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applying a new approach to victimisation
insecurity**

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Title: Feelings and Functions in the Fear of Crime: Applying a New Approach to Victimisation Insecurity

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Abstract

This paper presents a new definition of fear of crime that integrates two conceptual developments in this enduring field of criminological enquiry. Our measurement strategy differentiates first between specific worries and diffuse anxieties in emotional responses to crime, and second between productive and counter-productive effects on subjective well-being and precautionary activities. Drawing on data from a representative survey of seven London neighbourhoods, these distinctions are combined into an ordinal scale that moves from the 'unworried', to low-level motivating emotions, to frequent and dysfunctional worry about crime. We demonstrate that different categories of 'fear' have different correlates and explain different levels of variation in public confidence in policing. We conclude with a call for more longitudinal research to uncover the dynamic nature of fear of crime over the life-course. (128 words)

Key words

Fear of crime; methodology; public insecurity; public confidence in policing; emotions.

Word count: 9,645.

Feelings and Functions in the Fear of Crime: Applying a New Approach to Victimisation Insecurity

A potent challenge for policy makers, a matter on which politicians ‘hold forth,’ an issue for members of the public to grapple with in their everyday lives: ‘fear of crime’¹ is a topic loaded with criminological significance. Pushing and pulling in various directions over the past few decades, this background has provided a springboard for enquiries into *inter alia* ‘fear of crime’ (Ferraro, 1995), ‘anxiety about crime’ (Hough, 1995) and ‘public sensibilities towards crime’ (Girling *et al.*, 2000). Over the years, studies have generated knowledge about perceptions of risk and feelings of vulnerability (Lupton, 1999), the construction of public concerns about anti-social behaviour (Burney, 2005), relational concerns regarding neighbourhood breakdown, social change and moral consensus (Jackson, 2004; Farrall *et al.*, 2009), and the tolerance (Patillo, 1998) and resilience that people develop to mitigate risks they are exposed to by crime (Innes and Jones, 2006; Vale and Campanella, 2005),

Now an organising force of public and political life (Lee, 2007), public insecurities about crime are evident in numerous public and political tensions about crime and justice (Garland, 1996; 2001). Fear of crime has been linked to real and palpable effects on individual and community behaviour (Pain 1997; Stanko, 1990) and well-being (Stafford *et al.*, 2007; Jackson and Stafford, 2009). Yet, despite the centrality of emotions to this (and other) criminological debates, there have been few detailed analyses of the cognitive and behavioural processes involved in the construction of emotional responses to crime. While the study of emotions has become *au courant* across the humanities and social sciences (in psychology, Frijda, 1986; in sociology, Turner and Stets, 2005; in social psychology, Parrott, 2001; and in social philosophy, Goldie, 2000), few criminological studies have undertaken systematic exploration of the mobilization or expression of emotions about crime (de Hann and Loader, 2002; Gray *et al.*, 2008a). Notably, a series of critiques of standard survey tools has brought to light the methodological difficulties involved in measuring worry about crime, with scholars identifying some of the empirical and theoretical misspecifications commonly involved in ‘fear of crime’ research (Garofalo and Laub, 1978; Ferraro and LaGrange, 1987; Hale, 1996; Farrall *et al.*, 2009). New avenues of research must therefore be investigated if we are to develop more valid and reliable research tools, to dig more deeply into the reality of this social phenomenon, and to examine its variety, its effects, its causes and its very empirical nature.

We seek in this paper to open up fresh lines of enquiry in the fear of crime. Building on recent advances in the meaning and measurement of this contested concept – and addressing both the nature and the impact of emotional responses to crime – we develop a more comprehensive understanding of how crime-emotions affect the ways in which individuals navigate their social worlds and respond to external stimuli. We introduce a new ordinal measure that locates various emotional and behavioural responses to crime on a scale. After first testing the socio-demographic and perceptual correlates of our new measurement strategy, and second exploring the relationship between fear of crime and public confidence in policing, we close with a discussion of the promise of longitudinal research into the dynamic nature of fear of crime over the life-course.

Advancing the definition of fear of crime

Defining feelings

The measurement procedure presented in this paper combines two recent advances in the field. The first line of enquiry distinguishes between everyday *worries* about crime and more diffuse *anxieties* about crime (Farrall *et al.*, 2009). According to this account, ‘worry’ refers to concrete mental events of concern (Farrall and Gadd, 2004) while ‘anxiety’ refers to a more diffuse mental state (Hough, 2004). The second line of enquiry distinguishes between functional/productive and

¹ Historically, scholars have referred to the body of work on emotional responses to crime as ‘fear of crime’ research. For example, in his review of the literature Hale (1996) uses this very term. It has operated as a clumsy, but nevertheless common catch-all phrase for a variety of emotional responses to the threat of victimisation – which may include studies of ‘fear’ but also other negative and even neutral emotions.

dysfunctional/counter-productive effects of everyday worries and anxieties. We turn, first, to the distinction between worry and anxiety.

Victimisation surveys routinely ask respondents to summarise their levels of ‘worry’ (UK) or ‘fear’ (US) about specific crimes or their perceived likelihood of victimisation (in line with an influential article by Ferraro and LaGrange, 1987). Since 1982, for example, the British Crime Survey (BCS) has routinely asked respondents a *standard* question; “how worried are you about being [burgled/ robbed/ having your car stolen]?”² Yet these *intensity* measures may often collate not just everyday worries or fears, but also some emotionally-tinged ‘attitude’ towards risk (Tourangeau *et al.*, 2000; Jackson, 2006; Farrall *et al.*, 2009) or future-oriented anxiety (Sacco, 2005). Respondents may be thinking less about *past* emotional experience, and more about whether they are generally troubled by the thought of the risk of being victimized.

Conversely, *frequency* measures may better explore how often people have experienced memorable events of worry about being burgled, robbed and so forth over the past twelve months (Farrall and Gadd, 2004; Gray *et al.*, 2008b) or the past month (see Jackson, 2005). The question wording allows participants to report a ‘raw count’ of the number of worrying events over the given period, employing a narrow time frame that gives respondents a limited reference period for more accurate recalls of situated and concrete moments of concern. Importantly, when the 2003/2004 BCS fielded both standard and new frequency measures³, the resulting analyses showed that the two indicators gave quite different estimates of the distribution of fear of crime across England and Wales (Gray *et al.*, 2008b). For many individuals the two measures did not map neatly onto one another (see Farrall *et al.*, 2009 for a full discussion of these results); some people who reported that they were worried about crime (to the standard question), also stated that they could not recall a recent event of worry (on the time-limited frequency measure).

By combining the standard (intensity) and frequency measures, it was possible to differentiate between those who we classified as i) the ‘unworried’ – they reported that they were ‘unworried’ on both measures, ii) the ‘worried’ – who state they worry on the standard question and could recall recent episodes of worry via the frequency measure, and iii) the ‘anxious’ – participants who said that they were worried on the standard question but could not recall a recent event of worry when asked the frequency question (this ‘anxious’ response to crime has been described by Hough (2004) as a ‘rumbling state of unease’). The most common grouping referred to those who reported they were unworried on both measures.⁴ The most interesting category was the ‘anxious’, i.e. those respondents who said they were worried about a particular crime but were unable to recall a recent episode of worry. These individuals described an emotional experience that was more diffuse and more intangible than any memorable or conspicuous event.

Defining functions

The second development revolves around the notion of ‘*functional fear*’ (Jackson and Gray, 2010; cf. Fattah, 1993; Warr, 2000). By eroding well-being through a range of negative cognitive effects (such as pessimism and problem exaggeration) and detrimental affective states (such as emotional discomfort and depression), worry can be dysfunctional and counterproductive. But the psychological literature has also highlighted some ‘functional’ and motivational properties of low-level worry (Tallis *et al.*, 1994; Gladstone and Parker, 2003; Holaway *et al.*, 2006; cf. Nolen-Hoeksema *et al.*, 2008). According to this account, worry can be helpful and adaptive: a problem-solving activity that helps people anticipate and prepare for threat (Borkovec *et al.*, 2004) by prompting adaptive vigilance and routine precaution.

Providing support for this conceptual and empirical distinction in fear of crime, a recent study found that around one-quarter of individuals who said that they were worried about crime, also reported that i) they took precautions, that ii) these precautions made them feel safer, and that iii) neither their precautions nor their worries about crime reduced their quality of life (Jackson and Gray, 2010). In such circumstances ‘fear’ might be better viewed as a natural and *functional* defence against crime involving straightforward adaptations and behaviours: a socially beneficial activity that allows

² Response alternatives are ‘very worried’, ‘quite worried’, ‘a bit worried’ and ‘not at all worried.’

³ Both questions were field to a sub-sample, ‘follow-up D’ of the British Crime Survey (2003/2004).

⁴ The size of the categories were as follows: 62% unworried, 23% anxious, 15% worried (Farrall *et al.*, 2009)

individuals to exert control over perceived risks, encouraging them to behave in a responsible fashion.⁵

Specifically, Jackson and Gray (2010) measured (a) self-reported worry about crime, (b) the precautions that respondents did or did not take against crime, and (c) individuals' own tacit sense of the resulting impact on their quality of life. The method identified two distinct reactionary behaviour patterns: one which could be characterised as 'functional,' the other as 'dysfunctional.' 'Dysfunctional' worry occurred when participants took precautions to protect themselves from crime, but reported that these actions reduced their quality of life. By contrast, 'functional worry' resulted in them taking precautions, feeling safer, but without their quality of life being reduced by the precautions they took or the levels of worry they experienced in relation to this.⁶

Method

The current study integrates these two methodological developments into a new and improved measurement tool. By examining whether the functional and dysfunctional properties of fear sit alongside evidence that worry about crime may manifest as memorable episodes or more diffuse anxiety, we develop a new ordinal index that, the available evidence may suggest, operates along a continuum. The continuum moves from 'unworried' to positive then to negative emotional responses, depending on the success or otherwise of participant's management of risk and emotion. 'Functional anxiety' sits at the positive end: subjects manage their emotions (so they rarely, if ever, find themselves in threatening situations) and use their low-level anxiety to motivate precautions. 'Dysfunctional worry' sits at the negative end: individuals experience concrete moments of worry and feel that their well-being is reduced by their worries or precautions.

The survey

The 2007 Safer Neighbourhoods Survey obtained data around 400 residents in each of seven electoral wards that were chosen to represent a diverse cross-section of London. Electoral wards are administrative geographic units used to elect local government councillors. The sampling had three stages. First, there was random probability sampling of household addresses. Second, there was random selection of a dwelling unit in cases where a single address included more than one unit. Third, there was random selection of an adult to be targeted for interview in cases where a household contained more than one adult. The response rate was 43%. The final sample size was 2,844.

Measures

This study focuses on worry about robbery, treated here as one of a number of possible indicators of worry about falling victim of personal crime in public space. Because measures of worry about personal crime typically load on one factor when factor analysis techniques are used (Ferraro, 1995; Jackson, 2005; Farrall *et al.*, 2009), we treat our single indicator as an imperfect proxy for the joint distribution of worry about personal crime in public space, i.e. the tendency for individuals to feel worried about falling victim of a common type of personal crime in public space.

'Worry'⁷ and 'anxiety'⁸ about crime were measured using both standard and frequency-based questions. Focusing on robbery, the standard measure was phrased: 'How worried are you about being

⁵ It is important to emphasise that by defining a 'functional' manifestation of worry we are *only* referring to the sorts of worries that individuals themselves confirm do not impact on their quality of life and provide protective and satisfying benefits. These experiences can be contrasted with the sort of worrying responses that become damaging and involve negative cognitive (e.g. pessimism, problem exaggeration) and affective (e.g. emotional discomfort, depression) consequences as well as behavioural concomitants.

⁶ It should be noted that there may be 'hidden costs' to the precautionary behaviour employed by respondents. Some may report that their quality of life and wellbeing was not reduced by their worries or pre-emptive activities, without acknowledging the full practical, financial and emotional costs.

⁷ Worry is defined here as tangible and recent episodes of emotional arousal which participants can recall via both the frequency and 'standard' measure (Farrall *et al.*, 2009).

⁸ Anxiety is defined here as diffuse concern without the memorable 'spikes' of worry (as above). This group report that they are worried about crime to the standard measure but also state they cannot recall a recent episode of worry.

mugged/robbed?' [response alternatives were: very, fairly, a bit, or not at all]. As in Gray *et al.* (2008b) and Farrall *et al.* (2009) the frequency measures were phrased:

Q1: 'In the past year, have you ever felt worried about being mugged/robbed?'

Q2: [if YES at Q1] 'How frequently have you felt like this in the last year' [response: n times recorded]

Q3: [if YES at Q1] 'On the last occasion how fearful did you feel?' [responses: not very worried, a little bit worried, quite worried, very worried or cannot remember].

To measure the functional or dysfunctional aspects of worry about crime, we follow Jackson and Gray's (2010) approach. This has three sequential steps:

1. Measure worry about crime using 'standard' measures (as above);
2. If those who say they are worried about crime also say their quality of life is reduced either by their worries or their precautions against crime (if taken), then assign these individuals to the 'dysfunctional fear' group; and,
3. If those who say they are worried also say that the precautions they take make them feel safer, and that their quality of life is not reduced by either their worries or their precautions, then assign these individuals to the 'functional fear' group (and assume that worry acts as a problem-solving activity, motivating attention and activity).

Respondents were asked how often (if at all) they avoided (because of crime) public transport, certain streets or areas during the day, and certain streets or areas at night. A dichotomous variable was constructed to denote whether an individual took precautions or not. They were also asked: 'As a result of the precautions you take against crime, to what extent do you feel safer?' (the response alternatives were: 'not at all', 'a little', 'moderately', 'quite a bit' and 'very much'). This variable was also dichotomised: zero equalled 'not at all'; one equalled either 'a little', 'moderately', 'quite a bit' or 'very much.' Respondents then reported how much (if at all) their quality of their life was affected by i) worry about crime and ii) the precautions they took to guard against crime [the response alternatives were 'not at all', 'a little', 'moderately', 'quite a bit' and 'very much']. Again, both variables were dichotomised: zero equalled 'not at all' or 'a little'; one equalled either 'moderately', 'quite a bit' or 'very much'.

Results

We begin with overall levels of worry about crime within our sample. In response to the standard question, 31% of respondents said they were worried about being robbed (24% 'fairly' and 7% 'very'). When asked the frequency questions a more modest 21% said they had worried about robbery during the previous 12 months; 3% said they had worried 1-3 times, 5% said they had worried 4-12 times, 3% said they had worried 13-51 times, and 10% said they had worried 52 times or more.⁹

The differences in the overall proportions (31% compared to 21%) suggest that individuals can give different answers to the standard and frequency questions. Combining the standard and frequency measures to create three groups (see Farrall *et al.*, 2009 for a detailed rationale), we found the following:

- 65% of the sample were 'unworried': they reported that they were 'not at all' or 'not very' worried about robbery, and reported no episodes of worry in the past year;

⁹ As stated above, participants were asked to produce a 'raw count' of the number of worrying episodes over the past 12 months, but figures were categorised post-survey for brevity. It is clear from the raw data that participant's answers did involve an element of guessing. Farrall *et al.* (2009) found that raw scores from this data tended to collect at distinctive points, such as 6, 10, 12, 20, 50, 52, 100, 300, 365. Following Tourangeau *et al.* (2000) it is likely these reported frequencies reflect two types of estimation, rounding-up (10, 20, 50 etc) and calculated averages ("every other month", "once a month", "everyday" etc.). See Farrall *et al.*, 2009 for further discussion on the distribution of raw scores.

- 21% were ‘worried’: they said they were ‘fairly’ or ‘very’ worried and they had experienced at least one episode of worry over the previous year; and,
- 14% were ‘anxious’: they said they were ‘fairly’ or ‘very’ worried, but they also reported that they had not experienced one episode of worry over the past year.

Investigating next the functional fear classification (Jackson and Gray, 2010), we found that around one-quarter of individuals who admitted some level of worry about crime, additionally exhibited a kind of emotional experience which, according to their self-report, resembled a motivating and problem-solving activity. They took precautions; they felt safer as a result; and their quality of life was unaffected by worries and precautions. This method generated three groups:

- 65% of the sample were unworried;
- 27% of the sample was in the dysfunctional worry group. Respondents reported being i) worried about crime but also ii) that their quality of life was reduced by either their worries or their precautions (or both); and,
- 8% of the sample were ‘functionally worried’. They reported being i) worried about crime; ii) that they took precautions that made them feel safer; and iii) judged their quality of life unaffected by either their worries or their precautions.

Table 1 then combines these two methods of differentiating public insecurities about crime into one ordinal scale. Firstly, around two-thirds were ‘unworried’. Just under one-tenth reported functional ‘fear’ (whether anxiety or worry), while around one-quarter reported dysfunctional ‘fear’ (whether anxiety or worry). In short, the largest group was the unworried and the proportions of the remaining fear groups increased exponentially as the effect of worry and precautionary behaviours became stronger. Importantly, the order of the categories had a significant meaning; as the negative impact of emotional responses to the risk of victimisation increases, so too did the proportion of cases reporting such effects. In other words, the most common ‘fear group’ also suffered the most damaging emotional effects. Specifically, the ‘anxious – functional’ group managed their emotions (they rarely experienced episodes of worry) and their sense of safety (they felt safer because of the precautions they took and their quality of life was not harmed by their precautions or emotions), this group had the lowest frequency (3%). The ‘worried – functional’ group (next most common at 5%) managed their sense of safety, but their ‘fear of crime’ manifested in concrete mental events of worry. Perhaps such individuals can recall moments of worry – where they encountered, for example, certain threatening individuals in public space, but they generally take precautions by crossing the street or taking different routes, which make them feel safer.

INSERT TABLE 1 HERE.

The ‘anxious – dysfunctional’ group (11%) may rarely (if ever) worry, but still believe their quality of life is reduced by their precautions and/or their concerns. This may reflect the negative impact of long-term and persistent anxiety. Finally, the ‘worried – dysfunctional’ showed both negative aspects. They experienced worry and their well-being was reduced by their actions and emotions. This is the most common fear group at 16%.

We hypothesised that the ‘anxious’ group would be more likely to exhibit functional fear than the ‘worried’ group. We predicted that those who rarely, if ever, worried about crime, may be in a position to successfully manage their sense of risk, perhaps through various precautionary activities. Likewise we expected those who recalled recent episodes of worry might feel their quality of life was harder to maintain or have low confidence in the precautions they took. Yet counter to our expectation we found that equal proportions of the ‘anxious’ and ‘worried’ exhibited ‘functional fear.’ Amongst the anxious, 24% took precautions that made them feel safer and reported that their quality of life was not damaged by precautions or worries. Amongst the worried, the figure was 25%.

What were the empirical implications of this new categorisation of ‘fear’?

Once the new categories were established, we then examined whether the correlates and consequences of fear changed as a result of our new definition. We begin with the correlates.

Correlates of 'fear'

We first used hierarchical multinomial logistic regression to predict membership of each of our new categories. Since respondents were clustered within neighbourhoods (an average of around 400 in each of the seven wards), we used a fixed effects model.¹⁰ The explanatory variables comprised a set of socio-economic characteristics, victimisation, perceptions of neighbourhood breakdown, and broader concerns about social change and moral decline. The Appendix provides further details of the relational concern measures.

INSERT TABLE 2 ABOUT HERE

Table 2 shows the comparison between membership of the 'unworried' group and membership of each of the four 'fear' groups. Findings highlight the extent to which values of the explanatory variables predict higher or lower odds of individuals falling in each group. We can thus assess whether certain social, psychological and demographic factors are associated in different ways with membership of the four different 'fear' groups. Model I includes as explanatory variables victimisation, self-reported health, age and gender (curvilinear and interaction effects involving age and gender were not statistically significant). Model II adds (i) perceptions of neighbourhood disorder and (ii) perceptions of collective efficacy. Model III adds (iii) concerns about the decline of moral values and (iv) concerns about long-term social change.

Beginning with Model I, gender was a statistically significant predictor of membership of all four of the 'fear' groups: females were more likely than males to be 'functionally anxious', 'dysfunctionally anxious', 'functionally worried' or 'dysfunctionally worried.' To interpret the coefficients, consider the odds ratio of 2.08 ($p < .001$) for the 'female' explanatory variable (in Model I, in the comparison of 'unworried' and 'dysfunctional worried'). The odds of being 'dysfunctionally worried' compared to being unworried were around two times higher for females than they were for males (the 95% confidence interval of 1.64 to 2.63 meant that our best guess of the odds ratio in the population of the seven London wards is somewhere between 1.6 and 2.6). Victimisation (over the past twelve months) was associated with being 'dysfunctionally anxious', 'functionally worried' or 'dysfunctionally worried.' Strikingly, the odds ratio for 'dysfunctionally worried' was considerably larger than for the other statistically significant contrasts. Similarly, self-reported health was only a statistically significant predictor for 'dysfunctionally worried'. This suggests that – compared to the other 'fear' groups – dysfunctional worry is associated strongly with victimisation experience and poor health (cf. Jackson and Stafford, 2009).

Turning to Model II, perception of neighbourhood disorder was found to be a significant predictor of membership of each of the four groups. The odds ratio of 1.23 (95% CI: 1.17, 1.28) for dysfunctional worry meant that a unit increase in public concerns about disorder was associated with a predicted increase in the odds of being dysfunctionally worried (compared to being unworried) of 23%. Perception of collective efficacy was also a statistically significant predictor for all the groups. Replicating the work of previous studies, these results highlight the importance of non-criminal social conditions in helping individuals manage their worries about crime (Ferraro, 1995; Taylor, 1996; Jackson, 2004). Moreover, that perception of collective efficacy was most strongly related to dysfunctional worry may suggest that dysfunctional responses (which harm well-being) tend to

¹⁰ We also used ordinal regression, which allows one to specify a categorical variable as the response. Unlike multinomial logistic regression, ordinal regression takes into account the ordered nature of the measure. We reasoned that the current categorisation might be seen to have a natural, monotonic order with equal thresholds from one category to the next. We tested the three models (see Table 2) and conducted the Brant test of parallel odds assumption for each model. Only perceived disorder violated the parallel odds assumption, something borne out by inspection of the multinomial logistic regression results (Table 2), which showed that disorder was a predictor of each of the contrasts but the effect size was roughly similar across these contrasts. However, because perceived disorder is a key variable in the current investigation, we chose multinomial logistic regression for the main analysis.

emerge not just from signs of disorder, but more generally from the perceived erosion of a more trusting and generally cooperative social climate.

Model III adds broader relational concerns. Concerns about long-term social change did not emerge as a significant predictor of membership of the fear grouping categories. However, both worry-groups were significantly more likely to be apprehensive about moral decline. As prior studies have stressed, public unease about the health of a local neighbourhood, community fragmentation and moral authority lie at the heart of worry about crime (Dowds and Ahrendt, 1995; Girling *et al.*, 2000; Elster, 2004). Notably, in addition to the perceptual variables, the dysfunctional worry group in this model remained statistically more likely to be recent victims of crime. This analysis suggests that emotional reactions to crime can be at their most damaging when citizens are positioned both at the 'coal-face' of crime and disorder, while suffering the perceived loss of community bonds, collective efficacy and a decline in moral authority.

One potential consequence of 'fear'

Finally, by way of testing the potential utility of the new categorisation, we examine if the approach casts new light on one potential consequence of the fear of crime: trust and confidence in the police (c.f. Innes *et al.*, 2004). The available empirical evidence suggests little support for an instrumental model of public confidence of policing, which states that people think about their local police in terms of crime and risk (when they worry for their safety they lose confidence in police activities and efficacy). Instead, the data are more consistent with a 'symbolic' or 'expressive' model, which holds that crime and disorder challenge the moral structure of society, and that people look to agents of social control to channel group outrage and facilitate order (Tyler and Boeckmann, 1997; Jackson and Sunshine, 2007; Jackson and Bradford, 2009). Previous studies have measured worry about crime using standard measures ('How worried are you ...?') rather than frequency measures ('In the past year, how often have you ...?'). Moreover, they have not unpacked the concept into functional and dysfunctional elements. This leaves it open to question whether the new categorisation would detect hitherto undiscovered variation in the effects of insecurities about crime on confidence in policing.

Table 3 shows the parameter estimates from a linear regression model, where the response variable is an index of public confidence in police effectiveness.¹¹ Model I includes victim status, health, gender and age, but also four dummy variables that provide contrasts between 'unworried' and each of the four 'fear' groups (functional anxiety, dysfunctional anxiety, functional worry, and dysfunctional worry). The results indicate that those in the functional anxiety group had similar levels of confidence in police effectiveness compared to those in the unworried group, holding constant the other predictors in the model. However, confidence was lower for the other three 'fear' groups, with the effect strongest for 'dysfunctional worry.'

INSERT TABLE 3 HERE.

Model II adds in public concerns about neighbourhood disorder and social cohesion/informal social control. Both were statistically significant predictors of public confidence. As with previous studies, controlling for public concerns about neighbourhood disorder and social control reduced the effect of worry about crime on confidence in policing. Finally, Model III adds in broader public values and attitudes regarding a loss of moral authority and sense of community in society. Only concern about long-term social change was a statistically significant predictor, and controlling for these variables further dampened down the estimated effect of the fear of crime dummy variables. The 'dysfunctionally worried' had the least confidence in police effectiveness compared to the unworried or the other three 'fear' groups.

¹¹ Confidence in police effectiveness was measured by asking respondents: 'Here is a list of services that the police provide. For each one, I would like you to tell me firstly how well you think the Metropolitan Police actually carry out each of them. Please use a scale of 1 to 7, where 1 = Not at all well and 7 = Very well.' The functions/activities/services were: prevents terrorism; responds to emergencies promptly; provide a visible patrolling presence; tackle gun crime; 'support victims and witnesses'; 'police major events in London'; 'tackle drug dealing and drug use'; 'tackle dangerous driving'; and 'enforcing road legislation to improve traffic flows.'

Previous work on public confidence in policing has ‘lumped together’ diverse aspects of fear of crime. Disentangling these aspects, we found that one aspect of ‘fear’ (functional anxiety) was not a statistically significant predictor of confidence. By contrast, dysfunctional worry was the strongest predictor. It may therefore be that only the more frequent and counterproductive patterns of emotions about crime erode public confidence in police effectiveness.

Discussion

In summary, almost two thirds of the sample could be described as ‘unworried’ about crime, 21% could be described as ‘worried,’ and 14% could be described as ‘anxious.’ Similar proportions of the worried and anxious group stated that their actions to guard against crime made them feel safer, without compromising their quality of life (thereby displaying what we call a ‘functional’ emotion). This paper provides further evidence that worry does not necessarily diminish well-being, but can involve psychologically low-cost, potentially beneficial behaviours that leads to the aversion of threats and hazards (Jackson and Gray, 2010).

Exploring the correlates of our new categorisation, we also found that – unlike the unworried – the remaining ‘fear’ groups were significantly affected by perceptions of disorder and levels of collective efficacy in the neighbourhood. Disorder (or, as is often referred to in the media, anti-social behaviour) and community bonds thus appear to be intimately condensed within the expression of both worry and anxiety about crime (Farrall *et al.*, 2009). In this sense, crime related fears can be attached to micro, meso and macro dynamics; to the ways in which people actively navigate and experience social spaces; to people’s relationships with neighbours and local groups and their perceptions of the ‘health’ of their communities’ social and moral structures. Previous studies have investigated the links between disorder and fear of crime, finding that disorder signals to observers a loss of community controls and a breakdown in the norms and values that underpin cooperation (Skogan and Maxfield 1981; Wilson and Kelling, 1982; LaGrange *et al.*, 1992; Robinson, *et al.*, 2003). Notably, we found that concerns about moral decline in society were only related to functional and dysfunctional worry (not anxiety).

The new categorisation was able to disentangle key differences within the fear groups. Individuals who worried about crime, without benefitting from the functional advantages of these emotions (the dysfunctionally worried), were at greater risk than the other three categories of being effected by entrenched social and health problems. They were also more likely to be recent victims of crime, to suffer ill-health or disability, to have negative perceptions of community bonds and concerns about moral decline, as well as perceiving high levels of disorder in their neighbourhood. This result underlines the theoretical and empirical value in further interrogating samples beyond a dichotomy of worried/ not worried. Clearly some individuals in this study were in a stronger position to manage their emotional responses to crime, while others, provoked by a host of related personal and social problems, were particularly vulnerable to the negative impact of crime-fears.¹²

We also used the new index as a predictor of one possible outcome of fear of crime: public confidence in policing. Again, those in the dysfunctional worry group – who experienced regular episodes of worry and whose precautionary behaviour had a negative impact on their quality of life – had the least confidence in their local police force. This is important. Previous studies have found that the association between fear of crime and confidence in the police tends to disappear when one controls for more fundamental relational concerns. Our study indicates that future work on this issue needs to unpack the functional and emotional aspects of fear of crime more carefully.

Further considerations on method

¹² Consistent with previous research, our analysis suggests that perceptions of disorder shape fear of crime. We acknowledge, however, that the arrow of influence can be pointed in the other direction (Jackson *et al.*, 2010). Individuals who are already worried about falling victim of crime – and who are already concerned about levels of collective efficacy and the loss of authority and discipline in society – may be more likely to judge ambiguous neighbourhood cues as problematic (and were therefore more likely to see their environment as ‘disorderly’) than individuals without these prior worries and concerns. It is for future research to disentangle the potentially reciprocal effects of perceived disorder and fear of crime.

The aim of this paper has been to stimulate empirical and theoretical debate on the relationship between human emotions, behaviour and public insecurities about crime. The development of new measures of fear is, however, the first in many potential steps forward. We recognise, for example, that cross-sectional survey research into the fear of crime – like the present study – tends to portray the topic as a static creature. While cross sectional data provides a useful first step in illuminating important ideas, results from such data are often provisional. For example, the research herein suggests that there are several groups of people, some who fear crime “a lot”, or “not much” and in some instances “not at all.”

It might thus appear that our respondents fit neatly into one of five different groups in terms of their worries or anxieties and the nature of the behaviours they adopt in response. But this only tells us half the story; does group membership operate as temporary or stable variable over time? It is likely that at one stage in an individual’s life they might successfully manage their sense of risk, with occasional worries or anxieties motivating seemingly efficacious precautionary activity. At another stage, worry and anxiety might ‘tip over’ into negative outcomes – and drain their sense of well-being. Fear of crime may also be a reciprocal process, where an individual becomes sensitised to disorderly cues in the environment, and where perceptions of neighbourhood disorder in turn penetrate their assessment of the environment – maintaining or even elevating anxieties about crime (Jackson *et al.*, 2010).

Other pertinent questions relating to the fear of crime turn out, on closer inspection, to contain a temporal element. For example, is worry about crime a rare ‘event’ that takes place say once or twice a year, or are some people more likely to experience worry every day? Is worry experienced on a cyclical basis with worrying episodes concentrated at weekends rather than weekdays? Are people who worry frequently able to develop ‘resilience’ through the adoption of behaviours which minimise the negative effects of these emotions?

Research which is able to include a dynamic and temporal perspective would allow us to consider how time impacts emotional responses to crime. Questions concerning the passage of time – over a day, a season or other relevant period of time or even the life-course are most directly addressed with ‘repeated measures’ and panel data, and are only poorly addressed with cross-sectional data. Similarly, questions about behaviour change are most accurately addressed by data on the same individuals on a repeated basis. In short, the inclusion of information that goes beyond static self-reports offers much promise for a more nuanced understanding of fear about crime.

Notably, other researchers have found inspiration from cross-sectional surveys and subsequently adapted and honed their methods to discover new conceptual avenues within fear of crime research. One relevant example is Genn (1988), who revisited (and temporarily lived with) a sub-sample of women identified from a large-scale survey (Sparks *et al* 1977) who had claimed to have been victimised multiple times. She provided a remarkable account of the way that the lives of these women were blighted by frequent domestic sexual and physical assaults. In addition to this theoretical insight, she raised important methodological questions about the need for research to recognise the temporal *process* of emotional development; “It is clear that violent victimisation may often be better conceptualised as a process rather than a series of discrete events. This is most evident in cases of prolonged and habitual domestic violence, but there are also other situations in which violence, abuse and petty theft are an integral part of victims’ day to day existence” (1988:91).

Thinking specifically about our research, one question that we are unable to answer with cross-sectional survey data, is to what extent the new frequency of fear estimates may fluctuate over time, within individuals. We believe that the frequency questions are better at capturing ‘experiences’ of worry about crime, while standard questions are more likely to be measuring aspects of the fear of crime concept - including broader attitudes or judgements about crime. But, if the culture of ‘high crime’ societies is the product of long term social change, cultural adaptations and a resultant ‘crime complex’¹³, it is conceivable that entrenched ‘attitudes’ will be more resistant to change than those

¹³ Garland states: “the development of a crime complex produces a series of psychological and social effects that exert an influence upon politics and policy. Citizens became crime-conscious, attuned to the crime problem, and many exhibit high levels of fear and anxiety. They are caught up in institutions and daily practices that require them to take on the identity of actual or potential crime victims, and to think, feel, and act accordingly” (2001:164).

everyday experiences of worry – as ‘worry’ may vary more rapidly in response to everyday stimulus. In sum, the two different measures may not only capture different aspects of fear of crime, but it is possible that these measures may also behave very differently over time.

But how, exactly, should we measure the dynamic qualities of the frequency of crime related worries? Farrall *et al.* (2009) found that worry was in fact a rare event in many people’s lives¹⁴ which may complicate decisions about the length of any study period. Yet interestingly, the authors also identified a small but theoretically interesting ‘frequently worried’ group; 9% of those who worried about robbery, worried on average more than once a week (52 or more times).¹⁵ For these individuals – who were more likely to live in high-crime areas, have direct or indirect experience of victimization and reported that their quality of life was negatively affected by crime – worry over one’s personal safety was a recurrent and, sadly, familiar experience. It is possible that this group of people, once identified, could be revisited to complete short-term diaries to study micro fluctuations in their everyday emotions. A method that is more common in psychology, ‘day reconstruction’, asks participants to recall the previous day by completing a structured self-administered questionnaire or diary entry. This method helps participants remember how they felt through each day and record any subsequent emotional responses or behaviours. The advantage of diary-based data lies in the reduction in recall and measurement errors – and with it, the increase in validity and reliability. In addition, such data could potentially reveal whether fear of crime took place on a constant basis throughout the day, whether it was concentrated at certain times or in particular places and even how the feelings were managed by the individual (for an example see Scherer *et al.*, 2004).

Yet, the vast majority of people do not experience worrying episodes about crime on a frequent enough basis to warrant the use of diary methods. For most sample members, where the impact of crime is likely to unfold over a longer period of time, longitudinal panel or cohort designs would facilitate an examination of individual and group behaviour.¹⁶ These studies, which collect data from a subject periodically in ‘waves’ or ‘sweeps’, are particularly informative when change is examined during key individual or social transition points (e.g., becoming employed, a parent or a victim of crime; a change of government or during war). They are able to address some of the most challenging research questions – helping to determine the antecedents, correlates and consequences of a phenomenon. They can also evaluate whether individuals differ in these processes, and if so, determine the sources of the individual differences. At the same time, this methodology can capture group statistics to examine development at an aggregate level.

Recent analytic developments in relation to longitudinal data also allow much greater headway to be made in teasing apart the relative contributions of multiple variables to create stronger causal inferences (see Nagin, 2005). For example, longitudinal analysis can incorporate multivariate or higher order specifications, multiple populations, accelerated data collection, non-linear and interactive effects, multilevel or hierarchical structures and complex relations including recursive and non-recursive relationships. In short, self-reported cross-sectional data are no substitute for longitudinal designs that utilise more sophisticated methodological approaches.

Despite the advantages of longitudinal research, most studies concerning public insecurities about crime do not take a life-course approach.¹⁷ The financial cost, time investment and methodological complexity of these studies make them a significant undertaking (see Menard, 1991 for a full review of the method). However, we believe developmental processes have much to offer

¹⁴ In their study, 85% of people had not worried about robbery in the previous 12 months, of those who had worried, 60% had worried less than once a month (1-11 times).

¹⁵ The range of worries about robbery in the past 12 months went from 52 – 365, suggesting that for some people it was a daily occurrence (Farrall *et al.*, 2009).

¹⁶ In the 1980s there were a series of debates between Hirschi and Gottfredson and various others about the relative merits of longitudinal research on criminal careers. We have no intention of continuing that (or a similar) debate, and take it as self-evident that the insights into criminal careers gained from longitudinal research have been so vast, and of such policy relevance as being enough to warrant a general acceptance of the value of this style of research.

¹⁷ A number of notable exceptions are Robinson *et al.*, 2003; Stafford *et al.* 2007; Jackson & Stafford, 2009, which involve longitudinal designs. The US National Crime Survey also has a revolving panel design, with some subjects being retained for a period of time before dropped and replaced by other subjects.

and should become more salient features of the ways in which we understand and conceptualise emotional responses to crime.

It is also possible to apply longitudinal designs to qualitative data. Qualitative longitudinal research (Holland and Thompson, 2004; Farrall, 2006) consists of in-depth interview based work which returns to interviewees to explore incremental emotional changes and the processes associated with these developments. The emphasis is on shifts in meaning, self-awareness and identity and the legacy of key events for respondents (e.g. victimisation, contact with the police, and so forth). Such methods may throw light on how an individual's feelings about crime interact with other stimulus and how worries are managed within their everyday life. These methods are particularly valuable if one wishes to take a psycho-social or narrative approach to emotional management. We recommend future longitudinal qualitative research that pays special attention to dysfunctional and functional elements and the various emotional experiences that 'spike up' and 'bubble away.'

Conclusions

Emotions shape our beliefs, our relationship with others, and the ways in which we operate in private and public spaces. Emotions about crime impart important information about how we feel about our neighbours, communities and culture. They can also influence our perceptions of the social world, and affect our quality of life and our physical and psychological health. We have sought to demonstrate new methods for investigating fear of crime. Combining two recent advances in survey measurement (Farrall *et al.*, 2009; Jackson and Gray, 2010), we have disentangled different manifestations of 'fear of crime' – to illuminate the light and shade, the positive and negative, and the emotional costs and benefits which accompany public responses to crime. This is not to suggest that the types of worry discussed are not related to one another. Fear of crime involves a variety of ways of negotiating the social and cultural environment and arises out of lay judgements of risk. However, the manner in which information about crime is processed, understood and acted upon can vary in its severity and impact on our daily lives, and it is these details we have sought to uncover.

The new index allowed us to differentiate between those who felt at immediate risk of victimisation, and those who expressed more diffuse concerns about crime and society. Because the scale also integrated precautionary activity that could be subsumed into everyday life, it was possible to assess the everyday emotional costs of fear of crime. The benefit of our new categorisation is that it is neither unduly simplistic nor subjective, but is able to disentangle crucial emotional and behavioural corollaries of crime-fears at an aggregate level. Such methods can be applied to large scale research, and thus provide opportunities to understand complex patterns of emotional and behavioural responses to public insecurity.

Of particular policy relevance was the evidence that certain precautionary behaviours allowed individuals to successfully manage their worries about crime, without having a negative impact on their quality of life. Likewise, the 'dysfunctional worry' category emerged as a group of considerable significance; worry about crime for these individuals was accompanied a damaging sequence of personal and social problems. Their worries were not relieved by their precautions, their quality of life was damaged on account of the insurmountable nature of their crime-fears; they were more likely to be recent victims of crime, to suffer ill-health or disability and to have weak connections with their community - which was perceived to suffer the ill-effects of moral decline and disorder. Perhaps the result of longer-term social disadvantage or neglect, this group of people were particularly vulnerable to the hard edges of crime and disorder.

Following previous research, we uncovered links between fear of crime and heightened perceptions of neighbourhood disorder, concerns about collective efficacy and moral decline. These results chime with the idea that fear of crime absorbs people's understandings of social order, justice and community cohesion. Indeed, the desire to establish neighbourhood security is multifarious and highly political. Some of these responses contribute to fear as a 'social problem': the individual and the community can be negatively affected by feelings of threat and vulnerability, the restriction of daily activities and damaged social trust. It is apposite therefore, that criminologists and policy makers seek to measure how and why fear of crime impacts individuals and communities. With improved precision and better research design, we believe it is possible to generate yet more dynamic and thoughtful considerations of this topic.

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Table 1: A new categorisation of ‘fear of crime’

	%
Unworried	65
Anxious - functional	3
Worried - functional	5
Anxious - dysfunctional	11
Worried - dysfunctional	16
Total	100

Source: 2007 Safer Neighbourhoods Survey, unweighted data, $n=2,822$

Table 2. Multinomial logistic regression predicting membership of five ‘fear of crime’ groups[†]

	Model I		Model II		Model III	
	OR	95% CI	OR	95% CI	OR	95% CI
COMPARING ‘UNWORRIED’ AND THE ‘FUNCTIONALLY ANXIOUS’						
Victim of crime in the last 12 months	1.51	0.80, 2.85	1.25	0.66, 2.38	1.24	0.65, 2.36
Health: limiting health or disability	1.07	0.60, 1.93	1.03	0.57, 1.86	1.01	0.56, 1.82
Female	1.61*	1.04, 2.51	1.58*	1.02, 2.47	1.58*	1.01, 2.47
Age	1.11	0.99, 1.24	1.14*	1.02, 1.27	1.13*	1.01, 1.26
Perception of neighbourhood disorder ^{††}			1.22***	1.12, 1.33	1.21***	1.11, 1.32
Perception of collective efficacy ^{††}			1.15*	1.01, 1.33	1.11	0.95, 1.29
Concerns about long-term social change ^{††}					1.10	0.98, 1.23
Concerns about moral decline ^{††}					1.04	0.94, 1.15
COMPARING ‘UNWORRIED’ AND THE ‘DYSFUNCTIONALLY ANXIOUS’						
Victim of crime in the last 12 months	1.66**	1.14, 2.41	1.37	0.93, 2.01	1.36	0.93, 2.00
Health: limiting health or disability	1.12	0.78, 1.61	1.07	0.74, 1.54	1.07	0.74, 1.54
Female	1.37*	1.06, 1.77	1.34*	1.03, 1.74	1.34*	1.03, 1.74
Age	1.04	0.97, 1.11	1.06	0.99, 1.14	1.06	0.99, 1.13
Perception of neighbourhood disorder ^{††}			1.20***	1.14, 1.26	1.20***	1.14, 1.26
Perception of collective efficacy ^{††}			1.17***	1.08, 1.27	1.19***	1.09, 1.31
Concerns about long-term social change ^{††}					0.97	0.91, 1.04
Concerns about moral decline ^{††}					1.04	0.98, 1.10
COMPARING ‘UNWORRIED’ AND THE ‘FUNCTIONALLY WORRIED’						
Victim of crime in the last 12 months	1.83*	1.14, 2.95	1.53	0.94, 2.48	1.53	0.95, 2.49
Health: limiting health or disability	1.13	0.67, 1.90	1.08	0.64, 1.81	1.09	0.64, 1.83
Female	1.61*	1.12, 2.31	1.57*	1.09, 2.26	1.55*	1.07, 2.23
Age	0.95	0.87, 1.04	0.97	0.89, 1.06	0.95	0.87, 1.04
Perception of neighbourhood disorder ^{††}			1.24***	1.15, 1.32	1.22***	1.14, 1.31
Perception of collective efficacy ^{††}			1.13*	1.01, 1.27	1.12	0.99, 1.26
Concerns about long-term social change ^{††}					1.06	0.96, 1.17
Concerns about moral decline ^{††}					1.12**	1.03, 1.22
COMPARING ‘UNWORRIED’ AND THE ‘DYSFUNCTIONALLY WORRIED’						
Victim of crime in the last 12 months	3.33**	2.51, 4.41	2.67***	1.99, 3.58	2.67***	1.99, 3.60
Health: limiting health or disability	1.45*	1.06, 1.99	1.37	0.99, 1.90	1.41*	1.01, 1.96
Female	2.08**	1.64, 2.63	2.05***	1.61, 2.61	2.01***	1.57, 2.57
Age	0.98	0.93, 1.04	1.01	0.95, 1.07	0.98	0.92, 1.04
Perception of neighbourhood disorder ^{††}			1.23***	1.17, 1.28	1.21***	1.15, 1.26
Perception of collective efficacy ^{††}			1.24***	1.15, 1.34	1.23***	1.13, 1.33
Concerns about long-term social change ^{††}					1.06	0.99, 1.13
Concerns about moral decline ^{††}					1.19***	1.12, 1.26

OR = odds ratio; CI = confidence interval. * p<0.05, ** p<0.01, *** p<0.001. Fixed effects for electoral wards were included, but the parameter estimates for the six dummy variables are not reported here (almost without exception, they were not statistically significant).

† Response variable took 5 levels: ‘unworried’, ‘functional anxiety’, ‘dysfunctional anxiety’, ‘functional worry’ and ‘dysfunctional worry.’

†† Scores saved from ordinal latent trait modelling of (3-6) single indicators for each latent construct using full information maximum likelihood estimation. LatentGold 4.0 was used to calculate factor scores, which were then recoded so that they ranged from 0 to 10.

Source: 2007 London Metropolitan Police Safer Neighbourhoods Survey. Base *n* for all models = 2,571. Unweighted data.

Table 3. Linear regression predicting public confidence in the effectiveness of policing[†]

	Model I		Model II		Model III	
	\hat{a}	95% CI	\hat{a}	95% CI	\hat{a}	95% CI
Victim of crime in the last 12 months	-0.14*	-0.25, -0.03	-0.09	-0.19, 0.02	-0.08	-0.19, 0.03
Health: limiting health or disability	-0.10	-0.21, 0.00	-0.09	-0.20, 0.01	-0.09	-0.19, 0.02
Gender: female	0.06	-0.01, 0.14	0.07	-0.00, 0.14	0.07*	0.00, 0.15
Age	0.04***	0.02, 0.06	0.04***	0.02, 0.06	0.04***	0.02, 0.06
Fear of crime ^{††} : Functional anxiety	-0.15	-0.35, 0.05	-0.06	-0.25, 0.14	-0.05	-0.24, 0.15
Functional worry	-0.22***	-0.33, -0.11	-0.13*	-0.24, -0.02	-0.13*	-0.24, -0.02
Dysfunctional anxiety	-0.28***	-0.43, -0.12	-0.18*	-0.34, -0.03	-0.17*	-0.32, -0.02
Dysfunctional worry	-0.48***	-0.58, -0.38	-0.37***	-0.47, -0.27	-0.35***	-0.46, -0.25
Perception of neighbourhood disorder ^{†††}			-0.04***	-0.06, -0.03	-0.04***	-0.06, -0.03
Perception of collective efficacy ^{†††}			-0.05***	-0.08, -0.03	-0.04**	-0.06, -0.01
Concerns about long-term social change ^{†††}					-0.04***	-0.06, -0.01
Concerns about moral decline ^{†††}					-0.01	-0.03, 0.01
Constant	-0.06		0.29		0.42	
R ²	0.06		0.09		0.10	

β = partial regression coefficient; CI = confidence interval. * p<0.05, ** p<0.01, *** p<0.001.

† Response variable: Confidence in police effectiveness, scores saved from ordinal latent trait modelling of 8 single indicators for each latent construct using full information maximum likelihood estimation. LatentGold 4.0 was used to calculate factor scores, which were then recoded so that they ranged from 0 to 10.

†† Reference category: Not worried nor anxious about crime

††† Scores saved from ordinal latent trait modelling of (3-6) single indicators using the technique mentioned above.

Note: Fixed effects for electoral wards were included, but the parameter estimates for the 6 dummy variables are not reported here. Non-linear and interaction effects involving age and gender were not statistically significant.

Source: 2007 London Metropolitan Police Safer Neighbourhoods Survey. Base *n* for all models = 2,584. Unweighted data.

Appendix

Relational concerns regarding the local neighbourhood were broken down into perceptions of disorder and perceptions of collective efficacy. Perceived disorder was measured by asking respondents: 'Here is a list of issues that may or may not be a problem in this area. For each one please tell me whether it is a major problem, a minor problem or no problem.'

- Litter, fly tipping and fly posting;
- Graffiti;
- Vandalism, for instance of telephone kiosks or bus shelters;
- Noisy and/or nuisance neighbours;
- Noisy/rowdy/inconsiderate behaviour in the street;
- Teenagers hanging around in the street; and,
- Drinking in the street.

Perceptions of collective efficacy (Sampson *et al.*, 1997) were measured by asking two sets of questions. First, social cohesion was measured by asking respondents whether they agreed or disagreed (using a 5-point scale) with the following statements:

- People around here are willing to help their neighbours;
- This is a close-knit neighbourhood; and,
- People in this neighbourhood can be trusted.

Second, perception of informal social control was measured by asking respondents whether they agreed or disagreed (using a 5-point scale) with the following statements:

- If I sensed trouble whilst in this area, I could 'raise' attention from people who live here for help;
- The people who live here can be relied upon to call the police if someone is acting suspiciously; and,
- If any of the children or young people around here are causing trouble, local people will tell them off.

As in previous research (e.g. Jackson and Gray, 2010), a scale of public perception of collective efficacy was created by linking (a) mutual trust and shared expectations among residents, and (b) the shared willingness to intervene to defend social order.

Broader relational concerns were broken down into concerns about a decline in moral values and concerns about long-term social change in the community. Concerns about moral decline (or conservative views of moral living, see Dowds and Ahrendt, 1995) were measured by asking respondents to agree or disagree (five-point scale from strongly agree to strongly disagree) to each of the following statements:

- Young people today don't have enough respect for traditional British values;
- People who break the law should be given stiffer sentences; and,
- Schools should teach children to obey authority.

Concerns about long-term change in the community were measured by asking respondents whether they thought each of the following had increased, not changed or decreased since they had lived in the local area (five-point scale):

- A sense of belonging to the community;
- A sense of shared values amongst people who live here; and,
- A sense of right and wrong amongst people who live here.