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## A psychological perspective on vulnerability in the fear of crime

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**Title: A Psychological Perspective on Vulnerability in the Fear of Crime**

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**Running Head: A Psychological Perspective on Vulnerability in the Fear of Crime**

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## **A Psychological Perspective on Vulnerability in the Fear of Crime**

### **Abstract**

This paper examines vulnerability and risk perception in the fear of crime. Past studies have often treated gender and age as proxies for vulnerability, and on the few occasions that vulnerability has been operationalised, there has been little agreement on the mechanisms that underpin perceived susceptibility. To develop a more theoretically-driven approach, the current study examines whether markers of vulnerability are associated with higher levels of fear through mediating assessments of likelihood, control and consequence. Females are found to worry more frequently than males partly because (a) they feel less able to physically defend themselves, (b) they have lower perceived self-efficacy, (c) they have higher perceived negative impact, and (d) they see the likelihood of victimisation as higher for themselves and for their social group. Younger people are also found to worry more frequently than older people, but differential vulnerability does not explain this association. Finally structural equation modelling shows that the effects on worry of physical defence capabilities, self-efficacy and perceived consequence are mostly mediated through judgements of absolute and relative risk. Conclusions focus on the implications of this finding for debates about the rationality of the fear of crime.

**Key words:** Fear of crime, vulnerable adults, risk assessment, risk communication, gender differences

## INTRODUCTION

This paper examines public perceptions of the risk of criminal victimisation. Fear of crime is widely recognised as a significant social and political problem. Yet while numerous studies have sought to explain why some people worry more about falling victim than other people (for reviews, see Hale, 1996; Vanderveen, 2007; and Farrall, Jackson, & Gray, 2007), the research literature lacks a convincing psychological perspective on vulnerability. While theoretical advances have been made – and while studies have addressed various aspects of the public perception of risk – we lack any empirical assessment of a psychological account of perceived susceptibility to crime. Such a perspective promises to explain both high levels of general public anxiety and why some individuals worry more than others: crime may be one of those risks that is seen by some to be especially likely (for themselves and for their social group), especially uncontrollable in its event, and especially serious in its impact and consequence.

In order to assess this perspective, a survey of residents of two London neighbourhoods tests the twin-hypotheses that gender and age differences in fear of crime are due to (a) different perceptions of the likelihood of victimisation (for oneself and for one's social group) and (b) different perceptions of control over the event and anticipations of the extent of impact. By testing these hypotheses – based on the premise that these components of vulnerability explain both why females worry more frequently than males and why certain age groups worry more frequently than other age groups – the paper develops a more powerful definition of vulnerability in the fear of crime: markers of vulnerability (e.g. gender) are associated with higher levels of fear through mediating assessments of risk and susceptibility (Killias, 1990).

Criminologists have long debated the relationship between *crime* and *fear* (Biderman, Johnson, McIntyre, & Weir, 1967; Skogan, 1981; Hough & Mayhew, 1983; Tyler & Cook, 1984; Stanko, 1985; Sacco & Glackman, 1987; Sparks, 1992; Hough, 1995; Hale, 1996; Bilsky & Wetzels, 1997; Vanderveen, 2007). As research enters its fourth decade it is striking how the same themes – beginning with reports from a series of US government funded crime survey (e.g. Biderman *et al.*, 1967) – have persisted in much of the research and subsequent debate (Hale, 1996; Warr, 2000): first, more people feel at risk than are likely to fall victim (in any given year); and second, personal experience of victimisation and actual crime rates are only weakly correlated with fear.

Given the weak relationship between crime and fear, scholars have unsurprisingly looked elsewhere for explanations. Thus far it has been difficult to isolate unambiguous effects of the mass media (Hale, 1996; Ditton, Chadee, Farrall, Gilchrist, & Bannister, 2004). Instead perhaps the strongest evidence relates to the importance of public concerns about neighbourhood disorder, social cohesion and collective efficacy (Ferraro, 1995; Perkins & Taylor, 1996; Jackson, 2004; Wyant, 2008). The idea here is that the incidence and risk of crime has become coupled in the public mind with issues of social stability, moral consensus and the collective informal control processes which underpin neighbourhood order (Bannister, 1993; Walklate, 1998; Girling, Loader, & Sparks, 2000; Jackson, 2006). So not only do these 'day-to-day' issues ('young people hanging around', 'poor community spirit', 'low levels of trust and cohesion') produce information about risk and generate a sense of unease, insecurity and distrust in the environment (cf. Warr, 1990; Walklate, 1998; Innes, 2004; Jackson, Farrall, & Gray, 2007); many people use the language of 'fear' and 'crime' to express concerns about neighbourhood breakdown, the loss of moral authority, and the crumbling of civility and social capital (Taylor, 1995, 1996; Girling *et al.*, 2000; Jackson, 2008).<sup>1</sup>

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<sup>1</sup> In addition to this, recent criminological debate has also focused on feedback loops where politicians, media and research contribute to a culture of fear, leading individuals to (a) view the world more and more through the lens of crime, security and safety, and (b) demand more and more punitive policy from Government (Lee, 2007, 2001, 1999; Simon, 2007; Zedner, 2003; Furedi, 2006). Other debates have considered the importance of making sense of individual biographies when exploring the fear of crime (Hollway & Jefferson, 1997) and the refinement of the measurement of fear of crime (Farrall *et al.*, 1997; Farrall & Gadd, 2004; Jackson, 2005; Sutton & Farrall, 2005, 2008; Miller, 2007; Gray *et al.*, 2008a, 2008b). For recent broad-brush summaries of debates on fear of crime, see: Lee (2007), Farrall *et al.* (2007), Lee & Farrall (2008) and Walklate & Mythen (2008).

But an important and complementary perspective holds that personal vulnerability – defined here as differential perception of likelihood, control and consequence – operates alongside processes of social perception (cf. Killias, 1990; Hale, 1996; Smith & Torstensson, 1997; Vanderveen, 2007; Farrall *et al.*, 2007). Interpretations of the social and physical environment provide information about risk to observers (Ferraro, 1995). Yet the specific psychological properties of risk perception may extend beyond the sense of likelihood to include multi-dimensional assessments of risk. Because of high-profile media coverage and widespread signs of disorder, crime may be seen by many as a salient, vivid and relatively likely risk – one that is especially difficult to control and especially dramatic in its impact. Such perceived susceptibility – the feeling that one and one’s social group are especially likely to be targeted by criminals; the feeling that crime would have especially serious consequences; and the feeling of little control over the event – might affect certain groups disproportionately, thus playing a crucial role in both the production and distribution of fear.

As Hale (1996: 95) argues:

‘Any model trying to explain fear will include some notion of vulnerability. At a common sense level people who feel unable to protect themselves, either because they cannot run fast, or lack the physical prowess to ward off attackers, or because they cannot afford to protect their homes, or because it would take them longer than average to recover from material or physical injuries might be expected to ‘fear’ crime more than others. Three broad groups have been identified as falling into this category: women, the elder and the poor.’

To be sure, there have been theoretical advances on the meaning of vulnerability (Garofalo, 1981; Perloff, 1983; Killias, 1990; cf. Gabriel & Greve, 2003 Jackson, 2006). There have also been separate empirical advances in the role of public perceptions of the likelihood and consequence of victimisation (see *inter alia*: Warr, 1984, 1986, 1987; Vrij & Winkel, 1991; Denkers & Winkel, 1998a, 1998b; Winkel, Blaauw, Sheridan, & Baldry, 2003; Winkel, 1998). Yet no study has integrated existing psychological theory on fear of crime (e.g. Gabriel & Greve, 2003; Jackson, 2006) to extend a multi-dimensional conception of vulnerability that spans the full range of risk appraisals. Killias (1990) suggests that there are physical, social and situational aspects of vulnerability which are then related to ‘dimensions of threat’ that cover ‘exposure to non-negligible risk’, a ‘loss of control’, and ‘seriousness of consequences.’ For example, more serious consequences are expected to occur amongst women, the elderly and people in bad health (physical factors), amongst victims without networks of social support (social factors), and in deserted areas where no help is available (situational factors).

So far however, no study has defined the mechanisms that underpin vulnerability as perceived likelihood, control and consequence, and tested whether gender and age effects (markers of vulnerability according to Killias, 1990 and Hale, 1996) can be explained by the sense of likelihood of victimisation (‘am I likely to fall victim?’, ‘are people like me especially likely to fall victim?’), the perceived impact of victimisation (‘what will happen if I fall victim?’, ‘how will I cope with the impact?’), and a sense of control over these uncertain events (‘can I avoid situations where I might fall victim?’, ‘might I be able to deal with any problems should they arise?’). This study attempts to fill that gap. Along the way, disparate theoretical and empirical advances (principally Perloff, 1983, Warr, 1987, Killias, 1990, Winkel, 1998, Killias & Clerici, 2000, Gabriel & Greve, 2003, and Jackson, 2006) are integrated, and a meditational model of vulnerability is assessed which identifies the strength of direct and indirect effects of Killias’s (1990) ‘dimensions of threat’ on worry about crime.

### **Context to the study**

Insights into the nature and impact of vulnerability and risk perception promise to shed light on vexed notions of rationality in the fear of crime (cf. Sparks, 1992, and Lee, 2007). Given the negative impact on individual and community well being – and given the loose relationship to objective risk – the fear of crime is often seen as a social problem *in its own right*, separate from crime itself. And this view has led policy makers and criminal justice practitioners to ask whether

the public have a misplaced and exaggerated sense of the scope and priority of the threat due to sensational mass media coverage that instils a poor understanding of the reality of crime.<sup>2</sup>

Often the debate focuses on specific groups such as females and the elderly: are they especially prone to shrill media reports and misrepresentations of the risk of crime? There is strong evidence that females report higher levels of 'worry' or 'fear' of becoming a victim of personal crime than males (or are more likely to report feeling unsafe alone after dark) despite the fact that men are more likely to fall victim (Baumer, 1978, 1985; Skogan & Maxfield, 1981; Warr, 1984, 1985; Box, Hale, & Andrews, 1988; Ferraro, 1995). While recent work has questioned whether this is partly because men suppress the extent of their fears – compared to females, males may be less willing to express their concerns and anxieties (Sutton & Farrall, 2005, 2008; Sutton, Robinson, & Farrall, 2008) – debates about 'female fear' remain topical. Similar discussion has addressed the relationship between fear and age. Studies have shown that older people tend to report feeling less safe walking alone in their neighbourhood after dark than younger people do (Hale, 1996). While surveys which ask individuals about their worries about particular crime types often find that the age-fear relationship reverses (LaGrange & Ferraro, 1987; Chadee & Ditton, 2003; Nicholas, Kershaw, & Walker, 2007) the question of rationality again remains applicable.

A common riposte to the charge of irrationality is that those groups who express most concern (for example, women and the elderly) actually have greater 'self-perceived vulnerability to victimization and its more serious outcomes' (Skogan, 1986: 210; see also Skogan & Maxfield, 1981; Riger & Gordon, 1981; Stanko, 1997; Hollander, 2001). So – the argument goes – it is not that women (or older people) have a misplaced sense of risk and therefore an irrational level of fear. Instead women/older people are more sensitive to the consequences of victimisation than men/younger people, and less able to control its occurrence. Perhaps they feel less able to physically defend themselves? Perhaps they associate one crime with the prospect of another more serious crime (Warr, 1985, 1987; Sacco & Glackman, 1987; Ferraro, 1995)?<sup>3</sup> This issue has been much discussed in the literature (e.g. Skogan & Maxfield, 1981; Garofalo, 1981; Hale, 1996; Vanderveen, 2007). Indeed, empirical evidence has supported the idea that '...women's greater levels of fear lies in their heightened perceptions of personal vulnerability' (Hale, 1996: 97) so long as one defines vulnerability as the perceived seriousness of the crime (Warr, 1987) or the 'shadow of sexual assault' (Ferraro, 1995, 1996).

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<sup>2</sup> Two alternative perspectives on rationality in the fear of crime are of note. First, Richard Sparks and colleagues have argued that the narrow focus on the relationship between crime and fear has drawn attention away from the more intriguing nature of public sensibilities to crime. Not only is it difficult to fashion a yard-stick that measures what level of fear is 'rational' according to what level of objective risk (Sparks, 1994). Rationality debates obviate an analysis of the broader social and cultural significance of crime, social order and change (Girling *et al.*, 2000) and the relations between 'people's fears, feelings and dispositions towards crime and punishment and the shifting political cultures in which they reside' (Hope and Sparks, 2000: 3). Second, Stephen Farrall and colleagues have suggested that standard measures of the fear of crime in fact elide two 'dimensions' of fear: (a) everyday moments of worry; and (b) some more diffuse or 'ambient' anxiety about risk. Existing measures of worry about crime – such as those fielded by the British Crime Survey series – regularly show between 30% and 50% of the population of England and Wales express some kind of worry about being robbed, burgled or falling victim of some other crime (e.g. Nicholas *et al.*, 2007). However when one probes respondents further one finds that the number of individuals who worry on an everyday basis is actually quite a bit smaller (Gray *et al.*, in press; Farrall and Gadd, 2004; Farrall *et al.*, 1997). Moreover everyday worry about crime is relatively strongly associated with levels of crime and victimisation experience and is a greater drain on people's quality of life than more ambient insecurities (Jackson *et al.*, 2007).

<sup>3</sup> Gordon and Riger (1989) argue that men and women think about personal safety in different ways. This could be down to differing processes of socialisation, particularly regarding sexual vulnerability (Hamner and Saunders, 1984), with Stanko (1995: 50) arguing that sexual violence is a 'core component of being female and is experienced through a wide range of everyday, mundane situations.' Hollander (2001: 84) develops this perspective with the assertion that vulnerability to violence is also a core part of being female and dangerous is a core part of being male – 'these ideas are pervasive, widely shared, and constructed through interaction: through routine patterns of behaviour and communication that replicate and reinforce existing ideas about gender.'

### What is ‘vulnerability’?

But more work is needed if we are to develop a richer psychological perspective on vulnerability – one which includes a more complete range of public perceptions of risk. In particular we lack empirical evidence for the idea that gender/age differences (markers of vulnerability according to Killias, 1990) can be explained by differential susceptibility to the event and impact of victimisation. Before we begin however, it is important to review previous approaches to vulnerability. This will clear up a good deal of definitional confusion in the literature. It will also help motivate the current contribution.

In one of the first definitions advanced, Perloff (1983: 43) defined ‘perceived vulnerability’ broadly – as ‘a belief that one is susceptible to future negative outcomes and unprotected from danger or misfortune. Accompanying this cognition is an affective component, consisting of feelings of anxiety, fear and apprehension.’ In her theoretical paper, she considered whether non-victims tend to have an ‘illusion of invulnerability’, particularly in relation to seeing themselves as less vulnerable than others (‘it is not likely to happen to me ... it happens to other people, not me ...’; cf. Weinstein, 1980). She suggested that this judgement of relative risk might be related to (a) an ‘illusion of control’ (an exaggerated sense of the ability to control uncertain events; cf. Langer, 1975) and (b) to ‘downwards comparison’ (where we compare ourselves to others who are more at risk than we are because it makes us feel better or we have an unrealistic stereotype of others who fall victim; cf. Wills, 1981, Weinstein, 1980).<sup>4</sup> In a subsequent study Perloff and Fetzer (1986) operationalised ‘perceived vulnerability to victimization’ more narrowly, measuring it via relative risk judgements (e.g. ‘In your view, are you more or less likely to fall victim than other people?’).<sup>5</sup> Early conceptions of vulnerability to criminal victimisation thus focused on relative judgements of likelihood. But in an important (again theoretical) paper, Killias (1990) broadened the concept’s scope to include a range of personal, social and situational aspects (markers of vulnerability such as being of poor health, having few financial resources, or indeed being female or elderly) which he then linked to three key ‘dimensions of threat’: perceived exposure to risk, the anticipation of serious consequences, and the feeling of a loss of control. All of these, he wrote, are necessary to produce fear, but each is not (in and of itself) sufficient. He then suggested that these dimensions may combine to form complex interaction effects. Such a treatment of vulnerability certainly has a greater scope than that developed by Perloff and Fetzer (1986). But is it too all-encompassing? Hale (1996: 95) thought so, arguing that the taxonomy ‘...risks stretching the concept so far as to be in danger of losing its focus and explanatory power.’

One way forward might be to advance a more focused definition of vulnerability – with greater precision and explanatory purchase – that concentrates only on these three dimensions of threat: public perceptions of likelihood, control and consequence. This is the approach taken in the current study. The task is not to map out all those personal, social and situational aspects which are related to elevated perceptions of risk. Rather, the focus is only on those perceptions of risk, with markers of vulnerability treated only as correlates of fear, to be investigated as springboards for further explanation.

A number of studies have already addressed these perceptions, albeit not specifying them according to a broad psychological definition of vulnerability. For example, Killias and Clerici (2000) found that the self-reported (but not interviewer-rated) ability to defend oneself was associated with anticipated perceptions of personal safety in various situations. This implied that

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<sup>4</sup> Perloff (1983) suggested that ‘perceived unique invulnerability’ might be negative, either leading us to take fewer precautions than is prudent, or making us less able to cope with the impact of victimisation (it might be more difficult to adjust to unexpected, unforeseen or unpredictable events, and the sudden loss of exaggerated control). Victimisation then might lead either to ‘unique vulnerability’ (seeing oneself as highly vulnerable and others as less vulnerable) or ‘universal vulnerability’ (seeing oneself and others as equally vulnerable). She also suggested that ‘unique vulnerability’ is associated with ‘greater anxiety and depression, lower self-esteem, and a more negative self-image [compared to] university vulnerability’ (p. 53).

<sup>5</sup> The findings suggested that when people compared themselves to vague targets, they tended to judge their risk to be lower than average. But when people compared themselves to specific comparison targets, they tended to judge their risk to be similar. Given the opportunity, individuals often made comparisons with vague targets who were seen as especially vulnerable.

the fear of crime was related to ‘...the likely seriousness of the consequences, or to the inability of the respondent to control risk or outcome, or both’ (p. 448). And while this assertion went beyond their data (they did not actually measure public perceptions of consequence and control) it does seem plausible that self-reported physical capabilities are related to fear of crime because they are related to these dimensions of threat/vulnerability (which are then related to fear of crime). Interestingly Killias and Clerici found that gender remained statistically significant (although age did not) even after controlling for self-defence: some of the gender effect was explained, but not all.

Other research has employed measures of perceived likelihood and consequence (e.g. Winkel *et al.*, 2003; Denkers & Winkel, 1998a, 1998b; Winkel, 1998, 1989; Vrij & Winkel, 1991). Winkel (1998) postulated that fear (measured in his study by asking individuals to imagine ‘the possibility of becoming a crime victim’ and report whether they felt calm or tense, safe or unsafe) emerges when risk is primed and/or when the perceived likelihood/consequence changes. Winkel found that fear was related to both perceived likelihood – measured by asking individuals the chances of personal victimisation – and perceived consequence (measured by asking individuals the seriousness of the consequences of personal victimisation). He also found that while victimisation experience was not associated with levels of fear, it was associated with higher perceived likelihood and lower perceived consequence (compared to controls). This led him to reason that the lack of effect of victimisation on fear was due to the higher perceived likelihood and the lower perceived consequence (changes caused by victimisation) cancelling each other out.<sup>6</sup>

Warr’s (1987) model of ‘sensitivity to risk’ went beyond the main effects of likelihood and consequence on fear to investigate a more powerful framework. Analysing US data, he found that when people judged crime to be especially serious, a lower level of perceived likelihood was needed to stimulate some level of personal fear. Risk sensitivity refers to the idea that individuals are more ‘sensitive’ to a given level of perceived risk when they view the consequences of victimisation to be especially serious. As such: ‘ . . . circumstances or events that appear innocuous or comparatively minor to males or younger persons are apt to be viewed as more dangerous to females and the elderly because of the offences they imply or portend’ (Warr, 1994: 19). For example, one person may associate burglary with the risk of physical or sexual assault; another person may associate burglary with the loss of material goods and a great deal of inconvenience. Similarly, Ferraro (1995: 87) suggests that sexual harassment: ‘ . . . shadow[s] other types of victimization among women. Rape may operate like any other master offence among women, especially younger women who have the highest rate of rape, heightening fear reactions for other forms of crime.’

Perceived control might be one more element (alongside perceived likelihood and consequence) of perceived vulnerability to crime. Jackson (2004) found that the frequency of worry about crime was related to feelings of control over the risk. Houts and Kassab (1997) showed that some aspects of a ‘locus-of-control’ scale were related to perceptions of personal safety. Denkers & Winkel (1998a) measured a broad construct named ‘positive beliefs’ that covered a general locus of control scale, a measure of relative invulnerability (cf. Perloff, 1983) and a ‘style of evaluation’ that covers whether individuals felt generally positive over the past year in terms of finances, social life and health. While they did not disentangle these individual constructs, they did find that high ‘positive beliefs’ was negatively associated with fear of crime (measured by asking individuals to imagine ‘the possibility of becoming a crime victim’ and report whether they feel calm or tense, safe or unsafe’). And in a qualitative study, Tulloch (2003: 475) found that those interviewees who were fearful typically saw themselves at the ‘mercy of powerful others (criminal gangs, predatory males, armed gunmen, paedophiles, etc.) and chance (through the random lottery-like nature of attacks).’ In contrast the ‘unfearful’ individual felt

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<sup>6</sup> Adding to the general confusion about the definition of vulnerability however, other studies by Winkel and colleagues have defined vulnerability as perceptions of the likelihood of victimisation, while also at the same time measuring ‘negative impact’ (or perceived consequence, see Denkers & Winkel, 1998b) and ‘comparative vulnerability’ via the comparison of one’s own chances of victimisation compared to others chances (Winkel *et al.*, 2003).

protected, claiming high levels of control over their environment, feeling that others were not aggressively dominating public space.<sup>7</sup>

## THE STUDY

### Towards a psychological perspective on vulnerability

Looking across the literature therefore, all the pieces seem to be in place for a psychological definition of vulnerability. It is just that we lack the empirical assessment of an integrative perspective. People may feel especially vulnerable to the risk of crime because they see themselves as especially likely to be targeted, and because they feel that the impact of crime for them would be especially serious, and because they feel especially unable to control whether the event occurs or not. Accordingly, this study (a) tests whether public perceptions of likelihood, consequence and control (which are specified here to combine in a psychological definition of vulnerability) help explain gender and age differences in worry, and (b) assesses using structural equation modelling a mediational model that sequentially orders the variables and identifies the strength of direct and indirect effects.<sup>8</sup>

To be sure, there is some psychological work on the influence of social perception and environmental factors (van der Wurff, Van Staalduinen, & Stringer, 1989; Warr, 1990; Nasar & Fisher, 1993; Perkins, Wandersman, Rich, & Taylor, 1993; Perkins & Taylor, 1996; Nasar & Jones, 1997; Farrall, Bannister, Ditton., & Gilchrist, 2000; Jackson, 2004; Jackson *et al.*, 2007). There is some psychological work on the impact of criminal victimisation on fear (Winkel *et al.*, 2003; Denkers & Winkel, 1998a, 1998b; Winkel, 1998, 1989; Bilsky & Wetzels, 1997; Cates, Dian, & Schnepf, 2003). There is some psychological work on what ‘fear’ of crime means in the first place, and what is actually being measured (Farrall, Bannister, Ditton, & Gilchrist, 1997; Jackson *et al.*, 2007; Gray, Jackson, & Farrall, 2008a, 2008b); and on social desirability and suppression in the measurement of fear (Sutton & Farrall, 2005, 2008). And there is some psychological work on the impact of ‘fear’ on physical and psychological health (Chandola, 2001; Whitley & Prince, 2005; Stafford, Chandola, & Marmot, 2007; Kruger, Reischl, & Gee, 2007).

What we lack is an empirically assessed psychological perspective on vulnerability and risk perception. Gabriel and Greve (2003) differentiate between the fear of crime as a *transitory state* – which might be best measured by asking individuals about those moments when they find themselves personally concerned about safety and security (Farrall & Gadd, 2004; Gray *et al.*,

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<sup>7</sup> This is redolent of work that suggests that an environment seen to be unpredictable, unfamiliar and beyond the control of oneself or one’s community may thus generate a sense of disquiet and an instinctive need to scan the environment for signs of trouble – a sense that ‘...anything could happen’ (Warr, 1990; Carvahlo & Lewis, 2003).

<sup>8</sup> One study *has* addressed public perceptions of likelihood, consequence and control in the fear of crime, but it has done so in a rather unhelpful fashion. Cates *et al.* (2003: 228) defined fear of crime ‘...as a set of beliefs or attitudes’ and examined whether criminal victimisation was related to each of: (a) the severity of threat (measured by asking individuals how much they agree or disagree with statements such as ‘It is common these days to be tormented by others’, ‘Too many people today will steal if they see a way without getting caught’, and ‘Today, kids tear up property with no thought at all’); (b) the probability of occurrence (measured by asking individuals how much they agree or disagree with statements such as ‘I am scared that someone may rob me’, ‘I sometimes fear for my life’, and ‘I worry that someone might “stalk” me’); (c) the response efficacy (measured by asking individuals how much they agree or disagree with statements such as ‘Women need to carry “mace” or pepper spray’, ‘The police in our area keep vandalism down’, and ‘The courts are doing a good job of keeping the streets safe’); and (d) the self-efficacy (measured by asking individuals how much they agree or disagree with statements such as ‘If I saw a robber leave a store, I would try to get a good look at him for the police’, ‘I would rush to help someone who was being attacked’, ‘There is little that I can do to protect myself – it’s really up to the police’). First, these are somewhat idiosyncratic measures of these constructs (to put it mildly), mixing up many things in an unstructured and loose way. For example, might measuring the perceived probability of victimisation by asking individuals whether they are scared that they might be robbed confuse cognitive assessments of likelihood with emotional appraisals of the same risk? Second, the analysis focuses only on the association between criminal victimisation and each of these four ‘beliefs or attitudes’: Cates *et al.* (2003) did not address how different aspects of risk perception inter-relate and coalesce to predict some emotional response.

2008a) – and the fear of crime as a *dispositional state*. Dispositional fear is the ‘tendency to experience fear of crime in certain situations’ (Gabriel & Greve, 2003: 601):<sup>9</sup>

‘Such an individual disposition is characterized by experiencing more situations as being relevant to fear, being more likely to experience fear in a given situation, and possibly experiencing fear more intensely. Therefore, persons with such a disposition are more likely to experience the state of “being afraid” ... Dispositional fear of crime is one of the parameters that regulate, influence or determine its actual occurrence, i.e. the situational fear of crime (as a state) ... The dispositional fear of crime is the result of a long-term (ontogenetic) developmental process that is influenced by personal conditions and attributes (such as anxiousness, perceptive tendencies and coping resources) on the one hand, and by individual experiences of fear-relevant situations on the other, as well as by the interaction of these two factors.’ (Gabriel & Greve, 2003: 601-602)

The current perspective states that one aspect of ‘personal disposition’ and ‘dispositional fear’ (Killias, 1990) is a relatively stable set of judgements about likelihood, control and consequence of risk. One way of measuring dispositional states – the tendency to experience situations as fearful – is to ask individuals about their general perceptions of the chances of victimisation (‘am I/my social group likely to be targeted by criminals as a victim?’), their general control over the event (‘am I able to deal with any potential trouble?’) and their general perceived consequences of the event (‘is victimisation going to have an especially big impact on me?’). Gabriel and Greve (2003: 60) mention the mediating roles of self-efficacy and individual coping resources that lie between state and dispositional fear of crime. Yet the more precise conception presented here refers to specific representations of the risk of victimisation (rather than less specific and more wide-ranging self-efficacy and coping resources). Indeed Jackson (2006: 259) suggests that:

‘...people attach different weightings of consequences, likelihood, control, and affect to the potential of particular forms of criminal victimization. One individual may imagine that being burgled would involve serious material, physical, and psychological effects; another may feel that the consequences would be comparatively manageable. For the first individual the risk may be weighted by consequence more than likelihood; for the second likelihood may be most important in his or her composition of perceived risk. What is important, therefore, is the vividness and composition of risk.’

Gabriel and Greve’s (2003) dispositional state – the tendency of people to experience fear of crime in specific situations – is thus treated here as partly consisting of stable (vivid, evocative) representations of risk which cover likelihood, control and consequence.<sup>10</sup> Individuals might hold structured and stable representations of risk which then operate as part of a disposition to experience fear more intensely in certain situations. Individuals may generally feel unable to defend themselves against physical attack for example. Or they may generally feel that such an attack would have disastrous personal consequences.

This is not to suggest that people’s perceptions of risk *do not vary* from one situation to another. Of course people feel that crime is especially likely and especially uncontrollable in certain very specific circumstances. In this sense perceptions of risk are also fluid and situated from one situation to the next. Indeed perceptions of risk (and therefore according to the current definition, vulnerability) may include representations of the situational conditions (disorderly neighbourhoods which are seen to lack social cohesion and collective efficacy) under which crime

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<sup>9</sup> It is interesting that Greve (2004: 170-171) argues that: ‘If fear of crime is not *experienced* frequently or easily, it cannot be regarded as dispositional fear ... [since] a dispositional fear of crime should be apparent in at least the *frequency* of fear episodes.’ (emphasis in original)

<sup>10</sup> See Jackson (2008) for thoughts on other issues, including vividness/availability and morality/outrage.

is likely, uncontrollable, and serious (Ferraro, 1995; Jackson, 2004, 2006, 2008). But it is assumed here that people also have more stable representations of their susceptibility to crime.

How to link vulnerability/perceived risk to emotion? In a model from clinical psychology that explicates worry and the worry process, Tallis and Eysenck (1994) used Lazarus' (1966; see also Lazarus & Folkman, 1984) theoretical framework to distinguish between threat significance ('personal cost', 'imminence' and 'likelihood' of an anticipated event – the primary appraisal) and coping resources (secondary appraisal). When estimated threat exceeds estimated coping resources, an individual might feel threatened and worry will be triggered. With worry about crime, 'imminence' (when the event might occur) and 'likelihood' (how likely it is that the event will occur in the first place) might be collapsed into the perceived likelihood of victimization occurring *in the next year*. Worry would then be stimulated by the appraisal of threat: the seriousness of the consequences of victimization (the event and one's ability to cope with the consequences), the likelihood of the event occurring, and the ability to control its occurrence in the first place. The model is further simplified by expecting each to have direct effects on worry (although in the final stage of modelling, control and consequence are also expected to have direct effects on likelihood). Finally, throughout the study worry is treated as the transitory state. Emotions are short-lived bodily events, located in space and time. Accordingly, individuals were asked in this study how often they have worried about falling victim of a number of crimes over the past month (see Greve, 1998; Farrall & Gadd, 2004; Gray *et al.*, 2008a).

The overall approach taken in this study echoes Wikstrom and Sampson's (2006: 2) discussion of research into crime: 'According to a mechanism-based approach most correlates (or "risk factors") of crime are in fact spurious associations that denote markers rather than represent mechanisms that actually cause a particular social action.' The social, personal and situational characteristics that Killias (1990) would call vulnerability – because they are associated with fear of crime – are treated in this study as only markers that demand further investigation. Correlates are evaluated for their potential as representing causal mechanisms. Here gender (and age) is assessed as a correlate of fear. One then uses gender as a springboard to address the psychological mechanisms underpinning gender differences. Namely, females might worry more frequently about falling victim (transitory states) compared to males because they see the event as more likely, more consequential, and less able to control (dispositional states). It is these intervening psychological processes that the study investigates.

## **METHOD**

### **Participants**

A pure random probability sample of 1,800 residents from two contrasting neighbouring areas of London was drawn from the United Kingdom Electoral Register, which covers adults registered to vote in General Elections. The first area – given the pseudonym Victoria Gardens – was a wealthy part of London with relatively low levels of crime. The second area – given the pseudonym Catherine House – was a deprived part of the same Borough with high crime rates and a local reputation for drugs and anti-social behaviour. In the two areas in question, the Electoral Register identified approximately 6,000 registered voters.

A questionnaire – including a covering letter and explaining the request to participate and assuring anonymity – was mailed with a self-addressed, postage-paid envelope. Financial constraints meant that Dillman's (1999) guidelines for achieving a successful postal survey could not be followed (here, 'successful' is defined as having a response rate of 60% to 70% and above). Only two personalised contacts were made. If no questionnaire was returned within 2 weeks, a reminder letter and duplicate questionnaire was sent out. In an attempt to increase the response rate, a 'raffle' was carried out (three prizes of £50, £25 and £10). The overall response rate was 26.6% (479 completed and returned questionnaires) with 33.2% in the first area (299 in Victoria Gardens) and 20.0% in the second (180 in Katherine House).

### **Measures**

The principal topics of the survey were: (a) worry about crime, (b) perceptions of personal risk of crime, (c) relative risk judgements and (d) respondent assessments of their ability to defend themselves from physical attack. In order to measure worry about crime and perceived personal

risk, respondents were asked four different question sets, with each set relating to one of the following seven types of crime:

- being attacked by a stranger in the street;
- being robbed or mugged in the street;
- being harassed, threatened or verbally abused in the street;
- being pick-pocketed or having something stolen in a non-violent manner;
- having the home or property vandalised or defaced;
- having someone break into the home whilst the inhabitants were there; and
- having someone break into the home whilst the inhabitants were away.<sup>11</sup>

On worry about crime, respondents were how often (if at all) they had worried about becoming a victim of each of the seven crimes while in their own neighbourhood.<sup>12</sup> The response alternatives were: 'not once in the last month'; 'once or twice in the past month'; 'once or twice in the past week'; and 'every day'. This is a short time period. However, a number of studies on the response process with behavioural survey questions indicate that using a short and focused time period increases the tendency to enumerate, which may improve the accuracy of responses (e.g. O'Muircheartaigh, Gaskell, & Wright, 1993). Furthermore, they were very close to those which O'Muircheartaigh *et al.* (1993) identified as typical in a wide range of national surveys; and are consistent with the work of Jackson (2004, 2005) and Jackson and Sunshine (2007). The objective is to get reliable estimates of frequency for each respondent and then model the various across the sample.

Risk perception was treated as three separate assessments of the absolute likelihood of victimisation, personal control over its event, and anticipated consequences:

- Respondents were asked how likely they thought it was that they would fall victim of each of the seven crimes during the next twelve months. A seven-point scale was used with only the endpoints labelled: 1 = *definitely not going to happen* and 7 = *certain to happen*.
- Respondents were asked the extent to which they felt able to control whether or not they became a victim of various crimes. A seven-point scale was used with only the endpoints labelled: 1 = *not at all*; and 7 = *to a very great extent*.
- Respondents were asked the extent to which an experience of a typical instance of each category of criminal victimisation would affect their lives. The questions used seven-point response alternatives which were labelled at the endpoints: 1 = *not at all*; and 7 = *to a very great extent*.

The study also addressed judgements of relative risk, measured by asking respondents the following question:

'Please could you now think about the sorts of people who are more or less likely than average to become victims of crime in the [current area]. To the best of your ability, please indicate whether you think the following groups are more or less likely to experience crime than the other groups in this area. *For example, the first question*

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<sup>11</sup> These crime categories were expected to cluster within two domains: personal crime in public space and burglary. These form two distinct (but correlating) latent constructs interpreted as worry (to take worry as an example) about crime in public space and worry about property crime. This follows the idea that individuals do not distinguish between offence categories when they are appraising the danger of a particular type of victimisation, but rather have a more general sense of possibility.

<sup>12</sup> Asking about the past frequency of worry may be the most precise way of measuring the everyday experience of the fear of crime (Farrall & Gadd, 2004; Gray *et al.* in press). By contrast to standard measures – which typically ask individuals how safe they feel walking alone in their area after dark, or how worried they are overall about falling victim of different crimes – these indicators focus on actual events of emotion. They are also more highly correlated (compared to standard measures) with the self-reported impact of crime on people's own quality of life (Jackson *et al.*, 2007).

*asks whether females aged between 18 and 30 more or less likely to become a victim of crime than the other groups (females of other ages and males of all ages overall)?'*

The groups were: males aged between 18 and 30; males aged between 31 and 64; males aged 65 and upwards; females aged between 18 and 30; females aged between 31 and 64; and females aged 65 and upwards. The respondents alternatives were: 'much less likely than the other groups'; 'a little less likely than the other groups'; 'about the same chance as the other groups'; 'a little more likely than the other groups'; 'much more likely than the other groups'. A new variable was derived which captured the comparison involving respondents' own gender and age group. For example, if the respondent fell in the 'male aged between 18 and 30' category, the new variable was their response to the comparison of 'males aged between 18 and 30' to the other groups.

Finally, the survey asked respondents the following question: 'How well do you think you could physically defend yourself or ward off an attack from a man?' The response alternatives were: 'Very well', 'Pretty well', 'Not very well' and 'Not at all well'.

### **Procedure**

Individual indicators of worry about crime and the three components of personal risk perception (likelihood, control and consequence) were combined into two sets of indices for each construct, one set involving all crimes (so one index of worry about all crimes, one index of perceived likelihood of all crimes, one index of perceived control over all crimes, and one index of perceived consequence of all crimes) and the other involving personal crime (4 indices) and property crime (4 indices) separately. Factor scores for each measure were derived from exploratory factor analysis where only the appropriate crime types were included (Jackson, 2005). Hierarchical linear regression was then used to examine whether personal risk perception and the relative risk judgement explained or attenuated any gender effects on worry about crime. Finally, structural equation modelling was used to test a mediational model of the psychology of risk in the fear of crime, first for the full sample, then for a set of sub-groups defined according to type of crime, gender and age.

## **RESULTS**

### **Examining gender effects in the fear of crime**

Table 1 shows the results from seven models that comprise a set of hierarchical linear regressions. The first specified only one explanatory variable: gender. The statistically significant regression coefficient indicates that females had, on average, a higher overall score than males on index of worry about all type of crimes. Models 2 to 6 then included one at time: (a) physical ability to defend oneself, (b) relative risk judgement, (c) perceived consequences, (d) perceived control, and (e) perceived likelihood. Each was a statistically significant predictor of worry about crime, and in the cases of physical defence and the relative risk judgement, the gender effect lost its statistical significance. First, females on average felt less able to defend themselves from attack, and this explained why they typically worry more frequently than males. Second, females on average believed that women in general (and in particular, women of their own age group) were more at risk of crime than males, and this also explained their more frequent worry. For consequence, control and personal likelihood, the effect of gender remained statistically significant, but was significantly reduced when compared to Model 1.

INSERT TABLE 1 ABOUT HERE

Finally, Model 7 included all the explanatory variables in one model. Here we found that only the relative risk judgement, feelings of control and judgements of personal likelihood were statistically significant predictors of worry about crime. Because physical defence and consequence was each an important predictor when included in the restricted models (model 2 and 4 respectively), this suggested that some kind of mediational model should be examined: perhaps physical defence and consequence fed into judgements of likelihood and control? We return to this issue later in the paper.

Given the qualitative difference between crimes of a ‘personal’ nature – such as physical attack in the street by a stranger, or mugging/robbery – and crimes of a ‘property’ nature – such as burglary or vandalism – it was important to repeat these analyses for these two cases. Table 2 shows the results for personal and property crime. The most striking finding was that gender was a statistically significant predictor of worry about personal crime (Model 1, personal crime) but was not for worry about property crime (Model 1, property crime). The second important finding was that the coefficients when the response variable was worry about personal crime were similar to the findings when the response variable was worry about all crime (Table 1). Finally, apart from no gender effect, judgement of consequence was (for property crime) an important predictor of worry but judgement of control was not (Model 2, property crime).

INSERT TABLE 2 ABOUT HERE

### **Examining age effects in the fear of crime**

So far we have seen that females worried more frequently than males about personal crime, but did not worry any more or less frequently about property crime. Moreover, each individual aspect of vulnerability and risk perception either attenuated the effect of gender or rendered it not statistically significant. Thus compared to males, females felt less able to physical defend themselves, felt that their own gender (and age group) are more likely to fall victim, judged the consequences to be more serious, felt less able to control the risk, and felt it is more likely – and each of these went some way to explaining why females worried more about personal crime than males did.

But what about age? For brevity, the results of the statistical analyses are not presented here.<sup>13</sup> In summary however, the bivariate analysis found a statistically significant *negative* effect of age on worry about crime (combining personal and property crime): the older respondents were, the less frequently they worried. Each individual aspect of vulnerability and risk perception was a significant predictor of worry about crime (now controlling for the effect of age), however the age effect did not decrease (if anything, it increased for physical defence and feelings of control). Looking individually at personal and property crime, age was only a significant predictor of worry about personal crime, and again the individual aspects of vulnerability and risk perception did not reduce the effect of age for worry about personal crime. For personal crime, control, likelihood and relative risk judgements were significant factors; for property crime, perceived consequences were also important.

### **Testing a mediational model of risk perception and vulnerability**

The analysis thus presented hints strongly at the presence of a number of mediational relationships. Most strikingly, the impact of gender on worry about personal crime was entirely mediated by the judgements of vulnerability and risk perception. But tellingly, physical defence and perceived consequences were statistically significant predictors of worry about personal crime in restricted models, but were no longer significant in the full models.

Consequently, the next step was to test a mediational model. For space reasons, only the final analyses are presented here. Initial analysis had age and gender on the left-hand side of the model, worry on the right-hand side of the model, and mediating risk perception variables in the middle. Findings confirmed that the effect of gender on worry was entirely mediated by these intervening variables. This was not the case with age. Then, moving to focus on vulnerability and worry, a model was tested on the full sample (Figure 1). However because multi-group analyses revealed different strengths of associations according to different gender and age groups, the analyses were tested, first for males and females separately, and second for three age groups separately: younger, middle-aged, and older people. For space reasons, the focus is on personal not on property crime.

INSERT FIGURE 1 ABOUT HERE

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<sup>13</sup> Please contact the author for the full statistical results.

Figure 1 first showed general support for a mediational model that specified that physical defence predicted control and consequence; control, consequence and the relative risk judgement predicted likelihood, and all predicted worry about crime (all paths not statistically significant were removed from the model). The key difference between males and females was that control and relative risk judgements predicted worry about personal crime for females, but they did not for males. Similar analyses for age showed three differences (not reported here). First, the relative risk judgement was an important predictor of perceived likelihood and worry about personal crime for middle-aged and older people, but not for younger people. Consequently, judging their own age (and gender) group to be more likely to fall victim was a significant factor for the middle-aged and older, but not for the younger (who have a greater risk of victimisation). Second, physical defence was not a factor in explaining perceived likelihood for older people, but it was for the rest. Third, perceived control was not predictive of worry for older people, but it was for the other two age groups.

## DISCUSSION

This paper began by arguing that despite some promising conceptual advances – and despite a number of studies that have addressed perceived risk and the fear of crime – few studies have addressed the psychological processes that underpin vulnerability and perceived susceptibility to crime. This is not to say that there are no psychological models in the literature. Far from it. The problem is that we lack a convincing psychological perspective *on risk perception and vulnerability*. To be sure, some studies have addressed likelihood and consequence appraisals (Winkel *et al.*, 2003; Denkers & Winkel, 1998a, 1998b; Winkel, 1998, 1999; Vrij & Winkel, 1991) and perceived control over victimisation (Jackson, 2004, 2005). Yet no study has specified whether all three risk perceptions – alongside the judgement of relative risk and the self-rated ability to defend oneself from physical attack – operate as the psychological mechanisms that underpin vulnerability.

In order to integrate a rather disparate research literature, this study examined whether gender and age differences were explained by different perceptions of risk. Age and gender have often been used as proxies for vulnerability within the fear of crime literature. Here they were used only as a springboard to develop a psychological account of vulnerability: are correlates of fear (e.g. gender) associated with higher levels of fear because of mediating and differential assessments of risk and susceptibility to crime (i.e. increased self-perceived vulnerability)?

Support was found for this idea with respect to gender but not with respect to age. The study found that females worried more frequently than males about personal crime (but not about property crime) and that this could be explained either fully or partly by differential risk perception. Females felt less in control than males and judged the consequences to be higher; they judged likelihood to be higher and felt that their own social group was more likely to fall victim than other social groups. This study also found that younger people worried more frequently than older people about personal crime (but not about property crime) – a finding consistent with the studies of Akers, La Greca, Sellers, and Cochran (1987), Chadee and Ditton (2003), Ferraro and LaGrange (1992), LaGrange and Ferraro (1989) and Ziegler and Mitchell (2003) – but contrary to gender, these differences could not be explained by differential vulnerability or likelihood-perception. And further investigation – which differentiated between personal and property crime – showed that females worried more frequently than males about personal crime, but that there was no gender difference in worry about property crime. The same was true for age: younger people worried more than older people about personal crime, but there was no age effect with property crime.

Since the findings suggested a series of mediational relationships, structural equation modelling was then carried out to test a number of models. Support was found for the idea that (a) physical defence predicts control and consequence; (b) control and consequence both predict likelihood; (c) relative risk judgements also predict absolute risk judgements; and (d) relative risk judgements and likelihood both predict worry about crime. Notably, perceived control was more important to females and to young people compared to males and to older people. Indeed, relative risk judgements were more important to females and to older people compared to males and to younger people. Strikingly, for males the effect of control, consequence, and relative risk on worry

was entirely mediated by likelihood for males. But for females control and relative risk had direct effects on worry.

Before we proceed to the implications of the study, a quick note on work by Sutton & colleagues (Sutton & Farrall, 2005, 2008; Sutton *et al.*, 2008) that has suggested that gender differences in fear are less to do with actual differences in fear and more to do with men being less willing to report fear than women. The gender differences found in the current study could indeed be due to self-presentation biases and social desirability, not to actual differences in worry. Males may have worried just as frequently as females, it is just that they were less likely to admit it. If this was the case however, all the other responses to vulnerability/perceived risk question would also have to be explained by systematic differences in self-presentation. Thus even with the same level of fear experienced on a day-to-day basis, females would be more likely than males to say they had worried more often, more likely to report that the consequences were more severe, more likely to report that they had less control, and more likely to report that it was more likely (for them and for their social group as a whole). In short they would have presented themselves not just as more worried but also as more vulnerable.<sup>14</sup> This is certainly possible: men may feel just as vulnerable as women – and worry just as frequently as women – but just be less willing to admit to others their worries and sense of vulnerability. Future work might investigate this broader conception of ‘deceptive responding’ and the problems of self-presentation in fear of crime research.

## CONCLUSION

Overall – and looking across a substantial and interdisciplinary literature – research into the fear of crime has paid scant attention to the psychological processes which underpin risk perception and vulnerability. To be sure, theoretical advances have been made. But in the main, studies have operationalised ‘vulnerability’ through simplistic means. Circular arguments explain that women (or the elderly, or the poor) are worried about crime because they are vulnerable (i.e. they worry more). Yet despite Killias’s (1990) careful conceptual work – and despite studies which have variously addressed perceived likelihood, perceived consequence and locus of control, most often not treating these judgements as part of vulnerability (Warr, 1984, 1986, 1987; Vrij & Winkel, 1991; Denkers & Winkel, 1998a, 1998b; Winkel *et al.*, 2003; Winkel, 1998) – no study has tested a complete definition of perceived susceptibility that draws upon a complete set of risk perception judgements to explain gender and age effects.

Future work might extend the current strategy to explore the full range of physical, social and situational factors that make up Killias’s (1990) schema. A good example might be health. Stafford *et al.* (2007) have showed that fear of crime affects physical and mental health. But it is plausible that health also affects fear of crime: those of poor physical and mental health might feel more vulnerable and thus worry more. They might feel likely to be targeted by criminals; they might feel unable to control the event; and they might feel that victimisation would have especially serious consequences. Future work into vulnerability might also address the distinct dispositional and transitory/dispositional aspects of the fear of crime. For example, how do the dispositional perceptions of risk (the general perceptions of likelihood, control and consequence that were addressed in this study) interact with situational risk appraisals (the perceptions that relate to a specific situation to produce momentary worries about falling victim)?

This paper found that individuals worry about crime because they appraise a threat. Threat assessment involves judgements about the likelihood, control and consequence of risk. When individuals judge the impact of crime to be especially high, and when individuals feel that they

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<sup>14</sup> It may be that the frequency measure of worry used in this study is less susceptible to these self-presentation biases than the standard measures investigated by Sutton and colleagues (‘How worried are you ...?’). In Robinson & Clore’s (2002a, 2002b) presentation of a range of problems in emotional self-report, they suggest that some people report identity-related beliefs when answering questions about their everyday emotions. Applying this to standard measures of fear of crime (‘How worried are you ...?’), men may be more reluctant because it is may not be part of their male identity to admit vulnerability. However, frequency measures on the other hand, may be less likely to tap into identity-related beliefs, because they direct respondent attention onto actual experiential knowledge (i.e. actual episodes of worry).

have especially low levels of control over its incidence, then levels of worry will tend to be relatively high. By contrast, judgements of relative risk (how likely is it that people from my own social group will fall victim compared to other social groups?) and absolute risk (how likely is it that I will become victim?) are even more important in shaping subsequent worries about crime.

These findings have implications for debates about the rationality of the fear of crime. Much of the academic, social and political interest in the fear of crime has centred upon the relationship between crime and fear (and the negative impact of fear on individuals and communities). On the one hand, some argue that fears are grounded in the reality of crime, meaning we should not diminish the different ways in which crime damages on society. On the other hand, some suggest that fears are stoked up by the mass media and utilised by cynical politicians to push hard-line but populist criminal justice system policies. This study complicates any easy comparison between 'fear' and 'crime.' As Sparks (1992: 123) suggests, to describe fear as rational because it is 'wholly accounted for an antecedent level of objective risk' begs the question: what are the criteria for proportionality? To decide the basis of when a fear is 'wholly accounted for' involves moral and political choices. This study suggests that some of these moral and political choices centre upon public perceptions of control and consequence. Can we in all conscience describe someone as irrational (and try to educate them about the reality of crime) when their fear is higher than the actual probability of victimisation but when they also judge the consequences of victimisation to be especially high and feel especially unable to control the event? While perceptions of likelihood can be wrong, it is surely more difficult to argue that someone's sense of control and consequence is somehow out of kilter and in need of correction and education.

That being said, the present study did show that public perceptions of the absolute and relative risk crime were the most important predictors of fear of crime. Indeed the effect of perceived control and consequence on worry was often mediated by perceived likelihood (absolute risk and relative risk). Moreover females often felt that their people of their own gender and age group were more likely to be victimised than other gender and age groups (and this helped explained their more frequent worries). Perhaps we should retain some sense of proportionality. Comparisons between public perception of the actual extent of crime might still be useful, even if the water is muddied somewhat by the roles of perceived control and consequence.

Overall, looking across the literature and reviewing the debates surrounding fear of crime over the past few decades, crude labels of 'irrational' and 'rational' have seemed to draw attention away from a more careful and nuanced investigation of the psychological mechanisms underpinning fear of crime. The idea that risk should be judged only through cold assessments of probability seems naïve and unrealistic; empirical enquiry into public perceptions of the risk of crime has been unnecessarily narrow. This study has looked at one aspect of lay representations of risk – a psychological sense of vulnerability in the form of not just likelihood but also control and consequence – and offered one explanation for the weak link between crime and fear.

'If we are afraid of a thing we must first have an image or representation of it ... Why then should it *not* be the case that the fears which preoccupy us most would not be those which are most likely to come to pass? Rather they are likely to be the most representationally powerful fears – fears which attach to our sense of identity, security and potency in the world and which therefore affect us as whole social beings and not as the risk-accounting ciphers of crude rational choice theories' (Sparks, 1992: 133).

People may develop a representation of risk that includes their sense of control over the world and the resonance of the consequences of victimization, distilling what they value and what they would hate to lose. Some feel they would lose much of value (and have little control over the potential loss) and that the risk of crime is especially vivid, especially evocative and especially significant. It is here – on the topic of vulnerability and the psychology of risk – that psychologists might most contribute, to help to unravel the dynamics of this important social and political issue of the day.

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TABLE 1 Hierarchical linear regression, regressing the frequency of worry about all crimes onto gender, relative risk judgements, and personal perceptions of risk. The numbers in parentheses are 95% confidence intervals for the coefficients.

Variable	Model						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Gender	.323*** [.133; .512]	.176 [-.027; .378]	.160 [-.020; .339]	.197* [.007; .388]	.264** [.084; .444]	.204* [.043; .364]	.113 [-.057; .283]
Physical ability to defend oneself		-.218*** [-.336; -.099]					.030 [-.083; .143]
Relative risk judgement: group-level			.382*** [.289; .474]				.178*** [.088; .269]
Perceived seriousness of consequences				.249*** [.148; .349]			.068 [-.023; .158]
Perceived control					.324*** [.231; .417]		.149** [.056; .242]
Perceived likelihood						.550*** [.464; .635]	.429*** [.337; .520]
(Constant)	-.155	.392	-1.149	-.081	-.447	-.155	-.751
R2	.028	.060	.170	.084	.132	.311	.374

\* significant at 5% level, \*\* significant at 1% level, \*\*\* significant at 0.1% level

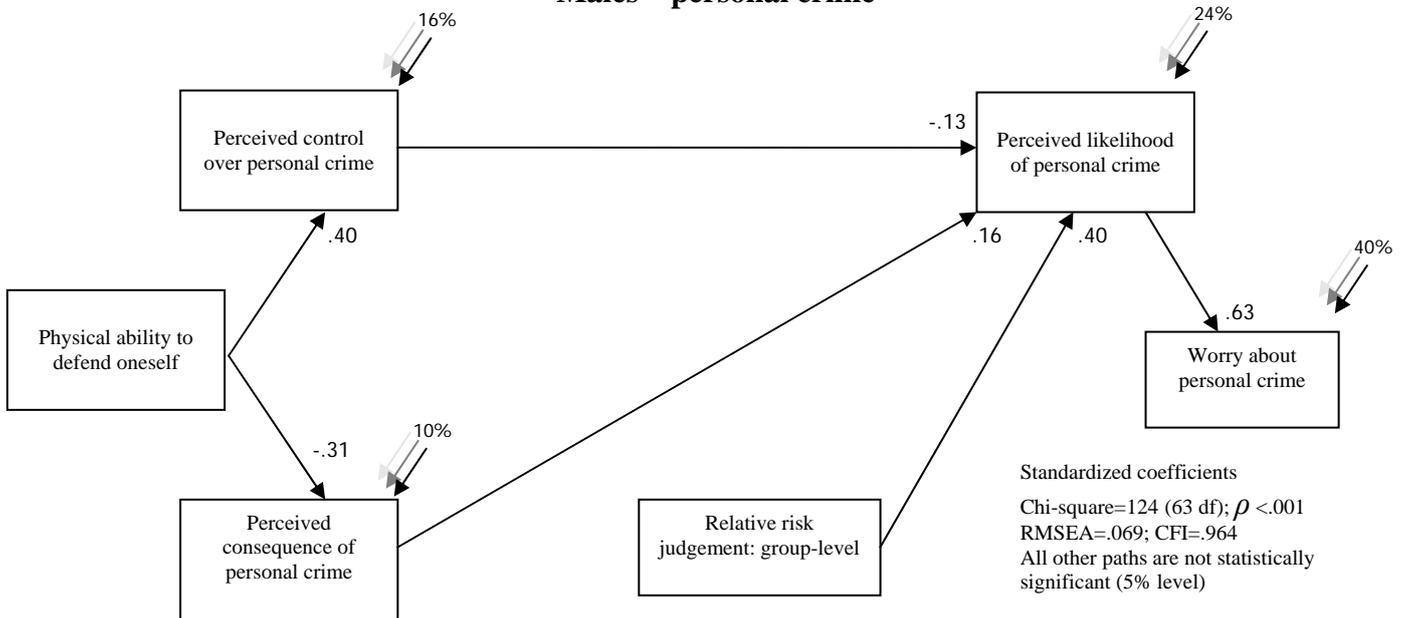
TABLE 2 Hierarchical linear regression, regressing the frequency of worry about personal crime and worry about property crime onto gender, relative risk judgements, and personal perceptions of risk. The numbers in parentheses are 95% confidence intervals for the coefficients.

Variable	Model								
	Personal crime				Property crime				
	(1)	(2)	(1)	(4)	(5)	(6)	(7)	(1)	(2)
Gender	.324*** [.137; .511]	.182 [-.018; .383]	.158 [-.017; .334]	.221* [.030; .412]	.262** [.082; .442]	.216** [.057; .375]	.134 [-.036; .303]	.117 [-.062; .296]	-.020 [-.182; .142]
Physical ability to defend oneself		-.210*** [-.327; -.092]					.030 [-.083; .142]		-.007 [-.108; .094]
Relative risk judgement: group-level			.401*** [.310; .491]				.209*** [.118; .299]		.138*** [.056; .221]
Perceived seriousness of consequences				.200*** [.099; .302]			.026 [-.065; .117]		.146*** [.062; .229]
Perceived control					-.297*** [-.391; -.202]		-.119* [-.212; -.026]		-.087 [-.177; .003]
Perceived likelihood						.540*** [.456; .624]	.429*** [.339; .519]		.485*** [.396; .574]
(Constant)	-.148	.380	-1.198	-.087	-.115	-.088	.701	-.034	-.331
R2	.028	.056	.181	.063	.112	.303	.361	.004	.341

\* significant at 5% level, \*\* significant at 1% level, \*\*\* significant at 0.1% level

FIGURE 1 Structural equation modelling: Psychological model of vulnerability and risk perception in the fear of crime, estimated for males and females separately

**Males – personal crime**



**Females – personal crime**

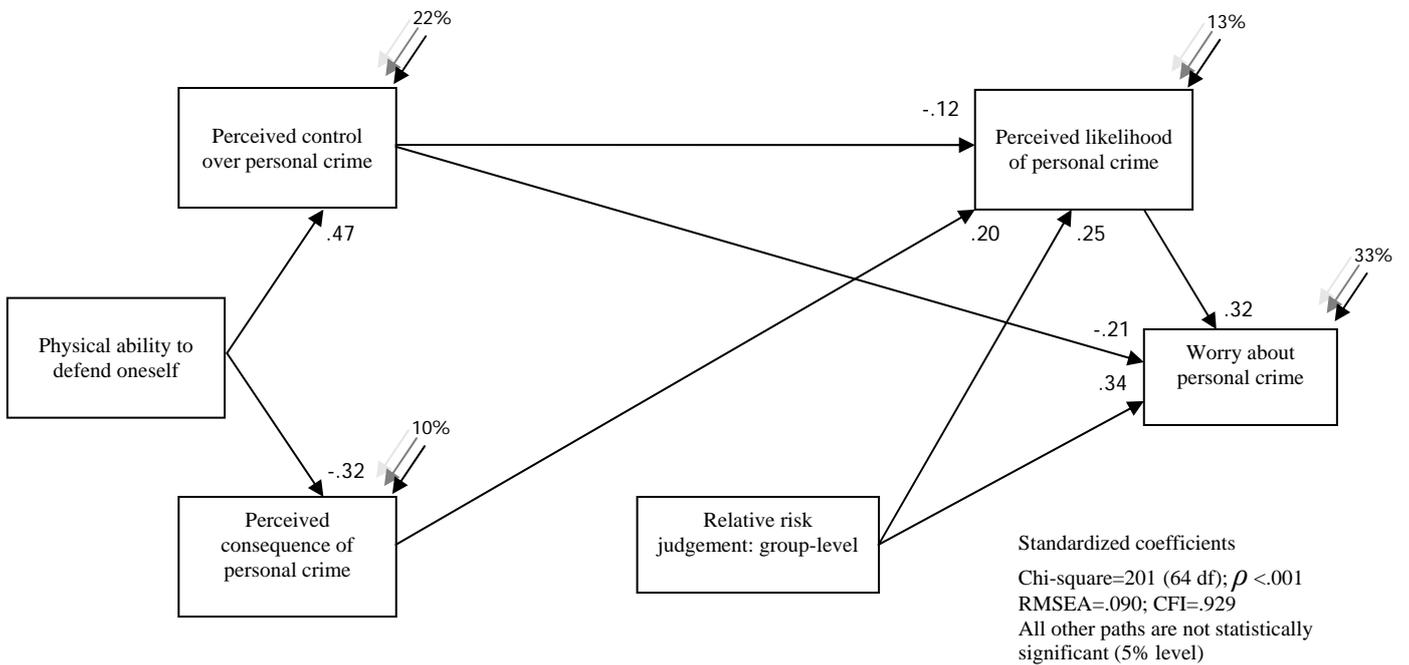


FIGURE CAPTION

FIGURE 1 Structural equation modelling: Psychological model of vulnerability and risk perception in the fear of crime, estimated for males and females separately