

## 5. General Discussion

In this dissertation, an action-theoretical framework was chosen to study age-related increases in precautionary behavior regarding crime. While the victimization-fear paradox seemed to be solved when participants were asked for their frequency of fear of crime and risk assessment, questions remained concerning the reasons for an increase in precautionary behavior and the underlying mechanisms behind the frequency of fear of crime.

One potential explanation consisted in the entanglement of the different measures of fear of crime. The frequency of precautionary behavior may prevent the frequency of experiencing fear of crime as result of precluding being in threatening situations and thereby diminishing the measurement of the affective component of fear of crime. It may also influence the evaluation of risk of becoming a victim. Increases in precautionary behavior as an indicator of fear would thus reflect increases in dispositional fear, i.e., the propensity to experience fear of crime, while the actual experience of fear is reduced due to precautionary behavior. An emotion induction measure was chosen as an approach to measure dispositional fear independent from the employment of precautionary behavior. Higher dispositional fear would be evident in higher situational fear across various situations. One factor in an age-related increase in dispositional fear was assumed to be stemming from an increase in physical vulnerability.

### 5.1. General Discussion of Findings

Old adults indicated more situational fear in two scenarios in Study 2 (car breakdown and bus stop), although only at one threat level. In the car breakdown scenario old adults indicated more situational fear than young adults at the lower threat level. This may reflect a consideration voiced by Schmitt and colleagues. They have argued for an important refinement in the relation between dispositions and states (Schmitt et al., 2008; see also Marshall & Brown, 2006). They assume that the increase in situational fear is not linearly dependent on dispositional fear but also on the extent of situational provocation. According to their argument, people with a high disposition (in their terms ‘trait’) are more sensitive to low situational provocation and thus respond faster/more intense to lower situational provocation compared with people with a low disposition. People with a high disposition are also likely to exemplify a greater increase in situational response to increasing situational provocation and a smaller positive slope with even more provocation. In contrast, people with a low disposition are likely to need a stronger situational provocation to respond, resulting in small differences in situational response between low and moderate situational provocation yet increased difference with high situational provocation. Accordingly, old adults may have been more sensitive to threat in the case of the car breakdown scenario, which is expressed in higher situational fear even at a lower level of threat. However, this pattern does not seem to generalize as old adults do not generally respond with higher situational fear at lower levels of threat.

Moreover, as already discussed in chapter 2.8, the strength of “provocation” of a situation can only be deduced from its impact on situational response. If a sufficient number of

people converges on the perception that something is dangerous, i.e., responds with situational fear, we may assume a specific level of provocation; however, this is contingent on people's perception. If instead comparing the perceived dangerousness of an object or a situation in contrast to an objective criterion such as odds of death (e.g., "Injury facts", National Safety Council, 2012, p. 43; although these odds are of course a function of many influences, too), convergence may be relatively low. This is not to say that subjective evaluation of threat is independent from objective dangerousness, but that there are many intervening variables that influence the relation between the two. Hence, the provocative strength of a situation is not an independent variable from disposition or subjective evaluation but reflects subjective evaluations of a situation as dangerous. Consequently, a more pessimistic view on emotion induction procedures entails that what is investigated when measuring the magnitude of emotional response is whether the same stimulus material also evokes an emotional response in another sample.

Two factors may weaken this reservation. First, generating hypotheses about why certain situations should evoke emotional responses in one sample and less so in another, allows testing features of emotion (fear) evocation. I assumed that older adults would show a general increase in situational fear as suggested by the undifferentiated concept of fear of crime. Therefore, a variety of situations were tested that all age groups were able to seek out at least principally. Moreover, it was hypothesized that age-related differences in subjective physical vulnerability would be related to an increase in situational fear. Accordingly, conditions of fear evocation could be tested, which showed that perception of physical vulnerability was larger in old adults than in young adults and that this was related to evocation of situational fear. Moreover, it was revealed that physical vulnerability is not the only factor in evocation of situational fear. This is because it was also found that young adults reliably reported more situational fear in the home scenario and partly in the park scenario, which is contrary to hypothesis. This outcome relates to findings showing that older adults may show emotional responses as high as young adults depending on the specific stimuli (Kunzmann & Grühn, 2005; Kunzmann & Richter, 2009; Teachman & Gordon, 2009). Fear of crime was conceptualized as a coherent object of fear within this dissertation. The findings imply that further differentiations at least with regard to age relevance of the situations are appropriate. Based on these findings, future studies may systematically vary features of the described situations in order to identify factors relevant in fear evocation in old and young adults.

It was assumed that the age-related increase in precautionary behavior is an expression of situational fear. This reflects another valuable aspect of emotion induction studies in that emotions and related behavior can be examined. Induced situational fear was generally positively related to precautionary behavior that is individuals who indicated more situational fear were also more likely to take precautions. As detailed above, higher situational fear of crime was induced in old adults than in young adults with two scenarios. This increase was also positively related to precautionary behavior and mediated a part of the age-related increase in precautionary behavior. However, a large part of shared variance between age and precautionary behavior was left unexplained.

One explanation for this finding focused on possible counter-regulative mechanisms in older adults (cf. John & Gross, 2007; Scheibe & Carstensen, 2010). Therefore a modified evaluative priming procedure was employed that tested inter-individual age-related differences in automatic threat evaluation. The results of the young age group suggest that this measurement approach can be usefully applied in research of inter-individual differences in fear manifested in differences of threat evaluation. A positive relationship between the magnitude of the crime-threat priming effect and the affective component of fear of crime was found for this age group in the restricted response time condition. However, the findings regarding the old age group indicate that old adults process the threatening stimuli differently depending on explicit measures of fear of crime. Mechanisms behind the frequency of fear of crime may be influencing the processing of threatening prime stimuli. These processes seem to be independent from mean RT (at least regarding the tested time span). Some potential explanations have been offered in the general discussion of Studies 4 and 5 (chapter 3.4). If, however, old adults process threatening stimuli differently, this may have consequences for the interpretation of the results of the vignette studies and studies on emotional reactivity in general. Future studies would have to combine both measurement approaches, so as to test in how far the same mechanism is reflected in both approaches and in which way it impacts on the studied behavior. Given that induced subjective physical vulnerability positively correlated with situational fear and that situational fear was related to precautionous behavior and that this relation mediated parts of the age relation with precautionous behavior suggests that these mechanisms did not influence the results to a large extent. As it is unclear thus far, which mechanism is reflected in the negative relationship between affective fear of crime and the crime-threat priming effect, it need not necessarily mean that older adults with high fear of crime reported lowered situational fear in the vignette studies.

Moreover, a general mechanism of down-regulating threatening information would not explain vignette-dependent differences in the age group differences. It may be that those processes reflect the already taken precautions (hence, lower situational fear in the home and park scenario). On the other hand, negative relations between the explicit and implicit measure occurred particularly with the affective component of fear of crime. Potentially higher affective fear of crime (higher frequency of fear of crime) may reflect difficulties in taking precautions as there was also no correlation between the two in Study 5 and generally low correlations in the other Studies. Then, e.g., attention and appraisal processes may manifest alternative coping mechanisms in those participants. Future studies need to disentangle these relationships and employ further experimental variations to carve out specific effects (see below). In sum, these findings portray the complexity of the subject matter. They underline that simple questions about the frequency of fear of specific offense types and risk assessments may not capture underlying mechanisms in a sufficient way. Moreover, they are an indication for the manifold ways that different processes intervene between environmental factors and the person. This lends support for the analyses given in chapter 1 regarding the relations between different factors studied in criminological research as impacting on fear of crime. It also highlights that other identified “predictors” of fear of crime such as education, gender, socioeconomic status, or media consumption need to be scrutinized and various sources of mechanisms identified that underlie their difference in fear of crime at the surface.

## 5.2. Alternative Accounts

Alternative or additional explanations may play a role in the age-related increase of precautionous behavior. One of such I have paid more attention to in the previous section. In Studies 1 to 3 effect sizes of age group differences were relatively low (if there were differences at all). However, precautionous behavior increases with age and in accordance with an increase in prevention importance (if assuming that counter-regulative mechanisms did not influence the results). Life circumstances as well as goal-related changes may be reflected in changes in precautionous behavior despite equal assessments of dangerousness of the situation. The findings of Study 6 imply the interpretation that different factors change with age including a change of opportunities to behave less risky but also a change of the value of goals that can be achieved with risky behavior. Future studies need to separate the different influences and their preconditions.

Another explanation consists in the interpretation that precautionous behavior may be just a reflection of a general withdrawal or disengagement behavior (Cumming & Henry as cited in Greve, 2000). However, this may only be part of the avoidance behavior of going out alone. The majority of the other precaution items revolve around precautionous behavior outside the home (e.g., ‘avoiding strangers’, ‘not using public transport’) or concentrate on precautions taken concerning the home (‘locking doors from inside’, ‘asking neighbors for taking care of house/flat when being away’). Those items do not seem to relate to withdrawal at face value. Moreover, participants were given the option to indicate that a specific behavior was not applicable to them, which should diminish confounding of crime-related precautions and disengagement behavior. This is also true for the slightly modified variant of measuring precautionous behavior in Study 3. Participants were asked to indicate the frequency of each behavior taken out of fear of crime and out of other reasons unrelated to crime in order to make intentions behind the behavior more salient. This variation still resulted in an age-related difference suggesting that participants differentiated between different reasons also in the variant of the question with the “inapplicable”-option.

A further explanation for the age-related increase in precautionous behavior has been forwarded by Greve (2004). He assumed that “any transitory fear episodes that do occur are experienced as more intensive and hence as more aversive. This would increase the individual tendency to avoid such experiences as far as possible (by taking preventive measures), which would in turn impact on the validity of frequency operationalizations” (p. 11). As shown by Studies 1 to 3, older adults’ fear responses are generally not more intense than those of young adults (on the contrary). Still, for this explanation it would not be necessary to experience more *intense* fear but rather that the *quality* of the experience changes, e.g., because the return to baseline feelings takes longer (see Charles, 2010; Wrzus, Müller, Wagner, & Lindenberger, 2011 or Keil & Freund, 2009 on the aversiveness of high arousal pictures). The inclusion of psychophysiological measurements may shed light on this aspect. Moreover, instrumentality of negative feelings may change with age given a decreasing life time horizon (cf. Carstensen, 2006). This last aspect relates to the account of altered values focused on in section 4.

From research within the realm of horror movies, there is some indication that people differ in the enjoyment of negative feelings (Andrade & Cohen, 2007). In a similar vein, Ben-Zur and Zeidner (2009) remark in reference to Levenson that “people may have different motives and reasons for risk taking, including seeking thrills and adventurous experiences, demonstrating courage and bravado, escaping boredom, experiencing flow experiences, and so on“ (p. 110). With regard to emotion development, this difference in an emotion’s value poses a future avenue that has yet to be explored. A first study lends support for this direction. In an experience sampling study, Riediger et al. (2009) examined age differences in how people want to influence their feelings on a regular day. The authors show that pro-hedonic motivations (wanting either to maintain positive affect or to dampen negative affect) are more prevalent in both age groups but that adolescents were more likely to engage in contra-hedonic motivations of wanting either to maintain or enhance negative affect or to dampen positive affect than old adults. The study focused on how momentary affects influenced motivation. While having a positive affect, increasing age was related to wanting maintain high positive affect and less motivation to enhance it. When having high negative affect, young adults were more motivated to enhance it than old adults (mostly because of utilitarian reasons). The age groups did not differ in their motivation to dampen negative affect when having negative affect. Open questions refer to why old adults were less likely than young adults to be contra-hedonically motivated. Maintaining negative affect was associated with having both negative and positive affect; however, this did not diminish the negative age effect. Yet, this study only asked participants to indicate their affect-related motivation but other goal-related behaviors may influence future affect as well. Furthermore, differentiation between discrete emotional experiences may uncover various patterns.

### **5.3. Caveats and Future Directions**

Several caveats in the present studies have to be considered. The first concerns the use of convenience samples, although this is often the case in psychological research. Particularly in the vignette and the priming studies women were overrepresented and well-educated individuals made up a larger part of the sample than in the general population. This possibly poses a threat to the external validity of the study with regard to the distribution of fear of crime. However, all samples mirrored typical findings in psychological variables such as health, well-being, and affect. In this sense, the results are at least comparable to those of other psychological studies. More importantly, all samples replicated the findings of previous studies with regard to the componential measures of fear of crime. This indicates that the samples of the present studies were comparable to those examined in previous (criminological) studies that employed representative sampling strategies.

A further caveat refers to the exclusion of middle-aged adults in some of the studies and older old adults generally, which rules out the possibility of studying the course of age-related changes and potential specifics of older old age. Advances to include the middle-aged age group were taken in Study 1 and Study 3; however, recruitment was not as successful as would be needed to draw general conclusions about this age group. Yet, this

aspect raises another related caveat. All studies were conducted cross-sectional. In this way, age-related differences cannot be distinguished from cohort and period differences (cf. Baltes et al., 2006). The oldest participants in the studies were born 1928, which means that participants of the oldest age group were in their adolescence or childhood during World War II. In contrast, younger participants have not experienced such an event. If those experiences had a long-term influence on the way people perceive threatening events or what they perceive as threatening, this could confound age-related effects. Considering that the victimization-fear paradox based on the use of the standard question has reliably been found throughout the research history of fear of crime lends support that the finding cannot be reduced to cohort or period effects. (However, it has to be taken into account that relatively peaceful times in Europe are a recent historical development and not generalizable across Europe.) More important in assisting conclusions is the inclusion of variables that may be connected to age-related differences in fear of crime in a cross-sectional design (such as vulnerability) in order to uncover mechanisms that play a role in the development of dispositional fear and, hence, the evocation of fear of crime. Yet, those variables would need to be less prone to cohort or period effects themselves. Thus, conclusions remain preliminary to some extent with this methodological approach. Another related way consists in experimentally varying effects that are supposed to be altered in the aging process and assumed to be driving other age-related differences, e.g., by restricting cognitive resources (cf. Mather, 2010), making (physical) vulnerability salient, manipulating the life time perspective (Micu & Chowdhury, 2010), or manipulating opportunities to seek out specific situations (or avoid them).

More conclusive results can only be gained by an integrative research approach that is longitudinally oriented. Crime as one object of fear beside others could be examined within a measurement-burst design (e.g., Brose, Schmiedek, Lövdén, & Lindenberger, 2011; Sliwinski, Almeida, Smyth, & Stawski, 2009). Measurement-burst designs allow the differentiation between within-person variability, between-person variability, and measurement error extended across a longer time period. Emotions are assessed within a daily diary approach on several days over an extended period of time and this procedure is repeated, for example, yearly. By this, behavior can be investigated in a more proximate way. Hence, problems of retrospectively assessing emotions and behavior are also avoided (e.g., Robinson & Clore, 2002a, 2002b). Although this measurement approach is already very informative, it cannot circumvent the problems associated with field studies. For example, Brose, Scheibe, and Schmiedek (2012) found that affect variability and affective reactivity decrease with age partly as a result of a lower frequency of experiencing stressful situations. However, the authors contend that future studies need to take into account that the frequency of stressful events may be the product of emotion regulation processes, resulting in avoidance of those situations. I would also add that the interpretation of an event as demanding may already be part of a regulation mechanism (cf. Gross & Barrett, 2011).



Measurement-burst designs could be complemented by experimental approaches in laboratories. Those studies would allow the control of emotion inducing stimuli and could provide the assessment of various information processing mechanisms such as attention and appraisal. Moreover, as mentioned in chapter 1.4, age is a socially shaped category with assigned roles and specific phases such as school, employment, and retirement (which may differ between societies). Different opportunities to seek out situations as well as being confronted with them beyond one's control are associated with life transitions. On the one hand, those age-related differences may influence the frequency of experiencing fear of crime. Although this is interesting by itself, it would be even more interesting from a developmental perspective to examine, whether these changes influenced changes in the perception of one and the same stimulus, i.e., leading to inter-individual differences in intra-individual change across time instead of only responding to altered frequencies of threatening cues in their environment.

In this vein, questions arise pertaining to inter-individual differences in intra-individual changes in response to age-related changes in the environment, i.e., what are the conditions for potential variability in development? This refers to considerations mentioned in chapter 1.4.1. For example, victimization experiences do not unequivocally lead to higher fear of crime or other psychological pathologies. Inter-individual differences prior to victimization may influence the way an individual deals with this experience and whether even better adaptation may result from it (Greve & Kappes, 2010). In the same vein, people may differ in the way retirement or health issues (and what comes along with it) shape fear of crime. Advances to a more comprehensive understanding of the mechanisms behind the generation of fear of crime and precautionous behavior can only be made if findings from various sources of information and layers of analysis are incorporated within a multi-method approach (cf. Hofer & Piccinin, 2010; Isaacowitz & Blanchard-Fields, 2012).

A further caveat concerns the measurement of precautionous behavior itself. This dissertation is based on the finding of age-related differences in precautionous behavior, i.e., the behavioral component of fear of crime measures. However, as indicated above, self-report measures are susceptible to a multitude of biases. In addition, individuals are asked retrospectively about the frequency of a specific action. While the frequency of a specific behavior may be remembered, the reason for this behavior may be retrospectively misattributed or constructed. Some of the instances of precautionous behavior may reflect habitual behavior without ever being related to the evaluation of threat. For example, locking the door from the inside could be an imitated behavior from one's parents, which is interpreted as reflecting precautionous behavior post-hoc when asked for it.

Moreover, given that older adults more often frame goal pursuit within a prevention focus than young adults (cf. Ebner et al., 2006), the phrasing of the question as "behavior to protect from crime" may make this focus more salient in older adults than in young adults. This could influence the misattribution mentioned previously. It may also influence the accessibility of instances of protective behavior without real different frequencies between the age groups. As detailed above, measurement-burst designs could circumvent these factors to some extent. If the approach was designed as an experience-sampling procedure, participants could be asked whether they would have liked to do

something else instead of what they are actually doing at the moment and for what reasons they did not do that (e.g., out of fear or a related emotion). They could be also asked what they are planning to do within the next hour and which emotions they associate with that.

This approach, however, presumes that people are able to reflect on their intentions, goals and the like. Yet, asking participants to give their reasons may already intervene in the underlying process, that is, it may alter behavior. Therefore, as suggested above, potential influences on the validity of this approach need to be tested, on the one hand, and, on the other hand, other methodological approaches need to be pursued in order to complement each other. For example, there is evidence that paradigms employing a joystick to mirror approach (pulling the joystick to the person) and avoidance (pushing the joystick away from the person) behaviors bear some meaning for subsequent behavior (e.g., Eder, 2011; Gast & Rothermund, 2011; Kawakami, Steele, Cifa, Phillips, & Dovidio, 2008). This paradigm could be modified to fit questions about avoidance motivations with regard to crime. Another option consists in the assessment of information search behavior related to precautions. In this vein, other behavioral measures with regard to anticipated feared crime may be included such as ‘vigilance towards potential signs of danger’, ‘not leaving your drink unattended when being at a party’, or ‘only going out in a group’, while not completely avoiding threatening situations themselves. Potentially, this reflects young adults’ cautious behavior with threatening situations better than the previously employed items for *precautions* (see also Sacco & Nakhaie, 2001, for a similar argument).

#### **5.4. Conclusions**

The victimization-fear paradox has attracted a great deal of attention in the past and continues to be referred to. While I have analyzed in chapter 1 that this paradox is the product of methodological and conceptual difficulties of the research into fear of crime and is solved by employing different measurements than the standard question, new questions arose. If precautionous behavior is an indicator of fear of crime and older adults take more precautions, they potentially are more fearful but experiences of fear are less frequent due to their precautionous behavior. In accord with calls for an emotional psychological perspective on fear of crime (Gray et al., 2008), intensity of situational fear across various situations as well as automatic threat evaluations were investigated in this dissertation.

The results of these studies indicate that older adults do not generally experience more situational fear or associate threat with stimuli faster than young adults. On the contrary, the findings of the vignette studies suggest that specific features of a situation have to be taken into account to understand the evocation of fear of crime. Some of those features seem to have more relevance for young adults. Subjective physical vulnerability has been shown to be an important factor in explaining fear increases in older adults, while young adults may have other reasons to be fearful. Situational fear was demonstrated to be positively related to precautionous behavior and it partly mediated age-related increases in precautionous behavior.



Besides considering specific features of situations that are relevant for different age groups in generating fear, differences in threat processing were obtained. Findings of the priming studies suggest that mechanisms underlying the frequency of fear experiences and cautious behavior are also relevant in early processing mechanisms concerning threat-related information. However, these mechanisms seem to play out differently for young and old adults. This implies that additional conditional factors have to be considered when investigating age differences in fear of crime. These mechanisms may also be relevant in studying emotional reactivity in other contexts. Life span theories of altered emotion regulation processes with age could contribute in advancing explanations for the findings, although they cannot solely account for the age group differences as they mainly predict general age group differences in emotion regulation.

The findings of a further study indicate that opportunity-based differences and changes in goals play a part in age differences in cautious behavior. Older adults may have the option of avoiding dangerous situations or can gain subjectively less from seeking out dangerous situations. These findings highlight that factors of different life circumstances need to be addressed as well as goal-related behavior that is not only driven by fear.

In employing an action theoretical framework with emotions as an element at the core of action some of the factors that are part of the entanglement of the victimization-fear paradox and the fear-of-crime topic in general could be unfolded. In this vein, the application of different methodological approaches allowed to uncover different processes that may play a role in fear generation and related behaviors. They point out that the different aspects detailed in chapter 1 are intricately linked and that investigating underlying mechanisms may provide a more profound understanding of the subject matter. This, however, presupposes an integrative framework that includes psychological, biological, and social variables across an extended period of time and applies a multitude of methodological approaches.



## 6. Summary

Despite nearly 50 years of research into fear of crime, discussions about the meaning of the construct *fear of crime* as well as related methodological considerations are still in full swing. In this dissertation, fear of crime is conceptualized based on componential approaches of emotion (e.g., Clore & Ortony, 2008; Scherer, 2005). This means that fear of crime is perceived as consisting of appraising stimuli of the environment as well as imagined stimuli as threatening (cognitive component); this is related to a motivational action tendency of responding to the stimulus (motivational component), which corresponds to changes in neurophysiology and the motor system (while not necessarily in a specific pattern). Moreover, it consists of the subjective experience of fear (affective component). Precautious behavior is framed within an action theoretical perspective (cf. Brandtstädter, 2007; Greve, 2001) and understood as an expression of fear of crime. Consequently, fear of crime cannot predict cautious behavior, but cautious behaviors can only be interpreted as such if attributing them to fear of crime.

One outcome of research into fear of crime that gained a lot of attention is the victimization-fear paradox (Bilsky, Pfeiffer, & Wetzels, 1993; Ditton & Farrall, 2000; Hale, 1996). According to this paradox old adults are more fearful of becoming a victim of crime than young adults. This finding contrasts with research of life span psychology that reports decreases or stability of negative affect and fear (e.g., Carstensen, Pasupathi, Mayr, & Nesselrode, 2000; Charles, Reynolds, & Gatz, 2001; Grünh, Kotter-Grünh, & Röcke, 2010). The finding of more fearful old adults is mainly based on the use of the so-called standard question in victimization surveys (“Would you feel safe being out alone in your neighbourhood after dark?”, e.g., Skogan & Maxfield, 1981). Older adults indicate that they feel less safe than young adults. This question has received numerous critiques resulting in the application of other measurements. Asking adults for their frequency of fear of specific offense types (affective component) and their risk assessment to become a victim of crime (cognitive component) obtained no age-related differences. These findings are in accord with life span psychology.

However, old adults take more precautions out of fear of crime than young adults (behavioral component). Based on emotion theory, cautious behavior was treated as an indicator of fear. It was hypothesized that cautious behavior diminishes the occurrence of experiencing fear of crime and that risk assessment is corrected for the knowledge of one’s cautious behavior. Therefore, the affective and cognitive component of fear of crime would underestimate older adults’ fear of crime. In order to test the assumption that an age-related increase in cautious behavior was reflective of an increase in fear in older adults (dispositional fear of crime), three vignette studies were conducted to induce situational fear of crime in the participants across various situations. It was assumed that older adults would exhibit a larger increase in fear of crime than young adults and that middle-aged adults would report a situational fear level placed between the young and the old age group. This increase in situational fear was hypothesized to be the result of an age-related increase in subjective physical vulnerability. Moreover, an age-related

increase in situational fear was supposed to mediate the positive relationship between age and precautionary behavior. Contrary to hypothesis, Study 1 (young:  $N = 179$ , 18 - 30 years,  $Md = 24.0$  years; old middle-aged:  $N = 106$ , 50 - 64 years,  $Md = 55.0$  years) found that young adults indicated more situational fear in two vignettes, while no further age effects were obtained. In Study 2 (young:  $N = 129$ , 18 - 30 years,  $Md = 22.0$  years; old:  $N = 114$ , 65 - 84 years,  $Md = 71.0$  years), young adults reported more situational fear than old adults in the same vignettes as in Study 1. In contrast, older adults indicated more situational fear than young adults in two other scenarios. Moreover, subjective physical vulnerability was positively related to age and situational fear and partly mediated the effect of age on situational fear. Furthermore, the indirect effect of age on precautionary behavior via situational fear was significant. However, the direct effect of age on precautionary behavior was still significant.

Study 3 (young:  $N = 174$ , 18 - 30 years,  $Md = 23.0$  years; young middle-aged:  $N = 121$ , 31 - 49 years,  $Md = 37.0$  years; old middle-aged:  $N = 103$ , 50 - 64 years,  $Md = 57.0$  years; old:  $N = 109$ , 65 - 84 years,  $Md = 73.0$  years) was conducted to follow up on open questions of Studies 1 and 2. The finding of larger situational fear of crime of young adults in contrast to the other age groups could be replicated concerning one vignette and partly a second. It is shown that this difference is not the product of prior differences in situational fear or scale use. Moreover, the effect of higher situational fear of old adults in one scenario could not be replicated. Beyond these results it was found that participants responded with more situational fear than with anger to the vignettes. Yet, they reported more anger than shame. In sum, there is no general age-related increase in situational fear. On the contrary, two scenarios evidenced an increase of situational fear in young adults. Subjective physical vulnerability was positively related to situational fear and shared variance with age group differences in situational fear. Situational fear was positively related to precautionary behavior, mediating parts of the age effect on precautionary behavior.

In order to study automatic threat evaluations as an implicit measure of age-related differences in fear, a modified evaluative priming task was employed in two studies. Instead of evaluating the target as positive or negative, participants were asked to indicate whether the target word was threatening or nonthreatening. Study 4 (young:  $N = 40$ , 19 - 30 years,  $Md = 22.1$  years; old:  $N = 41$ , 59 - 80 years,  $Md = 67.0$  years) showed that the modified priming task achieved typical priming effects in the young age group, while the old age group showed no priming effects. However, the affective component of fear of crime was negatively correlated with the priming effect in the older age group, which could be interpreted as counter-regulative processes. Correlations between mean response time (mean RT) and the magnitude of the priming effect suggested potential influences of time parameters in the evocation of the priming effect. Moreover, the slower mean RT may have promoted regulation mechanisms in older adults in dependence of the affective component. These hypotheses were tested in Study 5 (young:  $N = 27$ , 19 - 28 years,  $Md = 21.0$  years; old:  $N = 17$ , 61 - 78 years,  $Md = 67.0$  years) by implementing a response window that forced participants to evaluate the target within a specific time frame (800

ms after target onset). The results demonstrate that a lack of a priming effect in older adults in Study 4 was not caused by slower mean RT because old and young adults evinced a comparable priming effect in the free response time condition of Study 5. In accord with hypothesis, the priming effect increased given a restricted response time with the response window technique. In contrast to Study 4, there was no correlation between the affective component and the priming effect in the free response time condition; however, there was an interaction between age and the affective component in the response window condition. While young adults displayed the expected positive relationship between the affective component and the priming effect, this relationship was reversed (as in Study 4) in older adults. This finding suggests that the functioning of the mechanisms reflected in the affective component were not dependent on mean RT (at least not in the considered time range). In sum, the findings of the threat priming task allude to its utility in studying implicit effects of threat evaluation. While young adults exemplified results as expected, old adults showed no larger priming effect than young adults. However, there are indications for the potential influence of regulation mechanisms that confine conclusions and may also affect the interpretation of findings from Study 1 to 3.

Furthermore, an extended outlook was taken at an alternative explanation for the age-related increase in precautionous behavior. Given the findings of Study 1 to 3 it is assumed that age-related differences in situational fear are rather small. Hence, age-related differences in precautionous behavior may reflect that the age groups deal differently with fear. This may be due to differences in the opportunity to avoid dangerous situations and differences in goal-pursuit that necessitates seeking out threatening situations. The results of a first correlational study (Study 6: young:  $N = 38$ , 19 - 30 years,  $Md = 21.0$  years; old:  $N = 32$ , 60 - 75 years,  $Md = 68.5$  years) lend support for this alternative account insofar as reasons of necessity, utility, or pleasure associated with seeking out threatening situations receive less importance from old adults in comparison with young adults. This difference in importance is related to precautionous behavior, that is, the more important the mentioned reasons are the less precautionous behaviors are taken. The indirect effect of age on precautionous behavior via reasons is significant, mediating a large part of the total effect. Further support is lent by findings from Study 3, in which indicated importance of preventing the described situations increased with age.

In general, the studies provide insights in the complexity of the subject matter. While situational fear of crime seems not to generally increase with age, the results of the priming studies indicate that care needs to be taken with regard to potential regulation mechanisms in responding to the tasks. Moreover, the different theoretical approaches clarify that an approach has to be taken that employs various measurement techniques as well as an integration of different theoretical advances.





## 7. References

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