The past two decades have witnessed a dramatic increase in research on peoples’ perceptions of crime and their associated feelings of safety and security (see e.g., Farrall, Bannister, Ditton & Gilchrist, 1997). Surveys of the community are regularly conducted by police services, government agencies and academic researchers to assess levels of worry and perceived prevalence of crime. Such data may be used to identify specific areas of concern, target programs for improving safety and security, or to better understand peoples’ assessments and concerns about crime. Some police services even incorporate community perceptions of crime risk and feelings of safety as performance indicators equal to that of the actual offence rate. In Western Australia, for example, one of the five core functions of the Police Service is maintenance of the peace. This core function includes preserving public order and promoting a sense of security in the community and a primary performance measure of this function is the proportion of the community who feel safe and secure (Western Australia Police Service, 1999).

Although there has been a great deal of so called ‘fear of crime’ inquiry, researchers often have difficulty defining what exactly fear of crime characterizes (Farrall et al., 1997). Broadly speaking, fear of crime has encompassed measures ranging from affective fear reactions in specific settings (Nasar & Jones, 1997; van der Wurff, van Staalduinen & Stringer, 1989) through to individual assessments of crime risk or prevalence (O’Connell & Whelan, 1996; Rountree & Land, 1996b). Depending on the theoretical focus of the research, methodology of the study, and/or interpretation of the investigator(s), numerous conflicting findings have been reported (Farrall et al., 1997). Ongoing disagreement by researchers over the structure and measurement of fear of crime, along with persisting discrepancies amid research data, appear to characterize this field of study.

The fact that perceptions of safety and fear of crime have been so rigorously investigated, and that research findings have become so important to law enforcement

A review of the current literature indicates that, despite the large quantity of research on fear of crime, it has remained an elusive concept that is difficult to measure and assess. Research findings on this issue are varied and often contradictory and, in general, appear to lack a synthesizing theory. This lack of synthesis appears to be especially prevalent with regard to an understanding of public perceptions of crime in general versus public perceptions of specific crimes. It is suggested that the application of attitude formation and response theory might provide a more comprehensive understanding of this general/specific fear of crime issue. Specifically, it is argued that attitude formation and response theory might better explain why public perceptions of general and specific crimes are skewed and what cognitive factors lead to this discrepancy. As such, the current study had two major objectives. The first goal of this study was to compare perceived and actual crime rates to determine if people are able to accurately assess the occurrence of both general and specific crime in their areas. The second of the research was to apply attitude formation theory to interpret fear of crime, specifically with regard to cognitive antecedents and responses. As expected, results indicate that subjects are inaccurate in their assessment of general crime rates but very accurate in terms of their assessment of specific crime rates. In addition, there was a significant relationship between subjects’ attitudinal antecedents and their responses regarding fear of crime. Findings are discussed in terms of improvements to the measurement of fear of crime and associated responses to this phenomenon.


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and community leaders, highlights the importance of continued empirical examination of this area. Apart from trying to make sense of the wide-scope of past research into crime perceptions and fear, this area of research is also concerned with the individual and social ramifications of excessive concern with crime. In addition to the personal anxiety intrinsic to the fear of being criminally victimized (Hollway & Jefferson, 1997), it is suggested that fear of crime may lead to a disproportionate concentration of crime in lower socioeconomic areas (Rountree & Land, 1996a). For example, more affluent individuals tend to have more scope to protect themselves and their property or to relocate their homes to safer areas, displacing crime to low socioeconomic communities. As such, it has been suggested that individuals in low socioeconomic areas are more likely to be victims and thus more likely to fear crime (Rountree, 1998).

In addition to the above, people may fear criminal victimization although they have never been the victim of a crime. Although it is clear that in certain situations there may be realistic risks of criminal victimization and people may therefore understandably avoid certain places and activities, Box et al., (1988) argue that in a significant number of instances, an unrealistic fear of crime may cause people to place serious restrictions on their behaviour, unnecessarily compromising their quality of life. Given these findings, it is suggested that certain individuals, because of a concern for personal safety or the security of their property, may miss out on the opportunities and activities provided by their communities. In addition, these individuals may divert income away from personal activities and development and toward protection for themselves and their property. It has been argued that this “unrealistic fear of crime” may be especially important when discussing the elderly. According to Box et al (1988) this group is in fact one of the lowest to experience actual crime but are the most likely to fear crime.

WHAT IS FEAR OF CRIME?
Numerous theories about fear of crime have been proposed by a variety of disciplines. Psychology (e.g., van der Wurff et al., 1989), sociology (e.g., Rountree & Land, 1996a), criminology (e.g., Sacco & Kennedy, 1998), architecture (e.g., Nasar & Jones, 1997) and psychiatry (e.g., Lindersey, 1991) have each offered different variables and indicators of the phenomenon. In addition, researchers investigating fear of crime have examined variables such as age, gender, race (Rountree & Land, 1996a), previous victimization (van der Wurff & Stringer, 1989; Winkel, 1998), neighbourhood disorder and incivilities (Rountree & Land, 1996a), social status (Thompson & Norris, 1992), perceptions of police (Bennett, 1994; Sprott & Doob, 1997), police interventions (Van den Bogaard & Wiegman, 1991), the impact of personal biographies including prior histories of anxiety and coping (Hollway & Jefferson, 1997), as well as social, cognitive and affective variables (van der Wurff et al., 1989; Vitelli & Endler, 1993). A review of this research indicates that the bulk of the above variables may be divided into individual and community level factors.

Individual Level Factors
Individual level factors such as gender, race and income (see e.g., Rountree & Land, 1996b) have been examined in the context of community fear of criminal victimization, particularly with regard to feelings of safety and security in one’s neighbourhood. According to a number of studies, women, the elderly, and ethnic minorities appear to be especially concerned with personal safety and have a greater fear of victimization than young white men (Bernard, 1992). For example, when examining responses to the question “How safe do you feel walking alone in this area after dark?” Box et al. (1988) found that non-white respondents reported feeling significantly less safe than white respondents. The authors also discovered that women reported feeling significantly less safe than men and that respondents over the age of 60 felt significantly less safe than those under 60.

Similarly, this time using data collected in a 1978 Canadian “Citizens’ Concern Survey,” Kennedy and Silverman (1984-85) found that elderly women reported feeling more fearful of walking alone in their neighborhood at night than any other group. Other researchers, utilizing this same question of how safe people feel when walking alone after dark in their area, also found gender and age to be an “integral part of any model of fear of crime and victimization” (Boroaah & Carcach, 1997, p. 639). Thompson and Norris (1992) suggest a similar role for socioeconomic status, with persons of lower occupational and educational status displaying greater fear of crime than those of higher occupational and educational status. Despite the above findings, however, most researchers agree that the effect of individual level factors is complex, involving the integrated effects of numerous other variables including those related to community level factors (Rountree & Land, 1996a).
Community Level Factor
As stated above, research suggests that the community setting may also impact fear of crime and perceptions of safety (Carrington & Pfeifer, 2003). Kennedy and Silverman (1984-85) for example, found that social interaction with neighbours, friends and family reduces the fear of crime among the elderly, suggesting the less they socialize the more they fear crime. Similarly, Rountree and Land (1996a) found that feelings of danger, as measured by whether respondents perceived their neighbourhood to be somewhat or very unsafe from crime at the time of the survey, was positively correlated with one’s social interactions in his or her neighbourhood. That is, people who had very little interaction with their neighbours felt less safe than those who had more social interaction.

Other researchers examining the impact of community factors on perceptions of safety suggest that fear of crime is traditionally greater in larger cities than in smaller towns (Sacco & Kennedy, 1998). It has been argued that this finding may be attributed to the increased extent of public knowledge regarding higher crime rates in larger cities, sometimes referred to as the “public world of city life” (Fischer, 1981). In addition, according to researchers such as Sacco and Kennedy (1998), big cities often incorporate a larger diversity of lifestyles, dress, and demeanour, and contact with persons of a largely different outward appearance may increase feelings of insecurity in individuals.

It has also been suggested that social disorder (i.e., street drinking or drug use) as well as physical signs of disorder (i.e., abandoned buildings and unkempt residences) also impact peoples’ feelings of safety in the community (Sacco & Kennedy, 1998). For example, Perkins and Taylor (1996) were able to predict fear of crime amongst respondents using three ecological methods of measuring community disorder. Based on their findings the authors argue that, although disorder tends to be a problem where crime is also a problem, community level disorder may also supplement effects of local crime rates on the fear of crime. Other research findings, however, appear to vary significantly from this position, especially if previous victimization and perceptions of risk are included in the equation (Bankston, Jenkins, Thayer-Doyle & Thompson, 1987; Rountree, 1998; Rountree & Land, 1996a). Again, as with individual level variables, the current research suggests the effect of community level factors is highly complex.

Assessing Individual and Community Level Factor
The impact of the individual and community level factors reviewed above has recently been challenged by a number of studies suggesting that fear of crime is more complex than a simple combination of a few key variables. Gilchrist et al. (1998), for example, found higher fear of crime levels in men than in women when including qualitative data on victimization. Similarly, Ferraro and LaGrange (1992) found that the elderly were actually less likely to fear crime than younger persons when studied using an alternative strategy for measuring fear of crime based on rating fear for 10 different victimizations. In addition, Bankston, et al. (1987) found rural farm residents to be disproportionately more fearful of victimization than their city counterparts when measured on a scale of sensitivity to perceived risk. Seemingly counter-intuitive findings such as these have lead a number of researchers to suggest that the fear of crime may have more to do with the way the concept is measured than any real group differences (Farrall et al., 1997). This possibility is discussed below.

THE FEAR-CRIME PARADOX
The complex nature of the fear of crime issue is represented by an examination of a concept known as the fear-crime paradox. According to this paradox, there is a distinct differential between actual crime rates and the perceived crime rates (and associated fears) of the public. According to sociologists, this paradox is premised on the belief that the fear of crime can be divided into two distinct categories. The first category represents a concrete fear of crime and refers only to a fear of violent crimes. This category, according to theory, is of less interest to researchers because it is in fact directly reflective of actual experiences with crime. The second category, however, is known as a formless fear of crime and involves a general feeling that one is unsafe. According to research findings, women, the elderly, the marginally employed and those with low incomes are most susceptible to this type of fear (Sacco & Kennedy, 1998).

For the most part, research on formless fear of crime has involved analysis of changes in victim reported offences and perceptions of safety and security over time. Interestingly, findings indicate that although victimization has often remained stable or decreased, perceptions of being unsafe and fear of victimization have actually increased (Canadian Centre for Justice Statistics, 1995b). Other means of accessing unnecessary or excessive fear of crime and feelings of non-safe-
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Recently there have been researchers comparing group perceptions with the actual rate or probability of victimization and finding higher fear levels than justified by the statistics (Canadian Centre for Justice Statistics, 1992; 1995a; 1995b). This phenomenon has been referred to as the crime-fear paradox, and has been noticed particularly in research on the elderly and on women.

Although investigations into this paradox provide fairly strong evidence for its existence, it should be noted that some researchers suggest that the crime-fear paradox is more a result of faulty measurement techniques than any real inconsistencies in fear levels (Gilchrist et al., 1998). For example, one element that illustrates the faulty measuring argument may lie in reporting trends. Specifically, it is argued that the actual risk of victimization used to compare fear of crime often do not take into account the fact that many of the crimes that impact on populations such as women and the elderly are unreported and therefore hidden from the official crime statistics. Sexual assault and domestic violence involving the elderly, for example, are the two most consistently under-reported crimes. Similarly, these studies often ask people about their feelings of safety in situations where they may never have found themselves or never perceived themselves to be in (e.g., Kennedy & Silverman, 1984-85).

Furthermore, qualitative research has identified fear of crime as being equally prevalent in men and women, and that differences exist only in the way people identify and communicate their concerns (Gilchrist et al., 1998). When controlling for the above factors, researchers have found less of a demonstration of the paradox. Davis and Troy (1986), for example, altered their study to account for potential measurement biases and found that most elderly respondents did not perceive an increase in crime in their neighbourhood over the past few years. Similarly, when Ferraro and LaGrange (1992) altered their measurement technique, they also found no significant relationship between age and fear of crime.

As demonstrated by the above, most researchers now agree that fear of crime and peoples’ perceptions of crime cannot be explained by any one simple characteristic. Rather, it appears that the issue is a result of a complex mix of numerous variables. Given this situation, elaborate demographic and psychological models have been suggested that purport to explain more variance in fear of crime than simple individual and community factors. These are discussed below.

PSYCHOLOGICAL MODELS OF FEAR OF CRIME

Among the various psychological theories put forward to explain fear of crime, van der Wurff et al. (1989) propose a social psychological model in which perceptions of safety are influenced by four factors: (1) the level of perceived attractiveness one believes they are to criminal offenders, (2) the perceived power of oneself and the offender, (3) the evil intent attributed to others, and (4) the extent of “criminalizable” space one perceives. Using six situational depictions, followed by a number of questions tapping safety, van der Wurff et al., had respondents rate their answers from completely safe through to very unsafe. The authors also administered questions to measure the psychological and demographic variables. Analysis of the results indicated that the model had superior explanatory power and greater interpretability when compared to an alternative demographic model. It is noteworthy that this model generally utilized behavioural situations and measures to obtain support. Other demographic and psychological models have tended to be more cognitively or affectively based.

In contrast to the above research, Vitelli and Endler (1993) incorporated cognitive and affective variables relating to general perceived risk of victimization and fear of victimization in specific situational contexts by examining a number of psychological variables, including: availability of recall, vividness of recall, perceived competence in coping with victimization, trait anxiety, and fear of victimization. Results indicated that these variables were significant factors in predicting general fear of crime, but not in predicting fear of specific crimes. The findings also suggested that a respondent’s assessment of immediate personal risk in situations described as dangerous or ambiguous was primarily based on factors such as the time of day, type of neighbourhood and unfamiliarity of surroundings. Based on their findings, the authors suggest that fear of crime is the product of an interaction between cognitive and affective characteristics and situational factors.

OTHER RESEARCH CONTRIBUTIONS

The introduction of psychological models such as those described above to explain fear of crime has certainly enabled the concept to be more fruitfully measured as a multi-faceted phenomenon. The existence of a psychological predisposition to fear crime, however, has been countered by a suggestion that certain contexts are more fear-evoking than others (Tulloch et al, 1998b; Vitelli & Endler, 1993). Specifically, it has been...
suggested that there cannot be a basic underlying psychological predisposition to fear crime because research indicates that context varies perceptions of safety. Therefore, it has been proposed that fear of crime is not so much a personal trait, but rather a result of certain contextual and experiential situations (Tulloch et al, 1998b).

**Contextual Factors**
A number of researchers suggest that fear of crime is a direct result of the context in which an individual finds himself or herself. Sacco and Kennedy (1998), for example, highlight a number of environmental factors that tend to be correlated with increased fear for personal safety. According to these authors, people are often more afraid in novel settings, when it is dark, and when they are alone. Additional research indicates that people feel safer in settings open to observation, in areas that do not allow for offender concealment, and environments that do not block escape (Nasar & Jones, 1997).

In addition to the above, Tulloch et al. (1998b) found that fear of crime was, for most people, situated in space and time. That is, people were afraid in certain shops, at certain times of the day, and in certain areas. Based on these findings, the authors suggest that fear of crime is related to peoples' actual living conditions and probable exposure to threat, such as sexual harassment for young women or assault and violence in the case of younger males. Although such research findings as those described above tend to suggest that fear of crime is often a legitimate response to certain social or physical contexts, a number of researchers have argued that this “contextual” approach does not explain why, under the same conditions, some people report they are more afraid than others. Further, they argue that the contextual approach does not explain why some people avoid certain situations or implement precautionary measures while others do not. These observations have led some to believe that the fear of crime may also be impacted by behavioural factors.

**Behavioural Factors**
Research on behavioural factors has revolved, for the most part, around the relationship between precautionary behaviour and fear of crime. Rountree & Land (1996a), for instance, suggest that individuals base their choice of activities on their risk perceptions and fear of victimization. It is also possible that there is a reciprocal relationship between precautionary behaviour and fear. Norris and Kaniasty (1992) found that most precautionary behaviours were associated with an increase in fear of crime. The only precautionary method not to increase fear in their study was establishing rapport with neighbours.

However, if these precautionary behaviours actually work to make an individual safer, why would their fear increase? The most likely explanation is that fear resulted in the precautionary actions in the first place and the resultant actions failed to reduce this fear (Williams, Singh & Singh, 1994). Alternatively, another explanation is that precautionary actions, whether through avoidance of certain situations or use of locks and other security measures, increases the attention paid to crime. Specifically, it may be argued that when people make an assessment about crime through locking their doors or checking security systems, they are reminded of possible threats. Lisa, Sanchirico and Reed (1988), go further still, suggesting that fear of crime and constrained/precautionary actions are each part of an ongoing escalating cycle with fear leading to constrained behaviour which, in turn, creates further increases in fear.

A similar reasoning could be applied to why certain areas or situations become conceptualized by individuals or groups as unsafe. There may be real threats, but unless a person thinks or knows of these risks, or feels they are relevant to themselves, they are not likely to fear crime. There have, however, been significant debates revolving around the key factors individuals employ in making their assessments about the prevalence and likelihood of crime. To date, the most common explanations put forth involve personal victimization, the media, or informal channels such as interactions with neighbours.

**Previous Victimization**
A significant amount of research has been conducted into the effect of criminal victimization on feelings of safety and perceptions of crime risk. Rountree & Land (1996a) found previous victimization to be a key predictor of risk perception. Theses authors found that prior victimization led to ‘restricted routine activities’ (i.e., increased precautionary measures) when coupled with increases in perceived risk.

In contrast, van der Wurff & Stringer (1989) assessed fear of crime through respondents’ responses to ambiguous scenarios, along with obtaining general feelings of safety in their neighbourhood. These authors found that victims of burglary did not develop the predicted strong negative feelings toward their homes or neighbourhoods. In an attempt to make
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In the context of understanding the relationship between criminal victimization and fear of crime, it is important to consider how media exposure might influence perceptions of crime and safety. Many studies have explored the impact of media on crime perceptions, with particular attention to television viewing. For example, research suggests that individuals who spend more time watching television are more likely to perceive a higher rate or risk of crime. This finding is supported by the observation that increased television viewing is associated with heightened perceptions of crime prevalence (O’Connell & Whelan, 1996). Other research has examined the role of media in shaping perceptions of crime and safety. For instance, studies have found that gender, age, and education are significant predictors of fear of crime (O’Connell & Whelan, 1996; Liska & Baccaglini, 1990).

The impact of the media on crime perceptions has been a topic of debate among researchers. Some have argued that media messages have a direct and significant impact on fear of crime, while others have proposed more complex models that account for individual differences and context-mediated effects. For example, Heath and Gilbert (1996) found that media messages do not affect everyone in the same way, suggesting that the effect of media exposure on fear of crime is more variable than previously thought. Other research has explored the role of avoidance behaviours in shaping fear of crime. For example, Sacco and Ghinelli (1998) found that individuals who engage in avoidance strategies are more likely to be fearful of crime.

FEAR OF CRIME AS A MEASUREMENT PROBLEM

A review of research in the field indicates that fear of crime can be measured from four main perspectives: (1) as a concern over crime generally, (2) as a risk assessment, (3) in terms of perceived threat to safety, and (4) in terms of avoidance type behaviour (Sacco & Ghinelli, 1998). Most studies have examined fear of crime using only one or two of these measures, usually represented by a single item. The most frequently used measure of fear of crime involves participants rating their general perception of safety and/or security. For example, a large body of research on fear of crime revolves around answers to a single question regarding how safe participants feel walking alone in their neighbourhood after dark (see e.g., Box et al., 1988; Forde, 1993), or about their general feelings of safety in the neighbourhood as well as in various other life situations (see e.g., Bennett, 1991). In a variation of this method, van der Wurff et al. (1989) asked participants about their perceptions of safety in a number of potentially fear invoking scenarios. Other researchers prefer to assess fear associated with specific crimes by asking participants how afraid they are of being a victim of crimes such as assault or burglary (Ferraro & LaGrange, 1992). Strategies have even included asking respondents which crimes police should devote time toward as a subjective indicator of safety (John, Villaescusa, Toscko, & Powers, 1997). Few of the revised studies utilized general concern about crime as a measure of fear of crime, and a small number of studies researched avoidance behaviours. For example, Williams, Singh and Singh (1994) analyzed
adolescent crime avoidance behaviour and found fear of crime restricted activities for young people. Similarly Liska, et al. (1988) identified an escalating loop of fear and constrained social behaviour. Other researchers suggest behaviours should be taken into account as fundamental causal factors in fear of crime, even positive crime prevention strategies (e.g., Norris & Kaniasty, 1992). Another area of disagreement involves whether fear of crime should be measured using perceived risk of victimization, or whether risk of criminal victimization is separate from fear of crime.

Some researchers have used fear of crime as a subjective indicator of crime risk (Norris & Kaniasty, 1992) by asking respondents how safe they feel walking alone or how much they worry about victimization. Others have used perceived risk as an independent variable or separate dependent variable (Bankston et al., 1987; Ferraro & LaGrange, 1992), asking participants how likely it is that a certain offence would happen to them in the next 12 months, and measuring fear of crime by asking how afraid they are of becoming victim to the same offences. Still others have measured perceptions of crime risk by asking how safe respondents perceive their neighbourhood to be (Rountree & Land, 1996a; 1996b).

Another area of research, commonly regarded as separate but related to fear of crime, is perceptions of crime prevalence. It is often assumed that increased fear of crime is ‘caused’ by inaccurate perceptions about the prevalence and, therefore, risk of crime. Some research suggests they are different but related (Bankston et al., 1987; Box et al., 1988; Rountree, 1998), while other researchers suggest perceived risk and prevalence are completely independent (Forde, 1993). It would appear this is another area particularly prone to measurement inconsistencies, especially since the official crime rates used for comparison are not necessarily accurate. For instance, these numbers may be impacted by the fact that not all crimes are reported to police or by the number of the police patrolling an area (Levitt, 1998).

Specifically questioning the measurement of fear of crime, Farrall, et al. (1997) propose that the results of fear of crime surveys are more a function of the way the topic is researched and conceptualized than any real understanding of the concept. Typical studies draw on data from national surveys, interpret correlations between measured fear of crime and various background variables and construct a model to explain fear of crime. Farrall, et al. found traditional methods appear to over-emphasize the level and extent of fear. While providing some suggestions to improve fear of crime research, such as combining quantitative and qualitative research methodologies, Farrall et al. suggest that, ultimately, the whole concept may prove too difficult to accurately measure.

Despite the decades of research from various well-established disciplines, the fact that fear of crime has been difficult to clearly define and measure may be due to its being predominantly based on self-report research. Unfortunately, self-reports are not highly dependable and may be impacted by minor variations in question wording or question order (Schwarz, Park, Knauper & Sudman, 1999). With regard to fear of crime research, it is therefore imperative to understand how respondents develop their perceptions, not simply the related factors. This is where application of basic attitudes theory may help to shed some light on the area.

The main theories in fear of crime research depend on one or two particular methods of investigating and understanding the concept. For instance, fear of crime in the elderly and women has been established by asking how safe the person would feel walking alone after dark, or travelling on a train at night in order to assess behavioural responses to feelings of vulnerability to victimization. In these cases, it may be argued that investigators are asking for an affective response to a behavioural question without knowing how the initial affective response was formulated. Theories reviewed so far suggest that this affective response may be due to a number of possibilities such as hearing of a vicious attack via the news media, being a victim of an offence, knowing someone who was victimized, or watching a fictional television show where a similar action takes place. Interestingly, in many of these studies researchers do not even know if the respondent has ever walked alone in their neighbourhood after dark. In summary, it is not known how the attitude was initially formed, or how the response was formulated. It may be reported as a cognitive belief, an affective response such as fear, or through overt behaviour such as constrained or precautionary behaviour. It is argued, therefore that a greater understanding of attitude theory may enhance our ability to understand the cognitive basis for an individual’s behavioural responses to fear of crime.

ATTITUDE THEORY
It may be argued that, at the most basic level, research into fear of crime and perceptions of safety revolve around attitudes. That is, although investigations into this concept often “tap” behavioural responses as the
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dependant variable, the real interest may be in the attitudes that guide these behavioural responses. Although a number of definitions have been offered for an attitude, Eagly and Chaiken (1993, p. 198) suggest than an overall conceptual definition is that an attitude is “a psychological tendency that is expressed by evaluating a particular entity with some degree of favour or disfavour.” According to this definition the emphasis for studying attitudes should be on their evaluative component, especially as it relates to the moderating role they play between “certain classes of stimuli and certain classes of responses” (p. 3). Eagly and Chaiken (1993) suggest that one of the most critical factors in the study of attitudes revolves around the fact that they represent an evaluative component that mitigates the relationship between the presentation of a stimulus and the subsequent observable response. In other words, it is important to examine individuals’ attitudes towards things in order to predict how they will respond when they encounter the object, issue or person of interest.

Given the above it may be suggested that a more complete view of the role of attitudes may be accomplished by examining both the antecedents and responses surrounding them. Zanna and Rempel (1988), amongst others, suggest that the antecedents to an attitude may be divided into three categories: affective, behavioural and cognitive. Specifically, it is suggested that in order to better understand an individual’s attitude, it is imperative to investigate whether the attitude was formed through affective, behavioural or cognitive processes.

An affective-based attitude is one that is formed through an association between the object of interest and some stimulus that elicits an affective response. This proposition is based on the classical conditioning model and suggests that some attitudes are based on the fact that the object was presented during a time when the individual was experiencing a negative or positive experience and, as such, became associated with it. Behaviourally-based attitudes, on the other hand, are created through a review of our past behaviours. With behaviourally-based attitudes, one’s attitude is created by reviewing past behaviours related to the object of interest. Finally, cognitively-based attitudes are those that are established through direct or indirect experiences with the object or issue of interest. For example, you may hold a positive attitude toward someone based upon your experiences with that person or through what other people have told you about them.

Although the antecedents of an attitude have now been investigated according to their affective, behavioural or cognitive basis for some time, it has only recently been suggested that evaluative responses (based on one’s attitudes) might also be examined according the same principle. Specifically, it has been suggested that an individual’s response to an object may also be classified as being affective, behavioural or cognitive, based on the typology of the attitude (Eiser, 1987). In other words, it may be argued that if someone’s attitude toward a specific stimulus is formed through effect, behaviour or cognition, then their response to that stimulus may also be classified as affective, behavioural or cognitive. As such, an affective attitudinal response to a stimulus would be categorized as one’s feelings, moods or emotions. Ones behavioural attitudinal response would take on the form of overt actions such as punching someone you dislike or kissing someone you like. And, finally, a cognitive attitudinal response would encompass one’s beliefs about an object, issue or person.

Although there appears to be empirical support for the above model of attitudinal antecedents and responses, there has been very little work to date on the relationship between the two (Millar & Tesser, 1989). While it has been suggested that there should be a match between the antecedents of an attitude and the response it elicits, this area remains ripe for further investigation. It is here, with regard to fear of crime research, that such an application may exist. It is proposed that the variance in forming and responding to attitudes based on cognitive, affective and behavioural mechanisms may be evident in the perception and fear of crime.

OVERVIEW OF STUDY

The over-arching objective of this study is to look more specifically at fear of crime as it relates to attitude formation and response theory. As discussed above, attitudes may have cognitive, affective or behavioural antecedents, and may also elicit cognitive, affective or behavioural responses. It is proposed, therefore, that these differential methods of forming and responding to attitudes about crime may explain some of the inconsistencies and confusion in the research on fear of crime.

Given the above, the goal of this study was to investigate inconsistencies in fear of crime data in two specific ways. First, this study sought to investigate whether respondent’s perceptions of crime prevalence and risk do indeed vary from actual figures, as suggested in the literature. This involved requesting...
respondent estimates of rate and chance of victimization, their probability of victimization, and analyzing differences in perceived crime and actual crime trends for specific offences as well as for crime in general. Acknowledging that official crime statistics are only representative of the real state of crime, it is further hypothesized that, based on previous research findings, respondents would over-estimate the prevalence of serious or violent offences while under-estimating the incidence of less serious or property related offences. This initial analysis was intended to set research in context and determine the level of general concern and misconception about crime as previously reported in the literature, before investigating application of attitudinal theory to specific perceptions of crime.

The second approach to examining this fear of crime inconsistency, as discussed previously, involves the understanding that attitudes may have different antecedents and elicit different responses based on context in which they have been formed. For example, cognitive antecedents may involve direct or indirect experience with the object of the attitude, and may be identified in beliefs or estimates for instance. Affective antecedents are thought to involve the pairing of the object of the attitude with some kind of affective response (e.g., fear of a specific crime expressed through feelings or emotions). Finally behavioural antecedents based on prior behaviours may be recognized through further overt actions. That is, people may undertake precautionary behaviours, not because they fear crime, but because they have always done this in the past.

As such, it is proposed that the attitudinal antecedents of individual responses to perceptions of crimes will be positively correlated to attitudinal responses found in self-reports. In other words, it is suggested that an individual’s attitude toward their probability of victimization for a specific crime will be directly related to the antecedent basis for that attitudes. For example, an individual who has been the victim of a burglary (i.e., cognitive antecedent) is more likely to report a higher level of future victimization (i.e., cognitive response) than they are a fear of that victimization (i.e., affective response).

In order to keep the initial investigations simple, the analysis of the attitudinal theory was limited to cognitive antecedents. As such, it is suggested that cognitively-based attitudes are more likely to elicit cognitively-based responses, and will not necessarily be related to affectively or behaviourally-based responses. As suggested above, therefore, it is proposed that cognitive estimates of concern over victimization and probability of victimization for specific offences will be independent of feelings of safety in behavioural situations. In other words, it is hypothesized that probability and concern will be highly correlated, but neither will be correlated with feelings of safety. Similarly, prior victimization will impact cognitive ratings of probability and concern, but not affective feelings of safety.

METHOD

Participants
Participants were 100 residents of the metropolitan area of Perth, Western Australia and surrounding urban centres and were approximately representative of 1996 census population demographics. Of the respondents, 59 were male and 40 were female. One respondent did not provide details of their gender. Age of respondents was grouped to encourage response, with 9.0% aged 18 to 24; 41.0% aged 25 to 39; 42.0% aged 40 to 59; and 7.0% aged 60 or older. Again, one respondent did not provide details of age. With regard to educational attainment, 36.0% of respondents attained year 10 or equivalent; 20.0% year 12 or equivalent; 23.0% a TAFE (i.e., community college) diploma or equivalent; 12.0% undergraduate university degree; and 6.0% post-graduate university degree. Three respondents did not attain year 10 or equivalent, or did not respond.

Respondents were approached at major shopping centres and public areas and asked for their assistance in a research project assessing peoples’ perceptions of crime. No refusals were encountered. All respondents agreed to participate and were given information on the nature of the research being conducted and the amount of time the survey form would take. Participants were assured of the confidentiality of their responses and that no identifying information would be recorded. Participants were also invited, before and after the data collection period, to talk to the researcher to ensure adequate debriefing and/or discussion of the general study.

Materials
A questionnaire was developed specifically for the current research and organized into four separate parts. Part one requested information on respondents’ estimates of the chance and rate of victimization in their neighbourhood, and whether they had ever been the victim of crime. They were also asked how many
times they had been the victim of specific offences in
the last five years. Part two consisted of three separate
questions regarding respondents’ perceptions of
crime. Questions one and two asked for responses
regarding respondents concern and probability of vic-
timization on a scale of 1 to 10 regarding seven specific
crimes (sexual assault, assault, burglary, vandalism/
graffiti, stealing/theft, murder, and drug
offences). The third question asked respondents to rate
whether they believed the same seven specific crimes
had decreased, increased, or stayed the same on a
scale of one to five. Part three of the questionnaire
asked respondents to rate their feelings of safety on a
seven point Likert scale from very safe to very unsafe
for six different situations, (walking alone after
dark/during the day, walking with a friend after
dark/during the day, home alone after dark/during
the day). Finally demographic details were requested.

Procedure and Design
Participants were provided with a hard copy of the
questionnaire and asked to complete it independently.
Perceived and actual crime prevalence was compared
for each offence category (sexual assault, assault, bur-
glary, vandalism/graffiti, stealing/theft, murder, drug
offences). Perceived crime prevalence was measured
using community responses to questions on the rate,
risk and perceived trend of crime in Perth over the
past five years. Actual risk was calculated using the
rate per 100 population for the given offences and
actual percentage change in the offence rate. Data was
organised to enable comparison between actual and
perceived statistics. The rate per 100 population was
calculated from official statistics and ranked in order
of offence occurrence. Similarly mean probability esti-
mates of perceived victimization were calculated from
the data, and ranked from highest to lowest probability
of victimization.

To enable comparison of the perceived and actual
change in crime over the past five years, data was
manipulated in a manner similar to O’Connell and
Whelan (1996). Mean scores for perceived change
derived from a five point scale were converted to per-
tcentage estimates, based on no change indicating a
zero percentage change, a significantly decreased
response indicating a reduction of 50%, and a signifi-
cantly increased response indicating an increase of
50%, percentages were calculated from the mean
scores. This process was reversed for the actual per-
tcentage change in crime to give scores between 1.00
and 5.00 for each offence. Scores less than 3.00 indicat-
ed a decrease and scores greater than 3.00 indicated an
increase. This resulted in two figures, a score between
1 and 5 and a percentage change estimate for both per-
ceived and actual change, which could again be
ranked to enable comparison.

Concern and probability scores were obtained for
the seven specific offences, and overall concern and prob-
ability scores were calculated from this data. Feelings
of safety from the six individual questions were com-
bined to create a single safety score. Victimisation was
recorded for both property and violent crimes. As only
a small number of violent crimes were recorded, and
because violent crimes were more likely to carry affective-
based attitudes, prior property crime victimisation
was used as the independent variable for the cog-
nitive antecedent in the current study.

RESULTS
Non-parametric statistics were employed to examine
the actual and perceived crime rate data. Respondent
estimates of the chance and rate of crime were not inter-
pretable due to the excessive degree of variance, so esti-
mates of victimization probability were used for com-
parison with actual crime rates. While it is not possible
to compare respondents’ probability estimates directly
with the rate of corresponding offences, a spearman
rank related correlation was conducted to see if they
were at least related in terms of order of rank.

A significant correlation was observed between prob-
ability estimates and the actual rate of specific crimes.
As can be seen from Table 1, respondents were accu-
rate able to estimate their relative chance of victim-
ization for specific offences. The hypothesis that
respondents overestimate their chance of victimisation
for violent offences and underestimate the chance
of victimization for property crime was not met. It
appears that people do accurately perceive their relative
chance of victimization by specific crimes, even
though results suggested they could not accurately
assign a numerical estimate of the actual rate.

Table 1

<table>
<thead>
<tr>
<th>Offence</th>
<th>Respondent Estimates</th>
<th>Reported Offences 98/99</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rank Prob. Est.</td>
<td>SD</td>
</tr>
<tr>
<td>---------------</td>
<td>-----------------</td>
<td>----</td>
</tr>
<tr>
<td></td>
<td>1 to 10</td>
<td></td>
</tr>
<tr>
<td>Stealing</td>
<td>1 5.576</td>
<td>2.673</td>
</tr>
<tr>
<td>Burglary</td>
<td>2 5.566</td>
<td>2.508</td>
</tr>
<tr>
<td>Damage/Graffiti</td>
<td>3 4.747</td>
<td>2.659</td>
</tr>
<tr>
<td>Assault</td>
<td>4 3.707</td>
<td>2.237</td>
</tr>
<tr>
<td>Drug Offences</td>
<td>5 3.337</td>
<td>2.806</td>
</tr>
<tr>
<td>Murder</td>
<td>6 2.465</td>
<td>1.934</td>
</tr>
<tr>
<td>Sexual Assault</td>
<td>7 2.444</td>
<td>1.996</td>
</tr>
</tbody>
</table>

*Based on 1996 ABS census population estimates
While respondents were accurate in their relative estimations of the victimization probability for specific offences, they were less effective at estimating the rate of change from five years ago. A Spearman Rank correlation for respondent estimates of change and actual change was not significant. As indicated in Table 2, although both the highest actual change and the highest mean score of respondent estimates of change were attributed to drug offences, no other offences were ranked similarly. While the official statistics indicate offences such as damage/graffiti and assault have increased more frequently, respondents indicated burglary and stealing to have increased the most. This is an interesting result, considering that previous research has found that people perceive violent offences to show the most dramatic increases. Respondents did not over-estimate the relative increase in violent offences.

Scores on the concern, probability, and safety scales were summed to give an overall score for each. Pearson product moment correlations were conducted between the three variables and analysis of the subsequent scatterplots suggest that the assumptions of correlation were satisfactory. The hypothesis that probability and concern would be related, but that neither would correlate with safety, was partly met. As summarise in Table 3, a strong positive relationship between concern and probability was significant, \( r(95) = .75, p < .05 \). Weak but significant relationships were obtained for concern and safety, \( r(97) = .43, p < .05 \), and probability and safety, \( r(96) = .42, p < .05 \).

In order to test the hypothesis that prior victimization would have no significant effect on perceptions of safety, but would affect cognitive factors such as probability and concern, a between-subjects multivariate analysis of variance (MANOVA) was utilized. Due to the high correlation between the concern and probability, it was decided that the concern variable was redundant both statistically and logically. A MANOVA was therefore performed on the two dependent variables: probability and safety. The independent variable was previous property crime victimization (yes and no). The assumptions of MANOVA were deemed to be satisfactory. Some skewness was detected for the probability variable on the no victimization grouping, however this was not extreme. No outliers were detected, satisfying the univariate model for robustness (Tabachnick & Fidell, 1996, p. 381).

A significant multivariate effect was obtained for victimization, allowing interpretation of the univariate effects. A Bonferroni adjustment for experiment-wise error was calculated and a significant univariate main effect was obtained for probability, but not safety. Theses results support the hypothesis that victimization is a cognitive antecedent for crime-related attitudes and that these significantly influence probability estimates of victimization but not feelings of safety. Descriptive statistics are provided in Table 4.

**DISCUSSION**

The aim of the current research was two fold. First, to investigate whether respondent’s perceptions of crime prevalence and risk do indeed vary from actual figures, and as suggested in the literature, skew towards overestimates of violent and serious offences. And second, to investigate the application of attitude formation and response theory in interpreting fear of crime, specifically the cognitive antecedents and responses to perceptions of crime.

Regarding the first aim of this study, it was hypothesized that respondents would (1) over-estimate their probability of victimization for violent offences, and (2) perceive a greater increase in violent offences com-
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pared with other offence types. With respect to the second and primary aim of the study, it was predicted that cognitive-based attitudinal antecedents would be positively correlated to cognitive-based attitudinal responses, but not affective responses in self-reports about perceptions of crime. Specifically it was hypothesized that (1) the cognitive measures of concern and probability of victimization would be strongly correlated with each other, but not feelings of safety; and that (2) prior victimization would impact ratings of probability and concern, but not feelings of safety.

Findings indicated that, contrary to the hypothesis that people over-estimate violent and serious offences, respondents accurately situated their probability of victimization for specific offences. They did not overestimate their probability of violent crime compared with other offence types. Similarly, they did not overestimate the relative rate of increase in violent offences compared with five year ago. Respondents generally perceived the greatest increases in drug offences, burglary and stealing, compared with the actual statistical highest increases of drug offences, damage/graffiti and assault.

The second hypothesis, that cognitive-based attitudinal antecedents would be related to cognitive, but not affective-based attitudinal responses, received support. Although respondent reports of probability of victimization and concern about victimization for specific offences were found to be strongly correlated, probability or concern attained little more than a weak correlation with respondent feelings of safety in various situations. Similarly, prior property crime victimization was found to significantly increase respondents’ probability of victimization estimates, but did not influence feelings of safety. While these findings support the application of attitudinal theory in fear of crime, both these and respondent’s perceptions of crime change should be understood in the context of previous research findings.

To begin with, analysis of respondents’ perceptions about the incidence and change in crime compared with five years ago provided unexpected results. Previous studies have found people generally overestimate their risk of violent or serious crime, and perceive this type of crime to have increased significantly compared to previous years (e.g., O’Connell & Whelan, 1996). Such findings have mainly been interpreted with reference to media, including television, but particularly through newspaper reports of crime.

One interpretation of the conflicting findings of the current study, is that news forums in the Perth area where the current study was conducted, are geared less towards showing and highlighting violent crime. It is also possible that crime rates are perceived to be lower in Perth than other parts of Australia or the world (even if this is not actually the case statistically).

Another possible explanation is that people actually have a fairly accurate perception of the state of crime and are able to situate violent and sensation crime in context when given an appropriate medium to express their beliefs. In the current study participants could not correctly estimate the chance and rate of victimization out of 100 or 10,000 people in the population. They were, however, able to accurately estimate the relative probability of victimization for specific offences in context, which would indicate they have based their estimates on information or cues about the current state of crime. Perhaps the results of respondent estimates of crime change are also not so surprising.

Respondents perceived drug offences, burglary and stealing to be the most rapidly increasing offences. The identification of drug offences was an accurate perception, as these offences were found to have increased the most significantly. The second highest actual offence increase was graffiti and damage, which has been the subject of a number of projects and operations in Perth over the last few years. This would account quite substantially for the high rate of increase recorded for this offence, rather than any real increase in offending, and raises the issue of the true accuracy of official crime statistics when compared with peoples’ perceptions of crime.

Crime rates only provide a snapshot of the situation as not all crimes are reported to police, especially violent or serious crimes such as assault and sexual assault. Studies comparing actual and perceived crime prevalence and risk could therefore be using a poor base-rate with which to assess the accuracy of perceptions of crime. As discussed, factors such as the size of the police force in the area can even impact on crime rates (Levitt, 1998). Either way, respondents in the current study did not over-estimate their relative state of violent or serious crime, although based on attitudinal theory this does not indicate they will not fear or worry about crime in certain situations. As stated above, feelings of safety were found to be unrelated to perceptions about probability and concern over victimization.

The finding of correlations between concern and probability regarding victimization, but not feelings of safety, partly confirmed the research suggestion of this study, that attitude theory may be important in understanding perceptions about crime as measured...
through self-report surveys. Feelings of safety, while still found to be weakly correlated to the concern and probability measures, would appear to be based on a different set of attitudes.

Prior property crime victimization was found to significantly influence probability estimates of crime but not perception of safety. Specifically, respondents who had experienced previous property crime victimization tended to rate the probability of future victimization as higher. It is not a new finding to suggest prior victimization increases estimates of crime risk (e.g., Rountree & Land, 1996a), but it is interesting to find prior victimization has a significant impact on only cognitively-based response measures, and not affectively-based measures such as feeling of safety. This finding is also supported by other studies that have investigated previous property crime victimization and found no effect, having measured fear of crime through affective responses such as feelings of safety in specific or general scenarios (e.g., van der Wurff & Stinger, 1989). Similarly, other inconsistencies in previous fear of crime research may be understood through the application of attitudinal theory.

By understanding that the bulk of fear of crime research revolves around self-report responses based on an attitude that could have its antecedents in a number of contexts we can start to make sense of some of the contradictions in research findings. Research suggests that attitudes may be based on cognitive, affective or behavioural antecedents and similarly elicit responses in a similar way. It is then possible to investigate, which antecedents elicit which kind of response, such as the cognitive example provided by the current study. Another major outcome of interpreting fear of crime research from this perspective is that measurement becomes extremely important. The fact that results can be impacted by minor changes to wording, context, or order, provides not only a goal for consistency in future research, but helps to interpret previous findings and highlights possible limitations of the current study.

It is possible that the structure, type of question, and question wording used in the current study influenced the results as much as the intended variables. Since there is not a current, valid and reliable scale for the measurement of fear of crime it is not known what effect slight wording differences, or re-administration to a new sample, would have on the results. The questionnaire was based on instruments used in previous studies, but no details of the reliability or validity of these is reported.

Similarly, because the study was intended to investigate the possible application of attitude theory at a very simple level, the findings could be interpreted from a number of different perspectives. It is possible that property crime victimization simply makes people more aware of their susceptibility to future victimization, but this does not necessarily make them more fearful because it was not a fearful experience. This is the general emphasis of Winkel’s (1998) model that suggests while post-victimization perceived risk increases, negative impact associated with victimization decreases. This could be an alternative interpretation of the current research findings.

Definitive conclusions about the application of attitude theory to fear of crime cannot be made from the current study, and reduces its usefulness to a possible basis for future research and refinement in the area only. Furthermore, lack of true random sampling and the relatively small sample size may limit the external validity of the study. While the sample size fulfilled the requirements of the statistical analysis, it may be limited in representativeness to the general population. Respondent were recruited from public areas, and individuals who did not venture regularly from home would likely not be represented in the study. This could account for the relatively positive perception of crime prevalence expressed by respondents.

Despite the limitations of the current study, attitude theory, it seems, may offer a more comprehensive understanding of fear and perceptions of crime. While the current research has been by no means comprehensive enough to support the application of attitude theory to explain fear of crime it does offer a path for future research. In particular, the application of attitude theory to fear of crime research may help to define the studies in this area for exactly what they are - self reports that are impacted by a variety of things and that may change with age and experience (e.g., Schwarz, et al., 1999).

Future research could include the development of an accurate scale to measure fear of crime, based on attitude research applicable to self-report based studies. The current research looked only at exploring the cognitive antecedents and responses to crime related attitudes. Research is required to test behavioural and affective components. Similarly, while the current research suggests a link between the antecedent base of an attitude and the response elicited from this attitude, this may not necessarily be the case. Cognitive antecedents may also be recognised in behavioural responses for instance, but differently to an affective
or behavioural antecedent. Specifically, they may work on different time frames depending on the antecedent type and the measurement tool to elicit a response. For example, if newspaper crime stories are less sensationalised, they may be more likely to be the source of a cognitive antecedent to an attitude, but if they are overly dramatized they may be more likely to be affectively processed.

In summary, the application of attitude theory may provide a rich field for further research aimed at understanding the divergence in findings and conclusions in the fear of crime research and pave the way for future research in this area. Certainly, this research should be of interest to police services who seek to make a significant impact on public attitudes toward crime. For example, when seeking to lower the fear of crime experienced by residents, it would be important for the police (and other agencies) to understand the attitudinal basis for the fear before investing time and effort into developing a response.

REFERENCES


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