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The Effect of Life Transitions and Emotions on Food Choices in Older Adults

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Vorwort

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Summary

Abstract.

In times of product abundance and information overload, new marketing approaches have to be found in order to successfully launch food products on the market. Results of this dissertation confirm life transitions as “moments of change” – namely those times when preference changes in older adults occur more often. Specifically, positive life transitions have been found to increase the likelihood of making novel choices. Moreover, emotional processes, especially emotional reactivity, have been found to loom large as predictors of food intake quantity. Implications of these findings are relevant for the marketing of new products, consumer segmentation, and for policy makers in the context of enabling behavioral change.

Zusammenfassung.

Um in Zeiten von Produktvielfalt und Informationsüberflutung auf dem Lebensmittelmarkt erfolgreich zu sein, bedarf es neuer Marketingansätze. Ergebnisse dieser Dissertation bestätigen Transitionsphasen als „Momente des Wandels“ – als jene Zeiten, in denen ältere Konsumenten ihre Präferenzen häufiger ändern. Insbesondere positiv wahrgenommene Transitionsphasen erhöhen die Offenheit für neue Produkte. Darüber hinaus deutet sich an, dass Emotionen, vor allem emotionale Reaktivität, im Kontext der Konsummenge eine große Rolle spielen. Die Ergebnisse sind relevant für das Marketing neuer Produkte, Konsumentensegmentierung und politische Entscheidungsträger im Kontext der Verhaltensänderung.

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List of abbreviations

BMI	Body-Mass-Index
db	decibel
et al.	et alii
e.g.	exempli gratia
DALY	Disability-Adjusted Life Year
DGE	Deutsche Gesellschaft für Ernährung (German Nutrition Society)
GBD	Global Burden of Disease
i.e.	id est
ms	milliseconds
m^2	square meter
NSV	National Nutrition Survey (in German: Nationale Verzehrsstudie)
PERI	Psychiatric Epidemiology Research Interview Life Events Scale
QS	Quantified Self
RQ	Research Question
SRE	Schedule of Recent Events

1 Introduction

Pictures of past times often remind us of how drastically we have changed. Who hasn't experienced the feeling of surprise when looking at an older picture of oneself? These pictures are a tangible illustration of how preferences and styles can change over time. Over the course of their life, people change the clothes they wear, the drinks they prefer and the foods they consume. It is however, unclear whether these changes occur gradually or whether there are certain points in one's life when preferences change radically. The three studies included in this dissertation were developed based on this initial question: Whether periods in life exist, when changes in preferences are more likely to occur.

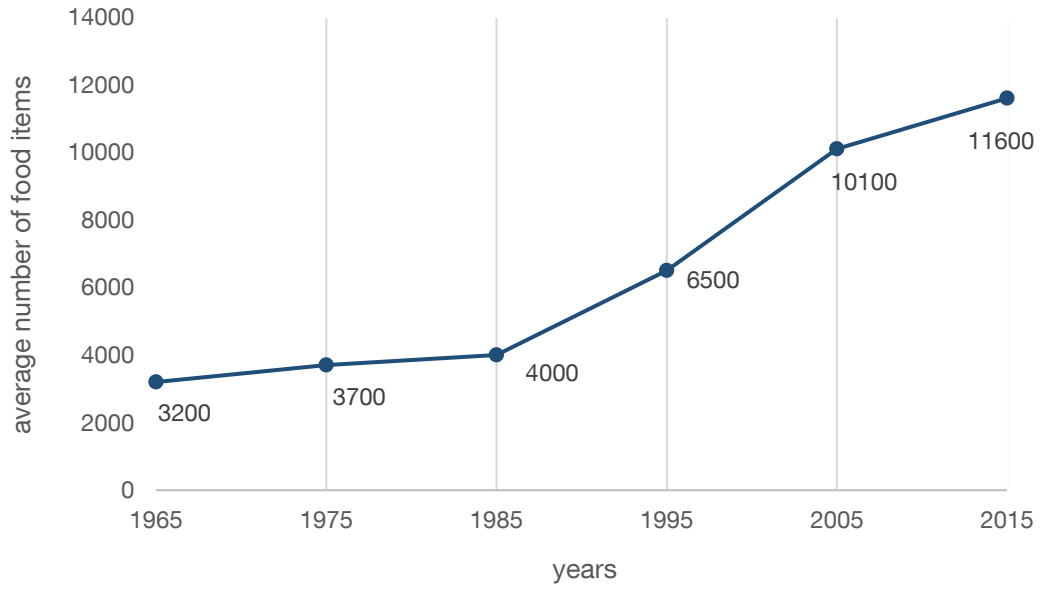
1.1 Background

When consumers change what they regularly buy and consume, is of substantial interest to companies and policy makers. Repetition of action is a central part of everyday life. "People have neither the mental resources, nor the time to constantly perceive, evaluate, and then act with respect to every aspect of life" (Khare and Inman, 2006: 567). Habitual behaviors are quick to activate and therefore reduce the effort consumers have to put into decision making. In days of time pressure and choice overload, buying the same brands of products and eating similar types of foods helps people to save cognitive resources and to free these resources for other tasks. Wood and Neal (2009) estimate that around 45% of people's behavior is repeated every day.

Routines and habits are especially prevalent in the context of food-related decisions, because we make so many every single day. Wansink and Sobal (2007) estimate that individuals make around 200 to 300 food-related decisions per day. German consumers are faced a huge variety of food products. As shown in figure 1, the average number of food products offered in supermarkets is more than 3.5 times higher today than it was fifty years ago: In 1965 supermarkets offered an average variety of 3200 products. This

increased to 11600 products in 2015. Along with that, the average size of supermarkets almost tripled from 400 m² in 1965 to 1150 m² in 2015 (EHI Retail Institute, 2015).

Figure 1. Average number of food items in German supermarkets 1965 to 2015



Source: EHI Retail Institute (2015)

Prior research has shown that the benefits of greater product variety[1] may be offset by the increase in cognitive costs that are associated with choosing from larger assortments (Chernev et al., 2015). Grocery shopping is based on routines that are developed over time (Koch, 2012: 31). It is estimated that the average German consumer only buys about 0.2 percent of all the items available on the market (Metro AG, 2014: 23). The food retail sector in Germany is characterized by intense competition (Metro AG, 2014). From this perspective, companies need to find good marketing strategies in order to successfully launch product innovations. To effectively communicate to consumers, new approaches have to be found.

[1] Benefits of greater product variety may be: Increased utility from having a larger choice, accommodating consumers' variety-seeking, increased enjoyment of shopping, or strengthening of overall satisfaction (Chernev et al., 2015).

Habitual aspects of eating are not only a challenge for companies, but also for policy makers as deleterious eating habits can have serious health consequences (Khare and Inman, 2006). According to results of the Global Burden of Disease (GBD), Injuries, and Risk Factors study, diet-related risks are the most important risk factor in Germany. Diet-related risks cause 14% of Disability-Adjusted Life Years (DALYs) and 26% of deaths. This is followed by high Body-Mass-Index (BMI) and high blood pressure (Plass et al., 2014). Results of the German National Nutrition Survey (NVS II) show that the average German does not eat enough foods of plant origin and consumes too much meat products, when referring to the guidelines of the German Nutrition Society (DGE). Also, consumption of bread, fruit juices and beer is higher in Germany compared to other European countries. More strikingly, the average respondent in the NVS II sample is overweight, and data show that the tendency to be overweight also increases with age (Heuer et al., 2015). A major cause of obesity is a lack of energy balance which may result from unbalanced and unhealthy diets. Fighting poor diets in older ages is an important policy goal, also against the background of population aging[2]. Studying how or when deleterious eating habits of older adults are likely to change may provide important insights for policy makers.

Studying older consumers is also of importance from a marketing perspective. Literature shows that older consumers have a preference for longer-established brands (Lambert-Pandraud et al., 2005), have a smaller brand consideration set when making a choice (i.e., older consumers consider fewer brands before a purchase) (Cole and Balasubramanian, 1993; Lapersonne et al., 1995; Uncles and Lee, 2006) and collect less information before they make a purchase (Johnson, 1990). Also, older adults have been found to have a higher tendency to repeat purchase. Lambert-Pandraud et al. (2005) found that the percentage of consumers rebuying the same brand of car constantly increases

[2] In 2009, 21% of the population were 65 year and older, while this rate is expected to rise to 29% in 2030 and 34% in 2060 (Federal Statistical Office, 2011). Healthy aging, is therefore of major importance for the German economy.

with age: Only 42% of consumers in the age group of 39 and younger tended to buy the same brand, whereas it was 72% among consumers aged 75 years and older. Moreover, the results show that older consumers tend to buy not only the same brand, but also buy at the same dealer. One explanation for these findings is habitual buying behavior: As habits are developed over time (i.e., relationships between associations and stimuli and relationships between associations and behaviors are reinforced with time), the likelihood of buying the same items in the next shopping trip is higher for older than for younger adults (Lambert-Pandraud and Laurent, 2010a).

Life transitions are a promising theoretical framework when it comes to the question whether there are moments in life during which individuals are more likely to change habitual behavior or choices. As habits result from responding to contextual cues (e.g., physical environment, time of the day) (Wood and Neal, 2009), a change in these contexts may trigger changes in habitual behavior. There is empirical evidence that life transitions are linked to changes in consumer behavior (e.g., Andreasen, 1984; Hopkins et al., 2006; 2014; Lee et al., 2001; Mathur et al., 2003; 2008; Wolf et al., 2014). Methodological gaps and conflicting findings (see chapter 2.2.2) however call for more research in the context of life transitions and consumer choices. Essay I addresses these methodological gaps and confirms that life transitions are linked to brand switching. Recent studies (Hopkins et al., 2014) criticize that not enough attention has been paid to consumer responses to negatively versus positively perceived transitions. Results of essay II have confirmed the importance of distinguishing between positively and negatively evaluated life transitions, and with that the importance of studying emotional processes in the context of food choice. Building on these insights, emotions have been included in the research portfolio of this dissertation and are subject of study in essay III.

1.2 Overarching research questions

It can be contended from the arguments discussed above that when older adults change their habitual food choices, is of interest for both companies and policy makers. This dissertation focuses on the overarching research question (RQ) whether having recently experienced transitions in life increases the likelihood of changing food-related choices.

RQ: *Are life transitions associated with changes in consumers' food choices?*

Previous research has already examined that the likelihood of consumers to change preferences (e.g., switch products or consumer lifestyles) increases when they undergo life transitions (see chapter 2.2.2). However, most studies that focus on changes in food choices use qualitative methods and investigate specific transitions (e.g. pregnancy [Aschemann-Witzel, 2013; Olson, 2005], retirement [Hopkins et al., 2006; Schau et al., 2009; Wolf et al., 2014]). Studies that analyzed the effect of multiple life transitions (e.g., Andreason, 1984) did not focus on food choices. Habit formation (i.e., repeated buying behavior) has been found to be especially strong at brand level (Arnade et al., 2008; Ravn et al., 2006) and the grocery chain (Olearius and Roosen, 2011). However, most studies have a) investigated changes across product categories and not at concrete brand level and b) are based on recalled change. Thus there is need to investigate the association between life transitions and changes in choices looking at a) brand switching and b) using scanner data which are real-world and longitudinal data. The first research question can be phrased as follows:

RQ 1: Are life transitions associated with a greater likelihood in brand switching?

Many studies investigating the effect of multiple life transitions focus on changes of preferences (e.g., Andreasen, 1984; Mathur et al., 2003; 2008). Only few studies exist that investigate the effect of life transitions on the likelihood of making novel choices (Groeppel-Klein and Kamm, 2014; Wood, 2010). Previous findings and theoretical considerations

have pointed out contradictions in literature explaining whether and how life transitions may be associated with novel choices (chapter 2.2.1 and 2.2.2). Investigating the association between life transitions and novel choices is therefore the focus of the second study. The Broaden-and-Build Theory of positive emotions suggests that positive emotions lead people to approach novel objects, people and situations (Fredrickson, 2013). The association between life transitions and novel choices may thus depend on how life transitions are evaluated. The second research question can therefore be formulated as follows:

RQ 2: Are only positive life transitions - in comparison to negative life transitions - associated with a greater likelihood of choosing a novel brand?

Critique of the strong theoretical bias of cognitive approaches to explain food decision making (Köster, 2009), has led to increasing interest in approaches using past behavior, habits and affective processes as predictors of food choice. Essay II has pointed towards the importance of emotions that come along with life transitions. Therefore, emotions are the focus of study III. A literature review has revealed that several lines of research including studies looking at a) the influence of stress reactivity on food consumption (Adam and Epel, 2007; Sproesser et al., 2014), b) the association between sensitivity to rewards and food cravings or overeating (Leehr et al., 2015), c) the link between affect intensity and food craving (Moore and Konrath, 2015) suggest close links between emotional reactivity and food consumption (see chapter 2.3.2). However, there are no studies examining this relationship. The third research question can be formulated as follows:

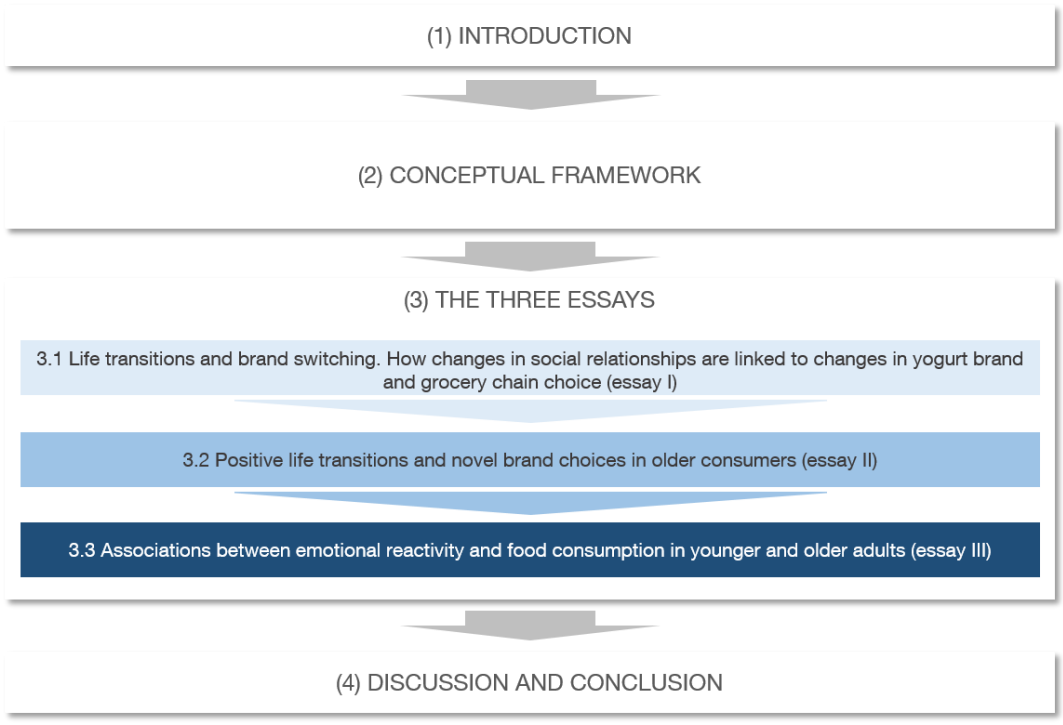
RQ 3: Are individual differences in emotional reactivity associated with food consumption?

The following chapter explains the structure of this dissertation and how these research questions are embedded in the three studies.

1.3 Structure of this dissertation, key findings and contributions

Figure 2 provides an overview over the structure of this dissertation. Following this introduction, a conceptual framework puts the three essays that are part of this dissertation in theoretical and empirical context. The three essays are presented in chapter 3. The essays are interlinked and build upon each other. While essay I focuses on the effect of life transitions on food choices (life transitions marked as light blue in all graphs), essay II addresses both, the effect of life transitions, emotions (i.e., affective evaluation of life transitions) and food choices. Essay III solely focuses on the effect of emotions on food choices (emotions marked as dark blue in all graphs). Chapter five discusses the findings, their limitations and implications and provides suggestions for future studies.

Figure 2. Structure of this dissertation



Source: Own graph

Table 1 illustrates which research questions were addressed by the essays, key findings, their contribution, and implications.

Table 1. Overview of essay I to III with regards to addressed research questions, key findings, contributions and implications

Essay	Research Question	Key Findings	Contribution	Implications
Essay I	RQ & RQ 1: Are life transitions associated with a greater likelihood in brand switching?	1) Relocation, change in household size and change in income are linked to an increased likelihood of changing a) the first brand and b) the first store for older adults. 2) Brand choice and grocery chain choice are strongly interlinked.	The study fills a methodological gap by examining the relationship between life transitions and changes in food choice with real world and longitudinal scanner data and at brand level.	Results support the stance of consumer researchers questioning socio-demographic variables as the most useful variables for understanding food-related choices. Findings suggest that it may be crucial not only to define whom to target with marketing activities, but also when to target older consumers.
Essay II	RQ & RQ 2: Are only positive life transitions associated with a greater likelihood of choosing a novel brand?	1) Older adults who experienced a higher number of life transitions are more likely to choose a novel brand. 2) The association is specific to positively evaluated life transitions and is not found for negatively evaluated life transitions. 3) The association is mediated by greater variety seeking.	The study points out mixed results in previous research. By drawing from different disciplines, the study explains why there are mixed results and emphasizes the importance of affective processes in decision making.	Findings suggest that behavior change efforts may be particularly effective when targeting older consumers during positive life transitions. If marketers can identify consumers who are currently undergoing positive life transitions, they may more effectively manage to target consumers with novel products.
Essay III	RQ 3: Are individual differences in emotional reactivity associated with food consumption?	1) Impairments in emotional reactivity predict greater food intake 2) The relationship between greater food intake and impairments in emotional reactivity only holds true for younger adults, but not for older adults.	The study is one of the first to investigate emotional reactivity and food consumption. The study investigates age differences, and measures multiple emotion response systems.	Findings suggest that how young adults respond emotionally to happy or sad situations may be quite closely linked to how much food they consume, which is relevant for health policy makers.

Source: Own table

Addressing the question of whether life transitions are associated with a greater likelihood in brand switching, essay I finds that relocation, change in household size and change in income are linked to an increased likelihood of older adults 1) changing their preferred brand and 2) their preferred store. Moreover, data show that brand choice and grocery chain choice are strongly interlinked. Essay I fills a methodological research gap of previous studies by using real world longitudinal scanner data and investigating change at brand level.

While essay I demonstrates that life transitions are indeed linked to brand switching, essay II investigates whether life transitions are linked to novel brand choices. Furthermore, study II was designed to overcome limitations of study I. First of all by using a detailed list of life transitions and second of all by measuring subjective evaluation of experienced life transitions. Essay II contributes to existing research in two ways. First, it addresses recent calls for distinguishing between positively and negatively evaluated life transitions (Hopkins et al., 2014). Second, it points out mixed results of previous studies and helps to clarify them by revealing that it is crucial to take affective processes into account. Findings show that when distinguishing between positively and negatively evaluated life transitions, only positive life transitions are associated with an increased likelihood of choosing a novel brand; and that this association is mediated by variety seeking.

Motivation for study III was to test findings of study II in a laboratory context and to investigate the association between emotional reactivity and food consumption. Findings of study II could not be replicated. The complex experimental set-up (i.e., experiment lasted two hours per participant) of study III resulted in a small sample size, and the association between positive life transitions novel food choice was not significant[3]. As effect sizes in both essays (essay I / II) were relatively small (but putting them in context,

[3] Even though non-significant, the relationship went in the hypothesized direction: The more positive life transitions participants had experienced, the more likely it was that they chose the novel chips brands to eat (Exp(*B*)=1.184, p=0.408).

they are comparable to effects found in previous research), the number of participants in study III may not have been sufficient to detect significant effects (i.e., with small effect sizes one needs a sufficient number of participants to detect significant effects). Essay III therefore focused on assessing how emotional reactivity is linked to food consumption, and contributes to the literature in the following ways: First, the study assesses multiple emotion response systems (i.e., subjective emotional experience and emotional behavior) that have rarely been used in studies on emotions and food consumption. Second, the study addresses differences in younger and older adults. Findings show that impairments in emotional reactivity predict greater food intake for younger adults, but not for older adults.

2 Conceptual framework

This chapter discusses the conceptual basis for the three essays in this dissertation. In the first part, the key concepts life transitions and emotions are defined. The second part elaborates on the association between life transitions and changes in consumer behavior. Based on a review of theory and research results, a model on life transitions and changes in food choices is developed. The third part discusses the role of affect and emotions in food decision making. Theoretical reflections on how emotions affect food decisions are summarized. Furthermore, previous research is discussed and research gaps are pointed out.

2.1 Defining key concepts

2.1.1 Life transitions

The concept of life transitions has been subject of research to psychologists, sociologists and consumer behavior scientists. It is embedded in the life course approach, which focuses on – unlike most cross-sectional consumer research studies – consumer behavior over the life span (Moschis, 2007a). Life course research sees a person's life as being a balance between stable periods and turning points (Devine, 2005; Moschis, 2007a).

Defining life transitions. Life transitions such as marriage, pregnancy, retirement, becoming empty nester, represent these turning points; and can be defined as discrete changes in life that elicit changes in an individual's perception (of self and of the world) and in the organization of his/her roles, resources, and central relationships (George, 1993; Hopkins et al., 2006). Being studied by different disciplines, definitions and also terminologies vary. Many researchers use the terms "life transitions" and "life events" interchangeably. Especially psychological studies have strongly associated life transitions with stress (Dohrenwend et al., 1978; Hobson et al., 1998; Schlossberg, 1981). All definitions have in common, that life transitions are perceived as major events or stages in

life that are associated with change (e.g., redefinition of social roles). Further adjustments to these major changes may be necessary as a result of the transition (Hopkins et al., 2006). Adaptation to the changes depend on the type of the transition, pre- and post-transition settings, and the person's individual characteristics (Schlossberg, 1981). Change of social roles (e.g., when retiring or when pregnant), resources (e.g., money, time or health), and social relationships (e.g., co-workers in case of retirement, family or friends), may either come along directly with the life transitions (e.g., change in family composition comes along with pregnancy), or may be a result of adapting to the life transition (e.g., change of time allocation during the transition to retirement). A broader concept of life transitions also includes changes such as natural catastrophes, which are very stressful, unexpected, and involuntary (Delorme et al., 2005). However, most consumer researchers have not included these transitions in their studies (Andreasen, 1984; Hopkins et al., 2006; 2014; Mathur et al., 2003; 2008). This dissertation also focuses on life transitions that are to some extent expected, and often programmed in human life cycle (Moschis, 2012). Moreover, life transitions are often sequel of or overlapping with other transitions (Hobson et al., 1998). A marriage for example may lead to parenthood, and a change in work status may cause relocation or income changes.

Measuring life transitions. There are numerous instruments developed by psychologists and sociologists measuring life transitions (Chiriboga, 1991) (e.g., Schedule of Recent Events [SRE] approach developed by Holmes and Rahe [1967], Psychiatric Epidemiology Research Interview [PERI] Life Events Scale developed by Dohrenwend and colleagues [1978]). Both, the SRE approach and the PERI Life Events Scale have been used by consumer researcher and have been adapted to the population that was focus of study. Amster and Kraus (1974), Mathur et al. (2008), and Mensh (1983) for example have adapted these lists to older populations. Also, item batteries measuring the perceived changes people have experienced during a defined period of time (e.g., "There has been more upheaval than usual in my life this month"; "There are a lot of really new things going

on in my life right now.") have been used by studies investigating the effect of life transitions on consumer behavior (e.g., Wood, 2010).

Life transitions at different ages. Life transitions come along throughout the whole life cycle. Some life transitions are experienced among all generations (e.g., relocation), some may be strongly linked to a specific age range (Lazarus and DeLongis, 1983). Greene et al. (1992) define four major transitions that are associated with early adulthood: moving away from home, marriage, becoming a parent, and gaining an instrumental role (e.g., starting to work for the first time). Whereas young people gain new responsibilities as they grow up, transitions at later adulthood have been found to mean a reduction of roles (Schewe and Balazs, 1992). At early older ages individuals often face transitions such as retirement and empty nest syndrome (Mathur et al., 2006). However, in addition to losing roles and family members, later adulthood can also be fulfilled by becoming a grandparent or remarrying (Schewe and Balazs, 1992). A growing trend is that some life transitions shift to later ages. Whereas the average age of mothers in Germany giving birth to their first child was 24 years in 1970, it increased to 31 years in 2012 (Federal Statistical Office, 2013a: 19). Retirement age in Germany it is to be gradually increased to 67 within the next years and an increase in labor participation of adults aged 65 to 69 has been observed within the last 15 years (Bundesinstitut für Bevölkerungsforschung, 2013: 24).

Compared to younger people, older adults experience fewer life transitions overall (Andreasen, 1984; Folkmann et al., 1987; Lazarus and DeLongis, 1983; Pearlin and Skaff, 1996), which implies that lives of older adults are characterized by more stable periods. Life transition may, thus, be of more importance for older adults as compared to younger adults. It is therefore and against the background of demographic change and stronger habits of older consumers (chapter 1.1) especially interesting to study the effect of life transitions in the population of older adults.

2.1.2 Emotions

Defining emotions. Emotions can be defined as "…short-lived psychological-physiological phenomena that represent efficient modes of adaptation to changing environmental demands" (Levenson, 1994: 123, see also Levenson, 2011). This definition emphasizes two core features of emotions. First, when emotions occur: Many emotion theories emphasize that emotions are brief responses (Ekman, 1992) that are selected evolutionarily to aid in problem solving (Tooby and Cosmides, 1990) and that arise when an individual attends to a situation and sees it as relevant or personally significant to his or her goals (Clore, 1994). Second, what kind of responses are triggered by emotions: The definition emphasizes that emotions are whole body phenomena that involve changes in subjective experience, behavior and physiology (Gross, 2014). Studies investigating emotion-related processes have used different terminologies (e.g., affect, mood or stress) which refer to slightly different phenomena, but have also been used interchangeably. Moods differ from emotions as they are a) longer lasting, b) may be more diffuse and c) are not elicited by specific objects or situations (Gross, 2014). Stress usually refers to negative responses that exceed individuals' ability to cope, whereas emotions can be both, positive and negative affective states. Affect can be considered as an umbrella term for states that especially relate to good vs. bad evaluations (Gross, 2014). Affect and emotions will be used as terminologies in this dissertation, however, affect is only used when referring to good-bad experiences.

Measuring emotions. Emotions have usually been measured in experimental contexts using specific elicitation methods. Different experimental paradigms have been developed to elicit emotions ranging from sudden loud noises (e.g., 115db, 100ms noise through loudspeakers behind the participant), films (e.g., selected excerpts from commercials or films used to elicit particular emotions), pictures (e.g., International Affective Picture System which consists of several hundreds of colored pictures depicting situations that have the ability to evoke emotions and are internationally understandable),

autobiographical recall (e.g., recalling or writing about past events that elicited intense emotions), dyadic interactions (e.g., interaction with a spouse or family member sitting in chairs and facing each other and discussing areas of relationship conflict) or music (Levenson, 2007). In their meta-study, Lench et al. (2011) find that films are the most common method of emotion elicitation. Emotional reactions have been measured in different emotion response systems including a) peripheral and central physiology (e.g., blood pressure, heart rate, and skin conductance), b) behavioral observations (e.g., body postures, or facial expressions) and c) subjective emotional experiences (e.g., surveys and rating dials). Emotions organize these response systems and theory suggests that discrete emotions should influence all three response systems (i.e., experience, behavior, and physiology) (Lench et al., 2011). However, studies find that the three systems may but do not necessarily cohere. Experience and behavior have been found to be more closely associated than physiological responses (Mauss et al., 2005).

Emotions at different ages. Many studies on emotions demonstrate age-related differences in emotional reactivity (Mather, 2012). As physical health typically declines at older age and negative events (e.g., death of a spouse or a friend) are more likely, the idea of aging sounds depressing. However, for the majority of older adults emotional well-being was found to be maintained or even improved (Charles, 2010). Socioemotional selectivity theory (SST) states that as perceived time left in life decreases with age, people focus more on regulating emotions and less on other goals such as information seeking (Carstensen et al., 1999). Older adults have been found to direct their attention away from negative situations (Mather and Carstensen, 2003), to be less reactive to interpersonal stressors (e.g., to react less with yelling or arguing) (Neupert et al., 2007) and to have heightened emotion regulation abilities (Shiota and Levenson, 2009) compared to younger adults. This “positivity bias” may contribute to emotional well-being at older ages. The fact that older adults engage more efficiently in emotion-regulation strategies suggests that they may evaluate life transitions as rather positive compared to younger adults.

2.2 Life transitions and changes in consumer behavior

2.2.1 Theoretical perspectives on life transitions and changes in consumer behavior

Three theoretical perspectives have mainly been used to explain the interplay between life transitions and changes in consumer behavior: Role theory, stress theory and the life course perspective. All three perspectives are interlinked but have to be critically examined as they can lead to opposing conclusions.

Role theory. Throughout life, individuals experience situations where one has to adopt new social roles, and to modify, or even give up some old social roles (Allen and van de Vliert, 1984; George, 1993). Roles can be defined as social constructs that characterize and form the interactions between people (Schewe and Balazs, 1992). Every person possesses a set of social roles (e.g., being a father, a lecturer, and a son), which come to the forefront depending on requirements of social situations. As conducts of the social environment, roles express the expectations that an individual and others have of the self (Schewe and Balazs, 1992).

Role theory helps to unveil how life transitions may be associated with changes in consumer behavior. As social roles are often associated with possession (e.g., clothes for a specific job) or behaviors (e.g., healthy food choices for pregnant women), a change in social roles may be related to disposal of possessions related to the old role and the acquisition of possessions related to the new role (Mathur et al., 2003). Divorcees may for example dispose of possessions that were related to their lifestyle when being married in order to distance themselves and establish a new lifestyle (McAlexander, 1991). Also, young people may change their looks to match a new social environment, and as they approach adulthood and distance themselves from the childhood home (McAlexander and Schouten, 1989). According to Belk (1988), possessions, other people, and even places can have a central part in one's life as extended selves. Possessions show who we are

(Belk, 1988), but also where we come from, and where we are going (Noble and Walker, 1997). Thus, in order to make the transition between the old and the new role smooth, adjustments in behavioral and psychological concepts are made (Schewe and Balazs, 1992). Mehta and Belk (1991) pointed out that immigrants reconstruct their identities by acquiring possessions related to the desired role in a new country. Meanwhile, they may value other possessions that remind them of the original cultural identity. Thus, possessions as "extended selves" may help people during life transitions.

According to Allen and van de Vliert (1984) role-related transitions occur with permanent change of social constructs into another social system. However, depending on the centrality of the role, this transition can be of minor or major importance. Centrality refers to the extent to which a social role contributes to an individual's self-definition; and the importance of values, believes, and behavioral patterns associated with that role (Allen and van der Vliert, 1984). Those roles which are important to an individual's self-definition may elicit positive appraisal when acquired, but cause negative appraisal and psychological resistance when they have to be given up (Hopkins et al., 2006). If the role of being a mother has high centrality, the empty nester period (i.e., when children leave home) may be characterized by strong negative feelings (Allen and van de Vliert, 1984).

Stress theory. An early view of explaining life transitions and their influences on behavior is that of stress (Andreason, 1984; Pearlin and Skaff, 1996). Psychologists have assumed that any kind of change can cause stress (Lazarus and DeLongis, 1983; Lee et al., 2007; Mathur et al., 2003). The intensity of stress, however, varies depending on the life transition as some transitions may be easier to control and to cope with (e.g., empty nester) than others (e.g., death of a close one) (Dohrenwend et al., 1974). Lazarus and Folkman (1984: 21) define psychological stress as "a relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being". Stress, thus, results from a feeling of imbalance

between resources and expectations. As a result, this discrepancy can cause pressure and emotional discomfort, requiring a person to utilize various readjustments to regain balance. These adjustments may be changes in consumer behavior and preferences (Andreasen, 1984; Mathur et al., 2003). Consumer behavior may be used as coping mechanism (i.e., to handle stress and to adjust to the changing environment) (Lee et al., 2001). Andreasen (1984) assumes that stress may affect consumer preferences in two ways: First, stressful transitions may lead to dissatisfaction with current consumption choices and hence will generate the desire to change consumption habits. Second, consumers may desire familiar consumption patterns to counterbalance these unwanted changes and to restore comfort. A substantial body of studies has analyzed consumption coping behaviors (e.g., increased alcohol consumption [Williams and Clark, 1998]).

Limits of the stress perspective have already been partly acknowledged by researchers that emphasized that not all life transitions may be associated with negative feelings to the same extent (e.g., Andreasen, 1984; Dohrenwend et al., 1974; Pearlin and Skaff, 1996). Moreover, recent calls for comparison between positively and negatively perceived life transitions (Hopkins et al., 2014) show that the stress perspective may only partly explain the mechanisms between life transitions and changes in consumer choices.

Life course perspective. The life course perspective is a theoretical framework to study how patterns of behavior develop over time and in different contexts (Moschis, 2007a), and has often been used in health and nutrition studies (Sobal et al., 2006; Wethington, 2005), especially when exploring changes in food choices with the course of time (Edstrom and Devine, 2001). Life course theory views a persons' life as a mix of stable periods and turning points. Stable periods are called trajectories (Devine, 2005). Individual choices are formed over time during such stable periods and in relation to place, time, cultural, and contextual influences (Moschis, 2007a). Life transitions which change places, time, cultural, and contextual influences may create psychological, emotional, and physical

demands to which a person must adapt by changing behavior. The life course perspective thus takes into account personal development (e.g., increase in knowledge, skills and abilities over time), termed human capital (Moschis, 2007a; 2012). Life transitions may alter human capital (e.g., skills and knowledge) and consequently behavior.

Researchers have also used the life course perspective to explain openness to change (Andreasen, 1984; Wood, 2010). Andreasen (1984: 784) first introduced "readiness-to-change" experienced by consumers undergoing life transitions. As consumers are rather set in their lifestyle and consumption patterns in general, life transitions represent an interruption of this stability (Andreasen, 1984). Resulting changes have been explained by role theory and stress theory (Andreasen, 1984; Mathur et al., 2003; 2008). Other researchers (Verplanken et al., 2005; Verplanken and Wood, 2006; Wood, 2010) have explained changes by the fact that life transitions disrupt daily routines and habits; and bring about a "change mindset".

All three theoretical perspectives have an overlap and provide explanations how life transitions may lead to changes in consumer behavior. However, when put in different contexts these perspectives come to different conclusions: According to psychologists, change results in stress; and stress in turn has been found to be linked to the desire for familiar choices (Andreasen, 1984; Kandiah et al., 2006; Litt et al., 2011). Habits literature (Verplanken et al., 2005; Verplanken and Wood, 2006; Wood, 2010) proposes that change results in disruption of routines and a "change mindset" which in turn may lead to novel choices.

2.2.2 Research on life transitions and changes in consumer behavior

Research on life transitions and changes in consumer behavior can be grouped into two major streams. The first stream examines specific life transitions (e.g., pregnancy and motherhood [e.g., Aschemann-Witzel, 2013; Clark and Odgen, 1999; Devine et al., 2000; Olson, 2005], marriage [e.g., Bove et al., 2003; Craig and Truswell, 1994; Kemmer et al., 1998], cohabitation [e.g., Hartmann et al., 2014], retirement [e.g., Chung et al., 2007; Hopkins et al., 2006; Schau et al., 2009; Wolf et al., 2014]), and their effect on consumption patterns. The second stream investigates changes in consumer behavior in response to multiple life transitions (e.g., Andreasen, 1984; Lee et al., 2001; 2007; Mathur et al., 2003; 2008; Wood, 2010).

Specific life transitions. Studies focusing on specific life transitions are mainly cross-sectional and based on subjective self-reports (e.g., Aschemann-Witzel, 2013; Kemmer et al., 1998; Olson, 2005; Wolf et al., 2014). Only very few studies work with longitudinal data. Hartmann et al., (2014), Hiroyuki et al. (2015) and Insler (2014) are one of the few studies that use panel data to investigate the effects of specific life transitions (i.e., cohabitation [Hartmann et al., 2014] and retirement [Hiroyuki et al., 2015 and Insler, 2014]) on lifestyle habits (i.e., consumption of alcohol and smoking). However, these studies do not focus on changes of preferences in specific contexts (e.g., change of brands bought) and are also based on self-reports. Longitudinal as well as experimental studies based on scanner data are lacking in this field.

Multiple life transitions. The work of Andreasen (1984) was the study that set the groundwork for research on the relationship between the accumulation of life transitions and changes in consumption choices. In his cross-sectional study, Andreasen (1984) found that the number of life transitions individuals have experienced lately is related to changes in brand preferences. Mathur, Lee and Moschis followed up on these results and published a series of papers based on questionnaire data from a mailing study related to the cumulative effect of life transitions on changes of consumer behavior and changes of brand

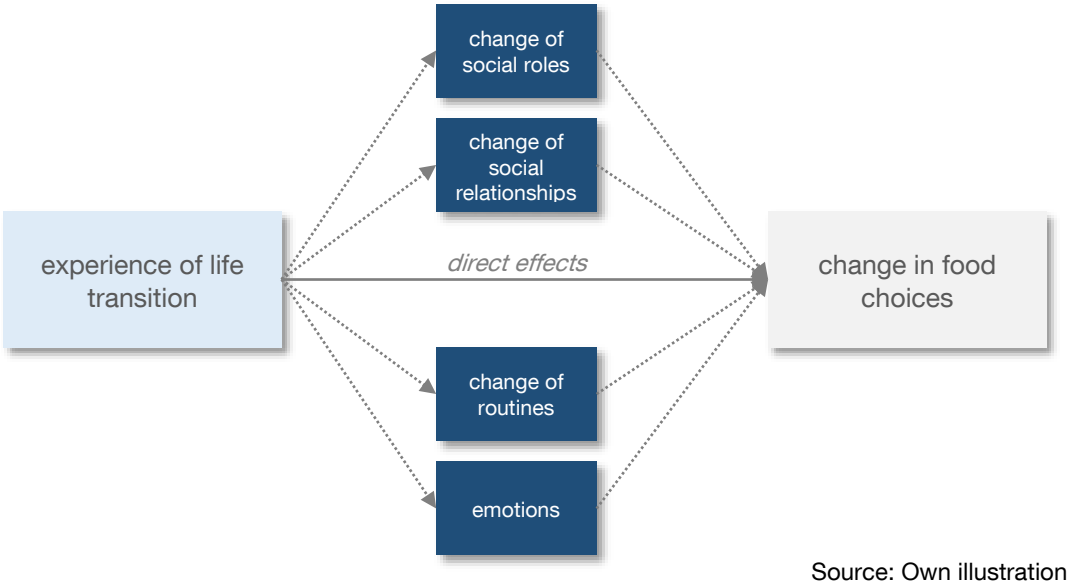
preferences (Lee et al., 2001; 2007; Mathur et al., 2003; 2006; 2008). These papers showed that life transitions bring about stress and consumers change consumption related lifestyles to cope with stress, which in turn is linked to changes in brand preferences. Another major study in this field is based on an experimental approach by Wood (2010) who found that individuals who experienced a greater number of life transitions were more likely to choose novel products. Wood (2010) explains that when experiencing lots of changes "change" may become mindset. As a result, people may be more open towards novel options during times of change. Groeppel-Klein and Kamm (2014) further investigated these results in an experimental study measuring consumers' responses who have been undergoing life transitions to advertisements for novel products and confirmed the change mindset approach. The studies by Andreasen (1984), Lee et al. (2001; 2007), and Mathur et al. (2003; 2008) in comparison to findings by Wood (2010), Groeppel-Klein and Kamm (2014) and habits literature (Verplanken et al., 2005; Verplanken and Wood, 2006) seem contradictory, when asking the question whether life transitions increase the likelihood of making novel choices. Hopkins et al. (2006; 2014) found that a) feelings towards change and b) the anticipation of consequences of change influence consumption patterns and preferences. This calls for a more detailed investigation of subjective evaluation (i.e., positive vs. negative) of life transitions.

Following up on the theoretical perspective, a model of how life transitions may be associated with changes in food consumption choices is developed in the following chapter.

2.2.3 A model of life transitions and changes in food choices

This chapter discusses a model of life transitions and changes in food choices. The model is comprehensive, and parts of it will be investigated in the studies of this dissertation. Figure 3 illustrates how life transitions may affect food consumption choices.

Figure 3. Model of life transitions and change in food choices[4]



Source: Own illustration

Life transitions bring about changes in consumption through direct and indirect effects. On the one hand, life transitions may create needs directly related to the change (e.g., changing diet when being diagnosed with diabetes). On the other hand, a life event can lead to more subtle changes (Andreasen, 1984) through mechanisms that come along with life transitions. The definition of life transitions already implies that life transitions bring along changes in social roles and changes in social relationships. Life transitions also bring about changes in routines (Verplanken et al., 2005; Verplanken and Wood, 2006; Wood, 2010). According to the stress perspective, life transitions bring about stress, modified as emotional reactions in the model. All in all, four mechanisms that come along with life

[4] It should be noted that essay III is not based on this model. Essay III addresses the influence of emotions on food consumption and investigates individual differences in emotional reactivity. Theoretical basis for essay III is discussed in chapter 2.3.

transitions can be identified: a) changes in social roles, b) changes in social relationships, c) changes in routines, and d) emotional reactions. These mechanisms are related to each other (e.g., changes in social relationships may cause emotional reactions) and may differ in terms of intensity depending on the life transition (e.g., emotional reactions due to the loss of a partner may be more intense than emotions that emerge due to relocating to a different home). These four mechanisms may lead to changes in food choice. Each mechanism is discussed in more detail in the following.

Changes of social roles. First, life transitions may bring about changes in food consumption because they lead to changes in social roles (e.g., spouse, retiree) (Moschis, 2007a). Social roles are social constructs, which define and shape interactions between people. Through socialization processes a person learns to shape identity (i.e., skills, attitudes, behavior) compatible with the roles he or she enacts (Moschis, 2007a). Every person possesses a set of roles; and different roles come to the forefront depending on requirements of the social situation. Adopting a new social role or relinquishing an old social role demand certain behavioral and psychological adjustments (Schewe and Balazs, 1992). As consumption is an integral part of identity, adaptation to a new social role is thought to be associated with the disposal of possessions or practices related to the old role and the adaption of new ones (Belk, 1988; Hajema and Knibbe, 1998; Schewe and Balazs, 1992). For instance, having a child may lead to taking over the role of a caring and responsible mother which in turn may lead to healthier food choices.

Changes of social relationships. Second, life transitions may alter food choices because they bring about changes in social relationships. Food consumption often occurs in social contexts (e.g., lunch at work), and consumers are influenced by whom they are with when making food-related choices (McFerran et al., 2010). Therefore, if social relationships change, the likelihood of behavior change should increase as well. For instance, if a person retires, lunch at work with colleagues will no longer take place. Being

with a partner for lunch instead may lead to different food choices. Social "food choice negotiations" have been found in a study related to newly married couples (Bove et al., 2003) and cohabitation (Hartmann et al., 2014). Bove et al. (2003) conducted qualitative interviews with couples that recently got married and found that a process of dietary convergence takes place during this life transition. The process was found to be either symmetrical (i.e., both partners change their dietary patterns) or asymmetrical (i.e., one partner changes more towards the other partner's preferences).

Changes of routines. Third, life transitions may bring about changes in food consumption because they change routines. The effect of changing routines on food choices may be both direct and indirect. Direct effects are predictable based on the nature of the transition. For instance, a person moving to a big city might need to change his or her shopping routine or to switch the grocery chain due to a different infrastructure. However, as life transitions change routines, ties of habitual behavior are weakened, which makes consumers more likely to adapt new kinds of activities or alter attitudes and preferences (Wood, 2010). When the usual pattern in one area of daily routines is disrupted, the person may view it as an opportunity to change in other dimensions of life (e.g., product choice).

Emotions. Fourth, life transitions may bring about changes in food consumption because they affect emotions. Negative emotions and stress as result of life transitions and consumers' engagement in consumption coping strategies has been extensively discussed in consumer literature (e.g., Andreasen, 1984; Hopkins et al., 2014; Lee et al., 2001; Mathur et al., 2008). However, life transitions may not only bring about negative but also positive emotions, for example when children move out of the home (Gorchoff et al., 2008). Affective science literature has documented how positive and negative affect influences judgment and decision-making (Forgas, 2008). The Broaden-and-Build Theory of positive emotions (Fredrickson, 2001; 2013) states that positive emotions broaden

individual's momentary thoughts and action repertoires; and studies building on the Broaden-and-Build-Theory have shown that positive affect leads individuals to approach and explore novel objects and increase variety seeking (Fredrickson, 2013; Fredrickson and Branigan, 2005; Kahn and Ihsen, 1993; Roehm and Roehm, 2005). Changes in food choice related to emotional reactions may hence come along through a) coping behaviors resulting from negative life transitions or b) a broadened mindset resulting from positive life transitions.

Positive or negative feelings towards change in life may make a differences in how life transitions affect food choices. The following chapter discusses the role of emotions in food decision making.

2.3 Emotions and eating

Every decision is a response to some kind of problem. The effort and cognitive processing one puts into solving the problem depends on the type and scope of the problem and the involvement[5] of the consumer (Solomon, 2015: 60). One can distinguish two systems involved in decision making: A cognitive, conscious, slow, and effortful system and an automatic, unconscious, fast, and emotional system (Sanfey and Chang, 2008). These two systems may interact in conflict with each other: When confronted with a problem, automatic processing may take place unless a more cognitive and conscious process is activated (Grecucci and Sanfey, 2014). As automatic, emotional processing is faster and less cognitively demanding, it is often used for decisions that have to be taken very often such as food choices (Wansink and Sobal, 2007).

[5] Involvement describes "a person's perceived relevance of the object based on their inherent needs, values, and interests." (Zaichkowsky, 1985: 342)

2.3.1 Theoretical perspectives on emotions and eating

We eat not just because we are hungry but also because of emotional and habitual reasons (Carrol et al., 2013). The interplay between emotions and food decisions, however, is bidirectional: Emotions may influence food decisions (e.g., drinking coffee when feeling sleepy) but what we eat may also alter emotions (e.g. feeling awake after drinking coffee) (Köster and Mojet, 2015). As the interest in emotional predictors of food decision making grew from the insight that affective evaluation of life transitions may have an influence on food choice, this dissertation focuses on the one-directional relationship how emotions may influence what and how much we choose to eat (for an overview on the bidirectional relationship see Köster and Mojet, 2015). Emotional states may directly influence food decisions, but they also have indirect effects: Emotions change how we evaluate and weight inputs into the decision process (Bublitz et al., 2010).

Different theoretical approaches have been used to explain how emotions influence food decisions (Macht, 2008). Conventional theories focus on biological or physiological drivers and argue that consumption patterns are determined by the need to survive (e.g., increasing eating speed in stressful situations) (Carroll et al., 2013; Macht, 2008). Other theories focus on psychological explanations: Food choice can be linked to a) emotion regulation (Evers et al., 2010; Singh, 2014) or b) escaping from self-awareness (Heatherton and Baumeister, 1991). Escape Theory states that responding to negative arousal with overeating may be a consequence of the attempt to shift attention away from ego-threatening stimuli. Food, hence, is used as a coping mechanism to distract oneself from aversive self-awareness or for comfort (Heatheron and Baumeister, 1991; Spoor et al., 2007). Emotion regulation refers to individuals' strategies to influence which emotions they have, how, and when they have them (Grecucci and Sanfey, 2014; Gross, 1998). Emotion regulation may result in the increase, maintenance, or decrease of one or more components of an emotional response, including behavior, physiology, thoughts, and feelings (Gross, 1998; Gross et al., 2011). Behavioral responses to regulate emotions may

be the increased intake of sweet, fatty or salty foods. Tasting carbohydrate-rich, energy-dense foods (e.g., sugar or fat) lead to an increase of brain serotonin (Macht, 1999; Singh, 2014), and thereby evoke positive affective responses. Moreover, consumers might actively choose specific food products from which they expect to reverse negative affective states or maintain positive affective states (Di Muro and Murray, 2012). Food may especially be used to regulate emotional states if one does not manage to engage in other strategies (e.g., disengaging from the source of negative affect). Deficits in regulating one's emotions are often used to explain binge eating disorders (Leehr et al., 2015).

Macht (2008) developed a model on how emotions affect eating, which combines previous theories and research findings. According to this model, emotional eating occurs in response to an emotion in case that emotion is associated with an eating habit (i.e., if one eats cake in festive and positive contexts, one may eat cake to upregulate emotions) (Macht, 2008). Hence, how emotions affect eating may not only depend on the emotion as such, but also on individual contexts. In his meta-study, Macht (2008) states that emotion-induced changes of eating may vary a) across individuals (e.g., distinguishing restrained or emotional eaters) and b) across emotions (e.g., anger, fear or sadness). The next chapter discusses research findings on how emotions affect food decisions using Macht's categorization.

2.3.2 Research on emotions and eating

Despite extensive research, findings do not converge into a coherent picture how emotions affect eating (Köster and Mojet, 2015; Macht, 2008). Numerous studies have looked at a) how different emotions influence eating and b) how individuals differ in emotional influences on eating.

Effect of different emotions on food decisions. Many studies have classified emotions in terms of valence (i.e., pleasure-displeasure), arousal, and intensity when studying their effects on food decisions. Negative emotions and stress have often been

found to increase hedonic (e.g., fatty and snack) food intake (Catwright et al., 2003; Garg et al., 2007; Lowe and Maycock, 1988; Olivier and Wardle, 1999; Tice et al., 2001; Zellner et al., 2006; especially for consumers with low self-esteem [Mandel and Smeesters, 2008]), and to increase hunger and the drive to eat (Groesz et al., 2012; Macht, 1999; Willner et al., 1998). Positive emotions have been found to increase healthy choices (Garg et al., 2007) but also overconsumption (Bongers et al., 2013; Cools et al., 1992; Evers et al., 2013). A normal response to high arousal states was found to be loss of appetite (Van Strien et al., 1986), whereas low arousal states may increase food intake (Robbins and Fray, 1980; for an overview see Macht, 2008). Intensity of emotions and food intake was mainly studied in animal studies, e.g., effect of intense noise, electric shocks on food intake. Studies showed that intense noises lead to decrease and low to moderate noises to increase of food intake (Macht, 2008). There is an extensive amount of literature on the effect of emotions on eating based on the dimensions of valence, arousal and intensity (Macht, 2008), however insights about effects of specific emotions are lacking (Köster and Mojet, 2015).

Individual differences in emotion-induced changes of eating. The interest in the relationship between emotions and eating derived from the psychological interest in overeating and obesity (Gibson, 2006). Hence, in its beginning researchers have analyzed the effects accounting for individual differences, which were based on eating behavior. Restraint eaters are people who have adopted a persistent pattern of eating-related cognitions and behavior that aims at maintaining or reducing body-weight (Macht, 2008). The eating patterns of emotional eaters on the other side describe a food consumption behavior of people who are “poor at differentiating between hunger and physiological correlates of emotional arousal and as a result respond to stress with overeating” (Kuijer and Boyce 2012: 936).[6] Both, emotional eaters and restraint eaters respond stronger with

[6] Emotional eaters have been identified using questionnaires (e.g., Dutch Eating Behavior Questionnaire (DEBQ); Emotional Eating Scale (EES); Emotional Overeating Questionnaire (EOQ) (Bongers et al., 2013).

overeating when experiencing negative emotional states (Van Strien et al., 2013; Zellner et al., 2006) than normal eaters. Emotional eaters also have been found to eat more when in positive emotional state (Bongers et al., 2013). Moreover, studies have shown that emotional eaters tend to choose more sweet, high-fat foods in response to emotional stress (Oliver et al., 2000). Another stream of research investigated individual differences in emotion regulation abilities and their relation to eating. Most of these studies related deficits in emotion regulation abilities to eating disorders (Leehr et al., 2015). Moore and Konrath (2015) examined individual differences in affect intensity and their relation to food cravings. Other studies related differences in stress reactivity (Adam and Epel, 2007; Sproesser et al., 2014) to food consumption.

Although the question how emotions affect food decisions has been addressed by many researchers, there are some gaps to be pointed out: First, many studies have concentrated on emotional composites (e.g., positive vs. negative valence, high vs. low arousal), and only few studies exist that investigate how specific emotions affect food decisions. Second, research on individual differences in emotion-induced changes of eating is dominated by eating-related differences and emotion regulation abilities, whereas differences in emotional reactivity (i.e., the type, magnitude, and duration of emotional responses) have not been focus of studies. Third, emotions have mostly been measured using self-reports, while emotional responses per definition comprise three dimensions: subjective experience, behavior and physiology (Gross, 2014).

3 The three essays

To investigate the effect of life transitions and emotions on food choice of older adults, a mix of methods was chosen. Table 2 shows which methods have been used to answer the three research questions.

Table 2. Overview of essay I to III with regards to addressed research questions, methodology, and time of data collection

Essay	Research Question	Methodology	Time of Data Collection
Essay I	Are life transitions associated with a greater likelihood in brand switching?	Focus Group Study Panel Data Analysis	June - July 2013*** 2004 - 2008*
Essay II	Are only positive life transitions associated with a greater likelihood of choosing a novel brand?	Online Survey	January 2014**
Essay III	Are individual differences in emotional reactivity associated with food consumption?	Experimental Laboratory Study	April – Nov. 2014***

*** Doctoral candidate was involved in the study design and the data collection
** Doctoral candidate was involved in the study design
* Doctoral candidate was neither involved in the study design nor in the data collection

Source: Own table

Essay I consisted of a focus group and a consumer scan panel study. Working with panel data brought along restrictions of an already existing data set (e.g., only a limited number of life transitions could be analyzed). This was overcome by the questionnaire study in essay II: The study used a detailed list of life transitions and included subjective evaluations of these life transitions. An experimental laboratory study (essay III) was conducted to test the results of essay II in an experimental setting and to examine the interplay between emotional reactivity and food consumption. Each of the three essays is presented in the following subchapters.

3.1 Life transitions and brand switching. How changes in social relationships are linked to changes in yoghurt brand and grocery chain choice (essay I)[7,8]

Abstract.

Older consumers are often neglected as a target group because they are considered brand loyal and not flexible in their consumption habits. However, previous research suggests that life transitions may be associated with changes in consumers' behavior. To investigate whether late-life transitions are associated with a greater likelihood of changing the regularly bought yogurt brand, real purchase data of German consumers from 2004 to 2008 were analyzed. Findings provide empirical evidence that changes in social relationships (change in household size, relocation) are associated with a higher likelihood of changes in first yogurt brand and change in first grocery chain for older consumers. These findings have implications for policy makers and marketing practitioners.

Key Words.

Life Transitions, Social Relationships, Changes in Brand Choice, Retail Chain Loyalty

[7] Essay I is based on Reitmeier, M.E., and Roosen, J. (2015). Life Transitions and Brand Switching: How Changes in Social Relationships are Linked to Changes in Yogurt Brand and Grocery Chain Choice. *Canadian Journal of Agricultural Economics.* doi: 10.1111/cjag.12091

[8] I thank Gesellschaft für Konsumforschung (GfK) Germany for granting access to the data used in this study.

3.1.1 Introduction

What influences consumers to change their consumption choice is of substantial interest to researcher, firms and policy makers. It is well-known that consumers differ in terms of their willingness to switch among brands. In this context, a considerable body of research shows that older consumers consider fewer novel and more familiar brands when making choices (Lapersonne et al., 1995); prefer well-established brands (Lambert-Pandraud et al., 2005) and are more brand loyal (Lambert-Pandraud et al., 2005; Newman and Werbel, 1973) and habitual buyers (Adamowicz and Swait, 2012; Verplanken et al., 2005; Wood and Neal, 2009). From this perspective, older consumers are a challenging group for the marketing of novel brands and for behavioral interventions that aim at a change in consumption choices. In light of this and because of population aging and increasing life expectancies, studying changes in brand choices in older consumers is especially interesting.

However, there is considerable empirical evidence that life transitions, e.g., marriage, parenthood or retirement, are associated with changes in consumer behavior (Andreasen, 1984; Chung et al., 2007; Clark and Odgen, 1999; Hopkins et al., 2014; 2006; Lee et al., 2007; 2001; Mathur et al., 2008; 2003; Schäfer et al., 2012; Wolf et al., 2014). Given this insight, life transitions may be a promising approach for marketers and may provide guidance on when to address older consumers with messages that aim at convincing them to change their habitual brand.

The issue is of particular relevance to food brands. Food choices are especially hard to change as food-related decisions are routinized and habitual due to the high number of decisions we make every day (Adamowicz and Swait, 2012; Shepherd and Raats, 2006; Wansink and Sobal, 2007). Habits can be conceptualized as the strategy of choosing the same good (e.g., brand or grocery chain) in consecutive periods of time (Adamowicz and Swait, 2012). Research has found evidence for strong habit persistence in food choice at

brand level (Arnade et al., 2008; Ravn et al., 2006) and the grocery chain (Olearius and Roosen, 2011). It is therefore particularly interesting to study the relationship between life transitions and change of brand choice for food products. Nevertheless, only few of the studies mentioned above address change in brand preferences (e.g., Andreasen, 1984; Lee et al., 2001; Mathur et al., 2003) and these studies do not focus on food choice but on a broad range of different consumer products (e.g., insurance, car choice) and services (e.g., choice of hairdresser). Moreover, these studies are based on self-reported change or attitude change which are prone to biases. Other studies that measure brand inertia in the food domain (e.g., Arnade et al., 2008; Thunström, 2010) do not assess the role of life transitions on brand switching. No study to the author's knowledge investigated the relationship between life transitions and changes in food-related brand choice for older consumers with (1) real world data and (2) at detailed brand level.

The essay aims at providing insights into whether life transitions are linked to changes in food brand choice. Given the wide variety of brands available in the food market, a case study approach was taken and the single product category yogurts is analyzed. The product category was selected because of its popularity with older consumers (i.e., dairy products are the third most often consumed food product category in Germany [Federal Statistical Office, 2013b]) and the high variety offering of brands of different strengths. In accordance with the literature on store loyalty (East et al., 2000), the favorite brand of a consumer is defined as the first brand as the brand with the highest number of purchases within a year. A change in the first brand occurs if this first brand changes from one year to the next. Because consumers' food-related brand choice consists of two aspects which are interrelated, namely the selection of the grocery store in which to shop and the decision for a product brand, both decisions need to be analyzed conjointly. This is acknowledged by implementing a bivariate probit model simultaneously depicting the change in product brand and grocery chain choice. Household scanner data for Germany in the years from 2004 to 2008 are used to analyze the relationship between late-life transitions and the

change in the first yogurt brand and in the first retail chain when purchasing yogurt. To observe the implications of life transitions, household purchases are aggregated at annual level. The first yogurt brand and the first grocery chain are defined as those brands receiving the largest share of purchases in the product category (i.e., the most chosen brand).

Background – Life transitions and changes in food choices

The life course perspective describes a person's life as a balance between stable periods and turning points (Devine, 2005; Moschis, 2007a). People tend to follow certain stable behavioral patterns or habits which derive from their past experiences and social background. Habits, however, are adjusted or significantly changed during periods of change (Howard and Sheth, 1969; Wethington, 2005). The life course perspective provides a set of tools that can be used to analyze how changes in people's environment affect consumer (Moschis, 2012) and specifically food choices (Devine, 2005). General definitions see life transitions as discrete changes in life that elicit changes in an individual's perception (of self and of the world) and in the organization of his/her roles, resources, and central relationships (George, 1993; Hopkins et al., 2006). One important implication of this approach is that life transitions bring along changes in social networks, which is especially interesting in the context of food choice as food consumption often occurs in social contexts (e.g., lunch at work, dinner with family). Consumers are influenced by whom they are with when making food-related choices (McFerran et al., 2010). Bove et al., (2003) provide insights into social "food choice negotiations" in a study related to newly married couples. Based on qualitative interviews with couples that recently got married they conclude that a process of dietary convergence takes place during this life transition. This process was found to be either symmetric (both partners change their dietary patterns) or asymmetric (one partner changes more towards the other partner's preferences).

In order to explore the processes that go along with life transitions and that lead to changes in food choices, four focus group discussions were conducted with twenty-four consumers aged 50 to 74 (see chapter 3.1.5). The analyses of the discussions revealed that participants faced changing conditions during these life transitions, such as changes in daily routines and changes in social relationships. In response to these changing conditions, which varied depending on the kind of life transition, individuals reported developing adaptive strategies including changing their food consumption and food choice. Changes in brand choice were often reported for life transitions with a strong link to changes in the close social environment (e.g., transition to empty nest, moving in with new partner). Participants who stated that a new partner had recently moved in talked about negotiation of favorite brands with the new household member. The fact that two consumption histories met in a new environment led to a change either in the direction of one of the household members or towards an entirely new brand. Participants, who reported that their last child moved out of the household, talked about rediscovering their own food preferences and therefore changes in brand and product choice.

Drawing from the literature and the results of the focus groups, this essay focuses on life transitions that bring along change in social relationships and examines three exemplary life transitions: change in household size, transition to retirement, and relocation. These life transitions may alter social relationships to a different extent. Whereas change in household size changes the close social environment (e.g., children, partner), transition to retirement may change social relationships in a broader circle of social contacts (e.g., colleagues), which in turn may affect changes in first brand to a different extent. On the one hand, household members are likely to be involved in the grocery shopping decision process, therefore change in household size may be more strongly associated with change in brand choice than transition to retirement. On the other hand, retirement has an effect on daily routines and may thus have a strong impact on brand choice.

3.1.2 Data and methods

Gesellschaft für Konsumforschung (GfK) consumer scanner data are panel data of approximately 30,000 German households. Households scan their actual product purchases throughout the year at the level of the Universal Product Code (UPC). As the data are based on the Universal Product Code, they include information about 1) where the yogurt was bought (grocery chain), 2) the brand of yogurt, 3) the amount bought (in grams), and 4) if the product was bought at a reduced price (i.e., on promotion).

In addition, each household fills in a questionnaire every year, including among others information on socio-demographic status. The data are well suited for examining the hypotheses because they contain detailed socio-demographic information (e.g., occupational status, household size, and postal code) about the household, track real-world yogurt purchases across multiple grocery chains, and provide information about a large population over a five-year interval.

In this study, data of the years 2004 to 2008 are used. Individual observations are aggregated to obtain annual data of number of units purchased and expenditures by brand, household and year. Conditioning household choice on purchases of dairy products (e.g., milk, cream, butter and yogurt) yields an initial sample of 24,363 households. Because the focus of this essay is on changes in brand choice in older adults, the sample is restricted to households with the head of the household being older than 45 years, which yields in a sample of 12,580 households. Similar to other studies analyzing brand inertia (Arnade et al., 2008), a cutoff for each household is employed. In order to assure time-series data on each household, households with non-successive records are excluded. The sample is restricted to regular yogurt consumers because 1) there is no information on non-purchases (i.e., only if a household purchased a product, the record appears in the scanner data) and 2) it is assumed that a change in habitual choices can only be detected, if the household regularly buys the product. Therefore, only years when a household made

yogurt purchases during at least six months were analyzed. Observations in the first year were dropped, because change variables are defined as a difference between the observations for year t and t-1. Moreover, only households that are regular yogurt purchasers are observed. In total, the sample consisted of 9,321 households and 25,078 purchase observations. Table 3 represents descriptive statistics and measures of the sample.

Table 3. Socio-demographic characteristics and measures of consumer scan panel

Socio-demographics	Mean	*SD*	
Age (based on mid-points)[b]	61.7	10.9	
Household size	2.2	1.1	
Income (based on mid-points)[c]	2256.9	943.2	
Independent Measures (Change Variables in 2005-2008)	nb	% of hh in sample	% of hh with multiple changes
Change in household size	1,461	13.4%	2.0%
Transition to retirement (change in employment status)	581	6.2%	0.0%
Relocation (change in postal code)	273	2.8%	0.1%
Change in income	2,311	12.5%	3.0%
Dependent Measures (Change Variables in 2005-2008)	nb	% of observations	% of hh with multiple changes
Change in first yogurt brand	9,470	37.8%	29.2%
Change in first grocery chain	5,984	23.9%	16.9%
Determinants	Mean	*SD*	
Lagged brand loyalty	0.59	0.29	
Lagged grocery chain loyalty	0.63	0.28	
Lagged share of purchases in discounters	0.52	0.36	
Lagged share of purchases on promotion	0.12	0.20	

Note: Number of observations = 25,078, number of households = 9,321.
[b] calculated from 6 age categories
[c] calculated from 16 income categories
[d] was added as a covariate for the analysis of change in first yogurt brand
[e] was added as a covariate for the analysis of change in first grocery chain

The age of the household head and household's monthly net income are given as categorical data. The sample was evenly distributed among the age groups. Age and income are represented by indices ranging from 7 to 12 (from age 45) for age and 1 to 16 for income ranging from under € 499 to over € 4,000. Both indices were translated to mid-

point data for each interval. An average household has two members (*SD* = 1.1) and has a monthly income of € 2,256.9 (*SD* = 943.2). Mean age of the head of the household was 62 years (*SD* = 10.9). With the average yearly expenditure of € 43.2 (*SD* = 40.7), a household consumed about 26.2 kg of yogurt per year (*SD* = 23.9).

Socio-demographic information was used to create life transition variables. Binary independent variables were created based on the change of socio-demographic status between successive years (0 = no change, 1 = change). Change in household size was indexed by a change in the number of people living in the household (*n* = 1,461; 13.4% of households in sample), transition to retirement was indexed by a change in occupational status from employed to retired (*n* = 581; 6.2% of households in sample), relocation was indexed by a change in zip code (*n* = 273; 2.8% of households in sample).

Purchase data were used to construct the dependent variables. This study examines purchase of yogurt brands and grocery chain visits, which are both based on the household's product scans. The 25 yogurt brands with the highest number of units bought between 2004 and 2008 (covering 82.5% of total sales) and the 22 biggest grocery chains covering 99.8% of all yogurt purchases between 2004 and 2008 were considered in the analysis. Private-label yogurts not classified in the data were recoded and assigned as brand of the retailer. As socio-demographic information is collected once a year, data on household purchases were aggregated at annual level and the first yogurt brand was created for each household. The first yogurt brand was defined for each household as the brand with the highest number of purchases within a year. The first grocery chain was created accordingly: It was defined as the chain with the largest number of visits within a year[9]. If a household had more than one first yogurt brand (a tie between two brands was observed for 4.8% of cases; a tie for two grocery chains existed for 3.7% of cases), its first brand was defined as combination of the two brands. The binary variables change of first

[9] The data only give information about the grocery chain visited, but does not inform about which store was visited.

yogurt brand (n = 9,470; 37.8% of observations) and change of first grocery chain (n = 5,984; 23.9% of observations) from one year to the next were created based on a comparison of two consecutive years.

A set of socio-demographic parameters was used as covariates: Age, income and household size. In order to more accurately control for age effects, age-squared was also included as covariate, which was created based on age-midpoints. The assumption was, however, that the change of yogurt brand choice and grocery chain choice does not depend on socio-demographic characteristics per se but is more likely to be correlated with the changes in these parameters (Andreasen, 1984).

Moreover, the likelihood of changing the first brand (yogurt or grocery chain) is likely to decrease the higher the brand loyalty of the household. Yogurt brand loyalty is a continuous variable indexed by the difference in units bought between the most often and the second most often bought yogurt brand relative to the total units bought (the higher the brand loyalty variable value, the greater is the difference in units bought between the first and second most often bought brand). Grocery chain loyalty was created accordingly (the higher the grocery chain loyalty variable value, the greater is the difference in number of visits between the first and second most often visited shop). A high value for brand loyalty or grocery chain loyalty indicates that the household has a very distinct choice behavior for one specific yogurt brand or grocery chain. Hence, ‘yogurt brand loyalty’ and ‘grocery chain loyalty’ were included as covariates for the analysis of change in first yogurt brand and change in first grocery chain, respectively. Moreover, the variable ‘share of purchases in discounters’ (indexed by the number of visits in discounters compared to the total number of visits) was included. Discounters in Germany are characterized by a limited product assortment and lower prices. Therefore, it can be assumed that households who prevailingly shop in discounters are less likely to change first their yogurt brand as they have fewer options to choose from. In order to account for potential effects of price

changes, the variable share of products bought on promotion was included in the analysis of change in first yogurt brand and change in first grocery chain, which is a continuous variable indexed by the amount of yogurts bought on promotion divided by the total amount of yogurts bought.

One concern is the potential endogeneity of the measures of brand loyalty. If life transitions are associated with changes in brands bought, they may likely influence brand loyalty. Also, if life transitions are associated with changes in the grocery chain visited, they may have an effect on grocery chain loyalty and the share of purchases in discounters. In order to circumvent the problem of endogeneity, the variables of yogurt brand loyalty, grocery chain loyalty, and share of purchases in discounters was included in lagged form in the analysis, assuming that loyalty and share of purchases in discounter present characteristics of the consumer that have an impact on the likelihood of change in brand choice. The lagged variable amount of products bought on promotion was included for the same reason.

To test the assumption of the relationship between each of the three life transitions and changes in first yogurt brand and change in first grocery chain, two independent probit equations were estimated first. Let y_{1it}^{*} and y_{2it}^{*} be the latent dependent variables that indicate a change for first yogurt brand and first grocery chain. The latent change function is given by

$$y_{kit}^{*} = \alpha_k + \beta_k \mathbf{x_{it}} + \gamma_k \mathbf{z_{kit}} + \varepsilon_{kit} \ , \ k = 1, 2 \qquad (1)$$

with y_{kit}^{*} = latent change in first yogurt brand (k = 1) and change in first grocery chain (k = 2) for household i (= 1, …, N) in year t (= 2005, 2006, …, 2008). $\alpha_k, \beta_k, \gamma_k$ are parameters. $\mathbf{x}_{it}$ is the vector of life transition indicators for household i in year t (variables: change in household size, transition to retirement, and relocation), and $\mathbf{z}_{kit}$ is the vector of covariates (lagged yogurt brand loyalty ($\mathbf{z}_{1it}$) and lagged grocery chain loyalty ($\mathbf{z}_{2it}$), lagged share of

purchases in discounters, lagged share of yogurt purchases on promotion, age, age square, income, household size); and ε_{kit} signifies the error term.[10]

The observed dependent variables result from the observation of a change in the first yogurt brand or change in the first grocery chain. Hence the observed dependent variable is $y_{kit} = 1$, if $y^*_{kit} > 0$, and $y_{kit} = 0$ otherwise.

Given the interlinked nature of the choices for yogurt brand and for grocery chain, both equations are estimated jointly in a bivariate probit model, where the covariance in the error term is allowed to deviate from zero, such as

$$\begin{bmatrix} y^*_{1it} \\ y^*_{2it} \end{bmatrix} = \begin{bmatrix} \alpha_1 \\ \alpha_2 \end{bmatrix} + \begin{bmatrix} \beta_1{}' \\ \beta_2{}' \end{bmatrix} \mathbf{x}_{it} + \begin{bmatrix} \gamma_1{}' & 0 \\ 0 & \gamma_2{}' \end{bmatrix} \begin{bmatrix} \mathbf{z}_{1it} \\ \mathbf{z}_{2it} \end{bmatrix} + \begin{bmatrix} \varepsilon_{1it} \\ \varepsilon_{2it} \end{bmatrix} \quad (2)$$

where $\varepsilon_{it} = (\varepsilon_{it} \quad \varepsilon_{it})'$ is bivariate normal with $\Sigma = \begin{bmatrix} 1 & \rho \\ \rho & 1 \end{bmatrix}$ (Greene, 2000).

The bivariate probit model allows for change of first yogurt brand to co-vary with change of first grocery chain. As each retailer offers a limited range of brands, it was assumed that a change in the first retailer is associated with a higher likelihood of a change in the first brand (65.2% of those who changed the first grocery chain also changed the first yogurt brand). The model returns a correlation coefficient ("rho"). Rho is the correlation coefficient between the residuals of the two probit equations. If the coefficient is statistically significantly different from zero, then two probit equations should be estimated jointly.

Data were analyzed using the bivariate probit procedures in NLOGIT 5.0. To account for possible correlations because of multiple observations per household, clustering was applied for a robust estimation of the covariance matrix of the parameter estimates.

[10] Rather than modelling change in brand choice, one could have followed Arnade et al (2008) in modelling brand choice directly. In their model, brand inertia is the result of habit formation and sticking with the same brand. According to the hypotheses, life transitions should reduce brand inertia and could be identified in an interaction term on their habit parameter. It was opted for the more direct approach of analyzing the change in preferred brand.

Marginal effects are calculated based on the conditional expectation for the dependent variable. Let $E[y_1|y_2, x, z_1, z_2]$ be the conditional expectation of y_1 conditioned on y_2 and the explanatory variables. Hence the marginal effects for continuous variables can be decomposed into direct (keeping y_2 constant) and indirect effects (measuring the change through y_2). For dummy variables, marginal effects are calculated as the difference in the conditional mean in the dependent variable for the dummy variable evaluated at 1 and at 0. Hence, the result table does not indicate direct and indirect effects but only total effects (see Greene, 2000: 851-855).

Brand choice is furthermore related to product availability and price in the store (Arnade et al., 2008; Thunström, 2010). As discussed in Arnade et al. (2008), prices in the consumer scan panel are realized prices and available only if the product has been bought. A possibility to obtain prices for non-purchased brands is to define average prices per region and year. This however, does not consider store related variation and promotions that may lead to changes in brand and store choice. Given that this essay analyzes first brand purchases on an annual basis, it is assumed that price shocks, as identified in an averaging method, would not explain differences between households that change their first brand and those that don't, which the essay aims to identify on the basis of life transition indicator variables.

Transition to retirement is not only associated with a change in social relationships, but is likely to come with a change in income. When retiring, people move from receiving monthly salary, to their pension which may result in increase or decrease in money to spend for food. Therefore, in a second step, the binary variable change in income was included in the analysis. Change in income was indexed by a change in income group between successive years (n = 2,311; 21.5% of households in sample).

3.1.3 Results

Table 4 gives an overview how life transitions are distributed across age groups in the sample. To use the comparison to the distribution of age groups in the total sample, the latter is reported in the last column.

Table 4. Life transitions across age groups

Age in Groups	Change in household size (n=1,461)	Transition to retirement (n=581)	Relocation (n=273)	Change in income (n=2,311)	Household (n=9,321)
1= 45 - 49 years	19.4%	0.0%	15.8%	12.5%	17.6%
2= 50 - 54 years	33.9%	20.8%	22.3%	21.3%	19.1%
3= 55 - 59 years	19.1%	26.9%	15.4%	19.3%	15.2%
4= 60 - 64 years	11.0%	37.0%	15.0%	17.0%	16.5%
5= 65 - 69 years	7.9%	11.9%	15.0%	15.3%	15.4%
6= > 70 years	8.6%	3.4%	16.5%	14.6%	16.3%

Note: Number of households = 9,321.

Change in household size occurs most often at the age of 50 to 54. The number of households who experience a change in size is slightly lower in older age groups. Only 9% experience a change in household size at the age of 70 years and older. Whereas no household in the sample experienced transition to retirement at the age of 45 to 49, 80% of transitions to retirement occurred at the age between 50 and 64. Relocation, on the contrary, occurs almost evenly across age groups in the sample. Only slight deviations from the age distribution of the entire sample are observed for the subsample of households with relocation. Similar, income change is not specific to an age group.

Results for the bivariate probit estimation are given in table 5. Marginal effects for both models are shown in table 6. The estimate for $\hat{\rho} = 0.506$ is significant at the 1% level. Rho being significantly different from zero validates the joint estimation of both probit equations.

Table 5. Change in first yogurt brand and grocery chain - bivariate probit estimates

	Step (1)		**Step (2)**	
	Coef.	*SE*	Coef.	*SE*
Change in first yogurt brand				
Constant	-0.686**	0.349	-0.660*	0.351
Life transition indicators				
Change in household size	0.381***	0.035	0.330***	0.035
Transition to retirement	0.108*	0.055	0.051	0.056
Relocation	0.467***	0.075	0.441***	0.075
Change in income	-	-	0.271***	0.029
Covariates				
Lagged yogurt brand loyalty	-1.302***	0.031	-1.305***	0.031
Lagged share of purchases in discounters	-0.237***	0.028	-0.238***	0.030
Lagged share of purchases on promotion	0.023	0.050	0.026	0.050
Age	-0.033***	0.011	0.032***	0.011
Age-squared	-0.000***	0.000	-0.000**	0.000
Income	-0.063***	0.011	-0.056***	0.011
HH size	0.043***	0.010	0.039***	0.010
Change in first grocery chain				
Constant	-0.867**	0.381	-0.853**	0.382
Life transition indicators				
Change in household size	0.296***	0.038	0.258***	0.039
Transition to retirement	0.093	0.059	0.050	0.060
Relocation	0.579***	0.078	0.559***	0.078
Change in income	-	-	0.194***	0.031
Covariates				
Lagged grocery chain loyalty	-1.677***	0.034	-1.678***	0.035
Lagged share of purchases in discounters	-0.071**	0.032	-0.071**	0.032
Lagged share of purchases on promotion	-0.014	0.051	-0.011	0.051
Age	0.036***	0.012	0.034***	0.012
Age-squared	-0.000***	0.000	-0.000***	0.000
Income	-0.033***	0.012	-0.028**	0.012
HH size	0.008	0.011	0.006	0.011
ρ	0.506***		0.504***	
Log *L*	- 26580.975		- 26530.621	

Note: Number of observations = 25,078, number of households = 9,321.
*, **, and *** indicate significance of the parameter estimate at the 10%, 5% and 1% level.

It can be seen that the three life transitions change in household size, transition to retirement, and relocation are significantly associated with a higher likelihood of change in

first yogurt brand. This result corresponds to previous studies on life transitions and brand preference changes, where the assessment was based on self-reported preference change (e.g., Andreasen, 1984; Mathur et al. 2008; 2003). Change in household size and relocation are also significantly associated with change in first grocery chain. The relationship is not significant for transition to retirement.

In a second step, change in income was included as independent variable. It can be seen that when including change in income in the analysis, transition to retirement becomes insignificant for change in first yogurt brand. As can be assumed from traditional economic theory on consumer choice (Deaton and Muellbauer, 2009), change in financial resources is associated with a change in brand choice. Transition to retirement being no longer significant shows that the impact of retirement is mediated by the change in income. Change in household size as well as relocation, however, remain significant. Drawing from these insights, it may not be change in all kinds of social relationships, but only specific changes that are associated with a change of yogurt brand choice. Whereas transition to retirement may alter job-related relationships, relocation and change in household size change relationships and routines related to the home living environment. Grocery purchases are in most cases done for the household, and therefore change in household relationships are likely to affect brand choice. As focus groups have shown, negotiations about brands take place between members of the household (see chapter 3.1.5).

To compare the effect size of the three significant life transitions, marginal effects in table 6 are interpreted. As marginal effects result as the difference in the conditional mean in the dependent variable for the dummy variable evaluated at 1 and at 0, direct and indirect effect cannot be distinguished. Hence, the result table does not indicate direct and indirect effects but only total effects. Also, '-' indicates a variable that has not been included in the respective equation, or that the direct effect is not relevant because the variable enters

only through an indirect effect. This is the case for 'lagged yogurt brand loyalty' and 'lagged grocery chain loyalty'.

Table 6. Bivariate probit marginal effects

	Step (1)			Step (2)		
	Direct	Indirect	Total	Direct	Indirect	Total
Change in first yogurt brand						
Life transition indicators						
Change in household size			0.1353			0.1166
Transition to retirement			0.0370			0.0174
Relocation			0.1690			0.1569
Change in income	-	-	-			0.0948
Covariates						
Lagged yogurt brand loyalty	- 0.4338	-	- 0.4338	- 0.4357	-	- 0.4357
Lagged grocery chain loyalty	-	- 0.0082	- 0.0082	-	- 0.0075	- 0.0075
Lagged share of purchases in discounters	- 0.0790	- 0.0003	- 0.0793	- 0.0796	- 0.0003	- 0.0799
Lagged share of purchases on promotion	0.0076	- 0.0001	0.0075	0.0883	- 0.0000	0.0088
Age	0.0111	0.0002	0.0113	0.0106	0.0002	0.0107
Age-squared	- 0.0001	- 0.0000	- 0.0001	- 0.0001	- 0.0000	- 0.0001
Income	- 0.0209	- 0.0002	- 0.0211	- 0.0186	- 0.0001	- 0.0188
Household size	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Change in first grocery chain						
Life transition indicators						
Change in household size			0.0870			0.0754
Transition to retirement			0.0259			0.0139
Relocation			0.1824			0.1754
Change in income	-	-	-			0.0554
Covariates						
Lagged grocery chain loyalty	- 0.4533	-	- 0.4533	- 0.4552	-	- 0.4552
Lagged yogurt brand loyalty	-	- 0.0012	- 0.0012	-	- 0.0083	- 0.0083
Lagged share of purchases in discounters	- 0.0191	- 0.0002	- 0.0193	- 0.0193	- 0.0002	- 0.0194
Lagged share of purchases on promotion	- 0.0039	- 0.0000	- 0.0039	- 0.0030	0.0002	- 0.0030
Age	0.0096	0.0000	0.0096	0.0093	0.0000	0.0093
Age-squared	- 0.0001	- 0.0000	- 0.0001	- 0.0001	- 0.0000	- 0.0001
Income	- 0.0090	- 0.0001	- 0.0091	- 0.0076	- 0.0000	- 0.0076
Household size	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Note: Number of observations = 25,078, number of households = 9,321. No distinction between direct and indirect effects for dummy variables in the bivariate probit model (see Greene 2000: 851-855).

Comparing marginal effects for step 1 and step 2, it can be seen that the effect sizes of all three transition phases slightly decrease when change in income is included in the analysis. Looking at marginal effects in step 2, it can be seen that relocation shows the strongest association with probability of change in first yogurt brand (0.1569). It is followed by change in household size (0.1166). Change in income has the weakest association with change in first yogurt brand (0.0948).

Looking at the other covariates of the model, it can be seen that including change in income in the analysis (step 2) only very slightly changes the effect size of the covariates. The data show that the stronger the yogurt brand loyalty (distinctiveness of choice for a specific brand), the weaker the relationship with change in first yogurt brand. The same tendency is found for share of purchases in discounters, income, and age squared. An increase in the share of purchases in discounters, income, and age squared is associated with a lower likelihood of change in first yogurt brand. The bigger the share of purchases on promotion, the stronger the association with probability of households changing their first brand. The effect size of all significant change variables (change in household size, relocation, and change in income) is bigger than the effect size of all socio-demographic variables (age, age-squared, income, and household size) included in the model.

Turning to change in first grocery chain (lower part of table 6) and comparing marginal effects for step 1 (excluding change in income) and step 2 (including change in income), the same tendency can be observed as for the upper part of the equation (change in first yogurt brand): Effect sizes of all three transition phases slightly decrease when change in income is included in the analysis. Linking changes in grocery chain choice to life transitions (step 2), relocation shows the strongest association (0.1754), followed by change in household size (0.0754) and change in income (0.0554).

The data furthermore show that the higher the grocery chain loyalty (distinctiveness of choice for a specific grocery chain), and the higher the number of people living in a

household, the weaker the relationship to change in first grocery chain. Increasing the share of purchases in discounters or the share of purchases on promotion is associated with a lower likelihood to change the first grocery chain. As for the likelihood of change in first yogurt brand, effect sizes of the covariates only slightly differ comparing step 1 and step 2. Again, the effect size of all significant change variables (change in household size, relocation, and change in income) is more substantial than the effect size of the socio-demographic variables (age, age-squared, income, and household size) included in the model.

3.1.4 Discussion

Consistent with previous research on life transitions and their influence on consumer choices, findings show that life transitions are associated with changes in first brand and first grocery chain for older adults when looking at yogurt purchases. Specifically, change in household size (e.g., resulting from transition to empty nest, moving in with new partner) and relocation are found to be associated with a higher likelihood of changing the first yogurt brand and the first grocery chain. Transition to retirement has been found to be associated with changes in first yogurt brand. However, if change in income is included in the analysis this relationship becomes insignificant. Results indicate that life transitions show a stronger association with change in first yogurt brand and first grocery chain than socio-demographic variables such as age, household size or income. These results support the stance of consumer researchers questioning socio-demographic variables as the most useful variables for understanding food-related purchase behavior (Bell, 2006; Verbeke, 2005)[11]. Hence, not only socio-demographic characteristics as such, but a change in these variables may help to better understand consumers' brand switching behavior. Moreover the link between change of first grocery chain and change of first

[11] Dong and Steward (2012) find that socio-demographic variables and a household's shopping history are almost equally important in explaining retail store choice.

yogurt brand is shown in the study. These results emphasize the fact that food purchases are a multidimensional decisions process with grocery chain choice and brand choice being strongly interrelated.

The study was able to address limitations of previous studies on life transitions and changes in consumption choices by (a) utilizing behavioral measures of yogurt and grocery chain purchases (assessing real-world yogurt purchases in grocery chains) and (b) relying on large panel data. The case study design, focusing on yogurt purchases and three life transitions, enabled to study changes in habitual food choices at brand level, where research found evidence for strong habit persistence (Arnade et al., 2008; Ravn et al., 2006). The panel data, however, contained a limited set of variables and thereby restricted the analysis to specific life transitions. Moreover, limitations were that the data set did not contain information about non-purchases. Hence, the sample was restricted to households that regularly purchase yogurt. Also, there is no information on the whole basket of the households, which is why other restrictions in the choice set could not be controlled. Some of the variables (e.g., age, income) were included as categorical variables and therefore reduced the specificity of change that could be analyzed. It is obvious that future work needs to enhance the insights into these mechanisms of change.

The study focused on older households because older consumers are assumed to be habitual buyers. Future studies should investigate the effects with different age groups (e.g. to see whether there is a difference between older and younger consumers) and broaden the analysis to other product categories. Moreover, other life transitions, that are associated with a change in social roles (e.g., becoming a grandparent) or that may be accompanied by strong emotional reactions (e.g., death of partner) may be subject of future studies.

Traditional consumer targeting is mainly based on demographic or cohort-based models, (e.g., age, life stage of the individual). However, these approaches seem to not

fully explain the dynamics that cause changes in purchase behavior. Results of this study provide useful insights for marketing to older consumers with well-developed brand preferences and habits. Findings suggest that it may be not only be crucial to define whom to target with marketing activities, but also *when* to target older consumers. It may be particularly useful to address older adults with product-related information during specific life transitions, which were found to be linked to changes in the first yogurt brand. Older adults may be more receptive to change during these periods of time. Descriptive tables analyzing at what age the four life transitions mainly occurred, moreover, provide information whether these four transitions are specific to an age group. This information may help marketers to even more precisely form groups for targeting purposes.

With technologies penetrating consumers' daily lives through the use of smartphones and tablets, consumers are increasingly traceable. Through constantly interacting with technology (e.g., indicating a change in relationship status in social networks) consumers generate data that are valuable for market research (e.g., relocation may be tracked via GPS data of mobile phones). Technological development and new ways of data processing offer considerable potential for more precise consumer targeting. This case study provides empirical evidence that it may be important to add information on life transitions to traditional targeting strategies for older consumers. Having information on when older consumers experience change in life, they may be segmented into more and less challenging target groups. Given today's technological advances and the study's results for yogurt purchases, consumer segmentation based on life transitions seems to be a promising approach for marketing practitioners. As results indicate that life transitions may influence consumers to change their consumption choice, they may also be useful for policy makers.

3.1.5 Supplementary material focus groups

Focus groups were conducted as exploratory study in order to (a) identify which life transitions are most often experienced by German consumers at a later stage in life and (b) to explore the relationship between life transitions and changes in food choices. Twenty-four consumers aged 50 to 74 and living in the area of Munich, Germany, were recruited in four groups between June and July 2013. The size of the groups varied between four to eight participants. There were slightly more females (54.2%) than males (45.8%) in the sample, and the mean age of the participants was 63.5 years. Most participants lived in a one-person (45.8%) or two-person (41.7%) household. Three participants (12.5%) reported to live with two other people. This results in an average household size of 1.7 people.

Lists of life events have been developed and refined by psychologists[12]. As these lists have been developed in (a) 1967 and 1978 and (b) in a different cultural setting, and because societal and individual factors that determine characteristics of and changes involved in life transitions (e.g., family or lifestyle concepts, policy regulations regarding age and forms of retirement) may differ, the objective of conducting focus groups was first to obtain a refined list of life events for a German sample of older consumers. Second, focus groups should develop an understanding of how life transitions are related to changes in food choice and food brand choice and the mechanisms that may be involved in that relationship.

In each group, the discussion was based on a 2.5 h interview guideline and was moderated by two researchers, which allowed for an interactive discussion. Participants were invited to a meeting room of the university. Upon arrival, participants read and signed a consent form and filled in a short questionnaire with socio-demographic questions. After

[12] Well developed and carefully revised scales are the Social Readjustment Rating Scale (SRRS) developed by Holmes and Rahe (1967) and the Psychiatric Epidemiology Research Interview (PERI) life events scale developed by Dohrenwend and colleagues (1978).

that, the discussion started with a short introduction and warm up round. The main discussion consisted of five parts. In the first section, participants reflected on life transitions which they experienced in the last five years, their perception of these life events (e.g., importance, feelings associated, and other changes that came along). Moreover, they were asked to name life transitions that they may experience within the next five years. To facilitate subsequent discussion, life transitions mentioned were noted on a flipchart by one researcher. In the second part, life transitions were linked to changes in consumption. The third part was the bridging part to food choice. Participants reflected on their food-related habits and routines. Subsequently, in part four, participants discussed about the impact of life transitions on food consumption changes. The first and the fourth part were the longest parts of the discussion. Participants were asked to link life transitions to changes in food consumption as regards change of (a) attitudes towards and motives for food choice, (b) time and place of food consumption, (c) food shopping behavior, and (d) brand choice. The fifth section concluded by a reflection of the participants on changes in food choices within the last years and reasons for these changes. Finally, the discussion was wrapped up by the researchers. At the end of the discussion, participants were thanked for participation, debriefed and received a compensation of 20 Euros for participating. All four groups were audio and video recorded.

Based on the audio- and videotapes, the spoken content of the focus groups was transcribed. The transcribed data were coded and assigned to a categorization system with MAXQDA, software suited for qualitative data analysis. The code system was iteratively adjusted, refined and expended during the data analysis process. Moreover, analysis of statements was not only based on quantitative (frequency of mentioning), but also on qualitative aspects (context and content of statement). First, a list of life transitions that were most often experienced was created. Second, life transitions were grouped based on their evaluation (e.g., positive vs. negative) and reported associated changes (e.g., change in social relationships, change in social roles). Third, life transitions were

linked to changes in food choices (e.g., changes in product choice, changes in brand choice).

The analyses revealed that transition to retirement, change of residence, physical illness, and change in household size (comprising transition to empty nest, moving in with partner, death or separation of partner) were life transitions that had been experienced most often by the participants within the last five years (see table 7).

Table 7. Reported life transitions

Life transitions	n
Entry into (early/ partial) retirement	13
Change of residence	11
Physical illness	11
Change in household size - Last child moved out of household (4) - Moving in with partner (2) - Death of partner (2) - Separation of partner (1)	9
Engaging in new activities - Taking on voluntary work (3) - Enrolling in educational program (5)	8
Death of close friend/ acquaintance	6
Physical illness of family member	4
Taking up new (side) job	4
Positive family life change - Marriage (1) - Becoming a parent (1) - Becoming a grandparent (1)	3
Dismissal from job	1

Note: $N = 24$.

Participants faced changing conditions during these life transitions, such as changes in daily routines and changes in social relationships. Also, participants reported changes in

social roles (e.g., losing work identity as a result of the transition to retirement or not being a caretaking parent anymore when children moved out of the household) and emotional reactions. Participants, who experienced life transitions due to dismissal from work, which in one case was related to a substantial change in income, and illness, reported strongly negative and feelings of stress that affected their daily life. Life events, which, by contrast, were linked to positive feelings were either associated with a shift towards fewer responsibilities or a higher degree of personal freedom (e.g., child moving out of the household). Positive feelings were also associated with life transitions that brought about a gain of household members (e.g., new partner moving in), or family members (e.g., becoming a grandparent). Conflicting feelings (i.e., positive and negative) were related to the transition to empty nest and retirement. In response to these changing conditions, which varied depending on the kind of life transition, individuals reported developing adaptive strategies including changing their food consumption behavior. Life transitions with a strong link to changes in the close social environment (e.g., transition to empty nest, moving in with new partner) were reported in association with changes in food brand choice. Participants who stated that a new partner had recently moved in talked about negotiation of brands to be purchased with the new household member. The fact that two consumption histories met each other in a new environment led to a change either in the direction of one of the household members or towards an entirely new brand. Participants, who reported that their last child moved out of the household, talked about rediscovering their own food preferences and therefore changes in product choice. One participant whose financial conditions changed drastically also reported a change in brand choice. However, this was rather because his shopping behavior changed (i.e., checking prices in more detail, planning where to shop) than a result of changing preferences. The results indicate that changes in food-related brand purchases were most likely recalled if life transitions brought about changes in social relationships and routines within the household.

3.2 Positive life transitions and novel brand choices in older consumers (essay II)[13]

Abstract.

Across the globe, populations are "graying" and consumer research is becoming increasingly interested in understanding older consumers' decision-making. Life transitions are key candidates for predicting novel choices among older adults, but empirical findings are ambivalent. Drawing from consumer research, life-course research, and affective science, the present study analyzes associations between life transitions (measured using a life events checklist including individuals' evaluations of these life events as positive or negative) and novel brand choice (measured using a real-world brand choice paradigm) in a representative sample of older consumers in Germany (N = 990; ages 50-70). Results show that 1) older consumers who experienced a higher number of life transitions are more likely to choose a novel brand, 2) this association is specific to positively evaluated life transitions and is not found for negatively evaluated life transitions, and 3) this association is mediated by greater variety seeking. Results are controlled for age, gender, and income. Novel choices have often been viewed as the province of early periods of life. The present findings show that older consumers are more likely to make a novel choice when they have experienced positive life transitions (emphasizing the importance of studying individuals' evaluations of life transitions) and suggest avenues for future research.

Keywords.

Life transitions, novel brand choice, older consumers

[13] Essay II is based on Reitmeier, M.E., Haase, C., and Roosen, J. (2014). From Stress to Fun - How Life Transitions Predict the Likelihood of Choosing Novel Food Brands and Changing Preferences. In June Cotte and Stacy Wood NA (Eds.), Advances in Consumer Research Volume 42, (pp. 807-807). Duluth, MN: Association for Consumer Research.

3.2.1 Introduction

Across the globe, populations age as life expectancies increase and birth rates decline. As older consumers gain increasing social and economic influence, there is a pressing need to better understand their consumer behavior. Lay conceptions and earlier research often assumed that once individuals reach a certain age, their personalities are “set like plaster” (Costa and McCrae, 1994), their preferences are stable, and their consumer behavior is inflexible. A mounting body of empirical evidence shows that older consumers are more averse to risk (Mather et al., 2012); attached to familiar brands in their purchases (Lambert-Pandraud et al., 2005; Lambert-Pandraud and Laurent, 2010b); consider fewer novel and more familiar brands when making choices (Lapersonne et al., 1995); and prefer well-established over novel brands (Lambert-Pandraud et al., 2005; Lambert-Pandraud and Laurent, 2010b). Thus, older consumers are often considered a challenging target group for the marketing of novel products. That being said, when and why do older adults choose novel brands?

The present study focuses on life transitions as key candidates for predicting changes in consumer behavior (Andreasen, 1984; Hopkins et al., 2014; 2006; Lee et al., 2001; Mathur et al., 2008; 2003; Mehta and Belk, 1991; Wolf et al., 2014). Drawing from life-course (Devine, 2005) and psychological (Fredrickson, 2013; 2001; 1998) frameworks, the present study examines how life transitions predict novel brand choices in a representative sample of older consumers. It is assumed that older adults who have experienced more positive life transitions are more likely to choose novel brands. Furthermore, the study explores whether this effect is mediated by greater variety seeking.

Life transitions and novel choices

The present study focuses on life transitions as key candidates for predicting novel consumer choices. Life transitions can be defined as changes in status (e.g., from non-parent to parent; employee to retiree) that elicit changes in an individual’s perception of

self and of the world and in the organization of his/her roles, resources, and relationships (George, 1993; Hopkins et al., 2006). Life transitions disrupt daily routines (Dohrenwend et al., 1978) and habits (Plessz et al., 2014; Verplanken and Wood, 2006), bring about a "change mindset", and enhance the likelihood of novel choices (Verplanken et al., 2005; Verplanken and Wood, 2006; Wood, 2010). From the perspective of the habits literature, life transitions are thus key candidates for opening up avenues for change and predicting novel choices.

However, coping theory, which is often used by consumer researchers to explain decision-making (Duhachek and Oakley, 2007), arrives at the opposite prediction. Life transitions are seen as bringing about uncertainty and stress (Andreasen, 1984; Dohrenwend et al., 1978; Hopkins et al., 2006; Mathur et al., 2003; Moschis, 2007b), which enhance the likelihood of making familiar choices as individuals seek to reduce uncertainty and minimize discomfort (Andreasen, 1984). Heightened desire for familiarity when being stressed has been well-documented in psychological (Litt et al., 2011), consumer (in terms of desire for familiar comfort food; Kandiah et al., 2006) and animal (Shors and Wood, 1995) research.

Empirical findings regarding the link between life transitions and novel consumer choices are mixed. Some studies find that life transitions induce stress (Andreasen, 1984; Mathur et al., 2003), which in turn has been found to predict familiar choices (Kandiah et al., 2006; Litt et al., 2011). In contrast, Wood (2010) finds that life transitions enhance the likelihood of making novel choices. Converging with older and more recent (Hopkins et al., 2014; Wheaton, 1990) calls for more specific examinations of life transitions, these conflicting predictions and findings may be reconciled by examining how individuals evaluate the life transitions they experience.

Positive life transitions and novel choices through the lens of the Broaden-and-Build Theory of positive emotions

How individuals appraise or evaluate a life transition (e.g., as positive or negative) reflects a fundamental affective judgment (Norris et al., 2010; Russell, 2003). Affective science literature has documented how positive and negative affect influences judgment and decision-making (e.g., Forgas, 2008). The present study focuses on the Broaden-and-Build Theory of positive emotions (Fredrickson, 1998; 2001; 2013) to better understand the relationship between life transitions and novel choices. The Broaden-and-Build Theory has received broad empirical support in experimental as well as longitudinal studies over the last 15 years and states that positive emotions broaden individual's momentary thoughts and action repertoires. From the perspective of the Broaden-and-Build Theory of positive emotions, not all life transitions but only those life transitions that are evaluated as positive may enhance the likelihood of making novel choices (for a similar prediction see also Carver, 2003).[14]

Supporting this prediction, studies have shown that positive affect indeed leads individuals to approach and explore novel objects, people, and situations (e.g., Fredrickson and Branigan, 2005; Kahn and Isen, 1993; for an overview see Fredrickson, 2013), and thus enhances the likelihood of making novel choices. One of the key underlying pathways may be individuals' greater variety seeking, which can be defined as a desire for stimulation through change in consumption (Van Trijp and Steenkamp, 1992). Studies indeed show that positive affect leads to greater variety seeking behavior (up to a moderate level of positive affect and if the choice is pleasant; Kahn and Isen, 1993; Roehm and Roehm, 2005). Greater variety seeking behavior in turn would result in a higher likelihood to make

[14] The Broaden-and-Build Theory focuses on positive emotions, which are short-lived psychophysiological phenomena and can be further differentiated into distinct emotions such as interest or joy (Fredrickson, 2013; Shiota et al., 2011). The present study focuses on positive evaluations or appraisals (of life transitions), which may initiate an emotion response (Fredrickson, 2001).

novel choices (i.e., in a choice context, varied behavior would be any choice that differs from its predecessor; Kahn and Isen, 1993; McAlister and Pessemier, 1982).

Examining positive life transitions and novel choices in older consumers

Consumer research is just starting to discover older adults as a group of interest (Moschis, 2009). The "mature market" is growing in size and highly affluent (in Germany, wealth of consumers peaks at the age of 66 to 70 [Grabka and Westermeier, 2014]). However, older consumers are often considered a challenging target group for the marketing of novel products as they are more brand loyal (Lambert-Pandraud et al., 2005; Lambert-Pandraud and Laurent, 2010b; Lapersonne et al., 1995) and risk averse (Mather et al., 2012) than younger consumers. To the author's knowledge, no recent research (e.g., Schiffman, 1972) has examined to what extent and under which conditions older adults choose novel products.

Findings from affective science suggest that older consumers may be a particularly interesting group to put predictions regarding the association between positive life transitions and novel choice to the test. Although older adults experience objective decline in a number of life domains (e.g., health, cognition) (e.g., Cacioppo et al., 2011; Salat et al., 2004; Schulz and Heckhausen, 1996), there is accumulating evidence that older adults exhibit a "positivity bias" (Carstensen et al., 1999). Specifically, older adults are more likely to direct their attention towards positive and away from negative information (Mather and Carstensen, 2003), remember positive information better compared to neutral or negative information (Charles et al., 2003), and have heightened emotion regulatory abilities (Levenson, 2000; Shiota and Levenson, 2009). This suggests that older adults may evaluate numerous life transitions that are positive or that they perceive as positive. To the extent that life transitions are evaluated as positive, they are prime candidates to predict an enhanced likelihood to make novel choices among older consumers.

The present study

Drawing from consumer research, life-course developmental research, and affective science, this study examines how life transitions predict novel choices in a sample of older consumers (aged 50-70). Specifically, the present study analyzes the choice of a novel grocery brand (a very frequent kind of choice; Wansink and Sobal, 2007) using a real brand choice paradigm (with high ecological validity). A novel brand can be a brand that is new to the market or a brand that is novel to the consumer (e.g., a foreign brand as in Wood [2010]).

Individuals who have experienced more life transitions are predicted to be more likely to choose a novel brand (H_1). Moreover, it is assumed that this effect is specific to positively evaluated life transitions (H_2) and mediated by greater variety seeking (H_3).

H_1 *The greater the number of life transitions older consumers have experienced in the past year, the greater the likelihood of choosing a novel brand.*

H_2 *The greater the number of positive life transitions older consumers have experienced in the past year, the greater the likelihood of choosing a novel brand. However, a greater number of negative life transitions is not associated with a greater likelihood of choosing a novel brand.*

H_3 *The association between positive life transitions and the likelihood of choosing a novel brand is mediated by greater variety seeking.*

Results are controlled for age, gender and income.

3.2.2 Method

Sample and procedure

The study used a stratified sample of 3761 household heads (i.e., defined as consumers being at least partly responsible for grocery shopping), which was drawn from an online panel (International Organization for Standardization (ISO) certified and with high quality standards, e.g., identity check, activity controls, only active recruitment). Household heads were recruited based on a quota online representative for German households aged 50 to 70 based on age, education, occupation, and income. To meet this pre-specified quota, 2625 participants were screened out and 116 participants ended the survey voluntarily, which resulted in 1026 completed online questionnaires. Data were collected in January 2014 so that retrospective reports for the past year referred to the year 2013.

Non-serious responders, defined as individuals who had completed the questionnaire in under eight minutes and 33 seconds (1.0 *SD* below the sample mean), were excluded from the analyses. The final sample analyzed consisted of 990 respondents (age: M = 59.01; SD = 5.51, range: 50-70). Fifty five percent of respondents were men, 45.1% were women. The average household size was 2.13 (SD = 0.89), the average income was 1314.10 Euros (SD = 653.00). On average, respondents took 17 minutes to complete the survey (M = 17.46 min, SD = 8.62). Table 8 shows sociodemographic characteristics of the sample.

Table 8. Sociodemographic characteristics of the sample

	M	*SD*
Age	59.07	5.51
Household size	2.13	0.89
Number of children	1.45	1.26
Female gender	45.1%	
Living with partner	73.2%	
Net monthly income (mid-points) (in €)	1314.10	653.00
Net monthly household income		
< 499 €	1.9%	
500 – 999 €	5.7%	
1000 – 1499 €	14.0%	
1500 – 1999 €	11.1%	
2000 – 2499 €	15.8%	
2500 – 3499 €	18.9%	
3500 – 4499 €	13.0%	
4500 € and more	10.8%	
Missing	8.8%	
Education		
No degree	0.1%	
Lower-tier degree	36.4%	
Middle-tier degree	35.5%	
Higher-tier degree	8.6%	
University degree	19.5%	

Note: *N* = 990.
[a] equivalent to 8 or 9 years of education (Hauptschulabschluss).
[b] equivalent to 10 years of education (Mittlere Reife).
[c] equivalent to 12 or 13 years of education (Abitur).

Measures

Life transitions were assessed using a checklist of 29 life events which was developed based on a modified version of the Psychiatric Epidemiology Research Interview (PERI) Life Events Scale (Dohrenwend et al., 1978: 211-216). Life transitions that were not relevant for older adults (e.g., pregnancy) were excluded from the checklist (Amster and Kraus, 1974; Mathur et al., 2008). Furthermore, four discussions with 24 German consumers aged 50 to 74 were conducted in June and July 2013. Focus group analysis revealed additional life events of particular relevance for older adults that were added to the checklist (e.g., starting further education, becoming a grandparent). Survey respondents indicated

whether they had experienced 29 events in the past six month, past six to 12 months, past one to two years, and past two to five years. The present study examined life transitions experienced within the past year building on previous research on life events in general (e.g., Holmes and Rahe, 1967; Scully et al., 2000) and life transitions and brand preference changes in particular (e.g., Mathur et al., 2008), which have used 1-year time frames when assessing life events. Building on previous studies (Andreasen, 1984; Chiriboga, 1991; Mathur et al., 2003), a count variable of life transitions experienced within the past year was computed.

Positive and negative life transitions. The experience of the same life event can be different for different individuals. For example, some people may perceive the transition to retirement as negative because it means financial decline and loss of purpose; others may perceive this transition as positive because it opens up new opportunities for traveling and engaging in long-neglected hobbies. Therefore, a response-based categorization of life transitions was considered the most useful approach (Mathur et al., 2008). Survey respondents were first asked whether they experienced a life transition. If so, respondents indicated whether they perceived the life transition as positive or negative on a nine-point scale (1 = extremely negative; 5 = neutral; 9 = extremely positive; 10 = don't know). The evaluation of life transitions as positive or negative reflects a basic affective judgment (Norris et al., 2010; Russell, 1980) and has been used in other psychological studies that analyzed the effect of life events on personality traits (Lüdtke et al., 2011; Vaidya et al., 2002). The number of life transitions rated as 6, 7, 8 or 9 were considered "positive life transitions" and the number of life transitions rated as 1, 2, 3 or 4 were considered "negative life transitions" (Norris et al., 2010). Analogous to Lüdtke et al. (2011), life transitions that were rated as 5 ("neutral") or 10 ("don't know") were not included in the logistic analyses.

Novel brand choice. Novel brand choice was measured using a real-world choice paradigm. At the beginning of the survey, consumers indicated which product they regularly bought from each of five different product categories (i.e., water, beer, yoghurt, chocolate, toothpaste) using pictures of the most popular brand in each category: "Please indicate which of the following products you [regularly] buy and consume. Please only indicate those products that you buy for personal consumption"). Most popular brands were identified using market data for the year 2013. At the end of the survey, respondents were informed that they could win one out of 100 product vouchers (worth 10 EUR each) as a thank you for participating in the study. They were presented with a choice to receive this voucher for either a) the brand they had chosen in the beginning as familiar (coded as 0) and b) a novel brand (i.e., the same product and packaging type but with the label NEW; coded as 1). As can be seen in figure 4, the same product category and packaging was presented for both the familiar and the novel brand in order to hold product preference and packaging effects constant. Thus, the two brand choices only varied by whether they were familiar or, in fact, "new".

Figure 4. Example novel vs. familiar brand choice

Note: neu = new.

Forty-eight percent of respondents chose the familiar brand, 40.7% chose the novel brand, and eleven percent did not want to be compensated for the study and were therefore coded as missing.

Variety Seeking. Variety seeking with respect to food was measured using the VARSEEK measurement scale developed by van Trijp and Steenkamp (1992). The scale consists of eight items (e.g., "When I eat out, I like to try the most unusual items, even if I am not sure I would like them") evaluated on a five-point Likert scale (1 = completely disagree; 5 = completely agree), which were summed up to create a variety seeking index (Cronbach's α = .81). VARSEEK scores ranged from 8 to 40 with an overall medium variety seeking tendency (M = 27.0, SD = 5.5)[15].

Covariates. Age, gender, and net-monthly household income were included as covariates. Missing values for household income (8.8% missing) were replaced with predicted income values (Lemieux and McAllister, 2005). Specifically, a linear regression was used to predict income by gender, age, household size, education and occupation, and missing income values were substituted by the predicted values (Gleason and Staelin, 1975).

Data analysis

To test hypotheses (H_1 and H_2), logistic regression analyses were performed using IBM SPSS Statistics 22. Hypotheses were tested in a two-step approach, including life transitions in the first step and covariates in the second step. The hypothesized mediation effect (H_3) was tested using PROCESS software by Hayes (2013; 2012) as it can handle dichotomous outcomes and estimates the coefficients accordingly. The PROCESS procedure entails the estimation of three regression models and the calculation of total, direct, and indirect effects. The direct effect quantifies how much two individuals who differ by one unit in the predictor X (i.e., number of positive life transitions for H_3) are estimated to differ in the outcome Y (likelihood of choosing a novel brand) independent of the effect of the mediator M (i.e., variety seeking) on Y (likelihood of choosing a novel brand). The

[15] Van Trijp and Steenkamp (1992) classify people with VARSEEK scores between 26 and 34 as medium variety seekers.

indirect (i.e., mediated) effect of X on Y through M is the product of the effect of X on M and the effect of M on Y controlling for X. Direct and indirect effect sum up to the total effect (Hayes, 2013; 2012).

3.2.3 Results

Descriptive analyses

Table 9 presents information on life transitions that individuals experienced in the past year (i.e., frequencies and evaluations). The ten life transitions that respondents experienced most often were 1) decline of financial situation; 2) death of a close friend or relative; 3) improvement of financial situation; 4) decline of health situation; 5) start of an education program, 6) becoming a grandparent, 7) change of job, 8) improvement of health situation, 9) retirement, and 10) significant increase of workload. Across all life transitions, those with average positive evaluations outnumbered those with negative evaluation by a factor of 1.8. Out of the 29 life transitions, 16 were on average evaluated as positive, nine were evaluated as negative, three were classified as neutral and one life transition "I became a parent (adopted a child)" was not experienced.

Table 9. Life transitions: frequencies and evaluations

	Experienced within last year		Evaluation	
Life transition	*n*	%	*M*	*SD*
My financial situation worsened significantly.	147	14.8	2.84	2.21
A close relative/friend died.	121	12.2	2.92	1.95
My financial situation improved significantly.	97	9.8	7.57	2.00
My health situation worsened significantly.	93	9.4	2.74	2.41
I started a continuing training program (e.g., studies, courses etc.).	71	7.2	8.02	3.22
I became a grandparent.	67	6.8	8.25	2.54
I changed the job/started a new job (including change of job position and formation of a company).	66	6.7	7.00	2.54

My health situation improved significantly.	64	6.5	8.06	1.92
I retired/stopped working.	55	5.6	6.78	2.36
My workload increased significantly.	51	5.2	5.21	2.29
My child/children moved out.	47	4.7	4.84	1.80
I was diagnosed with a severe illness (e.g., diabetes, gastric ulcer, thyroid disease, cancer, heart attack, depression).	46	4.6	2.58	1.71
My spouse retired.	39	3.9	6.97	2.27
My spouse/child was diagnosed with a severe illness (e.g. diabetes, gastric ulcer, thyroid disease, cancer, heart attack, depression).	33	3.3	2.31	1.77
I moved to another city.	25	2.5	6.87	2.56
A new person moved into the household (e.g., partner, flat mate).	24	2.4	6.75	3.52
I received a job promotion.	23	2.3	7.52	1.90
I was let go.	22	2.2	2.32	1.64
I had an accident/a severe injury.	22	2.2	2.68	1.56
I found a new love.	19	1.9	7.94	1.93
I moved within the same city.	18	1.8	6.94	1.64
I separated/got divorced.	12	1.2	3.58	3.45
I went into partial retirement.	12	1.2	5.75	2.63
I got married.	7	0.7	8.86	0.38
I moved into a second abode/home.	7	0.7	6.00	1.67
My spouse/partner died.	6	0.6	1.83	2.04
I moved to another country (or from another country back to Germany).	4	0.4	5.00	5.66
I became engaged.	3	0.3	9.00	0.00
I became a parent (adopted a child).	0	0.0	-	-

Note: *N* = 990.
[a] 1 = “extremely negative”, 5 = “neutral”, 9 = “extremely positive”.

Table 10 provides means, standard deviations, and intercorrelations of the study variables. On average, respondents experienced 1.21 life transitions within the last year (*SD* = 1.45; positive life transitions: *M* = 0.52, *SD* = 0.90; negative life transitions: *M* = 0.49, *SD* = 0.86). Positive life transitions were positively associated with variety seeking (*r* = 0.12, *p* < 0.01), whereas the relationship between negative life transitions and variety seeking was not significant. Household income showed a positive association with variety seeking (*r* = 0.15, *p* < 0.01).[16] Age was negatively associated with novel brand choice (*r* = -0.06, *p* < 0.05), whereas female gender was positively associated with novel brand choice (*r* = 0.13, *p* < 0.01).

Table 10. Descriptive statistics and intercorrelations of key study variables

	1.	2.	3.	4.	5.	6.	7.	8.
M (*SD*) or %	1.21 (1.45)	0.52 (0.90)	0.49 (0.86)	26.97 (5.53)	40.7%	59.07 (5.51)	45.1%	
1. Total life transitions	-	0.725**	0.691**	0.081*	0.073*	-0.127**	0.009	-0.043
2. Positive life transitions		-	0.148**	0.124**	0.074*	-0.103**	-0.004	0.072*
3. Negative life transitions			-	-0.008	0.037	-0.094**	0.060*	-0.116**
4. Variety seeking				-	0.163**	-0.054	0.087**	0.149**
5. Novel brand choice					-	-0.062*	0.131**	-0.019
6. Age						-	-0.097**	0.027
7. Female gender							-	-0.175**
8. Net monthly household income								-

Note: *N* = 990.
[a] 0 = familiar, 1 = novel. * p < 0.05. ** p < 0.01. *** p < 0.001.

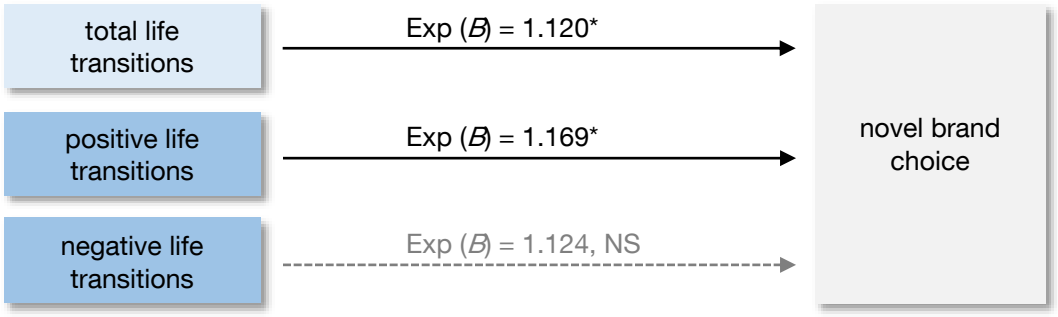
[16] This association converges with findings by Givon (1984) who analyzed Chicago Tribune and MRCA panels and found that households with higher per capita income showed greater variety seeking behavior.

Testing the research hypotheses

In the first step, H_1 was examined (i.e., the relationship between the number of life transitions experienced and the likelihood of choosing a novel brand). A logistic regression analysis showed that a higher number of life transitions predicted a higher likelihood of choosing the novel brand, Exp(*B*) = 1.12, $p = 0.016$. This association remained stable when controlling for age, gender, and income. Among the sociodemographic characteristics, only gender emerged as significant predictor of novel brand choice, with females being more likely to choose a novel brand. Although age had shown a small bivariate correlation with novel brand choice, when entered as a covariate in the regression analysis, it no longer emerged as a predictor (see chapter 3.2.5).

Next, H_2 was examined (i.e., the relationship between the number of positive life transitions and the likelihood of choosing a novel brand vs. the relationship between negative life transitions and the likelihood of choosing a novel brand). A logistic regression analysis showed that a higher number of positive life transitions predicted a higher likelihood of choosing a novel brand, Exp(*B*) = 1.17, $p = 0.037$. In contrast, this relationship was not significant for negative life transitions, Exp(*B*) = 1.12, $p = 0.132$. These results remained stable controlling for age, gender, and income. Again, female gender predicted a higher likelihood to choose a novel brand. Figure 5 displays the relationship between a) total life transitions, b) positive life transitions and c) negative life transitions and the likelihood of choosing a novel brand.

Figure 5. Relationship between life transitions and novel brand choice



Note: NS, not statistically significant. *p < 0.05. **p < 0.01. ***p < 0.001.

Finally, H_3 was examined (i.e., that variety seeking would mediate the association between positive life transitions and novel brand choice). Results of the mediation analysis are presented in table 11. First, variety seeking was regressed on positive life transitions. Second, novel brand choice was regressed on both, positive life transitions and variety seeking. Third, novel brand choice was regressed on positive life transitions. Analyses were controlled for age, gender, and income. The 95% confidence interval shows that the indirect effect of positive life transitions on novel brand choice mediated by variety seeking was significant. Moreover, the direct effect of positive life transitions on novel brand choice was no longer significant, when including variety seeking in the model. Thus, the association between positive life transitions and novel brand choice was mediated by variety seeking[17].

Table 11. Effect of positive life transitions on novel brand choice mediated by variety seeking: Results of the PROCESS mediation analysis

Model	Dependent Variable	Independent Variables	*B*	*SE*	R^2
Step 1	Variety seeking	Positive life transitions	0.5864**	0.2012	0.0472
		Age	-0.0517	0.0340	
		Gender (female)	1.3848***	0.3796	
		Net monthly HH income	0.4718***	0.3796	
		Constant	26.2986***	2.1301	
Step 2	Novel brand choice	Positive life transitions	0.1165	0.0775	0.0762[b]
		Variety seeking	0.0693***	0.0135	
		Age	-0.0183	0.0130	
		Gender (female)	0.4399**	0.1453	
		Net monthly HH income	-0.0415	0.0399	
		Constant	-0.9937	0.8865	
Step 3	Novel brand choice	Positive life transitions	0.1527*	0.0760	0.0350[b]
		Age	-0.0214	0.0128	
		Gender (female)	0.5193***	0.1424	
		Net monthly HH income	-0.0090	0.0389	
		Constant	0.8192	0.8008	

[17] In a follow-up analysis, the association between variety seeking and novel brand choice was examined without including positive life transitions in the model. Results showed that greater variety seeking predicted a higher likelihood of choosing the novel brand (Exp(*B*) = 1.074 $p < 0.001$). It should be noted that variety seeking was not conceptualized as a competing variable (i.e., competing with life transitions in predicting novel brand choice), but as a mediating variable (i.e., mediating the effect of positive life transitions on novel brand choice).

Total Effect of Positive Life Transitions on Novel Brand Choice					
Effect	*SE*	*z*	*p*	LLCI	ULCI
0.1527	0.0760	2.0097	0.0445	0.0038	0.3016
Direct Effect of Positive Life Transitions on Novel Brand Choice					
Effect	*SE*	*z*	*p*	LLCI	ULCI
0.1165	0.0775	1.5020	0.1331	-0.0355	0.2684
Indirect Effect of Positive Life Transitions on Novel Brand Choice Mediated By Variety Seeking					
Effect	Boot *SE*			LLCI	ULCI
0.0406	0.0163			0.0127	0.0743

Note: $n = 856$.
[a] 0 = familiar, 1 = novel, [b]Nagelkerke's R^2, LLCI = Lower level confidence interval, ULCI = Upper level confidence interval.
* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

3.2.4 Discussion

The present study showed that life transitions are key candidates for predicting novel brand choices among older adults. Specifically, findings showed that older consumers (aged 50-70) who had experienced a higher number of life transitions were more likely to choose a novel brand. This association was specific to positive life transitions (e.g., becoming a grandparent) and was not found for negative life transitions (e.g., death of a close friend or relative; health or financial problems). Finally, variety seeking was found to mediate the effect of positive life transitions on novel brand choice. Results were controlled for age, gender, and income.

When do older consumers choose a novel brand?

Individuals make many grocery-related decisions each day. Estimates are that individuals make between 200 and 300 food-related decisions alone per day (Wansink and Sobal, 2007). Given this sheer number of decisions, the amount of time and cognitive effort that individuals devote to a single choice is limited (Adamowicz and Swait, 2012). Grocery- and food-related choices are often bound to routines and habits (Verplanken and Wood, 2006), executed without conscious effort (Wansink and Sobal, 2007; Wansink, 2006), and assumed to be largely stable over the adult life course (Devine, 2005).

Life transitions have been deemed key candidates for predicting novel choices, but previous theories and findings have been mixed. Studies have shown that life transitions induce stress (Andreasen, 1984; Mathur et al., 2003), which in turn predicts familiar choices (Kandiah et al., 2006; Litt et al., 2011). Wood (2010), however, found that life transitions enhance the likelihood of making novel choices. Drawing from consumer research, affective science, and life-course developmental theory, results of this study may help reconcile some of these conflicting findings.

This study demonstrated an overall positive association between life transitions and novel brand choice, which was specific to positively evaluated life transitions (and not found for negatively evaluated life transitions). Thus, converging with Hopkins et al. (2014), findings show that differentiating between positive and negative life transitions is crucial when seeking to understand how life transitions predict decision-making. The study further showed that this association was mediated by variety seeking such that individuals who had experienced a greater number of positive life transitions were more likely to choose a novel brand because they exhibited greater variety seeking. This finding converges with predictions by the broaden-and-build theory and underscores one of the basic evolutionary purposes of positive affect, which is to promote exploratory behavior (Fredrickson, 2013; 1998).

The effect sizes in this study were rather small, consistent with the notion that many factors predict brand choices, ranging from external to internal (e.g., packaging, product assortment, culture, risk aversion). Putting effect sizes in context, they, are comparable to those found in previous research on life transitions and changes in brand preferences, which range between 0.01 and 0.21 (e.g., Andreasen, 1984; Mathur et al., 2003; Wood, 2010; see also Luhmann et al., 2012).

Positive life transitions among older consumers

Interestingly, findings showed that, positive life transitions outnumbered negative life transitions in the sample of "young older" consumers (age 50 to 70). At first glance, this finding may seem surprising given that older adults experience negative transitions and declines in various aspects of functioning (e.g., health, cognition) (e.g., Cacioppo et al., 2011; Carstensen et al., 1999; Salat et al., 2004; Schulz and Heckhausen, 1996). Recent psychological research, however, paints a more complex picture of late life, supporting basic notions (Baltes, 1987) that development at all ages involves losses as well as gains. In particular, research shows that the emotional experience in particular becomes more positive with age (peaking around age 60; Carstensen et al., 2011), as older adults increasingly focus on positive information (Mather and Carstensen, 2003) and have heightened emotion regulatory abilities (Shiota and Levenson, 2009) (summarized in Levenson, 2000). This may well result in older adults perceiving a variety of life transitions as positive, with attending consequences for their decision-making.

Strengths and limitations

The present study has strengths, including a sizeable sample of older consumers, a detailed checklist of life transitions, a response-based categorization of life transitions as positive or negative, and measuring novel brand choice using a paradigm that was close to a real product choice within the time and budget constraints of the survey.

The study also has limitations. First, similar to other studies (Andreasen, 1984; Holmes and Rahe, 1967; Mathur et al., 2008; 2003; Scully et al., 2000), life transitions during the past year were assessed retrospectively. Although this kind of assessment has often been used in life-transition research and although recall problems are not considered to be more serious for older adults compared to younger adults (Rodgers and Herzog, 1987), retrospective recall can be prone to biases. Second and in a related vein, a cross-sectional study design was used and individuals were not followed over time. Future research may

benefit greatly from using experimental and longitudinal designs (e.g., assessing novel brand choices before and after specific life events, such as relocation). Third, although positive and negative evaluations of life transitions were probed as core affective dimensions (Norris et al., 2010; Russell, 2003; 1980), the present survey did not allow to examine individuals' subjective emotional experiences (and other aspects of emotional functioning; Levenson, 2000). Finally, the study focused on older consumers between age 50 and 70. It would be interesting to investigate whether the present findings generalize to younger and even older age groups. A more age-diverse sample might have allowed to detect more robust associations between age and novel brand choice.

Implications for future research and applications

The present findings have implications for future research that may bridge consumer research, life course research, and affective science. First, future research may probe the generalizability of these findings across different kinds of novel consumer choices (i.e., beyond brand choices) and different consumer samples (i.e., beyond older consumers from Germany). Moreover, future research should investigate whether findings generalize across age groups or are specific to older consumers. Second, future research will need to probe underlying emotional processes in more depth using experimental paradigms to elicit emotions in the laboratory and assessing subjective emotional experience, emotional behavior, as well as physiological arousal (Levenson, 2000). Moreover, moderators and boundary conditions (e.g., high-intensity positive affect; Roehm and Roehm, 2005) of the effect of positive affect on novel choices may be investigated. In addition, there exists a sizeable body of affective scientific theory and research that allows for predictions not only for how positively evaluated life transitions (e.g., Fredrickson, 2013; 1998) but also how negatively evaluated life transitions may affect decision-making (i.e., novel brand choices). In the present study, negative life transitions predicted neither an enhanced nor a reduced

likelihood to choose a novel brand[18]. One possible reason is that the data did not allow to distinguish between different negative affective evaluations (e.g., whether life transitions elicited anger, fear, or sadness). Future research may benefit from studying discrete negative emotions (e.g., Lench et al., 2011) and examine the diverging effects of anger (which has been shown experimentally to enhance risk taking) vs. sadness and fear (which have been shown experimentally to reduce risk taking) on making novel choices (Lerner and Keltner, 2001; Lerner and Tiedens, 2006). It is possible that the link between stress and familiar choices (Andreasen, 1984; Litt et al., 2011; Kandiah et al., 2006) is specific to life transitions that elicit fear or sadness.

The present findings further have implications for consumer welfare and public policy. Extensions in life expectancy and the dramatic "graying" of the population have increased the appeal and importance of research examining older consumers. The present findings may have implications for policy makers and marketing practitioners who seek to promote novel choices among older adults, which can have tremendous pay-offs in terms of well-being and health (NIH, 2009). Findings suggest that behavior change efforts may be particularly effective when targeting older consumers during positive life transitions such as transition to being a grandparent, retirement, or moving in with new partner. Moreover, the results suggest that traditional segmentation methods could be complemented by segmentation via life transitions. If marketers can identify consumers who are currently undergoing "critical events" (Kotler, 1992: 75), namely positive life transitions, they may more effectively manage to target consumers with novel products.

[18] Follow-up analyses indicated that the mediation effect of positive life transitions on novel brand choice was specific to variety seeking and not found for other mediators, including global stress level ($p > 0.05$). Also, global stress did not mediate the relationship between total life transitions and novel brand choice ($p > 0.05$). Global stress was measured using a single-item measure as in previous consumer studies (e.g., Mathur et al. 2003). Respondents were asked to indicate how often they felt stressed within the last year, measured on a 1-9 point scale (1 "never", 5 "partly", 9 "very often", and 10 "don't know").

Conclusion

Consumer research is just starting to discover older adults as a group of interest (Moschis, 2009). This group is a) rapidly growing in size and b) highly affluent (in Germany, wealth of consumers peaks at the age of 66 to 70 [Grabka and Westermeier, 2014]). Novel choices have often been viewed as the province of early periods of life. The present study showed that older consumers are in fact more likely to make a novel choice when they have experienced positive life transitions, an effect that was mediated by greater variety seeking.

3.2.5 Supplementary material

Table 12. Logistic regression analysis of novel brand choice

Total life transitions	Step (1)			Step (2)		
	B	SE (*B*)	Exp (*B*)	*B*	SE (*B*)	Exp (*B*)
Total life transitions	0.113*	0.047	1.120	0.107*	0.048	1.113
Age	-	-	-	-0.021	0.013	0.980
Female gender	-	-	-	0.524***	0.143	1.689
Net monthly HH income	-	-	-	0.000	0.039	1.000
Constant	-0.315***	0.091	0.729	0.658	0.811	1.930
Chi-Square	5.941*			23.735***		
Nagelkerke R Square	0.009			0.037		
Positive life transitions	Step (1)			Step (2)		
	B	SE (*B*)	Exp (*B*)	*B*	SE (*B*)	Exp (*B*)
Positive life transitions	0.156*	0.075	1.169	0.153*	0.076	1.165
Age	-	-	-	-0.021	0.013	0.979
Female gender	-	-	-	0.519***	0.142	1.681
Net monthly HH income	-	-	-	-0.009	0.039	0.991
Constant	-0.259**	0.080	0.772	0.819	0.801	2.269
Chi-Square	4.397*			22.692***		
Nagelkerke R Square	0.007			0.035		
Negative life transitions	Step (1)			Step (2)		
	B	SE (*B*)	Exp (*B*)	*B*	SE (*B*)	Exp (*B*)
Negative life transitions	0.117	0.078	1.124	0.090	0.079	1.094
Age	-	-	-	-0.023	0.013	0.978
Female gender	-	-	-	0.509***	0.142	1.664
Net monthly HH income	-	-	-	0.001	0.039	1.001
Constant	-0.232**	0.79	0.793	0.879	0.804	2.409
Chi-Square	2.281			19.896**		
Nagelkerke R Square	0.004			0.031		

Note: $n = 856$.
The dependent variable is coded so that 0 = familiar choice and 1 = novel brand choice.
* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

3.3 Associations between emotional reactivity and food consumption in younger and older adults (essay III)[19]

Abstract.

The present laboratory-based study explored associations between emotional reactivity (i.e., subjective emotional experience and emotional behavior in response to a happy and a sad film clip) and consumption of potato chips in a sample of younger and older adults. Subjective emotional experience was measured at baseline and after each film clip. Emotional behavior was measured by objectively coded facial expressions in response to the film clips on a second-by-second basis using the Emotional Expressive Behavior System. Food consumption was quantified as the amount of potato chips consumed after the film clips. Results showed that 1) greater negative emotional experience and greater negative emotional behavior in response to the happy clip and 2) greater positive emotional experience in response to the sad clip predicted greater food consumption for young (but not older) adults. These findings suggest avenues for future research on links between altered emotional responding and food consumption.

Keywords.

Food consumption; emotional reactivity; subjective experience; facial expressions; emotional behavior

[19] Essay III is based on Reitmeier, M.E., Svoboda, R., Thomas, S.E., Roosen, J., and Haase, C.M. (2015). Associations between Emotional Reactivity and Eating Behavior: A Multi-Method Study of Young and Older Consumers. Poster presented at the Association for Psychological Science Annual Convention in New York, USA.

3.3.1 Introduction

Overeating is a major economic and public health problem. In the US, 20.6% of health expenditures are spent treating obesity-related illness (Cawley and Meyerhoefer, 2012). Numerous factors, including sociodemographic factors (e.g., Bublitz et al., 2010) and social factors (e.g., McFerran et al., 2010), predict how much and what kinds of foods individuals consume. Moreover, stress (e.g., Adam and Epel, 2007; Goldfield et al., 2008; Sproesser et al., 2014) and emotions (e.g., Köster and Mojet, 2015; Leehr et al., 2015; Macht, 2008) loom large as predictors of food consumption. However, surprisingly little is known about how emotional reactivity predicts food consumption.

Emotional reactivity refers to changes in subjective experience, expressive behavior, and physiology that occur in response to changes in the internal and external environment (Levenson, 2007). Several lines of research suggest a link between emotional reactivity and food consumption. A first line of research has shown links between stress reactivity (e.g., cortisol reactivity to social stress tasks) and heightened food consumption (e.g., Adam and Epel, 2007; Sproesser et al., 2014), suggesting a link with negative emotional reactivity. A second line has demonstrated links between sensitivity to reward and cravings for high-fat foods and compulsive overeating (Leehr et al., 2015), suggesting a link with positive emotional reactivity. A third line has shown that negative emotions mostly led to increased food intake (e.g., Garg et al., 2007) whereas positive emotions had mixed effects (Köster and Mojet, 2015). Together, these findings suggest that emotional reactivity (positive and negative) predicts heightened food consumption.

However, these studies share several limitations. 1) Previous research has rarely employed the kinds of emotional reactivity paradigms that are typically used in affective science. 2) Previous studies have rarely assessed emotion response systems beyond self-report. Although self-report measures have many virtues, they do not always converge with other response systems (Reisenzein et al., 2006). Moreover, 3) previous studies have

focused on younger adults. Yet, there is a sizeable body of research demonstrating age-related differences in emotional reactivity (e.g., Mather, 2012); and it is unclear whether associations between emotional reactivity and food consumption generalize across other age groups.

The present study examined associations between emotional reactivity in response to a happy and a sad film clip and consumption of high-caloric food in a sample of younger (age 20-35) and older (age 55-70) adults. More specifically, the study explored whether heightened positive or negative emotional reactivity would predict higher food consumption, and had the following considerations in mind: 1) Positive and negative emotional reactivity was examined using well-established film clip paradigms, and examining matched (e.g., positive emotions to happy film clip) as well as mismatched (e.g., negative emotions to happy film clip) emotional responses. There is increasing evidence that mismatched, ambiguous, or conflictual emotional responding is linked to psychopathology (e.g., Ebner-Priemer et al., 2008; Kring and Elis, 2013) and impulsiveness (Johnson et al., 2015). 2) Multiple emotion response systems were measured. 3) Generalizability of the findings across younger vs. older adults was explored. 4) A behavioral measure of food consumption was used. 5) Robustness of the findings were explored when controlling for baseline emotions, gender, and time of assessment.

3.3.2 Method

Participants

The sample consisted of 31 young adults (20-35 years) and 32 older adults (55-70 years) (*N* = 63; 52.4% females; 44.8% European-American, 31.0% African-American, 8.6% Asian-American, 10.3% Latino/-a American, 3.4% Native Hawaiian/other Pacific Islander, 1.7% other ethnicity). Participants were recruited through online forums (e.g., Craigslist) and advertisements (e.g., in supermarkets). Telephone screening excluded individuals who 1) had diagnosed diabetes or any other medical condition that would prevent their sitting comfortably in a laboratory chair for two hours and 2) had food allergies. Participants received $30 for participating in the study.

Procedure

The study consisted of (I) a laboratory-based assessment of emotional reactivity including a food and drink serving and (II) a questionnaire assessment of personality, emotion regulation, food choice motives, and well-being[20]. Upon arrival at the laboratory, participants reviewed and signed a consent form. Part (I) consisted of six trials in which participants viewed film clips while being videotaped.

The present study examined the happy and sad film clip, which were presented in trial 1 and 5. The remaining trials presented film clips designed to elicit motivational (trials 2-4) and neutral (trial 6) states. The happy clip was a montage of Sarah Hughes winning Olympic gold for her skating performance in 2002. The sad clip, an excerpt from the film "21 Grams," depicted a mother learning of the death of her husband and her two daughters. Previous research has demonstrated the effectiveness of both film clips (e.g., Shiota and Levenson, 2009). After trial 5 (i.e., about 60 minutes into the study), participants were

[20] None of several relevant questionnaire measures predicted food consumption - neither Big Five personality traits, βs = -0.23-0.11, *p*s = .276-.741; nor dispositional emotion regulation, suppression: β = .01, *p* = .777; reappraisal: β = -.03, *p* = .126. There were no interaction effects with age, *p*s > .05.

served food (i.e., Lays or Ruffles chips) and a drink (i.e., Coke or Pepsi), which remained with them for the remainder of the study. In part (II), participants completed a questionnaire battery (duration [in min]: *M* = 39.03, *SD* = 20.16). At the end, participants were debriefed.

Measures

Subjective emotional experience. Participants reported how strongly they felt each of eleven emotions (i.e., amusement, anger, compassion, contentment, enthusiasm, excitement, disgust, fear, joy, sadness, surprise; 1 = slightly/not at all, 9 = strongest ever felt). To reduce type I error, overall positive (i.e., averaging across enthusiasm, amusement, contentment, excitement, and joy; α = .84-88) and negative (i.e., averaging across anger, disgust, sadness, and fear; α = .71-79) emotional experience was analysed.

Emotional behavior. Nine emotional behaviors (i.e., anger, contempt, disgust, embarrassment, fear, happiness, interest, sadness, surprise) were coded by trained raters using the Emotional Expressive Behavior System on a second-by-second basis during a 30-sec peak epoch of emotional responding for each film clip. Inter-rater reliability was κ = .72 for sadness and κ = .90 for happiness. Reliability for the other emotional behaviors could not be determined because of the very low base rates. Again, to reduce type I error, positive (i.e., averaging across happiness and interest) and negative (i.e., averaging across anger, disgust, sadness, fear, contempt, and embarrassment) emotional behaviors were analysed.

Food consumption. Food consumption was measured by weighing the bowl of chips before serving (i.e., 85 grams of chips plus bowl) and at the end of the session. On average, participants spent 52.0 minutes with the food (*SD* = 14.8) and ate 52.2 grams of chips (*SD* = 45.2), which equals about 298.3 calories (*SD* = 258.3). To control for individual differences in the time participants spent with the food, a food consumption index was created by dividing the quantity of chips consumed by the time spent with the food. When repeating the analyses using the original variable, results were unchanged.

Data analysis

Data were analysed using hierarchical regression analyses with food consumption as dependent variable (using SPSS 23). The respective emotion variable was included in step 1; generalizability across age groups was examined by adding the interaction term between age x emotion and the main effect of age in step 2; and robustness of the results was examined by including covariates (i.e., gender, baseline emotion [for emotional experience]; time of assessment) in step 3. Independent variables were z-standardized. The emotion variables were the composite variables for positive and negative emotional experience and behavior, respectively. Conditional effects (i.e., simple slopes) were examined using PROCESS. If significant effects were found, follow-up analyses examined specific emotions.

3.3.3 Results

Preliminary analyses

Table 13 shows descriptive statistics and intercorrelations of key study variables. Moreover, it was examined whether the film clips successfully elicited the intended emotions using ANOVAs. The happy clip elicited greater levels of happiness experience compared to levels at baseline and after the sad clip, $F(2, 54) = 89.55$, $p < .001$, $\eta^2 = .77$; whereas the sad clip elicited greater levels of sadness experience compared to levels at baseline and after the happy clip, $F(2, 53) = 155.95$, $p < .001$, $\eta^2 = .86$. The happy clip elicited greater levels of happy emotional behavior than the sad clip, $F(2, 52) = 35.50$, $p < .001$, $\eta^2 = .41$; whereas the sad film clip elicited greater levels of sad facial behavior than the happy clip, $F(2, 52) = 41.57$, $p < .001$, $\eta^2 = .44$.

Table 13. Descriptive statistics and intercorrelations of key study variables

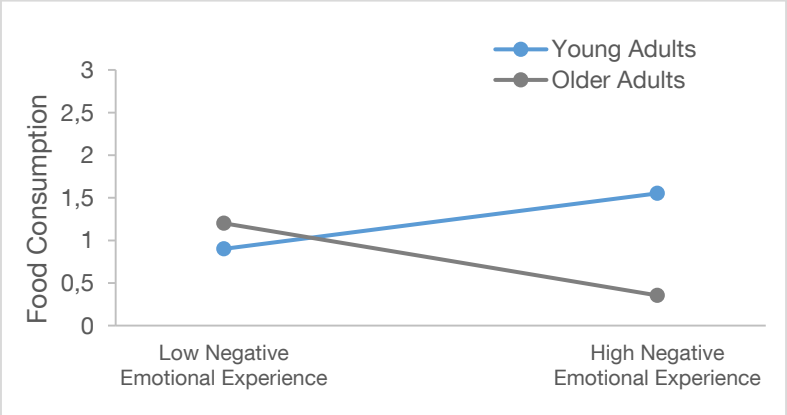
	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
M (*SD*) or %	5.60 (1.75)	1.32 (0.65)	7.38 (8.62)	0.96 (1.94)	3.99 (1.62)	2.55 (1.14)	3.80 (2.62)	0.21 (1.14)	1.04 (0.99)	44.70 (17.63)	52.4%
1. Positive emotional experience to happy film clip	-	-.12	.14	-.23	.08	.18	-.06	.06	-.22	.06	.30*
2. Negative emotional experience to happy film clip		-	-.15	.36**	.17	.28*	.09	-.08	.30*	-.11	-.07
3. Positive emotional behavior to happy film clip			-	-.33*	-.08	-.22	.22	.06	-.08	.21	.20
4. Negative emotional behavior to happy film clip				-	.06	.38**	.15	-.10	.18	.09	.16
5. Negative emotional experience to sad film clip					-	.10	-.10	-.24	.04	.06	-.18
6. Positive emotional experience to sad film clip						-	-.21	-.02	-.01	.24	.00
7. Negative emotional behavior to sad film clip							-	-.10	.09	.15	.27*
8. Positive emotional behavior to sad film clip								-	.04	.03	.03
9. Food consumption									-	-.38**	-.17
10. Age										-	-.03
11. Gender (female)											-

Note: $N = 63$.
*$p < .05$. **$p < .01$.

Emotional reactivity in response to the happy film clip

Emotional experience. Hierarchical linear regression analyses showed no associations between positive emotional experience in response to the happy clip and food consumption, *p*s > .05. In contrast (see chapter 3.3.5, table 14), greater negative emotional experience in response to the happy clip predicted greater food consumption, β = .30, *p* = .021. This association was moderated by age, indicated by a significant interaction effect between emotion and age, which remained stable when controlling for covariates, *p*s < .01. Conditional effects analyses revealed that greater negative emotional experience predicted greater food consumption for younger adults, *t* = 2.14, *p* = .037, but not for older adults, *t* = -1.32, *p* = .194 (see figure 6). The association for younger adults was driven by anger and disgust experience, *p*s < .05.

Figure 6. Negative emotional experience in response to the happy film clip

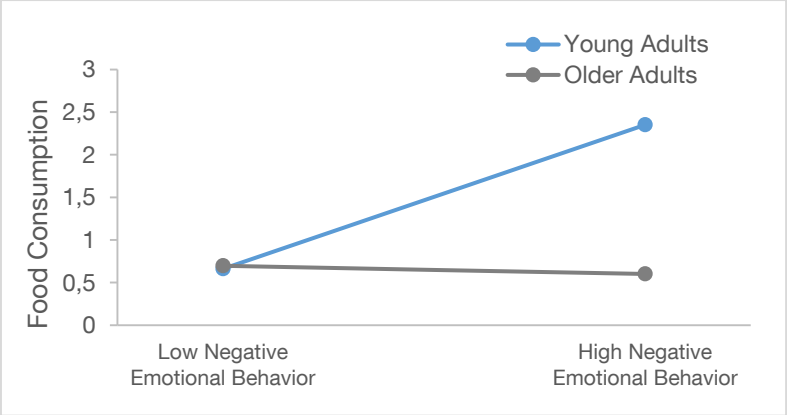


Note. Emotional reactivity plotted at low (*M*-1 *SD*) and high (*M*+1 *SD*) levels. Age plotted at 26 years (younger adults) and 62 years (older adults). Food consumption in grams/minutes.

Emotional behavior. Hierarchical linear regression analyses showed no associations between positive or negative emotional behavior in response to the happy clip and food consumption, *p*s > .05. However, (see chapter 3.3.5, table 15), there was a marginally significant interaction effect between emotion and age when controlling for covariates, *p* = .075.

Exploratory conditional effects analyses revealed that higher negative emotional behavior in response to the happy clip predicted higher food consumption for younger adults, t = 3.85, p = .000, but not for older adults, t = -.32, p = .750 (see figure 7). The association for younger adults was driven by sadness behavior, p < .05.

Figure 7. Negative emotional behavior in response to the happy film clip

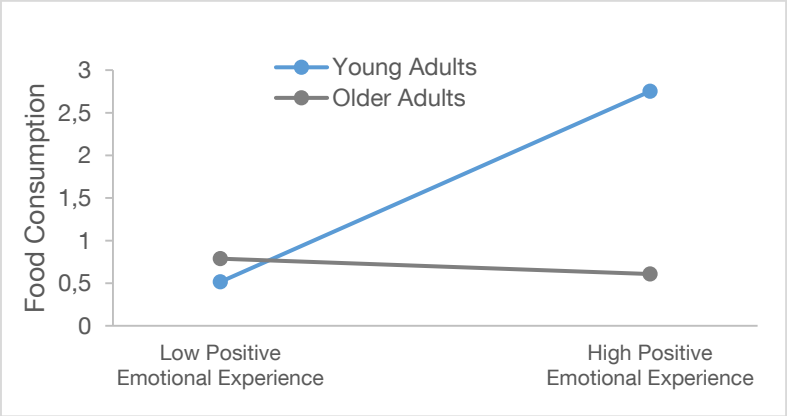


Note. Emotional reactivity plotted at low (M-1 SD) and high (M+1 SD) levels. Age plotted at 26 years (younger adults) and 62 years (older adults). Food consumption in grams/minutes.

Emotional reactivity in response to the sad film clip

Emotional experience. Hierarchical linear regression analyses showed no associations between negative or positive emotional experience in response to the sad clip and food consumption, ps > .05. However (see chapter 3.3.5, table 16), there was a significant interaction effect between positive emotional experience and age, which remained stable when controlling for covariates, ps < .01. Conditional effects analyses revealed that greater positive emotional experience in response to the sad clip predicted greater food consumption for younger adults, t = 4.27, p = .000, but not for older adults, t =-.72, p = .475 (see figure 8). The association for younger adults was driven by joy, contentment and amusement, ps < .05.

Figure 8. Positive emotional experience in response to the sad film clip



Note. Emotional reactivity plotted at low (*M*-1 *SD*) and high (*M*+1 *SD*) levels. Age plotted at 26 years (younger adults) and 62 years (older adults). Food consumption in grams/minutes.

Emotional behavior. No associations were found between positive or negative emotional behavior in response to the sad clip and food consumption, *p*s > .05.

3.3.4 Discussion

The present laboratory-based study provides some of the first evidence that individual differences in emotional reactivity predict differences in food consumption. Specifically, findings show a link between altered emotional responding (i.e., similar positive and heightened negative emotional reactivity in response to a happy film clip; similar negative and heightened positive emotional reactivity in response to a sad film clip) and greater high-calorie food consumption among young adults. Associations were more robust for emotional experience than emotional behavior.

Previous studies have pointed towards links between food consumption and both negative and positive emotional reactivity (e.g., Adam and Epel, 2007; Leehr et al., 2015; Moore and Konrath, 2015). This study supports both of these links and elucidates a specific kind of response alteration. Similar alterations in emotional responding that produce mismatched, ambiguous, or conflictual emotions appear to be particularly prominent among individuals with psychopathology (e.g., Ebner-Priemer et al., 2008; Kring

and Elis, 2013) and high in impulsiveness (Johnson et al., 2015) – and overeating is quite closely linked to impulsiveness (Meule, 2013). Moreover, this kind of response alteration leads to higher overall emotion intensity, which has been found to be linked with food cravings and behavioral intentions to eat (Moore and Konrath, 2015). It is important to note that these findings were specific to younger adults, converging with a sizeable body of research showing that links between emotional functioning and outcome variables can be more pronounced among younger adults than older adults (e.g., Birditt and Fingerman, 2005).

The present study has strengths and limitations. The study used an established paradigm to assess emotional reactivity, measured multiple emotion response systems, and used a behavioral measure of food consumption that had high ecological validity. However, the study was exploratory and awaits confirmatory testing in larger samples.

Overeating represents a serious economic and public health issue and emotions loom large as predictors of food consumption. The present study suggests that how young adults respond emotionally to happy or sad situations may be quite closely linked to how much food they consume.

3.3.5 Supplementary material

Table 14. Negative emotional experience in response to the happy film clip, age, and covariates, as predictors of food consumption

	Step 1		Step 2		Step 3	
	B	*SE(B)*	*B*	*SE(B)*	*B*	*SE(B)*
Negative Experience	.30*	.13	1.05**	.29	.89**	.30
Age	-	-	.38	.27	.45	.26
Negative Experience x Age	-	-	-1.06**	.35	-1.09**	.35
Negative Experience Baseline	-	-	-	-	.30*	.14
Gender	-	-	-	-	-.36	.21
Time	-	-	-	-	-.16	.17

Note: $n = 56$. *$p < .05$. **$p < .01$.

Table 15. Negative emotional behavior in response to the happy film clip, age, and covariates, as predictors of food consumption

	Step 1		Step 2		Step 3	
	B	*SE(B)*	*B*	*SE(B)*	*B*	*SE(B)*
Negative Behavior	.18	.14	.20	.13	.24	.12
Age	-	-	-.50**	.15	-.57**	.15
Negative Behavior x Age	-	-	.18	.15	.29†	.16
Gender	-	-	-	-	-.58*	.26
Time	-	-	-	-	-.00	.19

Note: $n = 53$. †$p < .10$. *$p < .05$. **$p < .01$.

Table 16. Positive emotional experience in response to the sad film clip, age, and covariates, as predictors of food consumption

	Step 1		Step 2		Step 3	
	B	*SE(B)*	*B*	*SE(B)*	*B*	*SE(B)*
Positive Experience	.07	.13	1.97***	.45	1.91***	.45
Age	-	-	-.49***	.11	-.51***	.11
Positive Experience x Age	-	-	-.03***	.00	-.03***	.00
Positive Experience Baseline	-	-	-	-	-.19	.11
Gender	-	-	-	-	-.16	.22
Time	-	-	-	-	-.02	.17

Note: $n = 53$. ***$p < .001$.

4 Discussion and conclusion

Old pictures often illustrate how much we have changed over time. This dissertation shows that change does not always need to occur gradually, but that there are indeed certain points in life, when changes of preferences are more likely to occur.

4.1 Summary of results

The main purpose of this dissertation was to investigate whether and how life transitions and emotions are associated with older consumers' food choices. Whether life transitions increase the likelihood of changes in food choices was analyzed in essay I and essay II (main research question). Change in food choices was operationalized as brand switching in essay I (RQ 1) and novel choices (in comparison to familiar choices) in essay II (RQ 2). Essay II took into account positive and negative affective evaluation of life transitions; and showed that emotional processes (i.e., these evaluations) are crucial to better understand food choices. Therefore, essay III focused on the relationship between differences in emotional reactivity and quantity of food consumed (RQ 3).

The supplementary material of essay I showed that transition to retirement, change of residence, physical illness, and change in household size (including transition to empty nest, moving in with partner, and death or separation of partner) were most often experienced by German adults aged 50 to 74. Moreover, the focus group discussion pointed out that other mechanisms such as change in social roles, change in routines, change in social relationships, and emotions come along with life transitions. These insights were used to develop the theoretical model in chapter 2.2.3.

Essay I provides an affirmative answer regarding the first research question: When experiencing change in household size, relocation or change in income, older consumers are more likely to change their first brand (i.e., brand that is most often bought) in comparison to when they do not experience a life transition. Moreover, results showed that

a strong interrelation between grocery chain choice and brand choice exists. When a panelist changed the grocery chain her or she shopped in, it was five times more likely that he or she also changed the first brand. Finally, life transitions were found to be more strongly related to brand switching than socio-demographic variables. Essay I addressed limitations of previous research by a) relying on real world and longitudinal measures of yogurt and grocery chain purchases, and b), assessing change of preferences on brand level, where habitual purchase behavior is well documented (Arnade et al., 2008; Ravn et al., 2006).

Building on the results that older consumers are more likely to change their preferred brand when experiencing or having recently experienced life transitions, essay II investigates whether older consumers are more open towards novel products when having recently undergone life transitions. The data show that older consumers are more likely to choose novel products only when they experience life transitions that are considered positive. In contrast, when experiencing life transitions that are evaluated negative, the association was non-significant. Moreover, the association between positive life transitions and novel brand choices was mediated by an increased variety seeking tendency. These findings clarify contradicting research streams and provide marketers with a more solid base for consumer segmentation.

Despite the growing interest in emotional processes that guide decision making and many studies that have been conducted in recent years (for an overview see Köster and Mojet, 2015; Macht, 2008), there is no common ground on how emotions affect food choices. Essay II showed the importance of emotional processes in this interplay. Therefore, essay III focused on emotions and their importance for food choices. Results show that individual differences in emotional reactivity predict food consumption. The study is one of the first to relate individual differences in emotional reactivity to eating behavior, and addresses the following gaps in research. First, the study assessed multiple

emotion response systems (i.e., subjective emotional experience and emotional behavior) that have rarely been used in studies on emotions and food consumption. Second, even though research demonstrates age-related differences in emotional reactivity (Mather, 2012), most studies have focused on younger adults. Essay three addresses differences in younger and older adults. Findings show that impairments in emotional reactivity (i.e., positive reaction to a sad stimulus or negative reaction to a happy stimulus) predict greater intake of high caloric food among younger adults, but not among older adults. Food choice research as well as affective science research have pointed towards these links. First, research results show that differences in stress reactivity relate to eating behavior (Adam and Epel, 2007), and that affect intensity is associated with food cravings (Moore and Konrath, 2015). Second, affective science literature provides evidence that alterations in emotional responding (i.e., mismatched, ambiguous, or conflicting emotions) are prominent among individuals with psychopathology (e.g., Ebner-Priemer et al., 2008; Kring and Elis, 2013) and high impulsiveness (Johnson et al., 2015). Overeating in turn is linked to impulsiveness (Meule, 2013). These findings contribute to research addressing antecedents of and contributors to overeating.

4.2 Implications

This dissertation has demonstrated that life transitions are associated with a) brand switching and b) a higher likelihood of making novel choices in older adults. Findings are in line with those studies that find an effect of life transitions on changes in consumer behavior (e.g., Andreasen, 1984; Hopkins et al., 2006; 2014; Mathur et al., 2003; 2008) and support the approach of life transitions as "moments of change".

From a ***theoretical perspective***, the findings support the life course approach (Devine, 2005; Moschis, 2007a), which takes into account past experiences and the consumer's current situation. Approaches that look at the effect of external stimuli on consumer choice may disregard important processes. Neo-behavioristic models (e.g., Stimulus-Organism-Response) describe consumer decision making to be determined by external and internal stimuli (Kroeber-Riel et al., 2009: 52). How a consumer may react to marketing stimuli (e.g., advertisement, promotion) depends on the design of the stimulus itself, but also on internal processes. Whether a novel product passes through the attentional channel of an individual not only depends on the characteristics of the product itself, but may also depend on a consumer's life course. Moreover, this dissertation critically examines the stress perspective (e.g., Andreason, 1984; Dohrenwend et al., 1974; Pearlin and Skaff, 1996). Findings point towards a more nuanced perspective on life transitions in line with Hopkins et al. (2014). Life transitions can be both positive and negative, and future studies need to take this into account.

To communicate effectively, it is important that companies know very well whom they want to target with products and marketing messages. Traditionally, companies use socio-demographic (i.e., age, education, income, and gender), psychographic (i.e., values and attitudes) or geographic (i.e., zip code and size of the city) variables to segment consumers. These variables can provide a very detailed picture of consumers at a certain point in time. However, it disconnects the individual from their life course. This dissertation shows that

it can be particularly valuable, especially for novel products, to not only take into account whom to target, but also when to target specific groups of consumers.

Using life transitions for consumer segmentation. Having shown their effect as "moments of change", this dissertation suggests using life transitions as additional criteria for consumer segmentation; especially within the group of older consumers. Using life transitions as segmentation criteria may not have been possible with former technologies and data sources. However, in the so-called digital age, consumers are constantly interacting with technology and produce information about their lives, preferences, and decisions. At the beginning of this year, the weekly newspaper "Die Zeit" has published an article headlined "Denn Sie wissen schon was ich will" [Because they already know what I want] (Die Zeit, 2015). The article discusses how much data is currently collected on consumers' preferences and activities. This is based on social network activities (e.g., what is liked and what is shared), websites visits (e.g., which websites were visited and how much time is spent on websites), and app downloads. Analyzing these big chunks of data enables companies to make specific predictions, for example the likelihood of a consumer being pregnant (Die Zeit, 2015). In addition to consumers being constantly online, more and more individuals have interest in "self-tracking any kind of biological, physical, behavioral, or environmental information" (Swan, 2013: 85) (e.g., eating, sleeping, and sport). This phenomenon is called quantified self (QS)-development. Having more and more individuals keeping detailed track of their eating behavior, sleeping habits, moods, physical activity, and even biological indices (e.g., heart rate) provides numerous opportunities to identify individuals undergoing life transitions. The global revenue in the big data segment is estimated to rise to just under 16 billion Euros in 2016 (in 2012 it was 4.6 billion Euros) (Metro AG, 2014: 58). Big data applications will be valuable for new business approaches and marketing activities. Walmart for example already makes use of purchase data (e.g., how much somebody buys, how much time somebody spends per store visit, and when and how often somebody shops) in combination with social network

data (e.g., data from Facebook or Twitter) to remind customers of their friends' birthdays and at the same time to make recommendations for birthday presents (Metro AG, 2014: 60). While using these data may seem especially relevant for younger consumers, the share of older people using technology is constantly increasing. A study by A.T. Kearney (2011) showed that 29% of consumers aged 80 years and older, and 49% of young-old (aged 60-64) consumers buy on the Internet. 50% of consumers aged 80 and older, and 78% of young-old (aged 60-64) consumers use mobile phones. Having information on when older consumers experience change in life, they may be segmented into more and less challenging target groups.

Whether and how the life transition approach is already used among practitioners has been assessed in a qualitative follow up study[21]. Results show that the life transition approach is known among practitioners (78% indicated to be familiar with the approach), but to date has been rarely used (44% indicated to use the life-transitions or a quite similar approach). However, it is perceived as a reasonable and realizable approach (67% indicated that consumer segmentation based on life transitions is feasible). Interviewees stated that the life transition approach may be of particular importance for sectors such as car producers or insurance companies that follow their customers over a longer period of time. According to respondents, data for identifying when consumers experience a life transition may be collected from various sources: loyalty cards, social media, geo-tracking, or institutions. The German Federal Post Office for example offers a change-of-address order service. This service is of special relevance for individuals who recently moved, and implies redirection of all letters from one (i.e., old) address to another (i.e., new) address. This database can be and is already used to identify households that have recently moved. Another possibility is to identify individuals who have recently moved by using data from

[21] Ten experts (minimum nine years of working experience in a field related to consumer segmentation) working in market research, consulting or business intelligence were interviewed. For more detailed information see Key (2015).

weather apps (using geo-tracking) in mobile phones. Individuals experiencing life transitions may also be identified through changes in consumption: People who change insurance or tax class may have recently got married. Pregnant women may buy vitamin supplements such as zinc and magnesium. Divorcees might increase spending in evening leisure activities (e.g., going to bars etc.). By tracking consumption behavior (e.g., through loyalty cards or credit card data) one might be able to predict important life transitions early enough to address the consumer when he or she is more open towards change and novel products. Information on life transitions may be combined with traditional methods (e.g., socio-demographic or psychographic segmentation) to more precisely target consumers.

Due to high costs of identifying consumers in transition phases, this approach may be of importance for industries that are expensive and offer a high margin per piece. Also, data protection is of high importance and may be a limiting factor of this approach.

Using life transitions for marketing communication. Furthermore, brand and product concepts could use life transitions for differentiation. Product or service concepts that aim at a concrete transition phase - such as special smartphone contracts for recently married couples offered by telecommunication companies; supermarket vouchers for those who recently moved offered by retailers; one-time free cleaning service for those who recently moved into a new apartment offered by cleaning service companies; cooking classes for men having entered retirement offered by restaurant owners or retailers - may more precisely address consumers. As people are more open to try new things during life transitions, and routines are not established yet (e.g., cleaning routines in the new apartment), there may be a chance for products or services to enter the habitual choice set.

Using life transitions and insights on emotional reactivity for public policy. Findings are also of interest for policy makers. First, life transitions can be used for policy

interventions that aim at changing detrimental eating habits to prevent diseases related to overeating, and to foster healthy population aging. Habitual choices are especially prominent in older consumers (Adamowicz and Swait 2012; Verplanken et al 2005; Wood and Neal 2009). Against this background, life transitions may be one of the few moments where older adults can successfully be encouraged to change bad habits into better ones. Second, results on emotional reactivity may contribute to better understand emotional correlates of eating behavior. With overeating and obesity being a major public health and economic issue (20.6% of health expenditures in the US are spent treating obesity-related illness [Cawley and Meyerhoefer, 2012]), a better understanding which individuals are more prone to overeat may help policy makers to design interventions. Findings have shown that the association between mismatched emotions and food consumption is only prevalent for younger adults. This is an important direction to follow for policy makers and needs further investigation by future research.

4.3 Future research

This section highlights limitations of the three essays included in this dissertation and identifies most interesting avenues for future research.

Studying the effects of specific life transitions on food choices. This dissertation has examined changes in food choices in response to life transitions from a broad perspective (i.e., investigating the effect of multiple life transitions). However, each transition may bring different mechanisms to the forefront which in turn may have different effects on food choices. Future studies could elucidate on specific life transitions and examine which mechanisms (i.e., change of social role, social relationships, routines, and emotional reactions) are more dominant than others. Essay I has shown that relocation and change in household size are associated with brand switching. Relocation and also alteration in the composition of a household are both important transitions in the context of food choices and could be subject of a follow up study. Also, future research should elaborate on the interplay between life transitions as internal factors and external factors such as marketing communications. Groeppel-Klein and Kamm (2014) investigated the effect of advertisements referring to life transitions and found that these messages foster consumers' openness to novel products and improve their attitudes towards novel brands.

Generalizing effects across age groups. Moreover, essay I and essay II have investigated the effect of life transitions with samples of older adults. Future studies should examine different age groups to see whether there is a difference between older and younger consumers. Differences between age groups were investigated in a follow up study on soft drink brand choice[22]. Results showed that the association between life transitions and brand switching was significant for older (45 years and older) but non-

[22] In this study, GfK panel data from 2004-2008 were analyzed for the product category of soft drinks. Moreover, some life transitions such as change in household size were specified (i.e., distinguishing between an increase and a decrease in household size). For more information see Luoma (2014).

significant for younger adults (up to 39 years). Future studies should elaborate more on these differences.

Studying other mechanisms than emotional reactions. The theoretical model proposed in chapter 2.2.3 implies that life transitions bring along changes in social roles, routines, social relationships, and emotional reactions. Essay II focused on emotional reactions while the other three factors were not included in the essays. Future studies should delve more into the mechanisms proposed in the model and assess their relevance for change of preferences and openness for novel choices.

The following paragraphs discuss limitations and suggestions for future research for each of the three essays. ***Essay I*** adopted a case study design examining yogurt brand purchases. Future studies could broaden the analysis to other product categories and investigate whether differences in these effects exist between product groups. Moreover, it would be interesting to specify the analyzed life transitions (i.e., whether differences exist depending on whether the household size increases or decreases). Also, as essay II showed a mediation effect of variety seeking, the impact of life transitions on brand variety seeking would be interesting to study with the data set used in study I.

Essay II investigated emotional reactions to life transitions at an affective level (i.e., positive vs. negative evaluation). Future studies should elucidate on emotional processes in more depth using experimental paradigms, assessing discrete emotional reactions, and investigating different emotion response systems (i.e., emotional behavior, physiological reactions). Significant effects for positive life transitions and novel product choice were found. From a theoretical perspective, negative life transitions should be associated with a decreased likelihood of choosing a novel brand; but no significant effects were found for negatively evaluated life transitions (i.e., neither increased nor decreased likelihood). One reason may be, that the study did not distinguish between whether life transitions elicited anger, fear or sadness. Anger has been shown experimentally to increase risk taking while

sadness and fear have been shown experimentally to reduce risk taking (Lerner and Keltner, 2001; Lerner and Tiedens, 2006). The link between stress and familiar choices (Andreasen, 1984; Kandiah et al., 2006; Litt et al., 2011) may be specific to life transitions that elicit fear or sadness; and future studies should investigate the effect of these discrete emotions (Lench et al., 2011). Novel product choice was based on an existing product where the branding was removed and a "new" stimuli was included in the picture. Future studies could investigate this choice paradigm with existing brands from different countries as it was done in study III.

Essay III was an exploratory study based on a small sample, which is why findings need to be tested in a large sample. Moreover, the association between emotional reactivity and food consumption could be extended using not only high-caloric food consumption but also choice between high caloric vs. low caloric food as dependent variable. Moreover, differences in the effect between younger and older adults should be further examined. It may be that learning experiences or other developmental aspects undermine the effect found.

In light of the findings, its implications and the avenues for future research presented, this dissertation confirms life transitions as "moments of change" – namely those times, where preference changes occur more often. Implications of these findings are relevant for marketing in terms of new consumer segmentation approaches or new product concept ideas and for policy makers that want to enable behavioral change. Moreover, results show that emotional processes loom large as predictors of food decision making (i.e., positive emotions in the context novel product choice and emotional reactivity in the context of quantity of high caloric food consumed) and that future research should elucidate on individual differences in emotional responding and how this may be linked with food consumption.

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