Fear of crime in old age: precautionary behaviour and its relation to situational fear

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Published online: 5 January 2013
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Abstract This study aimed to provide further insight into the question of why older adults show a higher precautionary behaviour regarding crime (behavioural fear), although they do not estimate their victimisation risk as higher than young adults and they do not experience fear more often. In two cross-sectional studies, the hypothesis was tested that the age-related increase in precautionary behaviour is an expression of higher dispositional fear with age. The vignette technique was employed to induce situational fear of crime across various situations as a proxy for dispositional fear. In contrast to the hypothesis, in Study 1 (young: 18–30 years, $N = 179$ vs. middle-aged: 50–64 years, $N = 106$), only younger adults reported higher situational fear in two vignettes. In Study 2 (young: 18–30 years, $N = 129$ vs. young-old: 65–84 years, $N = 114$), younger adults indicated higher situational fear again; however, young-old adults reported higher situational fear in other vignettes. The findings suggest that there is no general increase in the intensity of situational fear of crime with age and thus no age-related change in dispositional fear. Moreover, situational fear did not serve as mediator in the relationship between age and precautionary behaviour. Alternative accounts for the increase in behavioural fear of crime are discussed as well as emotion regulation mechanisms in response to the induction method.

Keywords Ageing · Emotion · Threat · Vignette · Precaution

Introduction

Within the literature on emotional development, a decrease or stability in the frequency of negative affect, such as fear, over the lifespan, has frequently been observed (e.g. Carstensen et al. 2000; Charles et al. 2001; Kessler and Staudinger 2009; Grühn et al. 2010). This finding is contrary to the so-called ‘victimisation-fear paradox’ consistently reported in criminological research. According to this paradox, older adults are more afraid of becoming a victim of crime than young adults. This is despite their statistical risk of victimisation being markedly lower (see e.g. Robinson 2010). This paradox has a long history of debate (see Bilsky et al. 1993; Ditton and Farrall 2000; Hale 1996; Lee 2007).

Global measure

Methodological issues associated with the measurement of fear of crime may be one factor that has contributed to these paradoxical findings. One methodology used in fear of crime research has been the use of the question, ‘Would you feel safe being out alone in your neighbourhood after dark?’ (Ennis, as cited in Farrall and Lee 2008, p. 32; e.g. Boers and Kurz 1997; Clemente and Kleimann 1976; Garofalo 1979; Naplava 2008; Skogan and Maxfield 1981; Tseloni and Zarafonitou 2008; henceforth, we will refer to this question as *neighbourhood safety*). The employment of this question and similar variants dates back to the first crime victim surveys of the USA in 1967 (cf. Lee 2007). Concerns regarding the validity of this methodology, however, are well documented (for an overview: e.g. Eve 1985; Farrall et al. 2000; Ferraro and LaGrange 1987, 1992; Hale 1996; Kreuter 2002). Critique has focused, for example, on the point that crime is not mentioned as the reason for fear or feeling unsafe. Accordingly, an older

Responsible editor: H.-W. Wahl.

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person with impaired vision may fear walking in the dark simply because they are afraid of falling. If this was true, this would spuriously inflate the relationship between age and fear of crime. Another critique concerns the representativeness of the scale items. Although this question was used as a general measure of fear of crime, offences such as burglary or fraud are not reflected in the measure items.

With increased awareness of these limitations the use of this method has declined significantly in empirical research (for exceptions see e.g. Hermann 2008). Other researchers employ this question directly as a measure of perceived neighbourhood safety (e.g. Semyonov et al. 2012; Köhn and Bornewasser 2011) or they include it merely for comparability reasons (cf. Reuband 2000; it was still used in the British Crime Survey at least until 2005/06, cf. Jansson 2007).

Non-situational measures

More recent approaches have distinguished between the different facets of fear of crime and relate them to a specific time frame such as 12 months (e.g. Gabriel and Greve 2003; Ferraro 1995; Ferraro and LaGrange 1992). These facets include the frequency of fear experiences with regard to different offences (i.e. affective facet) and the subjective assessment of the risk of becoming a victim of crime (i.e. cognitive facet). Research findings using this distinction suggest that older adults do not experience fear of crime more often than young adults. Furthermore, they do not estimate their victimisation risk higher than young adults (e.g. Chadee and Ditton 2003; Ferraro and LaGrange 1992; Greve 1998; Jackson 2009). These results are consistent with general findings in the emotional development literature concerning the frequency of negative affect across the lifespan. Contrary findings, however, were observed when participants were questioned regarding avoidance or preventative behaviours associated with their fear of crime such as avoiding going out alone at night, avoiding drunken people, or using extra locks for securing their home (i.e. behavioural facet). In comparison to younger participants, the older participants were more likely to engage in fear of crime behaviours (Greve et al. 1996; Greve 2000; Häfele and Lüdemann 2006; Sacco and Nakhaie 2001). This finding provides an explanation for the so-called paradox. First, persons that behave more cautiously and protectively will get less often victimised (all other things equal), and second, if older adults behave more protectively, they are less likely to experience fear (Greve 1998, 2004).

This interpretation may, however, be somewhat premature. This is because the underlying mechanism(s) with regard to the frequency of fear of crime and age-related increase in precautionary behaviours have yet to be identified. What factors impact on the frequency of fear and what

triggers an increase in precautionary behaviours in old age are two important questions that need to be addressed.

Situational measures

The microgenesis of fear of crime

One factor that may shed light in this area is the role of situational and dispositional fear. Situational fear refers to a *transitory* state of actually experiencing fear (e.g. while walking through a pedestrian tunnel at night or hearing strange noises in one's flat), whereas dispositional fear refers to the inter-individual difference in the tendency to experience fear when being in a situation that contains potential threat (see Spielberger 1972). Accordingly, higher dispositional fear describes a person who is more likely to perceive situations as threatening much *faster* and more *easily* across different situations than a person low in dispositional fear. With regard to fear of crime this means that a person who is high in dispositional fear is someone whose situational fear of crime is more probable, and is likely to be more intense when it occurs. Dispositional fear of crime in this sense does not *predict* situational fear (and much less does it *explain* it), instead it is a conceptual expression for inter-individual differences in the propensity to experience situational fear of crime. How these inter-individual differences develop is another question.

However, the measurement of disposition is a delicate matter as simply deducing disposition from the frequency of experiencing a certain state in everyday life may not reflect disposition comprehensively. This is because the frequency of a state may also be influenced by factors unrelated to the person (e.g. living in a crime-prone neighbourhood, cf. Brunton-Smith and Sturgis 2011) or by behaviours that reduce the occurrence of the state. It is the last aspect that we want to focus on. Mowrer (1939) already pointed out that fear is related to avoidance behaviour, which results in a decrease of the experience of fear. Later research has refined his theoretical ideas with regard to the finding that also vicarious or instructional learning about a threat can lead to subsequent avoidance behaviour and that the experience of a threatening event is not necessarily related to avoidance behaviour in all individuals (e.g. Rachman 1977, 1990). Yet, if avoidance behaviours are taken, they decrease the frequency of experiencing fear (for a similar argument cf. Jackson et al. 2008; Jackson and Gray 2010). The maintenance of precautions has been suggested as resulting from the repeated confirmation of the expectation that taking precautions leads to avoidance of threat and hence fear on the one hand. On the other hand, the expectation that something bad would happen if the threat was not avoided cannot be invalidated due to precautionary behaviour (e.g. Seligman & Johnston as cited by Dymond and Roche 2009).

These considerations may have consequences for the measurement of fear of crime regarding the facets of fear of crime. If differences in precautionary behaviour reflect differences in fear, dispositional fear may be better captured with the frequency of precautionary behaviour instead of the frequency of experiencing fear of crime and risk assessment.

The ontogenesis of fear of crime

As detailed above, dispositional fear refers to inter-individual differences in the propensity to experience situational fear. An individual's dispositional fear of crime may change as a consequence of long-term developmental processes. With increasing vulnerability to physical losses and financial insecurities and a shortened time frame to recover (Brandtstädter and Wentura 1995; Jackson 2009; Killias 1990; Mitnitski et al. 2002; Wahl and Heyl 2008), fear of physical or financial damage due to crime could be increased. This may result in perceiving situations as threatening more easily and more intensely, i.e. in experiencing situational fear of crime. The experience of situational fear or being afraid, however, may also lead to an increase in preventive behaviours, i.e. the motivational aspect of fear or the behavioural facet, respectively, to avoid situational fear. If this was the case, frequencies of experiencing fear of crime (i.e. the affective facet) would be lowered, potentially resulting in comparable frequencies of experiencing fear in younger adults. Moreover, by taking into account one's own precautionary behaviour, assessments of future victimisation probability would be lowered, too.

If this thesis should prove tenable, precautionary behaviour of older adults would be an *expression* of higher dispositional fear of crime (see Sacco and Nakhaie 2001 for a comparable approach). As described above, the experience of fear of crime is lowered when taking precautions. However, being confronted with a threatening situation that is precluding precautionary behaviour should result in an increase in situational fear. In order to test the hypothesis that older adults' dispositional fear of crime is larger than that of young adults, an experimental design is considered to be the most appropriate. Higher dispositional fear of crime in older adults compared with younger adults would be reflected in higher situational fear across various crime-threatening situations.

In general, most experimental studies on emotional reactivity demonstrate that the subjective experience of negative emotions does not differ between young and old adults (e.g. Beaudreau et al. 2009; Cacioppo et al. 2011; Kunzmann et al. 2005; Levenson et al. 1994). Some recent studies, however, have shown that those results depend on the stimuli used. Kunzmann and Grünh (2005) and Kunzmann and Richter (2009) demonstrated that the subjective experience of

sadness is higher in older adults when age-relevant stimuli were used. Similarly, Teachman and Gordon (2009) showed that older adults reacted with higher anxiety than young participants when being confronted with physical threat, whereas no age group differences were obtained with social stressors. Accordingly, while no age group differences have been identified using global measures of fear responsiveness, situational fear of crime stimuli that are equally important to older adults could potentially evoke higher subjective fear.

Only two experimental studies have been identified that attempted to evoke situational fear of crime in different age groups. Fisher et al. (2004) tested participants' state anxiety after watching three different formats of crime newscasts about a prison escape. The old age group (65–75 years) experienced higher state anxiety than the middle-aged group (35–45 years) only when watching the standard report format. In contrast, there were no age group differences when the prison escape was described as having happened 3,000 km away or when the escapee was portrayed in a positive light. In both cases, anxious responding was also lower than in the standard format. Ziegler and Mitchell (2003) asked participants about their fear at home and fear of walking outside alone after watching a crime-related news report (i.e. about a bank robbery or violent burglary reenactment). In contrast to Fisher et al. (2004), young participants (i.e. 18–29 years) reported a higher level of fear at home than the old participants (i.e. 61–78 years) after watching the burglary but not after watching the robbery. Independent from the kind of news report young adults indicated more fear of walking alone outside. Given that only two experimental studies regarding crime have been conducted it is difficult to draw conclusions about why their results differ (e.g. different age comparison groups, different crimes, stimulus material, or dependent variable). Moreover, the studies do not situate crime in personal experience of everyday life and the relation between experience of situational fear and precautionary behaviour is not examined.

The present studies

The present two studies addressed several aspects that have not been tested in this way and in unison before. First, a vignette technique is employed to induce fear of crime. This technique has been shown to be effective in inducing various emotions, especially negative ones (Westermann et al. 1996). Stimuli were used that were more self-relevant in that they asked the participants to imagine themselves directly in a situation of potential threat and as a victim of such. This is in contrast to Fisher et al. (2004) and Ziegler and Mitchell (2003) where the described event may not to be interpreted as concerning the self but could also invoke vicarious fear. Moreover, the employed situations are much more specific

than those used in previous experimental ageing studies in the induction of fear. Second, situations were addressed that are situated in everyday life to capture situations that could be experienced by young and old adults with equal probability (if old adults did not try to avoid such situations out of fear). Third, we wanted to test whether more situational fear across various situations (as reflecting dispositional fear) is related to more precautionary behaviour, thereby mediating the positive relationship between age and precautionary behaviour. Fourth, we used different age groups for comparison but utilised the same procedure to explore the boundaries of age differences. Accordingly, the same age span for the young age group (18–30 years) was sampled in both studies. The young age group's reaction is compared with a middle-aged age group that is still in working age (50–64 years) in Study 1 and with a group of young-old adults (65–84 years) in Study 2.

Usually in applying the vignette technique emotional situations are compared with a neutral situation. Instead, we varied each vignette in two levels of threat intensity (threat level 1 and 2 with the higher number indicating higher threat) by varying only one aspect per vignette, for example, noon versus night, with versus without partner, streetlamps versus no streetlamps. These factors have also been found to be differently associated with the evocation of fear (e.g. Fisher and Nasar 1992; Jorgensen et al. 2012; Vrij and Winkel 1991). The higher threatening version was designed to leave some ambiguity regarding the perception of actual threat. We used this design for two reasons. First, it is difficult to create a suitable *neutral* situation that could serve as a comparison condition and fit equally well for younger and older adults. Even if there was a comparable neutral situation, it could be problematic to compare responses to emotional stimuli with non-emotional stimuli. Second, demand characteristics are one of the problems inherent in emotion induction methods. Even if one chose a *within*-subject design with pre- and post-induction measurement, younger and older adults could be differentially prone to report feelings of fear, thereby confounding age group differences in fear response with differences in demand characteristics. By varying threat level *between*-subjects per vignette, demand characteristics (if they play a role) are given for both conditions. If there are differences in response to the threat level, they should not be due to demand characteristics because all subjects are asked to imagine themselves in potentially threatening scenarios.

However, using such a design raises questions regarding the relation between dispositional fear on the one hand and the intensity of a threatening situation on the other hand. This question has not yet received much attention as mostly responses to neutral situations are compared to emotion inducing situations. According to Marshall and Brown (2006) and Schmitt et al. (2008), the observation of inter-

individual differences in behaviour depends on the situational provocation. They describe behaviour as the interplay between person and situation factors. While no state differences between people with low and high disposition (e.g. dispositional fear of crime) are expected when there is no situational provocation (e.g. no threat), differences in disposition should be most visible at moderate levels of situational provocation (e.g. moderate threat; ambiguous situations). This is because interpreting the situation is uncertain in this case, and therefore, inter-individual differences in sensitivity for cues play a larger role. Marshall and Brown (2006) assume no differences in situational response between people with low and high disposition in highly provocative situations (e.g. pointing a gun at someone). In contrast, Schmitt et al. (2008) propose that individuals high in disposition exhibit still more situational response in highly provocative situations than individuals low in disposition, albeit the difference between the two is lower than at moderate levels of situational provocation. Moreover, they suggest that inter-individual differences in situational response reflecting dispositional differences can already be observed at lower levels of situational provocation, although not as large as at moderate levels of situational provocation.

Both models have yet to be established further and empirically validated. The important aspect relevant for the present studies is that individuals differ in the way they perceive situations ('situational sensitivity') and that individuals high in disposition are the ones that already respond to low situational provocation, while people low in disposition only respond to situations that are more provocative. This results in a nonlinear relationship between disposition and situational response as it is moderated by situational factors.

Hypotheses

Non-situational fear of crime and neighbourhood safety

In order to allow comparability of results with other studies, the more 'classic' non-situational approaches to the measurement of fear of crime were included in the study. Accordingly, it was hypothesised that no significant age-related differences will be observed for the affective and cognitive facet of fear of crime. However, significant age group differences will be observed for the behavioural facet of fear of crime. This would demonstrate that the middle-aged and young-old age group behave more cautiously than the young one. Moreover, significant age group differences are hypothesised for the question concerning neighbourhood safety with older adults indicating less safety than young adults. Together, these results ensure comparability of our samples with previous studies that employed these measures.

Situational fear

In this study, we wanted to test whether dispositional fear of crime is larger in older than in young adults, which would be exemplified in older adults experiencing situational fear faster and more intense than young adults across a variety of situations. The higher threatening version was assumed to evoke more situational fear than the lower threatening version. In accord with the considerations of Marshall and Brown (2006) and Schmitt et al. (2008) we hypothesised that older adults exhibit higher situational fear than young adults across various situations and that this difference would be larger in the higher threatening version of the vignette than in the lower threatening version.

Moreover, we wanted to examine whether the difference in situational fear mediates the positive relationship between age and the behavioural facet of fear of crime.

Methodology

Because a similar methodology was used in both studies, methodology is divided into three sections. These include a combined general methodology, Study 1 (participants and results) and Study 2 (participants and results).

General method of Study 1 and Study 2

Measures

Non-situational measures of fear of crime and neighbourhood safety

Perceived neighbourhood safety was measured with the question: ‘How safe do you feel or would you feel if you were out alone in the dark in your living area?’ (*very unsafe* (1), *quite unsafe* (2), *quite safe* (3), and *very safe* (4); scale was recoded for analyses so that higher values indicated feeling less safe; Greve 2000).

The facets of fear of crime scales were measured using items that were employed in previous studies (e.g. Greve 2000). The affective facet of fear of crime was operationalised as the frequency of experiencing fear with regard to eleven specific offences (i.e. theft of purse, theft in general, fraud, vandalism, burglary, threat or coercion, robbery, assault with and without a weapon, sexual coercion, and rape) in the past 12 months on a 5-point scale ranging from *never* (1) to *very often* (5). The cognitive facet was measured by assessing the probability of becoming a victim of specific offences (same as aforementioned) on a 4-point scale ranging from *very unlikely* (1) to *very likely* (4). The item-scale correlations for the

affective facet range between $r_{it} = .41$ and $r_{it} = .70$ in Study 1 and $r_{it} = .41$ and $r_{it} = .79$ in Study 2. For the cognitive facet, they range between $r_{it} = .32$ and $r_{it} = .63$ in Study 1 and $r_{it} = .36$ and $r_{it} = .68$ in Study 2. Internal consistency is $\alpha = .85$ and $.82$ in Study 1 and $\alpha = .89$ and $.79$ in Study 2.

In order to measure precautionous behaviour (behavioural facet), subjects were asked to indicate how often they undertook fifteen specific actions *to protect themselves from crime and violence* on a 5-point scale ranging from *never* (1) to *very often* (5) in the past 12 months. Items included e.g. ‘did not leave home after nightfall’ ... ‘avoided certain streets, places or parks’ ... ‘avoided strangers’ ... ‘asked neighbours to watch out for the flat when away’ ... ‘did not let flat uninhabited or look like that when away’ ... ‘hid money/valuables in flat’ ... ‘opened door only when knowing who’s outside’. One item was excluded from further analysis: ‘carried something to defend myself’. Participants were able to indicate when a specific behaviour did not apply. In Study 1, the item-scale correlations range between $r_{it} = .34$ and $r_{it} = .55$; internal consistency is $\alpha = .81$. Item-scale correlations in Study 2 range between $r_{it} = .18$ and $r_{it} = .55$; internal consistency is $\alpha = .79$.

Vignettes and situational fear scale(s)

The vignette situations were first created after collecting ideas from focus groups (i.e. interviews with older relatives and peers of a university’s course participants). From this pool, five situations were chosen collectively and vignettes of about 130 words were written in second-person perspective (see Table 4). Two vignettes were slightly modified for Study 2 to render them more applicable to older adults. Each vignette had two versions that only differed in one detail entailing a different threat value (i.e. threat level 1 and 2). Threat levels were constructed per vignette by varying one indicator that was associated with threat, for example, being with or without partner, light versus darkness, potential female or male perpetrator (see Table 4, changes in level in parentheses). We chose scenarios that depicted places that young, middle-aged, and young-old adults could seek out in principle (i.e. being at the market, at a station/bus stop, at home, on a country road, in the park). Some scenarios were more open to the interpretation of physical threat (e.g. park, country road, station/bus stop) and others could be rather interpreted with regard to financial threat (market, home), although they could also be interpreted to include physical threat.

Participants were firstly instructed to read each vignette thoroughly and try to imagine the scenario in real life. After reading the story, participants were then asked to indicate to what extent they were able to relate to the story (*not at all* (1) to *very good* (4), henceforth called ‘story relation’). This was included as the extent that individuals

are able to relate to the story is a personality factor that may influence the effectiveness of the vignettes (Westermann et al. 1996). In the third stage of the task, participants were instructed to indicate, using a 7-point scale (i.e. *not at all* (1) to *very/extremely* (7)), the extent they would agree with eleven statements concerning feelings related to fear in various situations. Only six items from the State Anxiety Scale of the German version of the State-Trait Anxiety Inventory (Laux et al. 1981; e.g. feeling tense, worried, secure) were utilised in the current study. Sylvers et al. (2011) and Englert et al. (2011) noted that the two subscales, measuring either state or trait anxiety, of the State-Trait Anxiety Inventory (Laux et al. 1981) correlated highly with instruments measuring depressive symptoms. Those items were chosen that shared face validity with the fear construct and added five items related to fear to enhance scale properties (e.g. being scared, feeling panicky, feeling threatened). Three items from the State Anxiety Scale were keyed in a positive direction and reverse coded for analyses so that higher values on all items indicate higher situational fear. Scales were created by calculating the mean across the eleven statements for each vignette separately. Internal consistencies per vignette ranged from Cronbach's $\alpha = .92$ to $\alpha = .97$ in Study 1 and Cronbach's $\alpha = .91$ to $\alpha = .95$ in Study 2, respectively.

Procedure

The questionnaire was divided into three parts. The first part asked for the basic demographic information (i.e. age and gender), and perception of neighbourhood safety. The second part of the measure included the five vignettes. These described everyday situations that had the potential to induce fear of becoming a victim of crime. Each participant read five vignettes, each of them being *one* of the two versions of a vignette (i.e. threat level as between-subjects factor per vignette). The five vignettes alternated within subjects in their sequence between threat level 1 in one vignette and threat level 2 in the next, i.e. this ensured that each participant did not receive five vignettes that were all within one threat level. In the third part of the task, subjects answered questions regarding the non-situational measures of fear of crime (affective, cognitive, and behavioural facet of fear of crime).

Data analyses

First, the effect of age group on the affective, cognitive, and behavioural facet of fear of crime as well as neighbourhood safety were tested employing four *t* tests.

In order to test the hypotheses with regard to situational fear of crime, 2 (age group: young vs. middle-aged) $\times$ 2 (threat level: 1 vs. 2) covariance analyses were conducted for

each vignette separately. Gender was included as covariate as it has been shown to be an influential factor in prior fear studies with women indicating more fear than men (cf. Hale 1996; review on gender: May et al. 2010). Moreover, story relation served as covariate. Self-reported situational fear was the dependent variable in each vignette. Because these analyses involved multiple testing of the hypotheses, we report exact *p* values to be able to compare *p* values with the Bonferroni-corrected α level for each family of hypotheses (five main effects of age group, five main effects of threat level and five interaction effects between age group and threat level; accordingly, $p < .01$ applies for each set of hypotheses to reduce type I error inflation). The partial eta squares representing the portion of explained variance in the dependent variable are reported for each significant effect. The following eta squares correspond with small (.10), medium (.25) and large (.40) effect sizes (*f*) respectively: $\eta^2 = .01$, $\eta^2 = .06$, $\eta^2 = .14$ (Cohen 1988).

Study 1

Participants

One hundred seventy-nine young adults (18–30 years old; *Median* = 24.0 years; 53 % female) and one hundred and six older middle-aged adults (50–64 years old; *Median* = 55.0 years; 49 % female) were recruited by students as part of a coursework in Lower Saxony in summer 2009. Participants were for example family members, friends, neighbours or passersby in a pedestrian precinct. The questionnaire was handed out to subjects in various settings (e.g. at home, at work, in the street) at different times of day; participants were asked to fill them out alone. Questionnaires could be given back immediately after answering or send back to university. The setting varied individually; however, because we randomly administered the different versions, this should not affect the differential age and threat effects systematically.

Results

Non-situational fear of crime and neighbourhood safety

In the first step, we conducted four *t* tests with age group as independent factor and the affective, cognitive and behavioural facet of fear of crime as well as neighbourhood safety as dependent variables. As shown in Table 1, there were no significant age-related differences in the affective and cognitive facet of fear of crime (affective: $t(279) = 1.57$, $p = .12$; cognitive: $t(279) = 0.36$, $p = .72$), supporting hypotheses. As hypothesised, significant age group differences were obtained for the behavioural facet of fear of crime, $t(275) = -2.79$,

$p < .01$, 0 demonstrating that the middle-aged age group behaved more precautionary than the young one ($M_{\text{young}} = 2.12$ vs. $M_{\text{middle-aged}} = 2.35$, $d = -0.34$ Cohen 1988). The results for neighbourhood safety deviated from prior studies by showing no significant age group differences, $t(283) = 1.17$, $p = .26$. Overall, the results of the non-situational measures demonstrate comparability with prior research results.

Situational fear

As can be seen in Table 2, analyses of variance revealed that effectiveness of threat manipulation was achieved in three vignettes (car breakdown: $F(1,265) = 87.49$, $p < .001$, $\eta^2 = .25$; park: $F(1, 268) = 5.20$, $p = .023$, $\eta^2 = .02$; market: $F(1,271) = 16.54$, $p < .001$, $\eta^2 = .06$). Situational fear was higher in the more threatening scenario in each case (car breakdown: $M_{\text{threat level 1}} = 3.04$; $M_{\text{threat level 2}} = 4.58$; park: $M_{\text{threat level 1}} = 4.45$; $M_{\text{threat level 2}} = 4.77$; market: $M_{\text{threat level 1}} = 2.07$; $M_{\text{threat level 2}} = 2.57$). According to the Bonferroni-adjusted α level, the threat levels are only significantly different in the car breakdown and market vignette.

Age group differences were obtained in two vignettes (park: $F(1,268) = 10.07$, $p = .002$, $\eta^2 = .04$; home: $F(1,270) = 6.54$, $p = .011$, $\eta^2 = .02$); however, only the park vignette demonstrated significant differences according to the Bonferroni-corrected α level. Contrary to hypothesis, younger adults exhibited more situational fear than middle-aged participants (park: $M_{\text{young}} = 4.84$, $M_{\text{middle-aged}} = 4.38$; home: $M_{\text{young}} = 4.56$, $M_{\text{middle-aged}} = 4.12$). There were no further age group effects, $ps > .10$ (see Fig. 1). Across all vignettes women indicated higher situational fear than men. Story relation showed significant influences on situational fear

in the park, home and market vignette. Subjects who were better able to relate to the story showed higher situational fear; this effect was independent from age.

Study 2

Participants

Two hundred forty-three adults were recruited in Lower Saxony, Germany, in January 2010 (young: 18–30 years, $N = 129$; Median = 22.0 years; 51.9 % female; old: 65–84 years, $N = 114$, Median = 71.0 years; 44.7 % female). A broad spectrum of participants was represented in the sample. Younger participants included students, technical and administrative employees at the university, pupils, apprentices and employees at social welfare offices. Older participants were recruited from choirs, sports clubs and facilities for further education. Questionnaires were handed out to subjects in various settings (e.g. at home, at work, at spare time facilities) at different times of day; participants were asked to fill the questionnaire out alone. Questionnaires could be given back immediately after completion or sent back to university at a time of their convenience.

Results

Non-situational measures of fear of crime and neighbourhood safety

As in Study 1, we conducted four t tests with the facets of fear of crime and neighbourhood safety as dependent variables and age as factor divided into two groups (young vs. old). As

Table 1 Means, standard deviation and range in non-situational measures of fear of crime and perceived neighbourhood safety for young and middle-aged adults in Study 1 and young and old adults in

Study 2 (theoretical range: affective and behavioural facet: never (1) to very often (5), cognitive facet: very unlikely (1) to very likely (4), neighbourhood safety recoded: very safe (1) to very unsafe (4))

	<i>M</i>		<i>SD</i>		Range	
	Young	Middle-aged	Young	Middle-aged	Young	Middle-aged
<i>Study 1</i>						
Affective facet	1.87	1.76	.57	.60	1.00–3.50	1.00–3.27
Cognitive facet	1.69	1.67	.36	.38	1.00–2.91	1.00–2.91
Behavioural facet	2.12*	2.35*	.60	.75	1.00–3.90	1.20–4.43
Neighbourhood safety	1.84	1.80	.64	.62	1.00–4.00	1.00–4.00
	Young	Old	Young	Old	Young	Old
<i>Study 2</i>						
Affective facet	1.95	1.91	.68	.68	1.00–4.36	1.00–3.64
Cognitive facet	1.73	1.82	.46	.38	1.00–4.18	1.00–3.00
Behavioural facet	2.30**	2.93**	.63	.68	1.21–4.42	1.40–4.64
Neighbourhood safety	1.86**	2.13**	.66	.67	1.00–4.00	1.00–4.00

* $p < .05$, ** $p < .01$

Table 2 Mean values in situational fear of crime for each vignette for younger and older adults in Study 1 and Study 2

Vignette	Threat level	Mean		Standard error		Effect size ^a		
		Young	Middle-aged/old	Young	Middle-aged/old	Threat	Age	$T \times A$
<i>Study 1</i>								
Market	1	2.0	2.2	0.10	0.13	.06***	.00	.00
	2	2.6	2.6	0.11	0.15			
Car breakdown	1	3.0	3.0	0.14	0.18	.25***	.01	.01
	2	4.9	4.3	0.14	0.19			
Train station	1	4.1	4.3	0.14	0.19	.00	.00	.01
	2	4.2	3.9	0.13	0.17			
Park	1	4.7	4.2	0.12	0.15	.02*	.04**	.00
	2	5.0	4.6	0.12	0.17			
Home	1	4.6	4.1	0.14	0.20	.00	.02**	.00
	2	4.6	4.1	0.14	0.18			
<i>Study 2</i>								
Market	1	2.2	2.3	0.13	0.16	.05**	.00	.00
	2	2.7	2.7	0.13	0.14			
Car breakdown	1	2.8	3.8	0.17	0.21	.19***	.05**	.02*
	2	4.5	4.7	0.17	0.18			
Bus stop	1	4.3	4.2	0.15	0.18	.00	.01	.02*
	2	4.0	4.7	0.18	0.20			
Park	1	4.5	4.2	0.18	0.19	.01 [†]	.01	.00
	2	4.8	4.5	0.15	0.18			
Home	1	4.6	4.3	0.16	0.18	.00	.03*	.00
	2	4.5	4.2	0.17	0.19			

$T \times A$ = Threat $\times$ Age

[†] $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

^a Effect sizes are partial eta squares (η^2)

Fig. 1 Means of young and middle-aged adults' situational fear by threat level (level 1 vs. 2) for each vignette in Study 1 (Gender and story relation as covariates. Error bars indicate one standard error above and below the mean.)

hypothesised, there was no significant difference between the age groups with regard to the affective and cognitive facet (affective: $t(237) = 0.40$, $p = .69$; cognitive: $t(238) = -1.67$, $p = .10$, see Table 1). Supporting hypotheses, older adults

differed significantly from younger adults with regard to pre-cautious behaviour and perceived neighbourhood safety (behavioural facet: $t(227) = -7.28$, $p < .001$; neighbourhood safety: $t(240) = -3.17$, $p < .01$). Older adults indicated

higher values on the behavioural facet ($M_{\text{young}} = 2.30$, $M_{\text{old}} = 2.93$, $d = -0.96$) and felt more unsafe than young adults ($M_{\text{young}} = 1.86$, $M_{\text{old}} = 2.13$, $d = -0.41$), thus replicating prior research results.

Situational fear

Mirroring Study 1, 2 (age group: young vs. old) $\times$ 2 (threat level: low vs. high) covariance analyses with gender and story relation as covariates were conducted for each vignette separately. The threat manipulation was efficient in two vignettes (car breakdown: $F(1,216) = 51.35$, $p < .001$, $\eta^2 = .19$; market: $F(1,218) = 11.27$, $p = .01$, $\eta^2 = .05$) and marginally significant in the park vignette (park: $F(1, 214) = 3.03$, $p = .083$, $\eta^2 = .01$), thus replicating results of Study 1. In each of those vignettes, the more threatening scenario elicited a higher value of situational fear (car breakdown: $M_{\text{threat level 1}} = 3.31$ vs. $M_{\text{threat level 2}} = 4.64$; park: $M_{\text{threat level 1}} = 4.34$ vs. $M_{\text{threat level 2}} = 4.64$; market: $M_{\text{threat level 1}} = 2.26$ vs. $M_{\text{threat level 2}} = 2.73$). However, as in Study 1, only the car breakdown and market scenario showed significant differences in inducing situational fear according to a Bonferroni-adjusted α level.

Age group effects were obtained in three vignettes (see Table 2; Fig. 2). Older adults indicated significantly more situational fear in the car breakdown vignette than young adults, $F(1,216) = 11.09$, $p = .001$, $\eta^2 = .05$ ($M_{\text{young}} = 3.67$ vs. $M_{\text{old}} = 4.28$). This effect was qualified by an interaction between age group and threat level, $F(1,216) = 4.94$, $p = .027$, $\eta^2 = .02$. The difference in situational fear between young and old adults was larger in the vignette version with lower threat ($M_{\text{young}} = 2.80$ vs. $M_{\text{old}} = 4.53$; difference = 1.73) than in the vignette with higher threat ($M_{\text{young}} = 3.83$ vs. $M_{\text{old}} = 4.74$; difference = .91). Moreover, an interaction effect between age group and the threat manipulation was found in the bus stop vignette, $F(1, 216) = 4.24$, $p = .041$, $\eta^2 = .02$ (lower threat: $M_{\text{young}} = 4.27$ vs. $M_{\text{old}} = 4.19$; difference = -0.08 vs. higher threat: $M_{\text{young}} = 4.00$ vs. $M_{\text{old}} = 4.65$; difference = 0.65). Older adults indicated more fear of crime than young adults only in the higher threatening vignette version. Based on these results, the hypothesis of higher situational fear in the older age group seems to be at least partly supported.

Yet, contrary to hypothesis but replicating findings of the first study, younger participants were significantly more fearful than older participants in the home vignette, $F(1,213) = 6.55$, $p = .011$, $\eta^2 = .03$ ($M_{\text{young}} = 4.70$ vs. $M_{\text{old}} = 4.24$). Moreover, although not significantly different for the two age groups, young adults exhibited also greater situational fear in the park vignette than older adults, which mirrored the results of Study 1. When applying the Bonferroni-adjusted α level, only one effect remains to be considered significant, namely the main effect of age group in the car breakdown scenario.

Again, being able to relate to the story had an influence on the bus stop, park, and home vignette independent from age. The better a participant could relate to the scenario the higher was situational fear of crime. Story relation was also high ($M_{\text{Car breakdown}} = 2.80$, $M_{\text{Home}} = 2.99$, $M_{\text{Park}} = 3.13$, $M_{\text{Bus stop}} = 3.15$, $M_{\text{Market}} = 3.17$). Moreover, as in Study 1, women indicated more situational fear across all vignettes but the market scenario.

Situational fear and precautionary behaviour

As outlined above, one potential explanation for the more frequent precautionary behaviours of older adults consists in an increased disposition to experience situational fear, which leads to preventive behaviours to avoid such situations. Higher dispositional fear would be exemplified by higher situational fear across various situations. As could be seen, old age was not associated with generally more situational fear. However, more frequent precautionary behaviour in older age could be driven by various specific situational fears with differing weights (i.e. instead of general situational fear) so that the vignettes in which older adults were more afraid could have a specific effect on the behavioural facet. Hence, we conducted a path analysis to test the hypothesis that the effect of age on precautionary behaviour is mediated by vignette-specific situational fear (on mediation cf. MacKinnon and Fairchild 2009). We first saved the z-standardised residuals after regressing situational fear on the threat manipulation for each vignette. Those residual measures were intercorrelated ranging from $r = .30$ to $r = .64$. Each situational fear residual was significantly positively correlated with the behavioural facet of fear of crime ($r_{\text{home}} = .24$, $r_{\text{park}} = .26$, $r_{\text{market}} = .28$, $r_{\text{bus}} = .32$, and $r_{\text{car breakdown}} = .40$). The more situational fear a person indicated, the more precautionary measures the person reported. Precautionary behaviour was regressed on age (effect coded: young = -1 , old = 1) and gender (effect coded: female = -1 , male = 1) in the first step. In the second step, the five individual situational fear residuals were included (see Table 3). The general model explains 34 % of the variance ($R^2\text{-change} = .12$, $p < .001$). The age effect on precautionary behaviour is not affected by the inclusion of the residuals of situational fear (1st step: $B = .63$, $\beta = .44$, $p < .001$; 2nd step: $B = .58$, $\beta = .41$, $p < .001$; the sum of indirect effects is not significant, $p = .32$). Situational fear residuals of the car breakdown and home vignette showed (marginally) significant positive relationships with precautionary behaviour ($\beta_{\text{car breakdown}} = .13$, $p < .05$; $\beta_{\text{home}} = .10$, $p = .10$).

Discussion

The aim of the present studies was to assess the extent that increasingly precautionary behaviours observed with age were

associated with an aged-related increase in dispositional fear as exemplified by higher situational fear responses across various situations. To assess this hypothesis, situational fear was evoked using the vignettes technique. This represents an extension on previous research as more contextualised and self-relevant threat scenarios were utilised. In the second step, it was investigated whether age-related differences in the behavioural facet of fear of crime are mediated by age-related differences in situational fear.

A mixed result pattern was obtained concerning situational fear. While the middle-aged group did not show more situational fear in any vignette in Study 1, the young-old age group indicated more situational fear in the lower threatening version of the car breakdown vignette in Study 2 (and also in the bus stop vignette if one applied a less restrictive significance criterion) than the young age group. This result provides some support for the hypothesis that young-old adults experience more situational fear than young adults, but middle-aged do not. However, the finding of younger adults indicating more situational fear than middle-aged adults in the home and park scenario in Study 1 and to some extent than older adults in Study 2 complicate the picture. It appears that there is no *general* direction of difference in situational fear of crime between age groups. As dispositional fear of crime was defined as a higher propensity to experience situational fear across a variety of situations, this suggests that there is no age-related difference in dispositional fear.

This is also reflected in the findings when referring them to the conception of Marshall and Brown (2006) and Schmitt et al. (2008) concerning the relation between dispositional fear and situational provocation on situational responses. If older adults had higher dispositional fear, age differences should be most pronounced at moderate levels of situational fear compared with lower levels of fear. Inspecting the levels of situational response across the different situations and their respective versions (see Fig. 2) showed conflicting findings in this regard. While there were no age differences at relatively low levels of situational fear (market scenario), older adults reported higher situational fear than young adults at the low level of situational fear in the car breakdown scenario as well as at a moderate threat level (high threat level version of bus stop scenario). In contrast, at moderate situational fear levels of other scenarios, there was either no age difference obtained or younger adults reported more situational fear than middle-aged and older adults.

Accordingly, the more frequent precautionary behaviour of older participants is not mirrored in *generally* higher situational fear. Despite this finding, it maybe argued that specific fear could be related to more precautionary behaviour. However, situational fear in vignettes, where older adults indicated more fear, also did not explain the age-related difference in precautionary behaviour although these fear residuals were positively related to precautionary behaviour. In sum, these results imply that the account for an increase in precautionary behaviour due to an age-related difference in dispositional fear is not tenable. Concurring, the overall positive relationship between situational fear of crime indicators and precautionary behaviour provides support for a meaningful relationship between situational fear as measured with the vignettes and precautionary behaviour. Yet, the age-related increase in the behavioural facet of fear of crime can neither be explained by a change in dispositional fear nor by specific age-related differences in situational fear.

In contrast, our results corroborate recent findings of developmental emotion psychology research in that age group differences in emotional reactivity depend on the specific stimulus material used (e.g. Kunzmann et al. 2005; Teachman and Gordon 2009) and imply that the opposing results observed in the studies of Fisher et al. (2004) and Ziegler and Mitchell (2003) may not have occurred by chance. In our studies, we found that younger adults reported higher levels of situational fear than middle-aged and young-old adults in some situations and young-old adults reported more situational fear in other situations. This result highlights the importance of embedding emotional stimuli within contexts that are relevant for both age groups in future studies. In this regard, it is important to question what those situations entail for different age groups. The specification of fear of crime as a general construct does not

Table 3 Predictors of precautionary behaviour

Variable	Precautionary behaviour			
	Model 1 <i>B</i>	Model 2		
		<i>B</i>	β	95 % CI
Constant	2.437	2.345		[2.30, 2.57]
Age	.63***	.58***	.41	[0.41, 0.75]
Gender	-.29***	-.12	-.08	[-0.31, 0.07]
Car breakdown ^a		.13*	.19	[0.03, 0.23]
Bus stop ^a		.08	.12	[-0.02, 0.19]
Park ^a		-.02	-.03	[-0.14, 0.11]
Market ^a		.04	.05	[-0.06, 0.13]
Home ^a		.10	.13	[-0.02, 0.21]
<i>R</i> ²	.22	.34		
<i>F</i>	29.35***	14.66***		
ΔR^2		.12***		

N = 209. *CI* confidence interval. Age and gender effect coded (age: young = -1, old = 1; gender: female = -1, male = 1)

* $p < .05$, *** $p < .001$

^a z-standardised residuals of state fear, effect of threat manipulation partialled out

Fig. 2 Means of young and older adults' situational fear by threat level (level 1 vs. 2) for each vignette in Study 2 (Gender and story relation as covariates. *Error bars* indicate one standard error above and below the mean.)

reflect age-related differences in terms of the perception of the situation and resultant situational fear.

In the present study, situations were selected that were equally applicable to young and old adults (i.e. accordingly, young and older adults did not differ in being able to relate to the situation). This was based on the assumption that there is a general age-related difference in situational fear with regard to crime. Given that findings did not support this assumption, we can only speculate about what contributed to the age-related differences in the scenarios. Potentially, the age groups differed in their interpretation of the implied crime or its specific potential to harm. If this was the case, this would reflect differences in the perception of threat in those situations, i.e. differences in response to situational provocation, which varies between age groups dependent on the specific situation. The question remains why they interpret the same situation differently. Similarly, the same potential crime could have been perceived but differently evaluated as threatening reflecting differences in the evaluation of the propensity that the implied crime would be carried out in real life; for example older adults could tax the probability higher that they will be verbally attacked by youths, whereas they judge their chances of being physically attacked lower. Moreover, the two situations that evoked more threat in younger adults (park, home) could have activated scripts (e.g. known from movies) that focus on young people as potential victims. Although both age groups indicated the same extent of being able to relate to the stories, younger participants could have answered more in line with the expected script that is associated with fear. At any rate, the addressed accounts reflect context-specific threat interpretations and underline a lack of a general age-related increase in situational fear of crime. Based on our findings, future studies need to investigate systematically which factors contribute to constructing threat in different age groups and what are the factors influencing this change.

Relating our findings to the lifespan developmental research about the frequency of negative emotions in young and old age, our results imply that the stability or decrease of fear is not due to a general increase in emotional reactivity and resultant avoidance behaviour, thereby reducing the frequency of fear. Still, frequency measures of affect or, specifically of fear of crime, that are obtained by asking about an aggregate of emotion episodes only give a rough estimate of the actual occurrence of fear of crime (Farrall and Gadd 2004). More importantly, the processes leading to the experience of fear are not taken into account. Gray et al. (2008) have already suggested different techniques such as experience-sampling procedures in which fear of crime episodes are recorded across a specific time period. In addition, life-course related changes in environment due to e.g. retirement as well as intentional selection of situations have to be considered to create a more comprehensive understanding about the frequency of fear (of crime) experiences.

Concerns about frequency measures also remain regarding the age-related increase in the frequency of precautionary behaviour. As this increase cannot be explained by a general increase in situational fear with age, other theoretical accounts have to be considered that are independent from the intensity of situational fear and age-related factors of provoking situational fear. One such could be shifting incentives of risky behaviour. Although walking through a park at night could be equally fear inducing for young and old adults, the reason leading to this situation could be differently perceived as rewarding ('it's (not) worth it', e.g. being out at night for finding a partner). In this case, the focus would switch to a question of loss and gain goals (e.g. Freund and Ebner 2005), the question would be: What is to be gained even if the risk is perceived to be the same and would elicit the same intensity of fear in the concrete situation. Why and how (if this is the case) does this appraisal change?

In this vein, it is important to note that for precautionary behaviour to be an expression of higher dispositional fear, fear need not be felt in the very moment of deciding to take precautionary actions. There is a continuum of the proximity of threat (from being confronted with a gun in a robbery to imagining this happening) and related (defensive) behaviours. The magnitude of felt fear and respective precautionary behaviours may vary according to this proximity. Given a distant threat, subjects may only retrieve a more abstract representation of threat when deciding for or against precautionary behaviour. Nonetheless, we argue that there are inter-individual differences in assessing threat in this case and that these differences are also reflected in the magnitude of situational fear in imagined scenarios. With evoking situational fear, we tried to capture these inter-individual differences in retrieving threat evaluations. It could be shown that this was related to precautionary behaviour but does not mediate age differences.

Moreover, even if younger and older adults do not differ in their mean intensity of situational fear and frequency of experiencing fear, it could feel qualitatively different, i.e. the feeling of fear could be more aversive (cf. Greve 2004). From research within the realm of horror movies, there is some indication that people differ in their enjoyment of negative feelings (Andrade and Cohen 2007). 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. Riediger et al. (2009) showed 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. In contrast, pro-hedonic motivations of wanting either to maintain positive affect or to dampen negative affect dominated in old age.

Some limitations of our study have to be noted that need to be considered before entirely refusing the account of generally increased situational fear as mediator for the age-related increase in the behavioural fear of crime. The first point concerns the use of convenience samples that maybe pose a threat to the external validity of the study with regard to the distribution of fear of crime. However, both samples replicated the findings of previous studies with regard to the non-situational measures of fear of crime and the young-old adults' perceived neighbourhood safety is also comparable with previous studies. Accordingly, both studies allow conclusions from the novel measures of situational fear of crime.

A related aspect consists in restricting the sample to young-old adults as the oldest age group. This was done to be able to compare results with previous studies using the non-situational measures of fear of crime and the neighbourhood safety question. Yet, old-old adults may differ significantly from young-old adults, as they have been shown to exhibit more severe health limitations and a change in the trajectory

of well-being and affect (cf. Kunzmann et al. 2000). In the same vein, middle-aged and young-old adults could not be compared directly within the same study as there was also a modification of the vignettes between the two studies. However, the car breakdown scenario was the same across both studies and age differences were only observed between the young and young-old age group. Accordingly, differences between various age groups may vary between situations as well.

A further concern focuses on the vignette scenarios. The scenarios differed with regard to their elicited mean fear level. As there is some indication that older adults reported more fear than young adults in vignettes that elicited lower mean levels of fear and younger adults reported more situational fear in the more intense vignettes, we cannot disentangle level of intensity and situation effects. One avenue for future research, therefore, lies in systematically varying vignette scenarios with respect to different contexts and more than two threat levels to carve out the specific effects of situation and intensity level of threat, thereby also allowing for larger effects in differences. Moreover, some vignettes did not induce differences in situational fear dependent on threat level. Yet, as different scenarios, e.g. market or park, induced differences in mean intensity of situational fear, it is clear that subjects responded to differences in induced threat even if threat level did not differ within one vignette scenario. Moreover, effect sizes of age differences are generally small and the application of Bonferroni-adjusted α levels suggests that interpretations of found age differences in both directions need to be treated with caution.

Third, differences in the processing of the scenarios have to be considered. Although there were no age group differences in the self-report of the ability to relate to the stories, it is possible that older adults have unconsciously down-regulated the threatening impact of at least some vignettes 'on-line' (e.g. John and Gross 2004; Scheibe and Carstensen 2010; Streubel and Kunzmann 2011). As one anonymous reviewer suggested, this could be due to the knowledge that preventive measures are already taken. Higher fear of young adults in the park and home vignettes and more fear of older adults in the car breakdown scenario lend support for this idea. The park and home vignettes describe scenarios where a person can take preventive actions to avoid being in such a situation (i.e. not walking through the park at night or not having cash at home or have suitable security devices). In contrast, the car breakdown scenario describes a scenario that can be less controlled and therefore less easily prevented. However, women also reported higher behavioural fear of crime but still have higher situational fear in almost every vignette scenario. Accordingly, the converse effect on situational fear of knowing that preventive measures are already taken do not seem to apply for women. Consequently, the

employment of emotion regulation mechanisms could be an age-specific process in this case. Streubel and Kunzmann (2011) report positivity effects for moderately arousing stimuli (versus no age difference with highly arousing stimuli). Positivity effects refer to the privileged processing of positive stimuli compared with negative stimuli (e.g. Scheibe and Carstensen 2010). Comparatively high fear intensity in the present studies constitutes a moderate intensity with regard to the scaling and thus could have produced a positivity effect. In order to test this assumption, regulation mechanisms should be manipulated both consciously and subconsciously. If this analysis should prove tenable, questions about the applicability of the vignette technique (or other emotion induction techniques) to test age group differences in emotional reactivity arise. Psychophysiological measurements and their time course in response to emotional stimuli constitute one road to complement self-report measures. However, if emotion regulation processes are at work

from early on in the information process, implicit measurements could provide another solution. A first study with a modified affective priming task indicates that older adults do not have more pronounced associations between crime-threat concepts (Kappes et al. 2011). This result corroborates the finding of the present studies that there is no general age-related increase in threat perception that could explain the increase in precautionary behaviour.

Acknowledgments Sincere thanks are given to Pippa Bell for her help in improving the readability of this article. The authors thank Hans-Werner Wahl and two anonymous reviewers for comments on an earlier version of this paper.

Appendix

See Table 4.

Table 4 Translated vignettes of Study 1 and Study 2

Market
You want to do some shopping and stroll alone at the market [market in Spain]. Market vendors praise their goods from fruits and vegetables to tools. The market is well visited and the crowd pushes through narrow alleys. From all sides people hustle and bustle. You want to buy something potentially and have 100 Euro in cash with you. You remember having read an article in the newspaper that emphasized the high crime rate (the high security) at this market.
Home
Because you expect an expensive mail delivery for the next morning that you have to pay in cash, you have drawn a large amount of money. [You could not make a personal appointment with a bank clerk on short notice.] Everybody could witness you. You spend the evening alone (with your partner) in front of the tv. In the news you find out about an ongoing series of burglaries in your living area. After some time you decide to go to bed. Shortly before falling asleep you hear noises from the direction of your entrance door. In the beginning, you doubt whether you really heard the noises due to your sleepiness. You sit up and now you hear without any doubt some scraping and scratching noises at your entrance door.
Park
It's already dawning as you begin walking home alone through the park. It is rather dark because there are no lights in the park. (The park and its surroundings are very well lit due to street lamps.) While you walk past some trees, you see a shadow out of the corner of your eye. It could be that someone hides behind a tree. As you turn around you cannot see anyone. It seems as if you are alone in the park. You keep moving, but after a short while you can hear footsteps that seem to follow you.
Station
It is night (noon) and you wait at a bus stop [train station]. You want to return home with the next bus [train]. You seem to be the only passenger at this moment because nobody else is in sight. Suddenly a group of clearly drunken youths appears in some distance to the bus stop [station]. At first, the group does not notice you; suddenly, however, one of them turns into your direction. You cannot understand what the group is talking; yet, you realize that the one looking at you calls the group's attention to you and now everybody is looking at you. You know that the next bus [train] will only arrive in 20 min
Car breakdown
You drive alone at night with your car on a secluded country road. The engine suddenly strikes and your car cannot be started again. You call the ADAC but they will only be arriving in an hour due to other operations. Soon afterwards a car approaches on the opposite lane. As it passes you, it slows down. You see a shabbily dressed man (well-dressed woman), who grins maliciously (smiles friendly) at you. Some distance behind you the car stops. Only after a few minutes the driver gets off his (her) car and approaches you. In the rear mirror you can only vaguely see his brawny (petite) stature and that (s)he is carrying something in his (her) hands.

Each vignette situation only differs in one threat aspect. In parentheses stand the threat level 1 content of the vignettes. The difference of the vignette in Study 1 compared with Study 2 is shown in brackets

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