FULL PAPER

The Relationship Between News Exposure to a Serial Killer Case and Altruistic Fear: An Exploratory Study

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Abstract: The current study focused on a singular serial killer and rapist case which received a lot of media attention in Belgium. We examined whether exposure to news about this case (case news exposure) was related to personal fear of sexual assault, altruistic fear of crime, and attitudes regarding young adolescents' safety (ATAGO-score) in a random sample of 1002 adults. Case news exposure was the strongest predictor of altruistic fear of crime and the second most important predictor of attitudes regarding young adolescents' going out (ATAGO-score), but it was not significantly related to personal fear of sexual assault in women. The barrage metaphor is proposed for the study of the effects of highly publicized news cases.

Keywords*:* Fear of Crime, Altruistic Fear, Violence, Television, News Effects, Serial Killer

Zusammenfassung: Die vorliegende Studie konzentriert sich auf den Fall eines Vergewaltigers und Serienmörders, der 2010 und 2011 in Belgien für großes Aufsehen sorgte. Wir haben dabei anhand einer Stichprobe von 1 002 Erwachsener untersucht, ob und inwiefern die Rezeption von Nachrichten über diesen Fall (*case news exposure*) in Zusammenhang stand mit der Wahrnehmung eines persönlichen Risikos, selbst Opfer einer sexuellen Straftat zu werden, mit einer altruistischen Kriminalitätsfurcht (*altruistic fear of crime*) und den Einstellungen zur Sicherheit von jungen Erwachsenen (*ATAGO-score*). Die Verfolgung der Fallberichterstattung war der stärkste Prädiktor für die altruistische Kriminalitätsfurcht und der zweitwichtigste für den ATAGO-score – allerdings war es nicht signifikant verbunden mit der persönlichen Furcht vor sexueller Gewalt bei Frauen. Eine Sperrfeuer-Metapher wird vorgeschlagen für die Analyse von Effekten extensiv veröffentlichter Einzelfälle.

Schlagwörter: Kriminalitätsfurcht, altruistische Furcht, Gewalt, Fernsehen, Nachrichteneffekte, Serienkiller

1. Introduction

Previous research has shown that the impact of media exposure on fear of crime should not be underestimated (Weitzer & Kubrin, 2004). A number of studies have shown that watching television news is associated with increased fear of crime victimization (Chiricos, Eschholz, & Gertz, 1997; Chiricos, Padgett, & Gertz, 2000; Eschholz, Chiricos, & Gertz, 2003; Lane & Meeker, 2003; O'Keefe & Reid-Nash, 1987). Research on the relationship between news exposure and fear of crime has at least two shortcomings.

First, most studies have focused on personal fear of crime. People are, however, not only concerned about their own safety, they may also be afraid for the safety of others. Studies examining media effects on such "altruistic fear" are scarce. Only a few authors appear to have looked at the relationship between media exposure and fear for others' safety and findings were inconsistent (Busselle, 2003; Martins & Wilson, 2011; Tamborini, Zillmann, & Bryant, 1984; Wilson, Martins, & Marske, 2005).

A second limitation is that previous research has concentrated mainly on total news viewing (e.g., Chiricos et al., 2000; Eschholz et al., 2003) or crime news exposure in general (e.g., Grabe & Drew, 2007, O'Keefe & Reid-Nash, 1987). Exposure to news stories about a singular[1] crime event, such as a serial killer case, has received scant attention. In criminology, Lee and DeHart (2007) provided evidence for the notion that an extreme crime case like serial killing and serial rape can have a tremendous impact on individuals' fear levels. The authors did not examine processes explaining how the killer's presence affected communities. An important missing link might be the media. Since most people do not have direct experience with extreme murder cases, it is likely they will learn about the actions of a killer through interpersonal communication and/or mediated experience. For instance, some studies showed that parents' attention to kidnapping stories in the news was related to fear of abduction of their children, their coping strategies, and their communication with their children about such kidnapping in the news (Martins & Wilson, 2011; Wilson et al., 2005).

In media effects research it might therefore be important to examine to what extent exposure to news stories about a singular crime case is related to fear. Hence, the goal of the current study is threefold: we will examine whether there exists a significant relationship between exposure to news stories about a serial killer and rapist case (i.e., the "Janssen case") in Belgium (referred to as case news exposure in the remainder of this study) and 1. personal fear of crime, 2. altruistic fear of crime and 3. attitudes towards young adolescents going out (referred to as the ATAGO-score in the remainder of this study).

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1   In the current study, the term "singular" is used to refer to a series of crimes that are connected (for instance by the fact that they are similar crimes committed by the same offender, as is the case here). The term "single" would be inappropriate because there could be more than one crime (as is the case here), more than one offender or more than one period of offending. Singular also means "particular", "special" or "interesting".

2.   The case of Ronald Janssen

To achieve the above-mentioned aims, we measured exposure to news stories about one particular murder and rapist, referred to as "the Janssen case", which occurred in Belgium.

Ronald Janssen confessed to murdering a young couple at the beginning of January 2010. The offender had tried to rape the 18 year old girl and when that did not succeed, he killed her by shooting her with a firearm. He murdered her 22 year old boyfriend by several gunshots as well. Janssen confessed to a third murder of another 18 year old girl who had disappeared in April 2007. He confessed to beating her to death. Ronald Janssen is suspected of at least one more murder. He also confessed to a number of sexual assaults, including rape (De Bock & Eeckhaut, 2010; Eeckhaut, 2011). Some media reports claimed that Janssen is a suspect in as many as 15 killings, mostly the rape and murder of young women (Waterfield, 2010). Prosecutors are said to be re-examining several unsolved abduction murders of young women. On 21st of October 2011 Ronald Janssen received a life sentence for all three murders, and the rape and torture of one of his victims.

The Janssen case had sent a shockwave through Belgium. It received a lot of media attention. The news media customarily referred to the offender as a serial killer and rapist.

3.   Personal fear of crime and news consumption

Most studies on the relationship between media exposure and fear have traditionally referred to cultivation theory as a possible theoretical point of view (e.g., Grabe & Drew, 2007; Gross & Aday, 2003; Weitzer & Kubrin, 2004). This approach posits that much socialization in society takes the form of storytelling and considers television as "a centralized system of storytelling" (Gerbner, Gross, Morgan, Signorielli, & Shanahan, 2002). Hence, television may be perceived as a purveyor of social norms.

The cultivation theory assumes that the media world differs greatly from the real world. For instance, violence is pervasive in the television world. Gerbner and Gross (1976) stated that "violence plays a key role" in the television world. It is a vehicle stories use for illustrating norms and values. According to the authors violence "is the simplest and cheapest dramatic means available to demonstrate the rules of the game of power" (Gerbner & Gross, 1976, p. 183). The central premise of the cultivation theory is that heavy consumers of media messages may develop a distorted worldview, consistent with the television world (for a review see Shanahan & Morgan, 1999). An example is the cultivation of the "mean world" syndrome as a result of prolonged violent television viewing. It refers to the finding that heavy viewers perceive the world as more dangerous and frightening. People who watch a lot of television are also more afraid of the real world and perceive most people to be untrustworthy (Gerbner & Gross, 1976; Gerbner, Gross, Jackson-Beeck, Jeffries-Fox, & Signorielli, 1978; Gerbner, Gross, Morgan,

& Signorielli, 1980). This distorted worldview may in turn affect cognitions and emotional states, such as crime risk perception and feelings of fear.

Gerbner and colleagues focused on total amount of television viewing as their original conceptualization of cultivation was described as looking at "the consequences of long-term exposure to the entire system of messages, in the aggregate" (Gerbner et al., 2002, p. 3). Even though the use of "genre" remains an issue in cultivation research (Morgan & Shanahan, 2010), genre-specific cultivation studies have emerged in recent years, especially regarding studies on fear of crime. Exposure to crime drama shows was positively related to concerns about crime as a national problem in the US (Holbrook & Hill, 2005). A Flemish study found an indirect relationship between watching crime drama, news (Custers & Van den Bulck, 2011; Custers & Van den Bulck, in press) and reality crime (Custers & Van den Bulck, 2011) on the one hand and fear of crime victimization on the other hand through perceived crime risk and perceived ability to cope with a possible threat. Other studies found that crime drama viewing was positively related to perceived crime risk and fear of victimization under certain conditions and among certain groups (Heath & Petraitis, 1987; Tamborini et al., 1984). Others showed that exposure to crime drama, and to tabloid, and reality TV were directly related to fear (Eschholz et al., 2003). In an experiment Bryant, Carveth, and Brown (1981) showed that action-drama viewing increased anxiety and fearfulness in the short term.

News has been included in cultivation research only rarely, focusing mainly on either overall viewing volume or drama (Romer, Jamieson, & Aday, 2003). However, it has been argued that news can also "cultivate stable expectations" (Romer et al., 2003, p. 89). News does more than merely reporting about events around the world (Bird & Dardenne, 1988; Bird & Dardenne, 2009). Specifically, news "provides the guiding myths which shape our conception of the world and serve as important instruments of social control" (Cohen & Young, 1981, p.12). As such news can also be considered to be a narrative as it tells stories. A narrative has been defined as "a story that raises unanswered questions, presents unresolved conflicts, or depicts not yet completed activity; characters may encounter and then resolve a crises or crises. A story line, with beginning, middle, and end, is identifiable" (Green & Brock, 2000, p. 701). It could even be argued that the news has a number of characteristics that make the occurrence of cultivation processes less problematic than in the case of fiction and entertainment. Research on the social construction of reality has shown that the more realistic television content is perceived to be the more impact it has on its viewers (Potter, 1986; Rubin, Perse, & Tyler, 1988).With news there is no discussion about the extent to which it is perceived as realistic (see Busselle and Greenberg (2000) and Potter (1986) on the realism of fiction). Mares (1996) showed that misremembering fiction events as news events positively predicted social reality judgments whereas confusing news with fiction led to negative social reality judgments.

A substantial number of studies have shown that watching television news is associated with higher levels of fear for one's own safety (i.e., personal fear) (Chiricos et al., 1997; Chiricos et al., 2000; Eschholz et al., 2003; O'Keefe & Reid-Nash, 1987; Romer & Aday, 2003; Weitzer & Kubrin, 2004). Others found that

news exposure was indirectly related to fear through risk perception (Custers & Van den Bulck, in press; Lane & Meeker, 2003). Some authors have found that exposure to both national and local television news was related to fear for one's safety (Chiricos et al., 1997; Chiricos et al., 2000) although the effect of local news consumption was sometimes stronger (Chiricos et al., 2000). Others only found a correlation with watching local broadcast news (Eschholz et al., 2003; Weitzer & Kubrin, 2004).

4. Media exposure and altruistic fear of crime

Most research on fear of crime victimization has focused primarily on personal fear (i.e., fear for oneself) (Warr, 1992; Warr & Ellison, 2000). People may, however, be afraid not only for their own safety but also for the safety of their loved ones (Warr, 1992; Warr & Ellison, 2000). Such *altruistic fear* (Warr, 1992) appeared to be more common and more intense than personal fear (Warr & Ellison, 2000). Snedker (2006) questioned whether the term altruistic fear actually captured fear for others. Based on research on altruism Snedker (2006) stated that "labelling fear for others altruistic implies an unselfish care for the welfare of others, even to the extent that it incurs costs to the individual. […] In the case of fear of victimization for others, those who express a general and overwhelming concern for strangers would represent the most altruistic – and unusual – actors" (p. 166). However, it is apparent that the majority of research on altruistic fear of crime is operationalized as fear for the safety of loved ones and not as a general concern for others (Snedker, 2006). These loved ones referred mainly to household or family members with whom respondents were closely related (Beck & Travis, 2004; Snedker, 2006; Tulloch, 2004; Warr, 2000; Warr & Ellison, 2000). Especially spousal and parental fear have been subject of research. However, people may also feel afraid for the safety of friends, boy- or girlfriends, neighbours and so forth. Therefore Rader and Cossman (2011) did not limit altruistic fear to fear for family members (spouse, domestic partner, and child) but included also friends, roommates, neighbours, persons people date and others. Nonetheless, following Snedker (2006), all these forms of altruistic fear are always linked with personal interest or benefits. Snedker proposed to use vicarious fear of crime instead of altruistic fear, because it excludes the suggestion of unselfish feelings. However, the use of the term "vicarious" carries a strong suggestion of self-reference, particularly in view of Bandura's (1971) original introduction of the concept. Bandura's treatment of vicarious-emotional conditioning effects (p. 243ff) in particular suggests that Bandura reserved the term "vicarious" for situations in which a subject drew conclusions regarding him or herself after observing outcomes in others, particularly observations leading to the suppression of behaviours to avoid undergoing similar outcomes oneself. Despite the suggestion of unselfish emotion the term altruistic fear therefore seems more appropriate for the purposes of the current study as it explicitly refers to fear felt for the wellbeing of others. Other concepts have been suggested (cf. Tricket, 2009, who proposes concepts such as dual fear, familial fear, emphatic fear and selfish gene fear), but none seem to be general enough to cover the entire range of "fear for others".

Regarding the issue of news exposure, the distribution of altruistic fear of crime differs from that of personal fear of crime (Snedker, 2006; Warr & Ellison, 2000). Snedker (2006) found that women were more concerned about their personal safety whereas men expressed fear for others (their spouse in particular) more than women did. Nevertheless, women were more likely than men to express fear for their children (i.e., parental fear) (Snedker, 2006; Warr, 1992). In a later study Warr and Ellison (2000) described the difference between men and women regarding parental fear as "not appreciable" (p. 561), but the gender of the child affected parents' fear differently. Both parents tended to be more afraid for the safety of daughters than for that of sons. More generally, the authors observed a more pronounced concern for young women (Warr & Ellison, 2000). The greater concern for young women was ascribed to the fact that young women are perceived as being much more vulnerable and more likely to be victims of sexual assault and rape (Warr & Ellison, 2000).

Studies on the news-fear association have mainly focussed on the relationship between news exposure and personal fear as well, whereas research on the relationship between news exposure and altruistic fear is scarce. Weaver and Wakschlag (1986) have linked media exposure to perceived likelihood of criminal victimization of others (i.e., family, friends) and one experimental study examined the impact of media exposure on people's concern for the safety of various individuals and intimates (e.g., spouse, child). They found a short term effect of watching a crime documentary on fear for one's partner in males (Tamborini et al., 1984). Busselle (2003) found that spousal fear was almost significantly (p<.06) related to crime fiction viewing, but did not find evidence of a relationship between exposure to television news and altruistic fear. On the other hand, a study on children and parents' fright reactions to kidnapping stories in the news found that parents who reported paying close attention to news stories about child kidnappings were more fearful about the occurrence of kidnappings in their neighbourhood (Wilson et al., 2005). Moreover, the authors found a positive relationship between parents' self-reported attention to kidnapping news stories and coping strategies to protect their child, such as not allowing the child to be outside alone and role-playing with the child about what to do if a stranger approaches (Wilson et al., 2005). A related study by Martins and Wilson (2011) found similar results. Close attention to news stories about kidnappings was related to more fear about kidnappings in parents and affected their communication about such events with their children. About 15% of the parents (N=182) reassured their children by telling them abduction is a rare event whereas 18% of the parents used more protective communication towards their children by warning them about possible dangers (Martins & Wilson, 2011). None of this research has focused specifically on news exposure to a particular crime case such as the Janssen case.

5. The importance of looking at singular crime cases

There is an (often implicit) assumption that being afraid of an event with an extremely low likelihood is irrational (Sacco, 2005). Psychological research such as that by Tversky and Kahneman (1975) acclaimed that people overestimate the

risk of rare events when examples of these rare events have been made easily accessible to their memory. However, the frequency of an event should not be the only reference for judging the response to the event. The seriousness of the outcomes does play an important role as well (Warr & Stafford, 1983). In other words, an unlikely event with extreme consequences may merit an extreme reaction. This view is supported by research showing that fear of crime is determined by at least three cognitive judgments. While perceived risk is one cause of fear, the perceived seriousness of the crime and the respondent's perceived ability to cope are important predictors of fear as well (Custers & Van den Bulck, 2011; Custers & Van den Bulck, in press; Jackson, 2011). In other words, even if a person perceives his or her personal risk of becoming the victim of a particular crime to be fairly low, but also believes not to be able to defend oneself and/or believes the crime to be particularly heinous, fear levels are still expected to be high. Both processes are affected by news of a serial rapist and serial killer. The news increases the attention to the seriousness of these crimes and makes them more accessible, explaining why it is not unreasonable to experience fear: news consumers have been made aware of an (admittedly, unlikely) event of extreme seriousness against which they are unlikely to be able to defend themselves.

Studies on the relationship between viewing television violence and fear of crime focus on whether total news viewing or exposure to crime news in general were related to fear. Exposure to news stories about a singular crime case has not yet been linked to fear. Lee and Dehart have remarked that while the actual risk of being killed by a serial killer is infinitesimally small, even when an actual killer is active in a community, the presence of a serial killer in a community was related to considerable fear (Lee & Dehart, 2007). The authors did not discuss any processes explaining how knowledge of the case was diffused through the affected communities. Even though word of mouth and other interpersonal processes undoubtedly play a role, it is clear that the news media are a likely source of continuous exposure to details and ruminations about the case (cf. substitution hypothesis, Weitzer & Kubrin, 2004). Especially when people do not have direct experience with a particular crime (i.e., have not been victimized themselves), such as serial killing, the mass media may become more important as an information source and may serve as a "surrogate for real-world experience" (Weitzer & Kubrin, 2004, p. 500). According to Weaver and Wakshlag (1986): "greater exposure to exaggerated depictions of crime on television, in the absence of other more direct sources of information, may lead to the assimilation of elevated crime-related perceptions" (pp. 153-154). Based on Shrum's heuristic processing model of cultivation higher levels of news exposure to such singular crime cases may lead to an increase in people's perceptions regarding the probability of becoming a victim of a serial killer. First, news exposure to such singular crime cases may make these examples more easily accessible in memory. Second, the heuristic processing model assumes that people use mental shortcuts or heuristics when constructing judgments about social reality such as the estimate of the chance of becoming a victim of a serial killer. One process describing such judgment formation is the availability heuristic (Tversky & Kahneman, 1973) which assumes that people base their judgment on examples which are easily retrieved from memory.

In that case heavy news consumption of these crime cases may lead to higher perceptions of the risk of becoming a victim of a serial killer.

The specific nature of the current study which deals with the impact of news coverage about one singular case might be conceived as a violation of the long term socialization assumption of the cultivation theory. Gerbner and colleagues (Gerbner et al., 1986, 2002) postulated cultivation effects as general and pervasive consequences of long-term exposure to television. A number of observation can be made regarding this issue. First, there is a lack of clear conceptualization of what constitutes long-term cultivation effects. Scholars who have been analyzing long term cultivation effects by means of longitudinal designs use different time frames to assess long term effects. For instance, Martins and Harrison (2012) who investigated the long-term effects of television exposure on self-esteem in preadolescent boys and girls used a two-wave panel design with a time lag of one year. Beullens, Roe, and Van den Bulck (2011), who assessed whether genre viewing affects later risky driving, also used a two-wave panel study with a 2-year interval. Results of prolonged experimental designs with a time lag of a month (Williams, 2006) and even one week (Rössler & Brosius, 2001) have been interpreted in terms of the cultivation theory too. Morgan and Shanahan (2010) seemed to recognize that the cultivation theory is widely accepted as a theoretical perspective that can be investigated in various contexts. They stated that:

> "At some point, cultivation gained fairly broad acceptance as a base idea that could be explored in a variety of contexts and situations. Indeed, while Gerbner may not always have approved of such forays […], many investigators pursued studies in which any relationship between exposure to some medium (most often television) and almost any outcome was seen as somehow relevant to cultivation". (Morgan & Shanahan, 2010, p. 349)

Second, the current study looked specifically at one particular news event (i.e., the Janssen case) which was on the news regularly in the course of several months. The time lag between the first news broadcast about the Janssen case in early January and the data collection which started around mid March was approximately six weeks. This implies that people could have been exposed to this news event for six weeks before the questionnaire was administered. Nevertheless, the current study cannot be presented as typical Gerbnerian because it is focused on one particular collection of messages regarding one particular serial killer and rapist. However, bearing in mind that some studies have focused on one specific entertainment program such as *CSI: Crime Scene Investigation* to examine the CSI effect from a cultivation perspective (Bilandzic, Busselle, Spitzner, Kalch, Reich, 2009), and that others have looked at the effects of a limited number of messages regarding lesbian or gay male relationships, transsexuality, and body adornment over a short period of time (Rössler & Brosius, 2001) our study design is less exceptional than it may seem. Moreover, our study is not limited to one particular news message or image, it examines overall news exposure to the Janssen case. Finally, especially against the background of recent psychological explanations of cultivation effects one can argue that short-term effects may be equally probable. For instance, Shrum's heuristic processing model of cultivation (e.g., Shrum, 2001) posits that cultivation effects in heavy viewers may be stronger because te-

levision examples are more easily accessible in their memory as a result of frequent exposure to these examples. Another factor, next to the vividness of the examples which may enhance the cultivation effect is the recency of the information. This means that the more recent an example is activated, the more easily it is retrieved (see Riddle, Potter, Metzger, Nabi, & Linz, 2011 for a recent discussion).

6. Hypotheses

The current study hypothesizes that case news exposure is positively related to personal fear of sexual assault in women and altruistic fear of crime, and negatively related to people's attitudes towards adolescents going out alone (i.e., ATAGO-score).

These hypothesized relationships may be explained by heuristic processing. Previous research regarding the TV-fear association showed that this relationship is mediated by two processes: perceived risk of crime victimization and perceived ability to control a threatening situation (Custers & Van den Bulck, 2011; Custers & Van den Bulck, in press). An explanation was found in cognitive processes such as heuristic processing (for a review, see Shrum, 2009). According to the availability heuristic people's judgment are affected by the ease with which they recall examples (Tversky & Kahneman, 1973). Television content provides viewers with memories of examples which may be used to construct judgments of probability (Shrum, 1996). Since heavy viewers are more exposed to these types of examples, it is assumed that they are more readily available in heavy viewers than in light viewers (Shrum, 1996; Shrum & O'Guinn, 1993). Based on these insights, repeated exposure to messages about the Janssen case may make these kinds of crimes and crime in general more easily accessible in memory, thus affecting the construction of probability judgments. Consequently, people who score higher on case news exposure may perceive their or others' risk of becoming a victim of a serial killer and rapist as higher compared to people who score lower on case news exposure and as a result feel more fearful of becoming a victim of such types of crimes or feel more afraid for the safety of their loved ones. Important to emphasize is the fact that it is not the actual risk an individual runs that determines that individual's fear levels. Instead, it is the perception of the risk people believe they or others run which may affect their personal and altruistic fear level. This implies that even though the actual risk of becoming a victim of a serial killer is extremely small, it is plausible that people perceive their or other's risk to be high.

Another important aspect of news reports is vividness: "news reports often convey information in the forms of case studies or extreme examples. Such a bias in favor of vivid examples over precise but pallid information may make those examples relatively easy to remember" (Shrum, 2009, p. 53). Since serial killer and rapist cases can be considered to be extreme crime cases we may assume that such extreme and vivid crimes are more easily remembered and, as a result, may lead to higher risk perception and perceptions of less perceived control. This in turn might lead to (1) higher personal and (2) higher altruistic fear levels, and (3) a more negative attitude toward adolescents going out alone.

Drawing on the insights of previous research and the fact that Janssen was involved in serious cases of sexual assault, including rape, we may expect that exposure to news stories about the Janssen case (i.e., case news exposure) might be positively related to personal fear of sexual assault in women. This fear is not linked necessarily to fear of victimization by that particular offender as Ronald Janssen was apprehended at the time of data collection. But based on the aforementioned insights regarding heuristic processing it is plausible that exposure to messages about the Janssen case raised awareness in women and made women more fearful of becoming a victim of sexual assault in general. Therefore, we predicted that:

H1: Case news exposure is positively related to personal fear of sexual assault in women.

None of the research regarding media use and altruistic fear of crime has focused specifically on news exposure to a particular crime case such as the Janssen case. Since Lee and DeHart (2007) found that a serial killer case encouraged protective measures such as carrying pepper spray and adding security devices to one's home and referred to this as an indication of altruistic fear, and building upon the insights regarding heuristic processing, we expected that news exposure to a similar serial killer and rapist case, such as the Janssen case, would be positively related to altruistic fear of crime. Thus, we predicted that:

H2: Case news exposure is positively related to altruistic fear of crime.

Warr and Ellison (2000) showed that people are more concerned about the safety of young women than of the safety of other groups (Warr & Ellison, 2000). Considering the fact that 1. Ronald Janssen reportedly admitted to committing a number of rapes (with female victims) and 2. men are more likely to express altruistic fear than women (Snedker, 2006; Warr, 1992), we expect that:

H3: The relationship between case news exposure and altruistic fear is stronger in men than in women.

One much publicized aspect of the Janssen case is that one of the victims was approached when returning home alone by bicycle after a party. It is possible that people who are exposed frequently to news stories about the Janssen case are also frequently exposed to this particular information about the Janssen case. Perhaps people who score higher on case news exposure have a less favourable attitude towards adolescents going out alone than people who score higher on case news exposure (operationalized as the ATAGO-score in this study). Thus, we predicted that:

H4: Case news exposure is negatively related to the respondents' ATAGO-score.

7. Method

7.1 Sample

We used data collected in March 2010 by means of a standardized self-administered questionnaire. The study received ethical clearance at the Katholieke Universiteit Leuven and informed consent was obtained from all participants. Participants had to be 18 years old or older to be included in the study. A two step randomization model was used for selecting participants. The selection procedure and data collection were conducted by 55 undergraduate students who participated in a media research methodology class. First, 55 cities or tows were randomly selected. Next, 40 addresses were randomly selected from the telephone directory of each city or town. To further ensure randomization with respect to respondents, a random walk protocol was used to select houses. The interviewer had to interview the member of each household who was first in line to celebrate his or her birthday had to be interviewed. The interviewers had to try to initiate contact three times before they were allowed to use a replacement address. This procedure was designed to avoid undersampling of active people and those not listed in directories. Interviewers followed this procedure until they had twenty successful interviews.

Response rate was 57.59%. In total 1740 addresses were contacted by the students, which led to 1002 respondents agreeing to be interviewed, 496 respondents refused to participate and 242 respondents were contacted three times but nobody appeared to be home.

7.2 Measures

Demographics: We controlled for socio-demographic variables such as age, gender and education Level of education consisted of four categories: no education, primary education, secondary education, college education, and university.

Number of children: Respondents indicated how many daughters and sons they had.

Overall television viewing volume: Viewing volume (viewing hours on a viewing day) was measured by asking respondents to estimate the number of hours they watched television on an average viewing weekday (Monday through Friday). A similarly worded question was asked regarding Saturday and Sunday. Response items were: 6 hours or more; about 6 hours; 4 to 5 hours; 3 to 4 hours; 2.5 to 3 hours; 2 to 2.5 hours; 1.5 to 2 hours; 0.5 to 1 hour; less than 0.5 hour; 0 hours. An estimate of total weekly viewing was obtained by multiplying volume for weekdays by five and adding it to the volume for weekend days multiplied by two. Dividing this variable by seven produced an estimate of average daily viewing. On average the respondents watched television for 2.6 hours a day (*SD* = 1.35).

News exposure to the Janssen case (i.e., case news exposure):. A scale was constructed to assess the extent to which respondents followed the news about this particular serial killer and rapist case by applying items from Van den Bulck's

(2006) study on news selection and avoidance to the subject of the current study. The scale consisted of nine items. Respondents were asked to indicate their agreement with each statement on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The following items were summed into an index which measured case news exposure: (a) I watched the news specifically to find out what was going on in this case; (b) I followed all the news about this case; (c) I often forgot to follow this case; (d) I followed the news on this case; (e) This case usually wasn't interesting enough to follow; (f) There is so much on TV that I followed this case rarely; (g) I watched the news more than usual because of this case; (h) To follow this case I watched the news on several channels; (i) When the news dealt with this case I switched to another channel ($M = 32.83$; $SD = 6.36$). A principal axis factor analysis yielded one factor (Eigenvalue = 4.04). This factor explained 38.44% of the variance. Cronbach's alpha was .84.

Personal fear of sexual assault in women: This variable was measured by asking the female respondents: "How afraid are you of being sexually assaulted?" They were asked to indicate their answer on a 7-point Likert scale ranging from 1 (*very little*) to 7 (*very much*).

Altruistic fear of crime: Based on Rader and Cossman (2011) four questions were asked to measure the respondents' concern for the safety of significant others. Respondents were asked to indicate on a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*very much*) to what extent the statements were applicable to them. The following four items were summed into an altruistic fear of crime index: (a) The safety of my loved ones worries me; (b) I am worried about the safety of my loved ones; (c) I am concerned about the safety of my loved ones; (d) I am someone who thinks about the safety of my loved ones ($M = 16.15$; $SD = 3.01$). A principal axis factor analysis was performed which yielded one factor. This factor explained 52.89% of the variance (Eigenvalue = 2.58). Cronbach's alpha was .81.

ATAGO-score (Attitude Towards Adolescents Going Out): The respondents were asked to indicate to what extent the following statements were applicable to them (on a 5-point Likert scale, ranging from 1 (*not at all*) to 5 (*very much*)). The following items were summed into an index: Eight questions were asked to measure the respondent's Attitudes Towards young Adolescents Going out Alone: (a) Letting young people go out alone nowadays can't be trusted, (b) It is no longer safe to allow young people to go to a party alone, (c) You shouldn't let young people go out alone, (d) I would never let my kids go out alone, (e) It is no longer wise to allow girls to go home on their own after having been out, (f) Nowadays it is dangerous to let young people between the ages of 15 and 21 go to a party, (g) I would like to bring my kids when they go out and pick them up afterwards, (h) It is better to bring young people to where they want to go out and to pick them up afterwards ($M = 25.51$; $SD = 6.76$). The higher the score the less favorite people's attitude towards young adolescents going out alone. A principal axis factor analysis produced one factor (Eigenvalue = 4.63) which explained 52.17% of the variance. Cronbach's alpha was .90.

Experience with crime: Research on the relationship between television exposure and fear of crime has shown that direct and indirect experience with crime

need to be taken into account when studying media-and-fear issues (Doob & Macdonald, 1979; Weaver & Wakshlag, 1986). *Direct experience* was measured by asking the respondents: "Which of the following crime incidents have already happened to you?" (a) Burglary or attempted burglary while you were at home; (b) Burglary or attempted burglary while you were not at home; (c) Being robbed outdoors; (d) Being robbed outdoors by threat of force; (e) Being robbed outdoors by force; (f) Being threatened with a beating; (g) Being threatened with a knife; (h) Being threatened with a gun; (i) Being attacked by someone you don't know; (j) Being attacked by an acquaintance; (k) Being attacked by someone you have or had an intimate relationship with; (l) Attempted sexual assault; (m) Sexual assault. Answer categories were yes or no. *Indirect experience with crime* was measured by asking the respondents: "Which of the following crime incidents have already happened to your family, to your friends or acquaintances?" The same 13 crimes were listed and answer categories were yes or no.

Indices of direct and indirect experience were produced by summing the answers given to these questions.

7.3 Statistical analyses

All statistical analyses were conducted using SPSS 19.0 for windows. First, to gain information about the correlates of personal fear of sexual assault in women, altruistic fear of crime, and the ATAGO-score, zero-order correlation matrices were conducted (Spearman correlation coefficients). Separate correlation matrices were conducted for personal fear of sexual assault as this dependent variable was only measured in women. Second, hierarchical regression analyses were conducted to test the relationship between case news exposure and the dependent variables while controlling for socio-demographic variables, direct and indirect experience with crime, and having (a) son(s) and (a) daughter(s). P < 0.05 was considered to be significant. In the first block the socio-demographic and personal variables were entered. In the second block case news exposure was entered. The R squared change was selected and indicated how much explained variance of the dependent variable was added by the second block (i.e., case news exposure).

8. Results

8.1 Sample

We compared the sample characteristics with the demographic stratification of the Flemish population according to the Belgian National Register (FOD-Algemene Directie Statistiek en Economische Informatie, 2010; Studiedienst Vlaamse Regering, 2010).

There was a slight underrepresentation of men in the sample (45.5%) compared to the population (48.9%) (X²=15.698, df=1, p<.0001). There was a slight overrepresentation of the respondents between 18- and 39-years old (sample: 35.4%, population: 33.9%) and of the 40-to 59-year-olds (sample: 41.2%, popu-

lation: 36%) whereas those of 60 and older were underrepresented (sample: 23.4%; population: 30%) (X²= 22.695, df=2, p<.0001). Regarding the level of education of the Flemish population, the Central Statistical Office provides information only for those with an age range of 15 years and older. The statistics should thus only be considered as an indication of the actual proportion for each education level because our sample consisted only of adults (18 years and older). The sample had considerably more people who had completed 4 years of college or university (sample: 16.3%; population: 13.3%) and 3 year of college (sample: 31.9%; population: 14%). Compared to the population statistics, respondents with no degree or primary school (sample: 6.6%; population: 19.2%) and those who finished secondary school (sample: 45.2%; population: 53.4%) were underrepresented (X²=322.541; df=3; p<.0001).

8.2 Zero-order correlation matrices

The findings regarding to correlates of case news exposure showed that women (M = 33.28, SD = 6.11) followed the Janssen case more intensively than men (M = 32.30, SD = 6.62) did (t(895.045) = -2.348, p < .05). Other positive correlations were found with age (r = .13, p < .0001) and having (a) daughter(s) (r = .09, p < .01). Case news exposure was negatively related to level of education (r = -.20, p < .0001), and with having direct (r = -.07, p < .05) and indirect experience with crime (r = -.09, p < .01). In addition, case news exposure was positively related to overall television viewing (r = .13, p < .01).

Regarding altruistic fear, we found that women (M = 15.60, SD = 3.17) scored significantly higher on altruistic fear than men (M = 16.61, SD = 2.79) did (t(897.956) = -5.23, p < .001). Furthermore, older respondents were significantly more concerned for the safety of their loved ones than younger respondents (r = .24, p < .0001). Other positive correlations were found with having (a) son(s) (r = .12, p < .0001) and having (a) daughter(s) (r = .16, p < .0001). Negative correlations were found with level of education (r = -.18, p < .0001) and indirect experience with crime (r = -.11, p < .001). Concerning television viewing, we found that altruistic fear of crime was positively related with overall television viewing (r = .21, p < .0001) and news case exposure (r = .22, p < .0001).

The results concerning the ATAGO-score showed that women (M = 26.92, SD = 6.64) had significantly higher scores than men M = 24.18, SD = 6.62) did (t(863) = -6.075, p < .001). The strongest correlation was found with age (r = .30 p < .0001). The older the respondents, the more cautious they were regarding allowing young adolescents to go out alone. Other positive correlations were found with having (a) son(s) (r = .16, p < .0001), and having (a) daughter(s) (r = .23, p < .0001). A negative relationship was observed with level of education (r = -.21, p < .0001), direct experience (r = -.12, p < .001) and indirect experience with crime (r = -.19, p < .0001). Regarding television viewing, the results showed that the ATAGO-score was positively related to overall television viewing (r = .25, p < .0001) and case news exposure (r = .22, p < .0001).

Regarding personal fear of sexual assault in women, it was found that older women were less fearful of becoming a victim of sexual assault than younger wo-

men (r = -.18, p < .0001). Having indirect experience with crime was positively related to fear of becoming a victim of sexual assault (r = .13, p < .01). Personal fear of sexual assault was significantly related to neither overall television viewing (r = .069, p = .12) nor case news exposure (r = .015, p = .73).

Regarding the dependent variables, the zero-order correlation matrix showed that altruistic fear of crime and the ATAGO-score were positively related (r = .33, p < .0001). In women, personal fear of sexual assault was only significantly related to altruistic fear (r = .08, p = .07).

Hypothesis 1: Case news exposure is positively related to personal fear of sexual assault in women.

Table 1 shows the results of a hierarchical regression analysis of case news exposure on personal fear of sexual assault in women. The first block consisted of age, level of education, direct and indirect experience with crime, and overall television viewing. In the second block case news exposure was entered. The total model explained 6% of the variance in personal fear. Only age (β = -.19, p < .0001) and level of education (β = -.09, p < .05) explained a significant proportion of the variance in personal fear scores. Neither overall television viewing (β = .046, p = .36) nor case news exposure (β = .072, p = .13) were significantly related to personal fear of sexual assault In women. Case news exposure accounted for an additional 0.50% in explained variance. Hypothesis 1 was therefore not supported.

Hypothesis 2: Case news exposure is positively related to altruistic fear.

Table 1 presents the results of a hierarchical regression analysis of case news exposure on altruistic fear. The first block consisted of gender, age, level of education, variables on whether or not the respondents had sons and daughters and direct and indirect experience with crime and overall television viewing. In the second block case news exposure was entered. The total model explained 16.3% of the variance in altruistic fear. Women scored higher on altruistic fear than men did (β = .16, p < .0001) and older respondents were more concerned about the safety of people they care about than younger respondents (β = .16, p < .0001). Altruistic fear decreased with level of education (β = -.10, p < .01). The results supported hypothesis 2 as case news exposure was the strongest predictor of altruistic fear (β = .22, p < .0001). It accounted for an additional 4.6% in explained variance ($F(9,830)$ = 17.953, p < .0001). Overall viewing was not a significant predictor.

Hypothesis 3: The relationship between case news exposure and altruistic fear is stronger in men than in women.

Table 1 shows the results of a hierarchical regression analysis of case news exposure on altruistic fear with an interaction term between gender and case news exposure. The order and type of variables were identical to the testing of hypothesis 2. Additionally, using appropriately centred variables (Cohen, Cohen, West, & Aiken, 2003) the interaction term was added in the second step. The total mo-

del explained 16.7% of the variance. Positive associations were found with gender (β = .16, p < .0001) and age (β = .16, p < .0001). A negative relationship was found with level of education. The higher the respondents' level of education the lower their scores on altruistic fear (β = -.10, p < .01). Having (a) son(s) and/or (a) daughter(s) was not significantly related to altruistic fear. Overall television viewing was not significantly related to altruistic fear either. Case news exposure was the strongest predictor (β = .22, p < .0001). The more people were exposed to the news about the Janssen case the higher they scored on altruistic fear. In addition, a negative interaction effect was found between gender and case news exposure. The relationship between case news exposure and altruistic fear was stronger in men than in women (β = -.062, p < .05). Hence, hypothesis 3 was supported. Case news exposure and the interaction term with gender accounted for an additional 5.0% of explained variance (F(10,829) = 16.594, p < .0001).

Hypothesis 4: Case news exposure is positively related to the ATAGO-score.

Table 1 shows the results of a hierarchical regression of case news exposure on respondents' ATAGO-scores. The order and type of variables were identical to the testing of hypotheses 2 and 3. The total model explained 21% of the variance in the dependent variable. Scores on the dependent variable increased significantly with gender (β = .23, p < .0001), age (β = .18, p < .0001), having (a) daughter(s) (β = .11, p < .01), overall television viewing (β = .11, p < .01) and case news exposure (β = .14, p < .0001). Level of education was negatively related to respondents' ATAGO-scores (β = - .11, p < .01). Hypothesis 4 was supported as case news exposure was the third most important predictor of the dependent variable. It accounted for an additional 1.8% in explained variance (F(9,742) = 22.013, p < .0001).

Cross-Sectional Two-Step Hierarchical Regression Analysis

	Hypothesis 1		Hypothesis 2		Hypothesis 3		Hypothesis 4	
	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2
Control variables								
Gender	-.194***		.159***		.160***		.231***	
Age	-.094		.164***		.163***		.176***	
Level of education	.047		-.098**		-.098**		-.109**	
Direct experience	.090		.028		.030		.015	
Indirect experience			.054		.052		-.020	
Having (a) son(s)			.048		.049		.058	
Having (a) daughter(s)			.058		.058		.11**	
Total TV viewing	.046	.057	.062	.117***	.061	.117***	.107**	.192***
Step 2								
Case news exposure	.072	.005	.221***	.046***	.216***	.050***	.140***	.018***
Case news exposure * gender					-.062*			
Model *F*	4.895		17.953		16.594		22.013	
df	6.448		9.830		10.829		9.742	
R^2	.062		.163***		.167***		.211***	

Note. Dependent variables per hypothesis: Hypothesis 1 = Personal fear of sexual assault in women. Hypothesis 2 = Altruistic fear in men and women. Hypothesis 3 = Altruistic fear. Hypothesis 4: ATAGO-score.

β = standardized beta. $\Delta R^2 = R^2$ change. * p < .05. ** p < .01. *** p < .001

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9. Discussion

Research on fear effects of news exposure has customarily focused on the relationship between total news viewing and personal fear of crime. The current study aimed to add to this line of inquiry in two ways, first by looking at exposure to news about one particular serial killer/rapist and, second, by extending the concept of fear to altruistic fear of crime. One earlier study demonstrated that the presence of a serial killer in a Louisiana community led to a tremendous increase in fear in local residents (Lee & DeHart, 2007) but the relationship between fear and exposure to news about the case was not examined.

Applying it to a similar widely publicized serial crime case (i.e. the Janssen case) in Belgium, the current study aimed to investigate the relationship between exposure to news stories about the Janssen case (case news exposure) on the one hand and personal fear, altruistic fear, and attitudes towards young adolescents going out (ATAGO-score) on the other hand.

Regarding the first hypothesis, we did not find a significant association between case news exposure and personal fear of sexual assault in women, controlling for a number of respondent characteristics. These findings did not entirely mirror the results of Lee and DeHart (2007) who found that the presence of a serial killer affected the residents' individual fear levels. There may be a number of explanations for these different findings. First, Lee and DeHart's study did not examine the impact of exposure to news stories about a crime case but merely the presence or the occurring of a serial killer case. It is possible that the Janssen case raised awareness and fear in our female sample, too, but that the relationship with case news exposure was absent, extinguished or immeasurable. It is possible that women who followed the Janssen case intensively did not differ significantly regarding their fear levels from women who did not follow the case to the same extent. Gerbner in fact questioned whether it is useful to think in terms of light and heavy viewers (Gerbner, Gross, Morgan, & Signorielli, 1994; Signorielli, Gross, & Morgan, 1982). In Gerbner's words: "Even light viewers may be watching several hours of television a day and of course live in the same general culture as heavy viewers" (p. 26). This may hamper finding significant relationships between exposure to media messages and fear. Second, case studies are a peculiar research design. Differences between the cases may account for the differences in findings. Perhaps Lee and DeHart (2007) examined a case which evoked emotions that were more intense than the Janssen case did, or perhaps the Janssen case affected all respondents regardless of their level of exposure to news about the case. Third, Lee and DeHart (2007) investigated only fear levels of residents of the affected community. In the current study the selected respondents were not limited to the affected community as Ronald Janssen did not operate in one particular community or neighborhood. Finally, there may be a time lag with respect to personal fear effects. The case may have reached a ceiling before we interviewed our responders or may have been much more acute in Lee and DeHart's study.

Our findings did support hypothesis 2 which suggests that respondents who followed the news about the Janssen case more closely were more concerned about the safety of their loved ones. As expected, there appeared to be a signifi-

cant relationship between case news exposure and altruistic fear of crime after controlling for demographic and personal variables.

Although we expected that men would be more concerned about the safety of their loved ones than women, the opposite was found. In our sample women were significantly more concerned about the safety of their loved ones than men. Warr and Ellison (2000), on the other hand, found only a marginal difference between men and women. They, however, examined parental fear whereas in the current study, the gender difference was related to altruistic fear in general (i.e., fear for your loved ones, not limited to children). Regardless of the difference in overall levels of altruistic fear, the relationship between case news exposure and altruistic fear was stronger in men than in women, which corroborated hypothesis 3. One possible explanation for this finding might be that the media can add little to the altruistic fear levels of women because they are already high, while there is more scope for effect in men.

Finally, our results demonstrated that respondents with a higher level of case news exposure expressed more agreement with statements suggesting that it is unsafe for adolescents to go out alone or to return home alone (the ATAGO-scale) (hypothesis 4).

The findings that case news exposure was significantly related to both altruistic fear of crime and the ATAGO-score may be interpreted in view of previous research on the relationship between television viewing and fear embedded in the cultivation theory. This research shows that exposure to news and local crime drama is positively related to perceived risk which in turn predicts fear (Custers & Van den Bulck, in press). Shrum's (2009) heuristic processing model suggests how media exposure may affect risk perceptions, by making vivid images accessible in memory (Shrum, 2009).

The relationship between case news exposure and higher levels of both altruistic fear and the ATAGO-score should not be read as support for either the drench hypothesis or a third-person effect. First, a third person effect would have occurred when respondents assumed that other people would experience more (or less) altruistic fear than the respondent (cf. Salwen & Dupagne, 2001). Altruistic fear refers to the idea that people are fearful or concerned for the safety of others. It is not about people's perception of the fear that others feel versus the perception of their own fear. Second, the drench hypothesis assumes that one dramatic vivid image may sometimes be sufficient to affect media users (Greenberg ,1988, see also: Bahk, 2001; Calvert, Kotler, Zehnder, & Shockey, 2003; Reep & Dambrot, 1989). Although we examined one notable serial killer, we did not examine one particular news story or image, nor just one crime of the killer. Instead, we measured overall news exposure to the Janssen case. The "breaking news" approach to sensational stories causes a short, but intensive flood of images bombarding the recipient constantly in a short period of time. In this respect, the "barrage" metaphor may, in fact, be more applicable for explaining the current study's findings. In military confrontations a barrage is a short, but intensive bombardment in which fire from different artillery weapons is directed at the same objective. The *barrage effect* would then refer to the effect of extensive and repeated coverage of the same crime case, displayed by several news media in the same, brief period of time.

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This study had a number of limitations. First, as a cross sectional survey was used the usual caution regarding causal inference applies. Even though the negative correlations between direct and indirect experience with crime on the one hand and case news exposure on the other hand may make the assumption of opposite relationships less likely, it is possible, from a uses and gratifications perspective, that the relationships which were found might be reversed. For instance, Minnebo (2000) found, based on the uses and gratifications theory, that people who are afraid of becoming a victim of crime watch more crime related content in order to cope with their fear (Minnebo, 2000). Van den Bulck (2004), on the other hand, compared three models testing the relationship between television viewing and fear of crime: the cultivation hypothesis, the mood management hypothesis and the withdrawal hypothesis. His results offered most support for the cultivation hypothesis. However, both Minnebo's (2000) and Van den Bulck's (2004) study was limited to personal fear of crime. The authors did not examine altruistic fear of crime.

Second, this study relied on self-reports. Reporting feelings of fear or concern may be affected by social desirability bias. Sutton and Farrall (2005), for instance, found an inverse relationship between men's fear levels and their tendency to give socially desirable answers. The authors suggested that this tendency may explain the lower scores on men's fear of crime that are commonly observed.

The discussion between the use of altruistic or vicarious fear as a concept to refer to the phenomena described in this study remains unsettled and a better term is needed. Future research should further explore the conceptualization and operationalization of altruistic fear of crime.

One of Snedker's (2006) recommendations for future research was to measure altruistic fear in relation to specific offenses. Fishman and Mesch (1996) already distinguished fear of property crime, fraud and violence. Future research on the media-fear association should therefore investigate whether or not different media genres have different effects on different offense-specific altruistic fear.

The fact that a relationship was found between case news exposure and altruistic fear but no association with personal fear of crime shows that it is important to pay attention to the proper definition of fear of crime. Different operationalizations of fear of crime yield different results. In media effects research too little attention has been given to the conceptualization of these concepts. The notion of fear of crime has generally been limited to personal fear (i.e., fear of self-victimization). The current study not only provided evidence for Fishman and Mesch's (1996) suggestion that fear of crime is a multidimensional concept consisting of personal fear and altruistic fear of crime. It also showed that the two types of fear were related differently to case news exposure. Researchers need to be attentive to the multidimensional nature of fear of crime.

When an important story hits the headlines or when "breaking news" interrupts regular television and radio broadcasts, news consumers receive frequent "updates" from numerous media channels. Consumers are repeatedly exposed to the story in a delineated period of time. Given the importance of both the "breaking news" format and emotionality in current news practice (Miller & Lesher, 2007) studying the "barrage effect" of such stories might therefore be an interesting avenue for further research.

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