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Comparing research methods to understand feelings of unsafety and fear of crime

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Abstract

Since the late 90's a large body of criminological, sociological and psychological literature was dedicated to the fear of crime measurement, not only because of the relevance of this topic, but also for the need of deepening the methodological issues implied in its assessment. Fear of crime has been traditionally explained by the resulting effect of combined factors, such as affective, cognitive, and situational factors, and this made so complex its understanding and therefore its measurement.

A significant debate was devoted to operationalize the concept of fear of crime: a number of studies have found that fear is only weakly correlated with objective measures of crime, suggesting that fear of crime is not simply a response to high crime rates, but it appears to be more consistently associated with conditions in the physical and social environment. Although the measurement of these constructs has been mainly entrusted to quantitative research methods, raising the criticisms of some scholars, qualitative methods and mixed methods are also frequent in literature. The aim of this work is to carry out a comparative review of the methods for measuring fear of crime. The main quantitative, qualitative and mixed methods research methods will be illustrated, trying to focus on their elective field of application, and, where possible, the robustness of the methodologies.

Keywords: fear of crime, measurement methods, qualitative methods, quantitative methods, mixed methods

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Comparing research methods to understand feelings of unsafety and fear of crime

Introduction

During the last decades, fear of crime has been one of the criminological themes that showed a broad flourishing of scientific literature. Safety from crime still represents a relevant social problem, and a main subject in local and national governments political agendas (Stefano Caneppele, 2010); most important, fear of crime constitutes a threat to communities' health and quality of life. Several studies reported a significant association between fear of crime and well-being outcomes at the individual level (OECD, 2011; Jackson and Stafford, 2009; Lorenc et al., 2012; Stafford, Chandola and Marmot, 2007), mainly concerning mental health. The review of Lorenc and colleagues (2012) emphasised that the impact of fear of crime on well-being may have pathways that are often indirect and mediated by environmental factors.

Researchers used many approaches and empirical tools without being supported by a shared definition of the meaning, and the content, of fear of crime. This uncertain theoretical framework allowed overlapping concepts that partly misrepresent the meaning of fear of crime (i.e., the concept of safety). Many studies demonstrated that fear is only weakly correlated with objective measures of crime (Farrall, Gray and Jackson, 2007; Hale, 1996; Lorenc et al. 2013), suggesting that fear of crime is not simply a response to high crime rates or, probably, what was meant to be measured wasn't the true level of concerns about crime but a general feeling of worry provoked by environmental and individual factors. Indeed, it is generally accepted that fear of crime is a multi-faceted phenomenon resulting from a complex network of relationships between the physical and social environment, individual characteristics, and cognitive and emotional processes about the risk of being the victim of a crime. In addition, anxiety and worries related to feelings of unsafety are contextual to time and space (Bannister, 1993), making it more challenging to obtain a reliable assessment of fear of crime.

The scholars' debate about measurement issues never reached a conclusive solution. In 1997, Farrall and colleagues argued that the results of fear of crime surveys appeared to be a function of the way the topic is researched, rather than the way it is, due to the extensive use of quantitative measures, but also because of the challenging attempt of conceptualising and operationalising the construct of fear of crime. During the following years, criticism was raised upon the use of appropriate terms describing worries about crime, the dimensions that contribute to portraying this phenomenon, and the reliability of the methods used for its assessment. Qualitative methods were employed too, due to their contribution to a finer understanding of the individual processes explaining the feelings of unsafety. These methods provided a deeper focus on important contextual variables (time and space), but they cannot represent a measure of fear of crime. More recently, mixed methods also were used in research to achieve a more comprehensive analysis of the fear of crime, but this approach needs a more accurate methodological framework.

Despite the large body of literature on fear of crime and its assessment, some issues are still unsolved and still claim answers. Are we measuring fear of crime, or are we dealing with feelings of unsafety that are partially related to crime and experiences of victimisation? Sometimes concerns about crime and unsafety were used interchangeably, but is there evidence that they belong to the same conceptual domain? Some scholars recommended more attention to the validity and reliability of the assessment tools (Farrall, 1997; Hart, Chataway and Mellberg, 2022), but at the same time, they suggested that qualitative and mixed methods may improve its understanding: if different methodological approaches are needed, do they aim to the same research objective?

This article has the goal to answer these questions providing some ideas on methods for measuring fear of crime according to the goals to be achieved.

Fear of crime: a landscape of definitions

At the beginning of the 80s, Garofalo (1981) proposed a conceptualisation of fear of crime as an emotional reaction resulting from a perception of danger and a threat of physical harm, defining fear as anxiety. A few years later, Ferraro and LaGrange (1987) operationalized this concept, distinguishing between "formless" and "concrete" fears: the first refers to situational fears, while the second is related to specific crime threats that an individual may experience. For the first time, they described the facets of this feeling, specifying that the perception of crime is generated by judgements about the risk of being a victim (Jackson, 2006), concerns about its consequences and the emotional status deriving from the two (fear of crime). They agreed with Garofalo's definition. However, according to these authors, the concept of fear of crime is limited to the emotional component since it portrays a distinct domain from concerns and perceived risk. During the following years, this distinction (particularly with perceived risk) was underlined by other scholars (Rader, 2017; Rountree and Land, 1996; Warr, 2000), who argued that judgments about being a victim of crime can be considered a predictor of fear.

Later, the scholars' debate focused on the psychological meaning of fear. Warr (2000) agreed to classify it as an adverse emotional reaction. This definition was considered by researchers still ambiguous, since it includes different feelings, such as sadness or anger, that do not correctly express fear.

At the beginning of the 2000s, multiple conceptualisations of this construct were proposed in the literature to highlight the psychological component of fear of crime. However, the distinction between fear and other emotional status remained unsolved. Fear was conceptualised as a worry about victimisation (Williams, McShane and Akers, 2000), but the researcher also used different terms, such as concern and anxiety. Gabriel and Grieve (2003) attempted a new categorisation of fear, remarking on the difference between dispositional and situational fear of crime: the first showed someone's attitude of being afraid, while the second pointed out the feelings of concern felt in a specific condition. Criticism was raised against this conceptualisation since it is practically impossible to measure situational fear, but this suggested a new perspective: behaviours can be considered an indicator of fear.

During the first decade of the new century, many authors indicated the three components of fear in cognitive, affective and behavioural aspects (Farrall, Jackson and Gray, 2009; Greve, Leipold and Kappes, 2018; May, Rader and Goodrum, 2010; Rader, 2004; Rader, May and Goodrum, 2007; Cornelli, 2019), bringing the concept of perceived risk, represented by the cognitive component out of the three aspects, to the fore. Rader (2004) argued that these indicators are responses to the threat of victimisation. This conceptualisation is a novelty compared to earlier definitions taking into consideration distinct domains for fear and perceived risk. Still, it suggested a more comprehensive interpretation of the interrelationships describing the fear of crime.

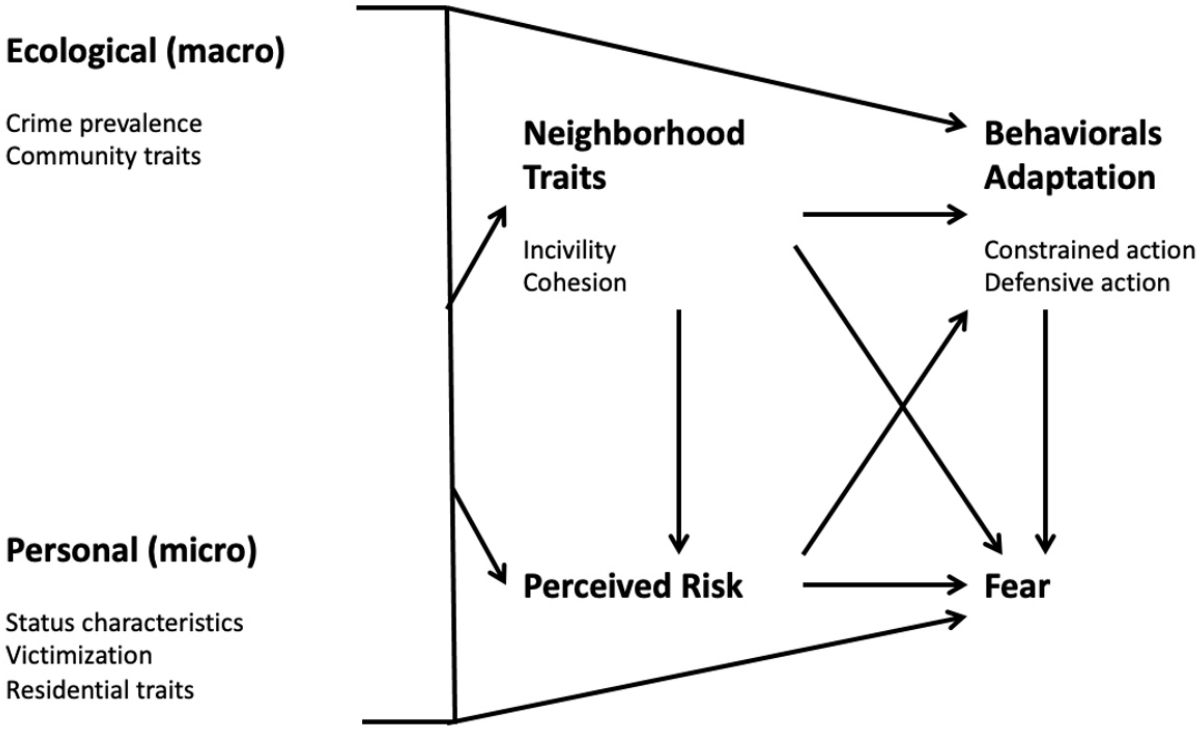
Indeed, in the following years, many authors tried to explore the multidimensional construct of this phenomenon, aiming to reach a shared and universal definition of fear of crime. Recent attempts to identify commonalities in fear of crime defined it as the resulting emotion from a perceived threat in the immediate environment, and its multidimensionality relies upon the interconnections between factors that express affective, behavioural and cognitive responses (Chataway and Bourke, 2020; Henson and Reyns, 2015; Lane, Rader, Henson, Fisher and May, 2014).

The importance of the environment in determining fear of crime has been well-known since the beginning of the scholars' debate, supported by theoretical frameworks that added robustness to how researchers analysed fear. For example, in the late '70s, researchers highlighted that fear in an urban environment results from social disorder and that the signs of incivility represent symbols that increase concern about the risk of being a victim of offences (Hunter, 1978), with reference to two types of phenomena: social disorder and physical signs of incivility. These signs are more visible in daily life than crime events and they may generate more extreme variations in the perception of insecurity rather than the actual crime rate (Perkins, Wandersman, Rich and Taylor, 1993). Individuals would interpret the disorder unevenly, and these differences would be related to individual characteristics (vulnerability), the routine activities of the individuals and the feeling of belonging to the area of residence (Simon, Dent and Sussman, 1997; Wallace, Louton and Fornango, 2015). Although the concept of disorder seemed unanimously recognised as two-dimensional (physical disorder vs social disorder), there is disagreement about the items used for its measurement.

Another theoretical framework that inspired scholars was the Social Disorganization Theory, which emphasised the importance of formal and informal networks as a means of deterrence against crime. The connection between the quality of social ties and safety was also studied through social cohesion, which refers to the individual's sense of belonging to a group (Bollen and Hoyle, 1990). However, the interest among scholars focused on collective efficacy, a dimension grounded in Social Disorganization Theory. Collective efficacy was defined as the strength of mutual relations within a community (social cohesion), together with the propensity to intervene in favour of the common good (informal social control/willingness to intervene) (Sampson, Raudenbush and Earls, 1997). An intriguing finding of Swatt and colleagues (2013) demonstrated that collective efficacy was also a good predictor of fear of crime and unsafety.

As mentioned above, individual characteristics are essential in cognitive processes related to fear of crime and unsafety (Ferretti et al., 2018). The vulnerability theory, based upon the individuals' perception of being more exposed than others to the risk of victimisation, tried to explain why distinct sub-groups of the population (e.g., women, the elderly etc.) expressed more significant concern about crime without being more victimised. In 1990 Killias proposed three conditions that the individuals perceive and that cause the sense of vulnerability: a) the exposure to criminal risk, b) the seriousness of the consequences that such an event could have, and c) the skills to deal with this situation. In his review, Hale (1996) underlined that vulnerability was considered a predictor of unsafety in many studies about fear of crime.

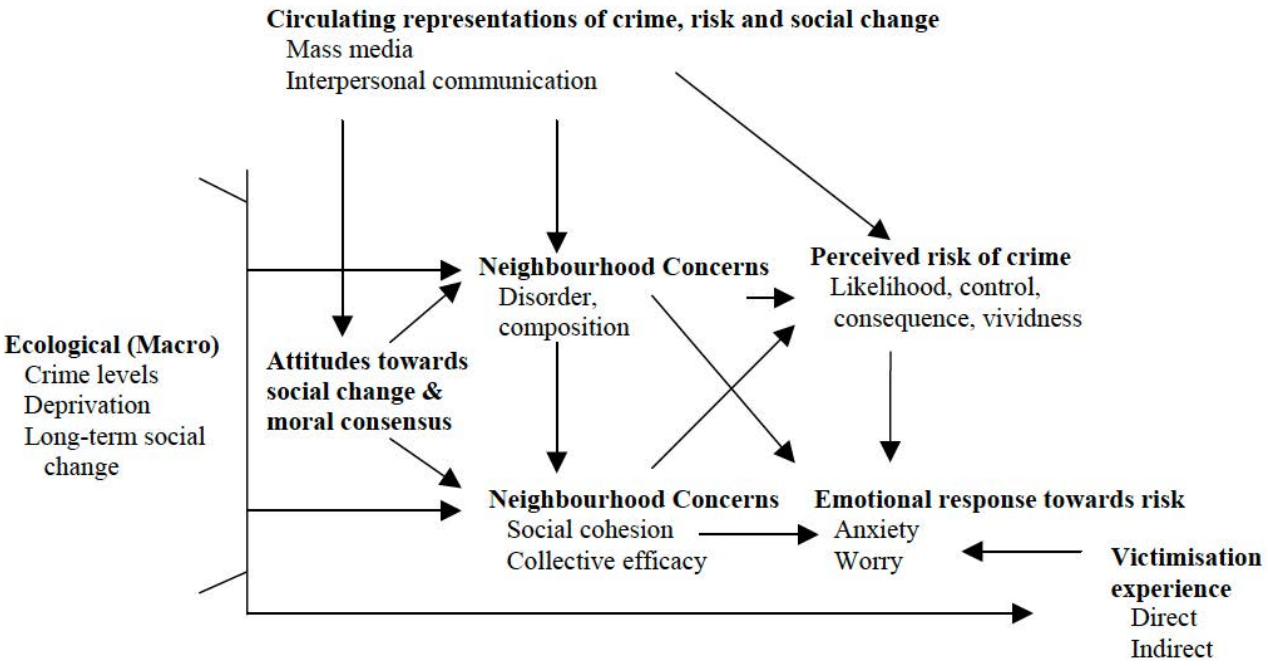
In the early 90s, scholars tried to systematise this complex set of definitions, theories and interrelationships from which the fear of crime originates. Ferraro (1995) proposed a model of causal relationships (Fig. 1) where macro-level variables (community characteristics, prevalence of crime) and micro-level variables (individual factors, e.g., gender, age, experiences of victimisation, ...) influenced the traits of the neighbourhood, the adaptive behaviours, the risk perception and finally the fear of crime itself. This model included the concepts of incivility and cohesion among the aspects describing the characteristics of the neighbourhood.



Although Ferraro's model was considered one of the first meaningful attempts to describe the factors and processes underlying fear of crime, some scholars criticised the lack of a hooplike interpretation of the phenomenon. Some model factors can be affected by the levels of fear: an adverse effect of a high level of unsafety on social cohesion was found by Sampson and Raudenbush (1999), while the fear, caused by high violent-crime rates, alters the neighbourhood conditions (Liska and Bellair, 1995; Cornelli et al., 2020).

These feedback effects were modelled by Markovitz and colleagues (2001). According to these authors, macro-level factors are responsible for determining the degree of cohesion in the neighbourhood: a decrease in cohesion results in more social disorder and crime, which in turn creates the feeling of unsafety and fear of crime. At the same time, fear causes a decline in neighbourhood cohesion, triggering a loop that feeds further disorder, crime, and a further increase in fear of crime.

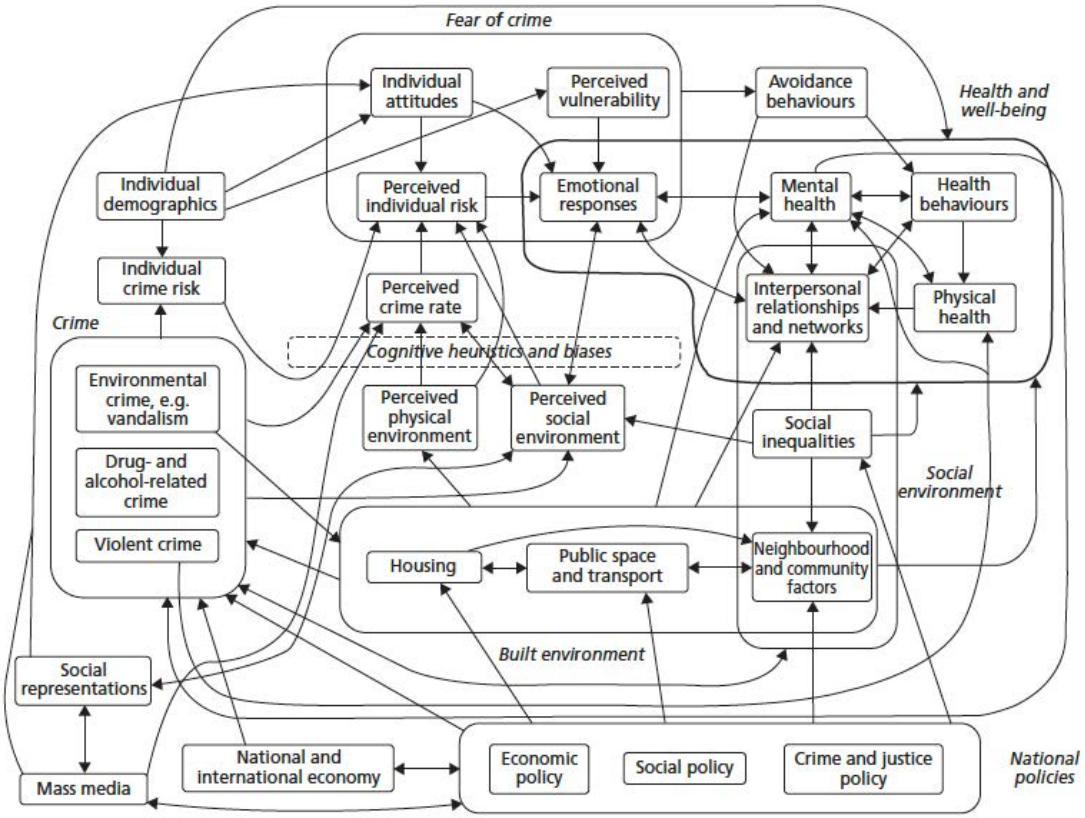
Farrall and colleagues (2007) made one step forward defining this new patterning as a 'unified' theory of the fear of crime (Fig. 2), accounting for elements from the previous major theories about the topic. In short, fear of crime involves experience – everyday worries about personal risk – and the expression of attitudes towards social change, stability, order and cohesion. The research progress in fear of crime enriched the authors' perspective: a more significant number of factors was included in this model, and a more explicit connection with the reference theories was formulated as well. It's worth mentioning that fear of crime was not explicitly pointed out in this model, but it was designed to express the emotional response to risk in terms of anxiety and worry. The contribution of individual traits was not depicted clearly. Still, presumably, the authors believed these factors could be expressed by dimensions such as attitudes towards social change and perceived risk of crime, for example, through the cognitive processes that characterise the perception of vulnerability.



Source: Farrall, Gray and Jackson, 2007.

Figure 2: Experience and expression in the fear of crime.

A few years later, Lorenc and colleagues released a review of theories and pathways (2014), encompassing the main factors contributing to the fear of crime and their interrelationships. The causal map that they proposed (Fig. 3) was organised by scale, with the micro-level factors on the top (individual characteristics), the meso-level factors in the centre of the map (representing environmental factors), and the macro-level determinants nearer the bottom (national policies). This map resumes six key concepts, several subconcepts, and the hypothesised relations between them. The six key concepts synthesized years of debates about the definition of fear of crime and its determining factors: 1) crime and disorder (violent or potentially violent crimes against the person, drug- and alcohol-related crimes, 'environmental' crimes such as criminal damage, vandalism and graffiti; 2) fear of crime (perceived risk, emotional responses, individual attitudes, perceived vulnerability); 3) health and well-being (physical activity, social well-being, interpersonal interaction and social capital); 4) built environment (design of public spaces, architecture and design of residential housing, …); 5) social environment (socioeconomic status, ethnicity, structural inequalities and individual discrimination, social cohesion or integration); 6) national policies (economy, crime and justice, …).



Source: Lorenc et al., 2014.

Figure 3: Causal map.

Although what Lorenc and colleagues proposed represents an appreciable interpretative effort of a complex and multidimensional phenomenon, the definition of fear of crime utilised by these scholars remains anchored to the traditional paradigm of the emotional response to a perceived threat in the immediate environment. As the authors pointed out, the model resulting from a thorough literature review aims to summarise all the points of view expressed by researchers, even if it cannot be considered universally accepted by all scholars. Many other scholars have proposed their own modelling of the phenomenon over the years, and this brief review does not do justice to the debate. However, rarely these studies were supported by empirical validation. Among the few, Jackson (2005) proposed a model based on multiple constructs that combined emotion, risk perception and vulnerability, and environmental perception, which was analysed using confirmatory factor analysis to test its validity.

The evidences from the most recent literature are still discussing these conceptualization issues. Some recent attempts to identify commonalities in the definition of fear of crime confirmed the multidimensional nature of this construct, consisting of interconnected affective, behavioral, and cognitive responses to an immediate and perceived threat of crime (Chataway and Bourke, 2020; Henson and Reyns, 2015; Lane et al., 2014).

Indeed, the research development in fear of crime showed significant progress over the years, but some topics are still on the agenda: a) a definition of this phenomenon shared as much as possible among scholars; b) a multidimensional perspective of the research object, not only in describing the concept of fear of crime but to analyse all the factors that contribute to it.

Measuring fear of crime: a short review

The previous section of the paper aimed to give a more precise understanding of the conceptualisation issues that the scholars tried to overcome in defining fear of crime. This paragraph summarises how the methodologies reflect its operationalization, and their evolution in time.

Quantitative methods

From the beginning, the most common approach in research on fear of crime has used quantitative measures collected through questionnaires with closed questions, but the problems deriving from this methodology were soon highlighted.

Initially, safety measurement (not yet the fear of crime) was entrusted on general questions asking about someone's feelings being in a place during a certain period of the day

(e.g., "How safe do you feel walking alone in your neighbourhood at night?", or the question "Is there any area right around here – that is, within a mile – where you would be afraid to walk alone at night?" created in early 70s by the National Opinion Research Center, University of Chicago). In his seminal review on the fear of crime, Hale (1996) underlined the inappropriateness of these measures since a single indicator cannot capture the multiple aspects of a complex phenomenon as the fear of crime.

Farrall and colleagues in 1997 agreed with the suggestions of Hale and underlined that this methodology does not allow to analyse of the multidimensionality of the phenomenon, proposes a poor conceptualisation of the concept of fear, aims to represent the events and not the processes creating the feeling of fear and finally, does not take into account critical contextual variables such as time and space. They described some mismatches that explain why the reported incidence of the fear of crime partly depends on the nature of the measurement instrument. The following list summarises these mismatches: a) quantitative instruments appear to measure feelings on a very general level; b) «formless» fear is higher if compared to a question related to a specific crime (concrete); c) these tools don't catch genuine changes in fear; d) the meaning of the word "worry" is variously interpreted by the respondents (and debated by the scholars). These authors concluded their work by recommending that future crime surveys should incorporate validation techniques and that fear of crime could fruitfully be measured as a multi-faceted phenomenon, adding emotional, cognitive and affective elements.

In the following years, scholars have proposed numerous tools for measuring fear of crime consistent with the developing theories on this topic. Omitting the debate on using the term «worry» instead of «anxiety» to describe the emotional component of the fear of crime, as previously mentioned, there are many indicators in the literature. In some cases, scholars used measures referring to the specific risk of victimisation (for instance, for theft) and the relative concern. In other cases, researchers designed indicators including the characteristics of the surrounding environment (incivility, social cohesion, etc.) to describe the cognitive, behavioural and affective aspects of the fear of crime.

Considering the multiplicity of solutions offered to solve the problem of the fear of crime measurement, two examples are of particular interest. In 2008, Gray and colleagues sought a solution to the poor reliability of fear of crime surveys. Once again, the authors underlined how these provided only vague 'global' summaries of the intensity of worry or feelings of unsafety and that these vague summaries may diverge from the reality of everyday emotions that affect people's lives. Therefore, they proposed a "new" set of questions referring to specific crimes that allowed to evaluate the frequency and intensity of concern. In the example reported by the authors (p. 368), the formulation of the questions is as follows:

Q1: 'In the past year, have you ever felt worried about … ?' (car theft/burglary/robbery)

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

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

Questions 1 and 2 focus on the frequency of crime worries, allowing an estimation of the regularity with which people fear crime that is arguably more precise. The third provides the intensity of the last event of worry. The authors focused on sampling events rather than individuals and the number of times each individual worries. The results confirmed that this new formulation of the questions effectively reduces the overestimation of the level of concern provided by the traditional questions. Furthermore, the authors point out that 'worry about crime' is often best seen as a diffuse anxiety about risk rather than any pattern of everyday concerns over personal safety.

Jackson (2005), on the other hand, starting from the conceptualisation of fear of crime as a range of distinct but related constructs comprising the interplay between emotion, risk perception and environmental perception, proposed and validated a measurement tool that analysed several dimensions of fear of crime: the frequency of worry about becoming a victim of three personal crimes and two property crimes in the immediate neighbourhood of respondents (five individual questions asked respondents about their worry about every single crime); estimates of the likelihood of falling victim to each crime locally; perceptions of control over the possibility of becoming a victim of each crime locally; perceptions of the seriousness of the consequences of each crime; beliefs about the incidence of each crime locally; perceptions of the extent of social and physical incivilities in the neighbourhood; perceptions of community cohesion, including informal social control and trust/social capital.

In these last two examples, although their papers were almost contemporaneous, Gray and Jackson debated measurement issues from two different points of view: on the one hand, obtaining measures that were not affected by an overestimation of the true feeling of concern (concern, anxiety) about the crime, on the other, identifying tools that would allow interpreting a highly complex phenomenon.

These two authors proposed methodological works that influenced scholars towards a robust methodological approach in measuring the fear of crime. However, the 2022 review by Hart and colleagues highlights that many studies on this topic did not follow these recommendations. The authors reviewed 547 papers published over the past 25 years involving quantitative studies. The results displayed a significant heterogeneity. During this period, the authors observed a progressive increase in studies using multiple indicators compared to studies that measure fear of crime through a single indicator. Among those using multiple indicators, 45% tapped into the personal

emotion dimension of fear and 37% personal judgement. A few studies tapped into behavioural (about 7% of all indicators) and physiological (less than 1% of all indicators) dimensions of fear of crime. Another essential finding this review highlighted was the quality of measures used in these studies. 6 out of 10 papers using multiple indicators reported results about the measurement's reliability (mainly through Cronbach's Alpha) and the validity of the construct measured (confirmatory factor analysis-CFA or exploratory factor analysis-EFA).

The analysis of some recent articles confirms the multiple ways the fear of crime is now measured. Macassa and colleagues (2023) assessed this construct with only one question, asking if respondents avoided going out alone for fear of being assaulted, robbed, or otherwise victimised. The one-indicator choice was made by Srivarathan and colleagues (2022), who asked, "To what extent do you feel safe when you are outdoors in the neighbourhood?". Benavente and Goya (2023) used multiple indicators. Still, they originated from the single-item indicator used to measure safety adapted to different situations (e.g., walking alone around your neighbourhood, in shopping centres and their surroundings,). The authors administered two sets of indicators: one for the feeling of safety in general, the second for the same feeling during the dark (all indicators were measured on a four-point scale: from «very unsafe» to «very safe»). Another recent study (Burt et al., 2022) measured the fear of crime through four rather generic questions, asking participants: 1. how fearful respondents are of crime in their neighbourhood; 2. how respondents perceive the crime rate in their neighbourhood compared to other neighbourhoods; 3. how dangerous or safe it is to walk in the respondent's neighbourhood during the daytime; 4. how dangerous or safe it is to walk in the respondent's neighbourhood after dark. Although the authors provided the reliability of their measurement (Cronbach's = 0.85), it is hard to believe that these indicators can capture the phenomenon's complexity. Golovchanova and colleagues (2023) aimed to analyse the perception of unsafety in the neighbourhood (two single items: «During the last year, did you ever feel unsafe in the area where you live?» and «During the last year, did you ever feel unsafe in the apartment in which you live?» and the Fear of crime (affective aspect) was assessed (six-item index in which each item represented worry about a specific type of crime). Similar examples can be found in other recently published works (Chadee, Ng Ying, Chadee and Heath, 2019; Lee, Ang and Chan, 2021; Binik et al., 2021).

Concluding this review of quantitative methods, it is necessary to mention some examples of authors who aspired to go beyond the traditional use of indicators, despite these measures being the most widespread and used in the literature. There are few examples in the literature of researchers who tried to build and validate psychometric tools based on a solid theoretical background that would allow the «fear of crime» construct to be measured. Among these, Jackson's paper mentioned above (2005) proposed a valid measure of the fear of crime based on multiple constructs that combined emotion, risk perception and vulnerability, and environmental perception.

In 2022 Etopio and Berthelot proposed a validated scale that integrated the Constructed Emotion theory (Barrett, 2017) from the field of psychology with the criminological study of fear of crime. The authors used a rigorous methodology: first, in-depth interviews were administered for item identification, and then the validity was studied with exploratory and confirmatory factor analysis. In addition to assessing reliability, the authors also analysed convergent and divergent validity. This unidimensional 10-item scale explores mainly the affective dimension of fear of crime. Its items describe situations such as «Crime worries me in my day-to-day life» or «I'm afraid of a crime happening to me», but they do not seem able to capture emotions coming from the social and physique of the individual.

An Italian group of researchers (Ferretti et al., 2019; Coluccia, 2008) has developed a measurement scale of urban security starting from some of the most used constructs in the literature. This tool, called PUSAS (Perceived Urban Safety Assessment Scale), is characterised by three dimensions: physical and social disorder (10 items), collective efficacy (9 items) and concern about crime and sense of vulnerability (8 items). The 27 items of the scale return a total value which expresses the perception of safety in an urban environment. Each dimension and the whole scale were analysed for the reliability of the measures, while the construct validity was studied with exploratory and confirmatory factor analysis. Furthermore, the authors performed a test-retest to assess convergent validity. During 2015-2017, the tool's development passed three validation steps that enrolled a national sample of 788 subjects. According to our knowledge, PUSAS represents the first Italian scale measuring feelings of unsafety with known psychometric properties. This tool was administered in 2019 and 2022 in two surveys, just before and after the COVID pandemic. These studies helped a local administration (the municipality of Grosseto, Tuscany) understand the perception of safety and which of the three dimensions (physical and social disorder, collective efficacy, and concern about crime) primarily affected the community's worries.

In response to the lack of instruments that capture the cognitive and behavioural processes creating emotional responses to fear of crime, Gray and colleagues (2011) developed an ordinal measure locating emotional and behavioural reactions to crime on a scale. This tool improved the understanding of a large-scale complex pattern of emotional and behavioural responses to fear of crime. Unfortunately, the authors did not assess this scale's reliability and validity.

Qualitative methods

Traditionally, qualitative methods offer a deeper investigation of the phenomena, even though they cannot provide evidence. Due to the limitations of quantitative

methods, some scholars pointed out that they are useless in understanding the peculiarities and the circumstances surrounding the fear of crime as an individual experience (Pain, 2000), while qualitative methods helped researchers contextualise events that generate fear in time and space. Already since the 90s, some authors recommended that the knowledge based on quantitative data should have been enriched with qualitative methods (Farrall, Bannister, Ditton and Gilchrist, 1997; Hale, 1996).

An interesting review of qualitative studies on fear of crime published in 2011 by a group of Canadian researchers (Paris, Beaulieu, Dube, Cousineau and Lachance, 2011) identified 18 papers, examining conceptual, methodological and epistemological aspects. The authors highlighted that in a few cases, the studies collected for this review provided a clear conceptualisation of the fear of crime. However, they admitted that using qualitative methods can contribute to better defining this concept. From a methodological point of view, the review underlines the lack of detailed information on the sampling, observation and data analysis process, favouring criticisms of the robustness of this approach. In summary, the authors complained that scholars of fear of crime pay little attention to qualitative methods, contrary to other fields of criminological research where this approach is more common.

A few years later, another review of qualitative studies on the specific relationship between fear of crime and the environment (Lorenc et al., 2013) enrolled 40 qualitative studies carried on in the UK, which represents a significantly higher number of papers. The authors found great heterogeneity among the topics of the papers included in the review. Although the majority of the 40 studies focused on the relationships between the physical environment and fear of crime, the other papers included in the review aimed to analyse various research questions: for example, perceptions of safety in pedestrian journeys, perceptions of safety and fear of crime on public transport, parents' perceptions of child safety, gender differences in fear of crime, perceptions of street lighting and fear of crime, evaluation of CCTV system. The majority of the study was based on focus groups (63%) or individual interviews (53%), but also on many other different methods: participant observation, virtual reality «walk-through», escorted journeys and participatory approaches.

Many of the qualitative research methods are well-known and widely used (in-depth interviews, focus groups, participatory observation, ...), while others are less widespread, especially those involving the application of new technologies. In a study by some English researchers (Waters and Neale, 2010), virtual reality was applied to simulate a walk in six paths defined by the researchers and to analyse the reactions from the participants. The six walk-throughs captured in each community were then used as environmental stimuli in a series of four focus groups. Each group was asked a series of semi-structured questions on whether they felt safe or unsafe and what environmental features made them feel this way. Virtual reality walk-through was used previously by Cozens and colleagues (2003). In their study about crime and fear of crime at railway stations, they built 360-degree 'panoramas' at various points in the environment whereby respondents could 'virtually' travel through the station approach and railway station environment, view in and out and pan left or right at any stage of their 'journey'. During the virtual reality experience, the participants were asked whether they had fears for their personal safety.

Recent literature shows numerous examples of qualitative methods applied to fear of crime research. For example, the study by Silva and Guedes (2022), explored the consequences of media consumption in the fear of crime. They used semi-structured interviews with a sample of 20 participants, finding that media do not completely shape the fear of crime experiences. The lack of relationship between media consumption and fear of crime had been yet founded by Chadee and Ditton (2005). A recent review (De Silva, 2023) underlined that although most reviewed studies indicate a positive correlation which can be attributed to the media's tendency to focus on sensationalised and dramatic crimes, several studies have discovered a negative correlation, which can be explained by desensitisation and heightened awareness among media consumers.

The examples of qualitative research on fear of crime are numerous and apply to specific study contexts. Shepperd and colleagues (2022) used a qualitative approach to understand the experiences of safety and unsafety for older adults in public housing. In particular, a mix of semi-structured interviews and focus groups provided insights into the perception of higher risk in this urban environment. An interesting application of a qualitative approach was described by Etiaba and colleagues (2020). They used 35 in-depth interviews and 24 focus groups to gather data that were analysed and reported according to the Context-Mechanism-Outcome heuristic of the Realist Evaluation methodology. The study aimed to explore the role of security and the feeling of safety in maternal health services in primary healthcare facilities in Nigeria. For these authors, the concept of security was expressed by the absence of fear of crime and the feeling of safety within healthcare facilities.

Mixed methods

The third category of methods is the least common among studies on fear of crime. The term "mixed method research" and its synonymous ("multi-method research," "mixed methodology") refers to research that combines quantitative and qualitative research techniques and approaches into a single study. Mixed method research, almost by definition, is more time-consuming, challenging, and complex than monomethodological studies. This methodology outlines five primary purposes (Green, Caracelli and Graham, 1989): 1) to analyse the convergence of results via different methods (triangulation); 2) to clarify the results of one method using another (complementarity); 3) to find contradictory results that could help reframe the research (initiation); 4) to use the findings

from one type of research to inform another (development); 4) to expand the breadth of the research through multiple methods (expansion).

Mixed methods can concretely contribute to an enrichment of the results of the studies. In 2003 Johnson and Turner defined the «fundamental principle of mixed method research»: methods should be mixed in a way that has complementary strengths and nonoverlapping weaknesses. According to these authors, researchers should follow this principle for at least three reasons: (a) to obtain convergence or corroboration of findings, (b) to eliminate or minimise critical plausible alternative explanations for conclusions drawn from the research data, and (c) to elucidate the divergent aspects of a phenomenon.

Some scholars criticised the use of mixed methods. Since qualitative and quantitative researches have such different strengths and weaknesses, scholars frequently experienced many problems with the complementarity of the methods, or in achieving triangulation for the study results, ending with two quite different studies on very different aspects of a related topic. In a paper concerning mixed methods in criminology, Maruna (2010) provided many answers to the criticisms raised against mixed methods, "Indeed, the very idea of "mixed methods" research as a special category of work – or indeed the idea of "pure" quantitative or "pure" qualitative" research – may be seen as an anachronistic oddity of a peculiar moment in the development of the social sciences» (p. 137).

In spite of these problems, fear-of-crime researchers have been experimenting with mixed methods for a long time. Farrall and colleagues (1997) enrolled 64 subjects administering quantitative and qualitative interviews (quantitative data were collected before the qualitative interviews). They used the triangulation approach to understand if the quantitative measurement overestimated the actual level of fear, which was verified through qualitative interviews. The importance and relevance of multi-methods research into fear of crime were highlighted by Lee and Ellis (2018), who reported the results of a study concerning the perceptions of crime and safety in Sidney (Lee, Ellis, Balmer, Jackson and Clancey, 2017). They explored the frequency of fear and collective efficacy as two examples of how qualitative research can bring to life the rather static and disembodied results of survey instruments. The authors used the complementarity approach, collecting quantitative data before qualitative interviews.

In literature, some mixed methods studies are based on different qualitative methods for the same research objective. In the article mentioned above by Waters and Neale (2010), virtual walk-throughs provided essential information for the semi-structured questions used in subsequent focus groups (complementarity approach again).

A misrepresented conceptualisation or a misused measurement method?

There is no universal definition of fear of crime within the established literature, and its meaning varies so substantially in the literature that its measurement is in danger of losing any specificity. As currently accepted by scholars, fear of crime is a multidimensional construct that, during the last decades, was conceptualised and operationalised with increasingly complex models. But, in our opinion, the lack of a solid theory of reference is not the main problem in measuring fear of crime. Removing the ambiguity deriving from using terms such as fear of crime and unsafety as synonyms would be helpful to a more explicit definition of these phenomena.

The literature clearly evidenced that: a) quantitative measurement of fear of crime provides an overestimate of the actual likelihood of being the victim of a crime; b) this discrepancy relies upon environmental and individual factors that influence the individual's emotions; c) these negative emotions can, in turn, have impacts on the same environmental and social characteristics that caused them, producing more concerns about crime.

The latest interpretative models offered by the literature (Lorenc et al., 2014) fully capture these interrelationships' complexity levels. The complexity this model depicts makes it difficult for any measurement to reproduce the effects on the fear of crime (assuming that this can be considered the only dependent variable, or rather one of the factors contributing to these exchanges). It may then be legitimate to ask the question: are we measuring fear of crime, or are we dealing with feelings of unsafety that are partially related to crime and experiences of victimisation? Although the two concepts (fear of crime and insecurity) have been used interchangeably in the literature, perhaps it would be appropriate not to overlap their content entirely.

Amerio and Roccato (2007) defined unsafety as the confluence of perceptions, judgments, feelings, emotions and concerns that emerge from the individual's material, social and symbolic environment, a mixture of emotional and cognitive states. The individual's perception of safety/unsafety was rooted in the characteristics of the ecological and social relationships rather than ruled by the objective assessment of the criminal risk due to the environment. This definition would also explain the discrepancy between the perception of unsafety and the actual levels of crime since unsafety is not to be attributed to the actual fear of being victimised (in many urban contexts, a rather improbable event) but to the signals that come from the surrounding environment and that create a feeling of unease in individuals, perhaps only because these signals do not correspond to values and traditions accepted in the community.

As showed by the previous examples, many authors, more or less recently in the literature, have continued to measure the perception of safety through the traditional single indicator, i.e., for example, how safe one feels while

being out alone in one's neighbourhood at night (Breetzke and Pearson, 2015; Greve et al., 2018; Hinkle, 2015; Zhao, Lawton and Longmire, 2015). They decided on this method even if there's literature pointing out that this kind of measurement typically results in a more fearful response than more specific questions regarding cognition, affect, or behaviour change limited to time, crime, place, and frequency do (Farrall and Gadd, 2004; Farrall et al., 2009). But this type of measurement can never be adequate for a complex construct as described by Amerio and Roccato, which Lorenc's model better represents. Therefore, on the one hand, the difficulty of scholars in finding tools for evaluating a phenomenon whose shapes have not yet been wholly outlined and, on the other, the acceptance, even today, of methodological reductionism (the single indicator) of such a level high enough to compromise the sense of what is being measured. A no-way-out situation?

After decades of scholars who debated about the intricate network of relationships defining fear of crime and unsafety, the knowledge about the phenomenon reached a high degree of maturity. Even if these refinements have not yet produced a complete agreement among the authors, it's impossible to point out that the phenomenon has been misrepresented. However, there is no clear discrimination between the two concepts (fear of crime and insecurity). From a conceptual point of view and considering the many theoretical approaches analysed in this work, the latter should represent a broader construct, which includes the concern for crime. Researchers should also consider different tools: measuring the feelings of unsafety requires an assessment of several domains that are larger in number and higher in complexity than that related to fear of crime.

In the same way, it would be false to claim that there has been an improper use of measurement methods, which have also evolved together with the reference theories. Although since the dawn of this criminological field (e.g., Farrall et al., 1997), scholars urged that the validation techniques should be incorporated into future crime surveys, this lack is also underlined in much more recent times: the recent review by Hart and colleagues (2022) reported that still few multi-item studies present information on construct validity.

If, on the one hand, with the absence of a solid theory, it is challenging to apply techniques aiming at the validation of the measurements, on the other, a compromise can be sought, recognising that today there is no preferred instrument but that this choice must be established on the awareness of the objectives to be fulfilled, perhaps distinguishing between multi-item tools that effectively measure the fear of crime from those that instead measure insecurity. For example, the set of questions proposed by Gray and colleagues (2008), in which the frequency and intensity of concern about specific crimes are used, may represent an appropriate tool to measure fear of crime, as it reduces that overestimation of which the literature has always debated, probably induced by other ecological factors that tend to influence these emotions. If, on the other hand, the goal is to evaluate unsafety, then it may be necessary to resort to tools that allow for a more effective evaluation of the multidimensionality of this phenomenon (social disorder, concern for crime, collective effectiveness), as some authors have proposed (Ferretti et al., 2019; Lee et al., 2017). This last research perspective, compared to the previous one, would require a more rigorous methodological approach oriented towards the creation of psychometric tools capable of measuring multidimensional constructs.

In all of this, the role of qualitative research and mixed methods will remain fundamental, even if with different purposes from those of measurement methods. Modern criminological literature has fully revealed the interpretative richness that these methods provide, compensating for the reductionism of quantitative methods, reliable in measuring the intensity of phenomena and the relationships between the constructs that define them, but unable to examine in depth the processes underlying these relationships.

Conclusions

It is difficult to summarise the decades-long debate regarding the measurement of fear of crime and insecurity in one paper. Many years after the first research experiences on this topic, some scholars' recommendations still have not been entirely accepted, although many signals are encouraging. For example, the propensity to use valid and reliable measures of the researched phenomena has increased. However, there is poor awareness that the absence of instruments with such characteristics can profoundly affect the study results. In the face of increasingly complex interpretative models, new research will be necessary to provide scholars with robust tools capable of examining domains that are only apparently superimposable (e.g.: fear of crime vs unsafety). Greater integration between qualitative and quantitative methods is desirable as a means to improve the understanding of the processes regulating these phenomena.

But the most challenging aspect concerns the application of these concepts with the introduction of new technologies. Some examples of this new research frontier were reported in the systematic review by Solymosi and colleagues (2020), which examined the impact of new technologies on the measurement of fear of crime. This review often mentions the use of apps installed on mobile phones to report situations of perceived risk and feelings of unsafety. On this and other aspects, such as virtual reality and artificial intelligence, the measurement of fear of crime and insecurity remains a largely unexplored field.

Unfortunately, it was impossible to delve into all the methodological aspects related to the insecurity measurement. Some of these are crucial and deserve a specific research space. For example, some peculiar selection strategies reported in the literature to enroll study parti-

cipants, or enhanced statistical methods for data analysis. In future publications, it will be necessary to enrich with these topics the discussion about measurement issues in fear of crime.

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