demonstrated that the task of removing options from a product is perceived to be more difficult than adding options. This observation may be linked back to two theoretical accounts. First, as I outlined above, −OF creates an inner conflict between utility losses and monetary gains, whereas +OF does the opposite and causes tension between monetary losses and utility gains. Because consumers are more sensitive towards utility losses than towards monetary losses (differential loss aversion), −OF creates more internal conflict than +OF, which could explain why consumers experience this task to be more difficult (C. W. Park et al., 2000). Second, as Shafir (1993) has shown, individuals tend to formulate and think of a decision-making scenario in the context of choices, as opposed to deselections, causing greater difficulty in making decisions in −OF than in +OF (C. W. Park et al., 2000).

To sum up, the systematic analysis of prior research has revealed several option framing effects and their underlying reasons, two of which will later serve to justify the development of a hypothesis concerning the effect of option framing on impulse purchases: (1) −OF causes consumers to underestimate the caloric content of food which results in additional orders of unhealthy food items and (2) consumers perceive −OF tasks as more difficult compared to +OF tasks. While framing effects are commonly employed in research to elucidate option framing effects, alternative explanatory approaches exist.

2.1.2 Other Explanations

2.1.2.1 Endowment Effect

The endowment effect refers to the fact that people tend to assign a higher value to items already in their possession than they would place on the same item outside their ownership (Levin et al., 2002). This effect occurs because they are more aversive to the potential loss of utility of the good they possess than they would be excited about the potential possession of the good (Tversky & Kahneman, 1991). Hence, the effect can be explained via the theoretical perspective of loss aversion I introduced earlier (Kahneman, Knetsch, & Thaler, 1990). The result of it are large differences between selling and buying prices of the same good (Thaler, 1980). A classic experiment conducted by Kahneman et al. (1990) demonstrated this outcome. Students were randomly assigned the role of buyer or seller and were provided with a mug. They were then instructed to engage in a market transaction with another participant and to report their

respective willingness-to-accept and willingness-to-pay prices. The results of the study revealed a striking disparity, with the median selling price exceeding the median buying price by over 100 %. Transferred to option framing, the endowment effect may explain why consumers are reluctant to remove options in −OF: Since consumers are presented with a full-featured product, to which they establish a feeling of ownership, they attribute greater value to the included options, making it harder for them to deselect some of them (Lu & Jen, 2016; S. Park & Kim, 2012).

2.1.2.2 Status Quo Bias

Humans tend to be reluctant to try new things and prefer the current as-is state. As a result, they, e.g., tend to always choose the same yogurt brand when shopping at the supermarket. This phenomenon is known as status quo bias and was first documented by Samuelson and Zeckhauser (1988). In the context of decision-making, this bias implies that consumers prefer to maintain the current status quo and are thus averse to alternative decision options (Samuelson & Zeckhauser, 1988; Tversky & Kahneman, 1991). In option framing, the nature of the product configuration task determines what is considered the default option. While in −OF the fully loaded product constitutes the status quo, in +OF it is the base product. Assuming consumers are biased toward the status quo, it can be predicted that few options are deselected in −OF and few are added in +OF (Levin, Prosansky, Heller, & Brunick, 2001). Current research provides different explanations for why a status quo bias may occur, which can be categorized into economic and psychological reasons. Not all of them being suitable to explain the option framing effect (e.g., transition costs that occur when switching from one option to another (Samuelson & Zeckhauser, 1988) as −OF would lower, not increase, the total product price), I discuss only a selection of them. One reason may be the uncertainty inherent in deciding about adding or subtracting an option to/from the status quo product (Samuelson & Zeckhauser, 1988), given that consumers cannot be sure whether the final product will provide higher utility. At the psychological level, the bias can be explained through four mechanisms. As previously mentioned, Park et al. (2000) found that −OF is associated with greater perceived task difficulty. Luce (1998), in turn, proved that increased decision difficulty is associated with avoidant behavior, causing consumers to remain with the initial product, in −OF a fully loaded product, and deselect a few options only. Furthermore, the status quo bias can be explained by loss aversion (Samuelson & Zeckhauser, 1988; Tversky & Kahneman, 1991). In this case, the reference point represents the status quo. Regret avoidance may also play a role (Samuelson & Zeckhauser,

1988). As delineated in 2.1.1. Framing Effect, people feel more regret because of action than inaction (Kahneman & Tversky, 1982), thereby predisposing them towards maintaining the current status quo. Moreover, in an experiment in which undergraduate students participated in a car configuration task, Biswas and Grau (2008) found that when consumers' cognitive resources are low and the task is to remove options (−OF), they tend to remain with the status quo product, in this case, the fully loaded product.

As has been shown, the framing effect, endowment effect, and status quo bias can explain option framing effects. Since this paper seeks to establish a connection between the option framing strategy and impulse purchasing behavior, next, the latter will be discussed in more detail.

2.2 Impulse Purchasing

2.2.1 The Strength Model of Self-Control

The following chapter will explain impulse purchasing grounded on the construct of self-control failure as the fundamental reasons leading to low self-control are essential for understanding the phenomenon of impulse purchasing (Baumeister, 2002). As of the year 2023, scientists have based their research on self-control on 98 different theories, with the strength model of self-control developed by Baumeister being the most commonly used framework (Francke & Carrete, 2023). Given that Baumeister's (2002) paper, in which he describes the strength model of self-control, has been cited 2,295 times by April 24, 2023, based on Google Scholar, the relevancy of this model is further highlighted. For this reason, I analyze impulse purchasing behavior on the basis of this framework. Self-control is understood as the ability of a person to alter the self, to override or restrain inner responses in order to ultimately resist or interrupt unwanted behavioral tendencies and to enable oneself to respond differently (Baumeister, 2002; Baumeister, Vohs, & Tice, 2007). In sum, self-control may be regarded as a conflict between desire and willpower (Hoch & Loewenstein, 1991). The term self-control is to be distinguished from self-regulation insofar as self-regulation denotes a person's strategic orientation towards goals and desired end-states, and self-control takes a supporting role in directing behavior in such a way that this desired finite state is achieved (Gillebaart, 2018). Hence, having self-control enables consumers to change behavioral responses like thoughts, emotions, or impulses (Baumeister, 2002). An impulse is an unplanned, often spontaneous behavioral response that results from the combination of internal stimuli, such as emotions, motivations, or physiological needs like hunger, and external stimuli, like advertisements (Baumeister, 2002). It can lead to

impulse behavior (Roberts & Manolis, 2012), e.g., impulse purchasing, when consumers lack the strength to resist the impulse. Impulse purchasing is defined as a sudden, immediate, and persistent urge to buy something right now, which was not planned beforehand, and to act on that urge without considering its consequences and whether the purchase is compatible with long-term goals, plans, and commitments (Baumeister, 2002; Rook, 1987). In comparison to compulsive purchasing, where the desire is not directed at the product itself but at the act of buying, in impulse purchasing the consumer's immediate desire is oriented toward an object (Faber, 2003). As outlined above and also proven by Roberts and Manolis (2012), impulse purchasing can occur because of low self-control. According to the strength model, the level of self-control depends on three components: (1) monitoring, (2) standards, and (3) the capacity to adjust one's behavior (Baumeister, 2002).

Monitoring refers to the act of keeping track of one's behavior (Baumeister & Heatherton, 1996). In relation to food consumption this could, for example, mean counting calories, measuring amounts of food, or creating a weekly menu plan. Successful monitoring requires self-awareness and the act to compare the current state with the future desired state to become aware of what is needed to achieve this future state (Roberts & Manolis, 2012). Scientists mostly support the notion that a low level of monitoring causes low self-control (e.g., Baumeister, 2002; Baumeister et al., 2007; Baumeister & Heatherton, 1996). Yet, Roberts and Manolis (2012) found contrasting results indicating a negative correlation between the two constructs. However, the authors attribute their divergent findings to the utilization of a different scale in their survey compared to that employed by Baumeister (2002) and in this context draw attention to the importance of the careful conceptualization and measurement of monitoring.

Standards, the second component of self-control, "*refer to goals, ideals, norms, and other guidelines that specify the desired response*" (Baumeister, 2002, p. 671). Applied to food consumption, the personally desired weight or the goal of maintaining a healthy and balanced diet, but also the social pressure to be of a certain body size can represent standards. If a consumer pursues unclear, or even conflicting, standards, he or she becomes more susceptible to the influences of marketing stimuli such as advertising, and his or her self-control is reduced (Roberts & Manolis, 2012). Experiencing negative emotions can cause the goal of feeling better to be prioritized over other, longer-term goals. This compromises one's ability to exercise self-control, thereby increasing the likelihood of purchasing and consuming unhealthy food as a means to alleviate negative affective states (Baumeister, 2002). For example, people who want to lose a certain amount of weight over a longer period of time may find themselves in situations where

they buy high-calorie food like a candy bar in response to negative emotions. In this situation, the short-term goal of feeling better and the long-term goal of losing weight conflict with each other.

The third element of self-control is the capacity to regulate and change one's behavior. Its presence is essential for monitoring and standards, as it is the active part of self-control that enables the use of monitoring and goals in the first place (Baumeister, 2002). This capacity is limited and actions in which self-control is exercised or active decisions are made (Baumeister, 2002; Vohs et al., 2008) reduce the availability of the self-regulatory capacity, so the ability to self-control one's behavior gets gradually reduced (Baumeister & Heatherton, 1996; Muraven, Tice, & Baumeister, 1998; Roberts & Manolis, 2012; Vohs & Faber, 2007). "Ego depletion" is the term used to refer to the final state where these resources are temporarily exhausted (Baumeister, 2002). Ego depleted consumers are more inclined to give in to temptations (Baumeister, 2002), feel the need to buy impulsively, spend more money, and buy more products (Vohs & Faber, 2007).

To summarize, the diminished capacity to alter one's behavior in combination with low monitoring and a high conflict in standards causes low self-control, which in turn leads to impulse purchaes. As is evident from the application of numerous other frameworks in the literature to explain impulse purchasing, self-control in isolation is insufficient to provide a comprehensive explanation of the drivers of impulse purchasing behavior. Thus, other determinants, divided into situational and individual factors, that contribute to the occurrence of impulse purchasing will be briefly highlighted. While I do not claim comprehensiveness, my primary aim is to emphasize that despite my choice to examine impulse buying through the lens of the self-control framework, it is imperative to consider additional factors in practice.

2.2.2 Other Factors

2.2.2.1 Situational Factors

Situational factors refer to environmental factors of the purchasing landscape. On the one hand, they are controlled by the selling company as well as the retailer if a company does not sell directly to its customers. On the other hand, in offline purchasing situations they may additionally arise from the presence of other shoppers. One aspect determined by the company is the marketing mix. Research has indicated that products high on hedonic attributes, known as "vices", are more likely to trigger impulse purchasing compared to utilitarian products

(Wertenbroch, 1998). Drawing upon an illustrative example, consider a candy bar, which is widely associated with great taste and the instant gratification of an urge for something sweet (hedonic attributes), and think about peas, which are high on nutritional value but usually not a source for pleasure and instant satisfaction, making them a utilitarian product. While candy bars are, among other reasons, often bought on impulse, peas are less likely to be subject to impulse purchasing. Additionally, lower-priced items are more prone to be bought on impulse than higher-priced ones are (Kacen, Hess, & Walker, 2012). In-store marketing efforts such as surprise coupons and discounts have also been found to induce consumers to engage in impulse purchasing because first, by creating a psychological income effect as customers feel they have already saved money and secondly by enhancing their mood (Heilman, Nakamoto, & Rao, 2002; C. W. Park, Iyer, & Smith, 1989). Furthermore, greater incidence of impulse purchasing is observed in more densely populated stores, where shoppers are influenced by the purchases of others to buy similar products (Katakam, Bhukya, Bellamkonda, & Samala, 2021).

2.2.2.2 Individual Factors

Individual factors refer to the variables impacting impulse purchasing that originate from the consumers themselves, such as personality traits, motives, moods, or behavior. The most frequently mentioned consumer characteristic in the literature in relation to impulse purchasing is the impulse buying trait, which is "*a consumer's tendency to buy spontaneously, unreflectively, immediately, and kinetically*" (Rook & Fisher, 1995, p. 306). Additionally, hedonic motives, i.e., when the purchase is made for fun and entertainment, serve as predictors of impulse purchasing behavior (E. J. Park, Kim, Funches, & Foxx, 2012). Third, in relation to impulse purchases of unhealthy food the payment method appears to play a role. Thomas, Desai, and Seenivasan (2011) have shown that when consumers pay with credit card instead of cash, there is an increased likelihood of impulse purchases of unhealthy food because card payments feel less painful.

Having provided an outline on the two research streams of option framing and impulse purchasing and having investigated their respective association with unhealthy food choices, the subsequent chapter will relate these findings to each other.

2.3 Hypothesis Development

The findings about option framing, impulse purchasing, and their underlying causes presented above provide key starting points for connecting these two constructs:

(1) In −OF (vs. +OF) customization tasks, consumers find it more difficult to decide which options they want to leave in the final product (C. W. Park et al., 2000) and experience internal conflict. This effect can be explained by differential loss aversion which states that consumers are more sensitive to utility losses than to monetary losses (Hardie et al., 1993). Internal conflicts also affect self-control. Particularly, a higher goals conflict is associated with lower self-control, which in turn results in more impulse purchasing as well as a higher consumption of unhealthy food (Baumeister, 2002) because consumers are more inclined to give in to temptations.

(2) It is likely to assume that the higher perceived task difficulty in −OF imposes a higher cognitive burden on consumers, resulting in a limited amount of cognitive resources left and ultimately a lower capacity to regulate one's behavior. The ability to alter one's behavior is one of the three ingredients of self-control. If it is low and consumers find themselves in a state of ego depletion, they are more inclined to lose self-control, which ultimately leads to an increase in impulse purchases (Baumeister, 2002).

(3) Besharat et al. (2021) found that using −OF in a food customization task also influences decisions which are made after the customization task. In their experiment, additional orders increased and consumers chose unhealthier food because they had estimated lower calories in the final product of the prior choice task. While this study does not directly address impulse purchasing, it does provide evidence of a link between option framing and choices of unhealthy food.

(4) Consumers in a −OF customization task prefer hedonic over utilitarian products (Dhar & Wertenbroch, 2000). Hedonic products are more likely to trigger impulse purchasing (Wertenbroch, 1998). Following the literature (e.g., Nagpal et al., 2015), unhealthy food may be considered hedonic-dominant, indicating that, among others, the hedonic characteristics of unhealthy food are one reason why it is purchased.

(5) Chen and Wang (2016) showed in their study that consumers are more prone to engaging in impulse purchasing when they are asked to subtract options (−OF) from hedonic products. While the results of this study may not be directly transferable to option framing of unhealthy food and its impact on impulse purchasing because the sample was limited to Taiwanese consumers and the products used were a GPS mobile phone (utilitarian product) and an iPod Nano (hedonic product), the study still indicates that the link between option framing and impulse purchases is worth exploring.

(6) Lower self-control increases the consumption of unhealthy food (Hassan, Shiu, & Michaelidou, 2010; Ma, Ailawadi, & Grewal, 2013; Salmon, Fennis, De Ridder, Adriaanse, & De Vet, 2014).

Based on the findings above, I develop the following hypothesis:

When customizing unhealthy food, consumers exposed to a subtractive option frame (−OF) will make more impulse purchases than consumers exposed to an additive option frame (+OF).

3. Discussion and Managerial Implications

The present literature review aimed towards integrating findings from two separate research streams, (1) option framing and (2) impulse purchasing, in order to develop a novel hypothesis about their potential connection. More precisely, it focused on finding possible linkages that could provide evidence on how the usage of option framing in customization tasks involving unhealthy food might affect impulse purchasing behavior. As established in the previous chapter, the effects of −OF may offer insights into the underlying mechanisms that drive impulse purchasing. Yet, the studies that underpin these conclusions did not examine the role of option framing in the context of unhealthy food. Nevertheless, other studies suggest that option framing and low self-control, an important determinant of impulse purchasing behavior, prompt consumers to choose unhealthy food more often. To the best of my knowledge, a single study to date has investigated the relationship between option framing, hedonic products, and impulse purchasing. It concluded that −OF leads to more impulse purchasing and that this effect is positively moderated by hedonic goods. Although there are more motives for purchasing unhealthy food than only hedonic ones, e.g., saving money, all evidence taken together suggests that the hypothesis may be merit and should be empirically tested in future studies.

From a managerial perspective, if the hypothesis regarding the potential connection between option framing (−OF) and impulse purchases of unhealthy food is confirmed, it could be a lucrative strategy, given that impulse purchases increase sales and revenue (Baumeister, 2002). As noted earlier, presenting consumers with a fully loaded product and asking them to reject unwanted toppings in food customization tasks leads to more options being chosen, which increases the total price of the final food product. This indicates that −OF could boost sales in two ways, both by encouraging impulse purchasing behavior and by increasing the cost of the final food product. Given these potential benefits, managers should consider implementing marketing measures to highlight the option of customizing their food offering by deselecting individual components. However, it should not be neglected that mainly in the short run do

consumers associate impulse purchases with positive feelings, as they can satisfy sudden cravings, while in the long run, they tend to have negative connotations, even if in the case of food purchases these negative consequences do not take the form of devastating financial shortfalls. Impulse purchases can lead to feelings of guilt and regret, especially when they result in the destruction of a diet or undermine long-term health goals (Rook, 1987). Managers should therefore be aware of the potential upsides and downsides of an option framing strategy and carefully consider whether implementing the strategy in the form of subtractive option framing will facilitate the achievement of desired goals in the long run.

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5. Literature Tables

Author/s (Year) [Journal]	Research Focus	Theoretical Background	Sample	Method/Analysis	Main Findings
Baumeister (2002) [*Journal of Consumer Research*]	1. Three causes of self-control failure: conflicting standards, monitoring failure, ego depletion 2. Self-control as a trait	The strength model of self-control	-	Literature review	Purchasing impulses are resistible, but resisting an impulse depends on self-control. Conflicting goals and standards lead to lower self-control. Failure to monitor one's behavior lowers self-control. Ego depletion leads to lower self-control. Trait differences in self-control predict different behaviors.
Besharat, Romero, and Haws (2021) [*Journal of Retailing*]	Impact of −OF and +OF on consumers' estimation of calories	Framing effect and underlying loss aversion	1. n = 102 Mechanical-Turk panelists Laboratory experiment with a burrito customization scenario 2. n = 111 US students Laboratory experiment with a sandwich customization task	1. ANOVA IV: option frame (−OF vs. +OF) DV: calorie estimation 2. ANOVA 1 IV: option frame (−OF vs. +OF) DV: calorie estimation ANOVA 2 IV: option frame (−OF vs. +OF) DV: Patronage intentions	1. −OF leads to lower calorie estimation 2. −OF benefits patronage intentions. Calorie estimation mediates subsequent choice. 3. −OF increases likelihood of ordering additional

			3. n = 116 Mechanical-Turk panelists Laboratory experiment with a sandwich customization task 4. n = 191 students Laboratory experiment with a nachos customization task	PROCESS macro Model 4 for mediating effect of calorie estimation ANOVA 3 IV: option frame (−OF vs. +OF) DV: number of ingredients left, nature of ingredients left, percentage misestimation 3. ANOVA 1 IV: option frame (−OF vs. +OF) DV: calorie estimation ANOVA 2 IV: option frame (−OF vs. +OF) DV: desirability of final product ANOVA 3 IV: option frame (−OF vs. +OF) DV: likelihood of ordering dessert PROCESS macro model 4 for mediating effect of calorie estimation ANOVA 4 IV: option frame (−OF vs. +OF) DV: number of ingredients left, nature of	unhealthy items. Calorie estimation mediates subsequent choice. 4. −OF leads to unhealthier subsequent decisions. Calorie estimation does not mediate subsequent choice.

				ingredients left, percentage misestimation 4. ANOVA 1 IV: option frame (−OF vs. +OF) DV: calorie estimation Chi-square test IV: option frame (−OF vs. +OF) DV: subsequent food choice PROCESS macro model 4 for mediating effect of calorie estimation ANOVA 2 IV: option frame (−OF vs. +OF) DV: number of ingredients left, nature of ingredients left, percentage misestimation	
Biswas and Grau (2008) [*Psychology & Marketing*]	Interaction effects of −OF and +OF and cognitive constraints on consumer choices	Framing effect and underlying loss aversion	1. n = 152 students Laboratory experiment with a car customization task 2. n = 188 students Laboratory experiment with a car customization task	1. ANOVA IV: option frame (−OF vs. +OF), cognitive resources (high vs. low) DV: number of options chosen, total cost of chosen options 2. ANOVA IV: option frame (−OF	1. and 2. Under low cognitive resources, −OF leads to more options chosen and higher total cost of the options.

				vs. +OF), redundant product information (high vs. low) DV: number of options chosen, total cost of chosen options	
Chen and Wang (2016) [*Journal of Consumer Behaviour*]	Effects of impulsivity traits, −OF and +OF, product type, and cash refund promotion on impulse buying intention	Impulsivity traits, framing effect and underlying loss aversion	n = 760 Taiwanese subjects Laboratory experiment Stage 1: a customization task of either an iPod Nano (hedonic product) or a GPS mobile phone (utilitarian product) Stage 2: high vs. low cash refund promotion	ANOVA IV: impulsivity traits (high vs. low), option frame (−OF vs. +OF), product type (hedonic vs. utilitarian), cash refund promotion DV: impulse buying intention	High (vs. low) impulsivity traits lead to stronger impulse buying intention. Cash refund promotions increase continuous impulse buying intention. Consumers with high impulsivity traits, when viewing hedonic products, increase their impulse buying intention. −OF leads to stronger impulse buying intention than +OF. Product type has a positive moderating influence on the former finding, with a stronger relationship for hedonic products.

Dhar and Wertenbroch (2000) [*Journal of Marketing Research*]	Impact of −OF and +OF on consumer choice between hedonic and utilitarian goods	Framing effect and underlying loss aversion	1. n = 51 students Laboratory experiment with choice task between audio tape gift certificate (hedonic product) and computer disks gift certificate (utilitarian product) 2. n = 114 students Laboratory experiment with choice task between M&M's chocolate (hedonic product) and UHU glue stick (utilitarian product) 3. n = 141 students Laboratory experiment with choice task between 4. n = 217 students Field survey with task to imagine sale of own car (hedonic vs. utilitarian car)	1. ANOVA IV: option frame (−OF vs. +OF) DV: choice between hedonic and utilitarian good 2. ANOVA IV: option frame (−OF vs. +OF), task to write down reasons (with vs. without) DV: choice between hedonic and utilitarian good 3. Logit model IV: 4 alternatives: apartments, coworkers, college lunch plans, shampoos DV: choice between hedonic and utilitarian good 4. OLS regression IV: ratio of Bluebook prices to reservation prices DV: natural log of original purchase price, natural log of mileage, year car was built,	1. −OF leads subjects to prefer the hedonic product. 2. −OF leads subjects to prefer the hedonic product. When engaged in an activity that reduces the hypothesized difference in elaboration on the two goods, the effect is smaller. 3. The ratio of WTA-to-market prices is higher for hedonic than for utilitarian products.

				uniqueness ratings, composite measure of ratings of hedonic and utilitarian characteristics of vehicles	
Hassan, Shiu, and Michaelidou (2010) [*Journal of Consumer Affairs*]	Impact of nutrition information on consumers' choice and conflict and self-control	Theory of regulatory focus; self control	n = 299 Female consumers from the UK Laboratory experiment showing pictures of cake with real, fake, and without Guideline Daily Amount (GDA) information	Binary logistic analysis using generalized linear model, chi-square tests, ANOVA, tests of proportions IV: GDA, temptation, conflict, self-control DV: choice Control variables: health consciousness, chocolate cake fanatic, diet	Lower self-control increases the consumption of unhealthy food. GDA information of unhealthy products has a direct and negative effect on consuming them. There is no effect for moderately unhealthy products. Information of high GDA strengthens relationship of self-control and choice while reducing that of conflict and choice.
Herrmann, Hildebrand, Sprott, and Spangenberg (2013) [*Psychology & Marketing*]	Impact of customer recommendations on −OF and +OF as well as on purchase intention	Framing effect and underlying loss aversion	1. n = 641 customers Field experiment on German of car manufacturer homepage 2. n = 818 customers	1, 2. ANOVA IV: recommendation sources DV: option frame (−OF vs. +OF) 2. Mediation model with bootstrapped estimates	Recommendations increase purchase intention. OF-effects can be eliminated by recommendations of other

			Field experiment 3. n = 70 Online panel of paid customers willing to buy a car in the next 6 months. Completed a tought-listing task	IV: recommendation sources DV: number of positive thoughts	customers. Customer recommendations have the same effect on +OF and −OF. −OF leads to more options chosen and a higher total price.
Levin, Schreiber, Lauriola, and Gaeth (2002) [*Marketing Letters*]	Impact of −OF and +OF on number of options chosen in two countries	Framing effect and underlying loss aversion	1. n = 115 US students Laboratory experiment with a pizza customization task 2. n = 100 Italian students Laboratory experiment with a pizza and a salad customization task	1. t-test IV: option frame (−OF vs. +OF) DV: number of options chosen 2. ANOVA IV: option frame (−OF vs. +OF), kind of food (pizza vs. salad) DV: number of options chosen	−OF leads to more options chosen and a higher total price. This effect holds across two different countries (US and Italy).
Lu and Jen (2016) [*Psychology & Marketing*]	Impact of −OF and +OF and temporal distance between option choice and buying behavior on decision difficulty	Endowment effect and underlying loss aversion	1. n = 260 Taiwanese subjects Laboratory experiment with a travel package customization task 2. n = 240 Taiwanese subjects Laboratory experiment with a car customization task	1. ANOVA IV: option frame (−OF vs. +OF), temporal distance (near vs. distant future) DV: perceived temporal distance, reference price, decision difficulty 2. ANOVA IV: option frame (−OF vs. +OF), temporal	1. Perceived decision difficulty is influenced by option framing and temporal distance. 2. −OF leads subjects to state higher reference prices for the target product. −OF leads to higher perceived decision difficulty for

				distance (near vs. distant future), mental simulation (control vs. outcome simulation vs. process simulation) DV: decision difficulty	decisions in the distant future. In −OF, outcome simulations cause greater decision difficulty than process simulations.
Ma, Ailawadi, and Grewal (2013) [*Journal of Marketing*]	Impact of personal characteristics and marketing factors on healthful food purchasing	Self-control and underlying ego depletion	Four sources; (1) nationwide home-scan panel data tracking households weekly grocery purchases from 2006-09. n = 5,980 with diabetes, n = 18,410 without diabetes. (2) Health survey from 2005-08 to determine diabetic patients, (3) database of food items nutrient content, (4) consumer online panel survey (n = 190 US adults in general, 122 US adults with diabetes) on perceived healthfulness of food items.	Seemingly unrelated regression (SUR) IV: education, nutrition interest, net price, family size, initial intake, age, income, perceived health, behavioral control, nonprice promotion DV: intake of calories, sugar, carbohydrates, fat, and sodium Moderator: diagnosis	Lower self-control increases the consumption of unhealthy food. High education and nutrition interest reduce caloric intake and that of sugar and carbohydrates. Higher self-control leads to overall higher carbohydrate consumption, but in a healthier product. Consumer characteristics influence healthy food choices, with habits being the most important. Marketing measures also influence healthy food choices.

Nagpal, Lei, and Khare (2015) [*Journal of Retailing*]	Impact of −OF and +OF with healthy and unhealthy ingredients on nature and number of options chosen	Framing effect and underlying loss aversion	1a. n = 76 students Laboratory experiment with a food platter customization task containing healthy and unhealthy items 1b. n = 65 students Laboratory experiment with a sandwich customization scenario containing healthy and unhealthy items 2a. n = 148 Mechanical-Turk panelists Laboratory experiment with a salad or pizza customization scenario containing healthy and unhealthy items 2b. n = 186 Mechanical-Turk panelists Laboratory experiment with a white-bread or whole-wheat bread sandwich customization	1a. ANOVA IV: option frame (−OF vs. +OF), item type (healthy vs. unhealthy) DV: relative number of healthy versus unhealthy items 1b. ANOVA IV: option frame (−OF vs. +OF), item type (healthy vs. unhealthy) DV: relative number of healthy versus unhealthy items 2a. ANOVA IV: option frame (−OF vs. +OF), food valence (salad vs. pizza), item type (healthy vs. unhealthy) DV: relative number of healthy versus unhealthy items 2b. ANOVA IV: option frame (−OF vs. +OF), food valence (salad vs. pizza), item type (healthy vs. unhealthy) DV: relative number of	1. −OF leads to more unhealthy items chosen than healthy items. 2. −OF leads leads to more toppings chosen. Unhealthy-valenced food: Under +OF, a higher number of healthy toppings is chosen. Healthy-valenced food: Under −OF, a higher number of unhealthy toppings is chosen.

			scenario containing healthy and unhealthy items	healthy versus unhealthy items	
Park, Jun, and MacInnis (2000) [*Journal of Marketing Research*]	Impact of −OF and +OF on various psychological reactions and managerial effects	Framing effect and underlying loss aversion	1. n = 126 students Laboratory experiment with a car customization scenario 2. n = 302 students Laboratory experiment with a car, computer, or treadmill customization scenario 3. n = 101 students Laboratory experiment with a car customization scenario	1. ANOVA IV: option frame (−OF vs. +OF), price (half- vs. full-priced) DV: reference price, decision difficulty and time, perceived value, perceived task enjoyment, number of options chosen, total option prices 2. ANOVA IV: option frame (−OF vs. +OF), regret anticipation (high vs. low) DV: number of options chosen, type of option chosen, total option prices 3. ANOVA IV: option frame (−OF vs. +OF), commitment (high vs. low) DV: number of options chosen, type of option chosen, total option prices, reference	−OF leads consumers to choose more options with a higher total option price. The effect holds across different option price levels and product categories. Effect is magnified when subjects must anticipate regret from their option choice decisions. Under −OF, the task is perceived more enjoyable. Effect on purchase likelihood depends on customer's initial interest in buying. −OF demotivates category purchase when product commitment is low.

				price, product category purchase likelihood, decision difficulty, perceived value, perceived task enjoyment	
Park and Kim (2012) [*Psychology & Marketing*]	Impact of −OF and +OF depending on attribute importance	Framing effect and underlying loss aversion	1. n = 88 students Laboratory experiment with a car customization scenario 2. n = 177 students Laboratory experiment with a car customization scenario 3. n = 350 students Laboratory experiment with a car customization scenario	1. ANOVA IV: option frame (−OF vs. +OF), budget range (wide vs. narrow), justification DV: number of options chosen, total option prices 2. ANOVA IV: option frame (−OF vs. +OF), budget range (wide vs. narrow) DV: number of options chosen, total option prices	−OF leads consumers to choose more options. The differential effect of the option frame is magnified when important features are added, or less important are deleted. The moderating role of justification on option frame effect is stronger under a wide (vs. narrow) budget range. Justification increases the differential effects of option frame when less important attributes are added, or important attributes are deleted under the wide

					budget range.
Roberts and Manolis (2012) [*Journal of Marketing Theory and Practice*]	Three causes of self-control failure: conflicting standards, monitoring failure, ego depletion	The strength model of self-control	n = 403 iThink web panel Online survey with self-monitoring scale (Snyder, 1974), eight-item measure of fatigue (Martijn et al., 2002), values conflict scale (Burroughs and Rindfleisch, 2002), self-control scale (Tangney, Baumeister, and Boone, 2004), nine-item impulsive buying scale (Rook and Fisher, 1995)	Structural equation modeling with latent variables	Ego depletion reduces self-control. Monitoring reduces self-control. Goals conflict reduces self-control. Self-control is an important predictor of impulse purchases.
Salmon, Fennis, Ridder, Adriaanse, and Vet (2014) [*Health Psychology*]	Effect of social proof heuristic under low self-control on healthy food choices	Self-control and underlying ego-depletion. Theory of planned behavior. Health belief model. Protection motivation theory.	n = 177 students Laboratory experiment	ANOVA IV: self-control, heuristics DV: healthy food choice	Lower self-control increases the consumption of unhealthy food. If a social proof heuristic promoting the healthy food as liked by the majority is active, effect is reversed. Without increasing

					self-control, simple heuristics can nudge people to choose the healthier food option.

6. Affidavit

Hiermit versichere ich, dass diese Abschlussarbeit von mir selbst verfasst ist und dass ich keinerlei fremde Hilfe in Anspruch genommen habe. Ebenso versichere ich, dass diese Arbeit oder Teile daraus weder von mir selbst noch von anderen als Leistungsnachweise andernorts eingereicht wurden. Wörtliche und sinngemäße Übernahmen aus anderen Schriften und Veröffentlichungen in gedruckter oder elektronischer Form sind gekennzeichnet. Sämtliche Sekundärliteratur und sonstige Quellen sind nachgewiesen und in der Bibliographie aufgeführt. Das Gleiche gilt für graphische Darstellungen und Bilder sowie alle Internet-Quellen. Ich bin ferner damit einverstanden, dass meine Arbeit zwecks eines Plagiatsabgleichs in elektronischer Form anonymisiert versendet und gespeichert werden kann. Mir ist bekannt, dass von der Korrektur der Arbeit abgesehen werden kann, wenn die Erklärung nicht erteilt wird.

Mannheim, XX XX, 202X

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