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Feelings of Safety In The Presence Of the Police, Security Guards, and Police Volunteers

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Abstract Uniformed presence is commonly thought to create feelings of safety in people. However, do differently uniformed people contribute to an equal amount of safety and are there situation-dependent differences? The present study examined the association between various types of uniformed presence and people's feelings of safety through a questionnaire among 352 respondents (18–86 years) (49.1 % women). The questionnaire contained pictures of situations perceived as relatively safe and unsafe with or without uniformed presence. The respondents estimated how safe they thought they would feel in these situations with no uniformed presence, two police officers, six police officers, a police vehicle, two security guards, or two police volunteers. Results showed that uniformed presence did not increase feelings of safety in a situation perceived as relatively safe, making patrol unnecessary. In situations perceived as relatively unsafe however, all types of uniformed presence increased feelings of safety. Foot patrolling police contributed to the greatest increase in feelings of safety. Security guards and police volunteers created similar amounts of feelings of safety making police volunteers a cost-effective alternative. All types of foot patrol were better than vehicle patrol, making non-police groups an alternative to vehicle patrol. Some situational, gender, and age differences were found.

Fear of crime has long been considered "a major social problem" (Box et al. 1988, p. 340) and is associated with both physical and mental health problems (Amerio and Roccato 2007; Baum et al. 2009; Dolan and Peasgood 2007; Hale 1996; Jackson and Stafford 2009; Stafford et al. 2007; Ziersch et al. 2005), increases in stress (Jackson and Stafford 2009) as well as lower quality of life, life satisfaction, and subjective well-being (Adams and Serpe 2000; Cohen et al.

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2009; Dolan and Peasgood 2007; Hale 1988, 1996; Stafford et al. 2007; Ziersch et al. 2005). It can also affect people's feelings of mastery, trust (Adams and Serpe 2000; Jackson and Stafford 2009; Skogan and Maxfield 1981) and can limit their activity range (Amerio and Roccato 2007; Dolan and Peasgood 2007; Hale 1996; Jackson and Stafford 2009; Skogan and Maxfield 1981; Stafford et al. 2007).

How to measure the level of fear of crime and feelings of safety is debated in research. In the present study we use the same definition as the Swedish Crime Prevention Council use in their national safety survey (BRÅ 2014), in which feelings of safety are linked to fear of crime. One way to conceptualize feelings of safety is the degree to which the individual is afraid of being subjected to crime (individual fear) or for a loved one to be subjected to crime (general fear). Thus there is a link between fear of crime and feelings of unsafety (BRÅ 2014). Considering the potential detrimental consequences of fear of crime and lack of feelings of safety, public safety is a key objective for governments. In order to fulfill this objective, groups of professionals and volunteers engage in safety upholding activities. One group of professionals with this specific task is the police. Already in the first paragraph of the Swedish police act, it is stated that the police should work to promote safety (Police law 1984:387). However, there are other groups that perhaps could be able to contribute to feelings of safety and possibly ease the workload of the police.

The present study aims to examine if and to what extent different forms of uniformed presence—patrolling police officers, a police vehicle, security guards, and police volunteers— are related to peoples' feelings of safety. We will not examine why people feel as they do about different uniformed groups, nor if different forms of uniformed presence is related to reductions in crime. What sets the present study apart from previous studies is that a comparison is made concerning the relationship between various uniformed groups and feelings of safety. This is important because it can help the police to be more effective in their work to create feelings of safety, by allocating resources in a more time and cost effective manner, with the help of security guards and police volunteers. We conducted a questionnaire study on a convenience sample of 352 adults in the city of Örebro, a mid-sized Swedish city (pedestrians of differing age and gender), using pictures of uniformed or vehicle presence in different situations that could be perceived as safe or unsafe.

High crime rates and the limitations of the criminal justice system to deal with these crime rates (Garland 1996) has led to what some researchers would call "multilateralization" of policing, multilateralization is about opening up and allowing participation of other parties in policing. This is more than just decentralization; it is about blurred lines between what is considered public and private. Governments are not just delegating down the chain of command but rather actively promote "the sharing of responsibility for policing with new institutions" (Bayley and Shearing 2001, p. 8). This has also been called a pluralization of policing or put another way an extension of the police family (Bayley and Shearing 2001; Garland 1996; Johnston 2003; Loader 2000). This means that the delivery of policing has been fragmented and agents other than the police also partake in policing responsibilities (Loader 2000), it is not only the government or the police that ensure feelings of safety in the public in today's society. Governments now highlight phrases such as partnerships with the community and active citizens (Garland 1996) and this also seems to increasingly be accepted from the viewpoint of the public (Crawford and Lister 2004).

There are several good examples of working relationships between for example citizens that volunteer their time and the police (Ayling et al. 2009). The volunteering citizens can be seen as a "force multiplier" for the police in certain areas, however minimizing the risks for the

citizens involved is of importance. Also, the training and supervision of volunteers can be time-consuming for the police (Ayling 2007). There are also success stories in the use of private security in collaboration with the police when regulated by legislation. However, the authority and the role of the security guard is not always clear (Sarre and Prenzler 2011). Since it is becoming harder to separate the public from the private (Bayley and Shearing 2001) the boundaries of responsibility and authority of the different policing providers can blur together for the public and leave them uncertain as to the legitimacy of the different policing agents (Crawford and Lister 2004). Private security organizations are furthermore not accountable to all society as the police are but rather accountable to their financers (Bayley and Shearing 1996). Furthermore, the relation between the different policing groups can vary from good to hostile (Crawford and Lister 2004; Johnston 2003), and an increase of private policing can actually accentuate differences in society where not everybody can afford to pay to feel safe (Crawford and Lister 2004; Garland 1996; Loader 2000). The question has been raised; perhaps all these new emerging policing agents are not equipped to deal with social control as well as the police (Garland 1996; Loader 2000)?

What Affects Feelings of Safety?

Feelings of fear of crime as well as safety can be influenced by the situation, that is, factors such as time, place and people in the situation (see e.g., EUCPN 2004; Farrall et al. 1997; Ferraro 1995; LaGrange and Ferraro 1987). Feelings of fear of crime and safety can also be influenced by demographics, current environment, earlier experience of victimization, media coverage of crime, individuals' confidence in the justice system, and perceptions of society as a whole (Andreescu 2010; Hale 1996; Heber 2007; Hinkle and Weisburd 2008; Zhao et al. 2002). Social disorder and incivilities can produce fear and feelings of unsafety when people feel as though the "agencies of external control have failed to preserve the order" (Hinkle and Weisburd 2008 p. 504). However, according to some researchers' visible uniforms can be a symbol of societal control (Bahn 1974; Hale 1996; Jackson and Bradford 2009; Wakefield 2007; Winkel 1986); and visible uniformed patrol can be the representation of that crime is being both predicted and controlled and that order has been restored to society (Balkin and Houlden 1983; Hale 1996; Jackson and Bradford 2009; Wakefield 2007; Winkel 1986) and as a consequence reduce fear of crime and increase feelings of safety.

The idea of symbolic societal control to increase feelings of safety is similar to the idea behind rational choice and routine activity theories, that societal control decrease the risk of crime. These two theories constitute the basis for many situational crime prevention efforts, building on the idea that potential criminals are deterred from committing a crime through an increased risk of detection through different kinds of capable guardians (Braga and Weisburd 2010; Clarke and Cornish 1985; Clarke 1995; Kelling and Moore 1989). Perceptions of feelings of safety (albeit not a part of the theories described) could potentially follow the same logic as in the reduction of crime in the presence of capable guardians; people usually try to obey the law in the presence of the police (the official version of capable guardians), so the presence of the police becomes the symbol for the police being in control and reduces the potential risk of crime. Actions, such as their presence might imply that the police are in control and could potentially reduce fear of crime and increase feelings of safety (Bahn 1974; Jackson and Bradford 2009; Zhao et al. 2002). In sum, uniformed presence could theoretically counteract feelings of unsafety and increase feelings of safety.

Patrolling as a Method to Increase Feelings of Safety?

Which specific groups who are involved in safety promoting activities varies between countries. The police, however, often have the official and state mandate to work with safety and crime prevention (i.e., Swedish Police law 1984:387). Interestingly, theories behind patrols as a method for situational prevention do not differentiate between different kinds of patrols. According to rational choice theory and routine activity theory, it is not only the presence of police that deter potential perpetrators. It may also be neighbors or friends as well as patrolling civilians (Clarke and Felson 2008; Cohen and Felson 1979). This means that security guards, police volunteers and other groups potentially could assist the police by contributing with patrols in relevant contexts, which could liberate financial as well as personnel resources for the police force (see e.g., Ayling 2007).

Other researchers express concern about problems that can arise when civilians become involved in police work. The increase in awareness and reports of crime that may come with, for example, neighborhood watch and other security precautions may in fact increase fear (Adams and Serpe 2000; Pepinsky 1989). Also, some claim that patrols from groups or organizations other than the police, such as security guards, police volunteers or other civilian groups, may be insufficient to satisfy public demands for more protection, because they do not have the same "symbolic aura" as the police (Loader 1997). In sum, there are different opinions among researchers as to the benefits of civilians partaking in police work.

Uniformed Presence and Feelings of Safety

Studies of uniformed presence and feelings of safety have either studied different types of presence separately, e.g., police or security guards, or have compared police presence to the uniformed presence of other groups, e.g., police and community safety officers.

Police Presence Previous research on the relation between police presence and feelings of safety is predominantly cross-sectional but also quasi-experimental. The typical study method is to increase the police presence in a certain area through different methods such as foot patrol and assess people's feelings of safety. Most studies show that police presence is related to higher levels of feelings of safety, especially in unsafe areas (see e.g., Balkin and Houlden 1983; Cordner 1986; Knutsson 1995; Pate et al. 1986; Police Foundation 1981; Salmi et al. 2004; Trojanowicz and Baldwin 1982; Van De Veer et al. 2012; Winkel 1986). However, in some of these studies, several police procedures were implemented simultaneously, making it hard to conclude exactly which procedure or procedures actually contributed to the proposed feelings of safety (Cordner 1986; Knutsson 1995; Pate et al. 1986; Salmi et al. 2004).

Other studies have, unexpectedly, demonstrated higher levels of feelings of unsafety in the presence of police in unsafe areas (Cordner and Jones 1995; Hinkle and Weisburd 2008). A possible explanation of these findings might be that increased police presence, without information as to why, can make residents believe that the area is dangerous and that something crime related has happened and therefore reduce the feelings of safety (Hinkle and Weisburd 2008; Holmberg 2005; Winkel 1986). Finally, there are also studies showing no association between increased police presence and feelings of safety (Bennett 1991; Kelling et al. 1974). Both studies showing negative and no associations between police presence and feelings of safety have methodological flaws though, including potential confounding factors and problems with implementation, making the interpretation of the results tentative (Bennett 1991; Cordner and Jones 1995; Kelling et al. 1974).

Indeed, an important factor for feelings of safety seems to be *how* police presence is implemented (Moore and Trojanowicz 1988; Pate et al. 1986; Weisburd and Eck 2004). It seems as if when the police proactively focus on and tailor interventions to suit the specific problems in the area, and when they work with other institutions and people in the community (e.g., using community resources such as neighborhood watch), they are effective in increasing feelings of safety, whilst just increasing the presence of uniforms does not seem to have the same strong effect (Weisburd and Eck 2004; Zhao et al. 2002). There also seem to be differences in feelings of safety depending on which type of patrol that is implemented, where foot patrol is more effective and perceived more positively than patrolling by vehicle (Police Foundation 1981; Trojanowicz and Baldwin 1982). Patrolling by vehicle can actually induce higher levels of feelings of unsafety, as it is associated with the police responding to incidents of crime and may lead to perceptions of increased crime in the area (Holgersson 2008; Knutsson and Partanen 1986; Rubinstein 1980; Salmi et al. 2004; Winkel 1986).

One study has compared the relation between police presence and feelings of safety depending on context, using photographs of different situations perceived as safe and unsafe. The results indicate that police presence does not induce higher levels of feelings of safety in situations perceived as safe. Rather, a higher level of fear is induced with increased presence of the police, especially among males. In unsafe areas, on the other hand, police presence induces higher levels of feelings of safety (Van De Veer et al. 2012).

Results from studies on police presence and feelings of safety are inconclusive when it comes to gender. Some show that females feel safer in police presence than males (Cordner 1986; Van De Veer et al. 2012), others show that males feel safer than females (Knutsson 1995), and yet others show similar results for males and females (Winkel 1986) or different results depending on what is being measured (Cordner and Jones 1995). With regard to age, both adults and teenagers feel safer in the presence of foot patrolling police officers, but more fearful in the presence of police vehicles (Salmi et al. 2004).

In sum, results from studies on police presence and feelings of safety are inconclusive. Most studies indicate that police presence is related to higher levels of feelings of safety. However, some studies find no or negative associations, which also seem to depend on implementation, situational factors, and the gender and age of study participants.

Uniformed Presence, Other Than Police Few studies have examined the relation between non-police groups, such as security guards and other civilian groups, and feelings of safety among people. Previous research is mostly based on citizen surveys, in areas where security guards are often seen or where civilian patrol initiatives have been taken.

In terms of security guards, their presence is often related to higher levels of feelings of safety (Klein et al. 1989; Noaks 2000; Van Steden and Nalla 2010; Walsh and Donovan 1989), but the results are inconclusive. Similar to studies on police presence, some people have higher levels of feelings of unsafety as a result of the increased presence of security guards (Noaks 2000, 2004). Also, some people have the attitude that security guards are not a good substitute for the police (Van Steden and Nalla 2010). No studies have compared differences in feelings of safety and presence of security guards between situations perceived as safe and unsafe. One study has investigated the relation between presence of security guards and feelings of safety depending on gender and age, showing no significant differences (Van Steden and Nalla 2010).

Research has also shown that presence of civilian groups can induce higher levels of feelings of safety (Hauber et al. 1996; Unit 2004). However, other studies contradict these findings (Kenney 1986; Pennell et al. 1989). Conclusions are tentative due to methodological

flaws and shortcomings in reports of results (Kenney 1986; Unit 2004). Also, some studies show that when civilians themselves engage in crime prevention activities, fear seems to increase as citizens increase their awareness of crime (Adams and Serpe 2000; Scheider et al. 2003). No studies have compared differences in feelings of safety and presence of civilian groups between situations perceived as relatively safe and unsafe. With regard to gender differences, results are inconclusive. Some studies find that females feel safer than males, others that males feel safer than females, and yet others find no gender differences at all (see, e.g., Hauber et al. 1996; Kenney 1986; Pennell et al. 1985; Pennell et al. 1989; Unit 2004). Studies have been far more conclusive concerning age. Older people seem to feel safer in the presence of civil patrolling groups, and have more positive opinions about them, than younger people (Hauber et al. 1996; Pennell et al. 1985, 1989; Unit 2004), even though one study showed no age differences (Kenney 1986).

Comparisons of Police Presence and Other Uniformed Presence Two previous studies have, to our knowledge, compared feelings of safety in the presence of different uniformed groups (Balkin and Houlden 1983; Rowland and Coupe 2013). One of these used pictures of situations perceived as relatively safe and unsafe by people, and showed that uniformed presence was more strongly related to higher levels of feelings of safety than people not wearing uniforms. In addition, police presence was most strongly related to higher levels of feelings of safety, closely followed by firefighters, and soldiers (Balkin and Houlden 1983). One of the potential weaknesses of this study is that the respondents were asked to imagine their own presence and the presence of the different uniformed groups and groups of civilians in the situations—they were not actually depicted in the pictures. This will potentially result in responses based on very different images of the situations, as the respondents had to visualize what the uniformed groups and groups of civilians would look like. The study did not investigate gender or age differences, and did not compare situations perceived as relatively safe and unsafe.

The second study used pictures of police officers, police community support officers, accredited community safety officers (both previously mentioned non-police groups have less authority than police officers) and private security guards, to compare the recognition and effectiveness of these patrolling groups. Interviews with visitors in shopping malls showed that police officers induced the highest level of feelings of safety, closely followed by community support officers, private security guards, and accredited community safety officers. Police officers did however also induce feelings of worry of crime. Moreover, the results showed that the uniforms of the non-policing groups seemed to impart similar levels of feelings of safety. One of the authors' conclusions was that a uniform induce higher levels of feelings of safety more or less no matter who wears it, but a police uniform seems to be held at a higher regard (Rowland and Coupe 2013). Generally, younger women worried more about crime in the presence of police officers and security guards than younger men did. When the different groups were identified by uniform, older people felt safer in the presence of community support officers, accredited community safety officers, and security guards than younger people did. The study did not compare the different uniformed groups in situations perceived as relatively safe and unsafe (Rowland and Coupe 2013).

What We Know and What We Need to Know More About

In summary, the number of studies that focus on feelings of safety in the presence of people in uniform in general and police officers in particular is quite limited. Available research shows

somewhat inconclusive results. Several studies demonstrate positive results, with associations between higher levels of feelings of safety in uniformed presence in general and police presence in particular, especially in relatively situations perceived as unsafe. Others reveal negative or no associations at all. The nature of these previous studies prevents clear conclusions due to methodological shortcomings, often related to implementation and assessment. There is a need for studies that examine the potential impact of uniformed presence while controlling for other factors that may affect the relationship between police presence and feelings of safety.

No study has yet investigated the differential impact of police presence and the presence of non-police uniformed groups in different contexts, such as situations perceived as relatively safe and unsafe. Such studies may be useful when drawing conclusions about if and when these non-police groups can ease the work-load of the police, but also whether there are places and times when uniformed persons are more necessary than others. Also, further studies of differences in feelings of safety depending on the patrol method used by the police—such as comparisons of foot patrol with vehicle patrol, and comparisons of situations with different numbers of police officers present—could be useful for drawing conclusions about what procedures are most useful and when, to induce higher levels of feelings of safety. Finally, since previous research show inconclusive results concerning gender and age, and we know that these are demographic variables by which feelings of safety are likely to vary, it is necessary to include these factors in future studies, for drawing conclusions on specific target groups for safety work.

Purpose and Hypotheses of the Present Study

The overall purpose of the present study is to examine if and how the presence of different uniformed persons and a police vehicle is related to different levels of people's feelings of safety. We hypothesize that people will not feel safer in the presence of uniformed people or a police vehicle as compared to without such presence, in a situation already perceived as relatively safe. This hypothesis was derived from previous studies indicating that police presence in situations perceived as relatively safe do not make people feel safer but is to some extent related to higher levels of feelings of unsafety (Van De Veer et al. 2012).

We hypothesize that people will feel safer in the presence of uniformed people and a police vehicle as compared to without such presence, in different types of situations perceived as relatively unsafe. This hypothesis was derived from the previous research mentioned in the introductory section; people do feel safer by uniformed presence in areas perceived as unsafe (see e.g., Hauber et al. 1996; Salmi et al. 2004; Trojanowicz and Baldwin 1982; Van De Veer et al. 2012; Van Steden and Nalla 2010). We also hypothesize that people will feel safer in the presence of foot patrol as compared to vehicle patrol. This hypothesis was derived from previous studies indicating that patrolling by vehicle actually can induce higher levels of feelings of unsafety as compared to foot patrol that seem to induce higher levels of feelings of safety (see e.g., Salmi et al. 2004).

Further, we hypothesize that people will feel safer in police presence compared to security guard or police volunteer presence. This hypothesis was derived from previous findings that the police generally induce higher levels of feelings of safety compared to non-police agents (Balkin and Houlden 1983; Rowland and Coupe 2013), as well as the effect that the public uncertainty of the non-police legitimacy can have on levels of feelings of safety (Crawford and Lister 2004). Finally, we hypothesize that people will feel less safe by six foot patrolling police officers as compared to two foot patrolling police officers. This hypothesis was derived from previous studies showing that people might consider unusual police activity a sign of increased crime

and therefore assume that the area is more dangerous (Hinkle and Weisburd 2008; Holmberg 2005; Winkel 1986). Although not hypothesized about, we also investigate whether people would feel equally safe in the presence of security guards and police volunteers as compared to without such presence, as well as if these non-policing groups contribute to more safety than the police vehicle does. These questions are explored due to the fact that police volunteers are a new phenomenon in Sweden. We were interested as to how they fared compared to the more established but also more expensive, security guards. Another reason was curiosity as to how these non-police groups fared in comparison to the police car since earlier research shows that the police uniform is held to a higher regard than the non-police uniforms and because police cars induce higher levels of feelings of unsafety. We did however not have as much information from previous studies as for our other hypotheses to be able to build hypotheses of what to find concerning this. Finally, we investigate potential gender and age differences in feelings of safety in the absence and presence of uniformed groups and a police vehicle.

Method

Respondents

Respondents were recruited via university students on campus at a Swedish university and in public areas of Örebro, a mid-sized Swedish city. The aim was to recruit equal numbers of men and women in different age groups from 18 years and older. Of the 352 respondents, 50.9 % (179) were males and 49.1 % (173) were females, 18.5 % (64) respondents were either born outside of Sweden or had at least one foreign-born parent. The age-range of the respondents were 18 to 86 years ($M=34.7$, $SD=15.38$). Of the respondents, 42.2 % (148) were currently employed, 49.9 % (175) were students, 4.1 % (18) were retired, 1.4 % (5) were unemployed or other 1.4 % (5). Concerning education 7.1 % (25) respondents had finished elementary school or less, 56.4 % (198) had finished high school, 11.4 % (40) had finished vocational school, and 25 % (88) had at least a bachelor degree. In cases where the questionnaire was completed incorrectly, for example the respondent had failed to fill in gender or age ($n=2$), or the questionnaire had not been filled out face-to-face with the person in charge of data collection, which was important to ensure completion of questions in consecutive order ($n=11$), participants were excluded from analysis.

All respondents answered the same questions. However, the intent was for 50 % of the respondents to fill out one version of the questionnaire (A), and the other 50 % of respondents to fill out the second version of the questionnaire (B), to prevent a potential sequential effect (for further detail, see the description of the questionnaire below). Due to the uneven number of respondents responding to the A- and B-versions of the questionnaires, 43 respondents were randomly removed, creating groups with equal numbers of people in each condition to counterbalance any questionnaire effects, since it is "essential to have equal sample sizes when counterbalancing order" (Cramer and Howitt 2004 p. 176).

The Questionnaire

Respondents' perceptions of feelings of safety were assessed via a questionnaire containing pictures of situations perceived as relatively safe and unsafe with presence or absence of people in different uniforms and a police vehicle (see Figs. 1, 2, 3 and 4).
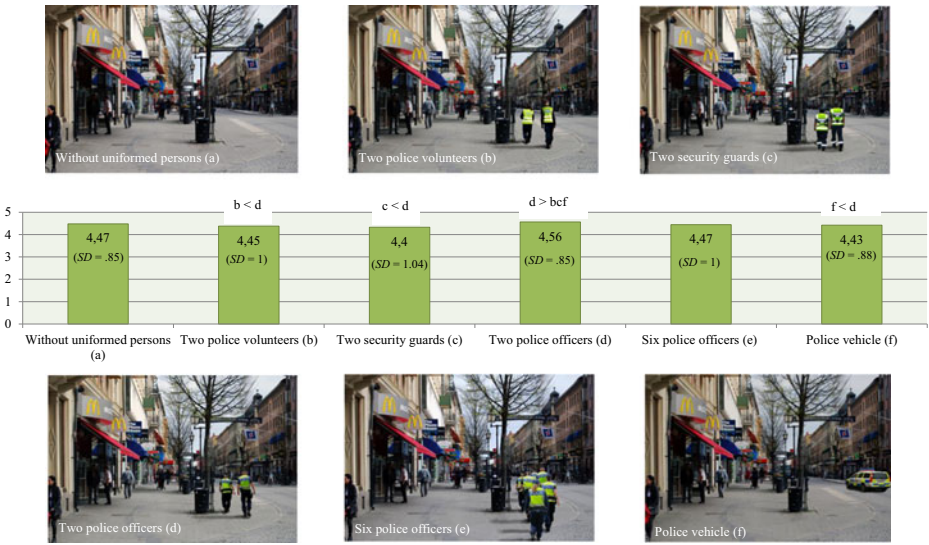
Fig. 1 Mean differences in perceived safety with and without uniformed persons and a police vehicle in a relatively safe situation. The letters, for example d>f, indicate significant difference (*p*<0.05) in mean values of safety between pictures d and f using Bonferroni pairwise comparisons

Situations and Uniformed Presence The pictures depicted four situations in three urban environments: a situation perceived as relatively safe during daytime (see Fig. 1), the same environment at night representing a situation perceived as relatively unsafe with a group of youths as an added potential threat (see Fig. 2). This environment was chosen because it is

Fig. 2 Mean differences in perceived safety with and without uniformed persons and a police vehicle in a relatively unsafe situation. The letters, for example d>f, indicate significant difference (*p*<0.05) in mean values of safety between pictures d and f using Bonferroni pairwise comparisons
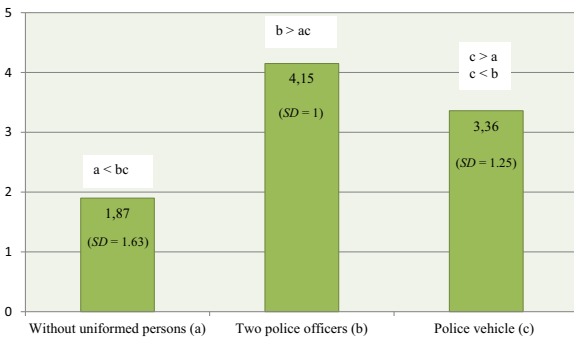
Fig. 3 Mean differences in perceived safety with and without police officers and a police vehicle in a relatively unsafe situation without other people present. The letters, for example a>b, indicate significant difference ($p<0.05$) in mean values of safety between pictures a and b using Bonferroni pairwise comparisons
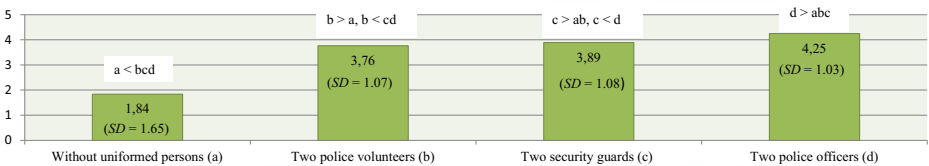

Fig. 4 Mean differences in perceived safety with and without uniformed presence and a police vehicle in a relatively unsafe situation without other people present. The letters, for example a>b, indicate significant difference ($p<0.05$) in mean values of safety between pictures a and b using Bonferroni pairwise comparisons

considered a hot spot for street violence according to police crime statistics (see e.g., Frogner et al. 2013). In Fig. 2 there is also the added element of a gang of youths that according to research induce higher levels of feelings of unsafety (see e.g., Box et al. 1988; Heber 2007). Several other situations that induce higher levels of feelings of unsafety because of environmental clues such as neighborhood incivilities were chosen based on research (see e.g., Box et al. 1988; Heber 2007) (among them Figs. 3 and 4). When these situations had been chosen a small pilot study ($n=15$) was conducted where the respondents were asked to rate their feelings of safety in the different situations. This led to the two additional situations perceived as relatively unsafe in different environments, at night with no other people present (see Figs. 3 and 4) that was used in the present study.

All situations with and without uniformed persons in different configurations were shown to all respondents. However, not all types of uniformed persons were present in all the different situations, as seen in Figs. 1, 2, 3, and 4. The respondents were instructed to estimate the situations in the pictures according to how safe they thought they would feel if they were in the specific situation. For each picture, they were asked to rate their perception of safety on a 6-point scale (0=*Not at all safe* and 5=*Very safe*). The descriptions of each situation included information about which of the uniformed persons that were present in the specific picture.

The uniformed persons that appeared in the pictures were police officers (in groups of two or six), police volunteers, or security guards. *Police volunteers* are adult individuals who during their spare time volunteer to assist the police with various tasks to contribute to a safer society, through for example night walks and distribution of crime preventive information. Volunteers are not employed by the police and have no powers other than regular citizens. If a crime is committed, the volunteer should not intervene, but can observe and report directly to the police. Police volunteers work on appointment of the police and have close contact with the police officer in charge before, during, and after their assignments (Police 2013b). The only uniform they wear is a reflective vest with the text "Police volunteers" written on the back and with a smaller text on one side of the chest.

To be called a *security guard* in Sweden, training by the police is mandatory. Security guards are commissioned by the police and subject to police authority in their service districts (Law 1980:578 on security guards). They have limited police powers and may apprehend, turn away or remove persons who, because of their condition, cannot take care of themselves, might disturb the public order or constitute a danger to themselves or others. The security guards may also use force if the task cannot be solved by any other means (Police 2013a). It is not uncommon for security guards to be employed by the police in crime prevention interventions (Police 2013a). In Sweden, Section 3 of the Act on security guards, gives police the right, where necessary, to appoint security guards to serve in limited areas not otherwise covered by the law (see, e.g., Frogner et al. 2013). Furthermore just as security guards are used for crime prevention, they could possibly be used to create feelings of safety. Swedish security guards differ from security guards in other countries, for example from American guards, who are more private-oriented, not trained by the police and not under the responsibility of the police when on duty. However, it is not uncommon for the police to use security guards in crime prevention efforts (Berkley and Thayer 2000; Shearing 1996; Shearing and Stenning 1983). All security guards in Sweden wear identical uniforms.

Questionnaire Design The number of persons in and appearance and position of the uniformed groups depicted in the pictures were kept constant across respondents, groups of patrol, and situations. Hence, the positions of the various uniformed persons (i.e., police

officers, security guards and police volunteers) were exactly the same in all the pictures, they were of the same bodily constitution, and in each pair of uniformed persons one was female and the other was male. The woman always patrolled to the left and the man to the right.

To prevent a potential sequential effect, two versions of the same questionnaire—versions A and B—were developed and administered, where the pictures were arranged in different consecutive order. In version A, the pictures started from no uniform and ended with six police officers. In version B, the pictures were shown in opposite order, starting with the six police officers and ending with no uniform. The intent was for 50 % of the respondents to fill out one form of the questionnaire A, and the other 50 % of respondents to fill out the second form of the questionnaire, B. This was done to counterbalance any effects of the order of the pictures in the questionnaire.

A split plot repeated measures ANOVA with the different pictures as the within subjects variables, and the two versions of the questionnaire (A and B) as between subjects factors ($n=$ 395), showed interaction effects for two of the situations, indicating that the order of the pictures (i.e., questionnaires A and B) might have an effect. Thus, counterbalancing was important to accomplish. There was an uneven distribution of number of respondents in the A and B conditions (A, $n=179$, 45.3 %; B, $n=216$, 54.7 %) and also an uneven distribution with regard to gender and age (women in the A condition, $n=90$, 50.3 % versus the B condition, $n=$ 125, 57.9 %; young people [18–25 years] in the A condition, $n=77$, 43 %; versus the B condition, $n=121$, 56 %). Due to this disproportionate distribution across the A and B conditions, respondents were removed from the B group, to achieve an equal number of respondents in each condition (A and B), as well as similar distributions across gender and age groups in each condition (A and B). This removal was done randomly. With 50 % respondents in condition A and 50 % respondents in condition B there was no longer an interaction effect of A and B, and hence no sequential effects. The A and B questionnaire variable was also analyzed as a covariate in the split plot repeated measures ANOVA to control for the order effect; the main results were the same.

Procedure for Collection of the Data

The data collection was carried out on the University campus and in public areas of Örebro, a medium-sized Swedish city. All questionnaires were completed under the supervision of the person who recruited the respondents. Participation was voluntary and the respondents were informed that they could withdraw their participation if they so wished. Respondents were anonymous and they were informed both verbally and in writing about the study's purpose and implementation. The questionnaire took about 20 min to complete and an opportunity was given to the respondents to be informed of the study's results, by submitting their e-mail address on the last page of the questionnaire. Respondents received no compensation for their participation. The data collection was conducted in late fall 2012 and spring 2013.

Statistical Analyses

The respondents' ratings of feelings of safety in relation to the different pictures, with or without uniformed presence, or with presence of a police vehicle, were compared. Since all respondents answered questions about all the different pictures, a repeated measures design was needed. The data for the main results was consequently analyzed through one-way

repeated measures ANOVAs with the different pictures as the within subject variables, since differences in feelings of safety would be evident in the within subject variance. If Mauchly's test indicated that the assumption of sphericity had been violated, the degrees of freedom were corrected using Greenhouse-Geisser estimates of sphericity. The mean values, standard deviances and statistical significance testing can be seen in Figs. 1, 2, 3, and 4. The main effects were compared using Bonferroni confidence interval adjustments. As ANOVAs compare mean values it is also important to present effect sizes as analyses can show significant mean differences but have a small effect size rendering the results arguable. We report effect sizes through partial Eta squared (η_p^2), which is the common statistic in ANOVAs. A (η_p^2) below 0.02 is considered a small effect size and above 0.25 a large effect size. In the discussion we will also use Cohen's d effect size when discussing different significant results. Cohens' d below 0.20 is considered a small effect size and above 0.80 a large effect size.

For gender and age differences, split plot repeated measures ANOVA were used, with the different pictures as the within subject variables, and gender and age as between subjects factors, comparing the results between the different groups (i.e., gender and age) on feelings of safety in the different pictures. In some of the analyses testing for age differences, the respondents were grouped according to age (18–25 years, $n=156$, 44.3 %; 26–40 years $n=$ 82, 23.3 %; 41–86 years $n=114$, 32.4 %). If Mauchly's test indicated that the assumption of sphericity had been violated, the degrees of freedom were corrected using Greenhouse-Geisser estimates of sphericity. These effects were then compared using Bonferroni confidence interval adjustments. We did also run split plot ANOVAs with the age left in individual years as a between variable and we found no significant effects. Hence, when age is left in individual years there are no significant differences between the different ages in any of the situations.

Results

Feelings of Safety in a Situation Perceived as Relatively Safe

There was a significant difference in feelings of safety between the different pictures of the situation perceived as relatively safe (see Fig. 1), as shown with a repeated measures ANOVA, $F(4, 1402)=4.92$, $p=0.001$, $\eta_p^2=0.014$. The Bonferroni pairwise comparisons did however reveal that compared to no uniformed presence at all, the uniformed presence or the police vehicle did not make the respondents feel safer in this particular situation. Two foot patrolling police officers made the respondents feel safer than the police volunteers ($p<0.000$), security guards ($p<0.000$), and the police vehicle ($p=0.004$), but not as compared to no uniformed presence at all.

Additional analyses using split plot repeated measures ANOVA with the different pictures as the within subjects variables, and gender and age as between subjects factors, showed significant interaction effects for gender ($F(4.01, 1400)=3.93$, $p=0.004$, $\eta_p^2=0.011$) and for age ($F(8.07, 1405)=2.17$, $p=0.027$, $\eta_p^2=0.012$). The Bonferroni pairwise comparisons revealed that males felt less safe in the presence of two foot patrolling security guards ($p=0.031$), compared to no uniformed presence at all, which differed from the main results. Males also felt safer by the police vehicle than by the security guards ($p=0.033$), and safer by the two foot patrolling police officers than by six police officers ($p=0.012$). Results for females, on the other hand, were similar to the results of the total sample.

The youngest group (18–25 years) considered two foot patrolling police officers to contribute to more safety than what police volunteers did ($p=0.004$). The middle aged group (26–40 years) considered the two foot patrolling police officers to contribute to more safety than what six foot patrolling police officers did ($p=0.025$). Finally, respondents in the oldest age group (41–86 years) considered two foot patrolling police officers safer than police volunteers ($p=0.020$) and security guards ($p=0.001$) but not the police vehicle.

Feelings of Safety in a Situation Perceived as Relatively Unsafe Including Youth Presence

Repeated measures ANOVA showed that there was a significant difference in feelings of safety between the different pictures in the situation perceived as relatively unsafe (see Fig. 2), $F(3.76, 1315)=148.46$, $p<0.001$, $\eta_p^2=0.298$. The Bonferroni pairwise comparisons revealed that feelings of safety were significantly higher in the presence of uniformed persons, regardless of group of persons, and a police vehicle, compared to when no uniformed persons are present, in this situation ($p<0.001$). The respondents felt safer in the presence of all the different uniformed foot patrols, in comparison to the police vehicle ($p<0.001$), and foot patrolling police officers generated the highest levels of feelings of safety ($p<0.001$). No significant difference in feelings of safety was found between two and six patrolling police officers, or when comparing the presence of security guards and police volunteers (see Fig. 2).

Additional analyses using split plot repeated measures ANOVA with the different pictures as the within subjects variables, and gender and age as between subjects factors, showed an interaction effect for gender ($F(3.88, 1245)=13.64$, $p<0.001$, $\eta_p^2=0.038$) but not for age. In contrast to the results of the total sample, the Bonferroni pairwise comparisons revealed that males felt equally safe in the presence of the police vehicle as in the presence of security guards and police volunteers. Results for females, on the other hand, were similar to the results of the total sample.

Feelings of Safety in Situations Perceived as Relatively Unsafe Without the Presence of Other People

Feelings of safety in the two situations perceived as relatively unsafe, which did not contain other people, followed a similar pattern even though different forms of uniformed presence were assessed. Using repeated measures ANOVA, analyses showed that there was a significant difference in feelings of safety between the different pictures of the situation in the park (see Fig. 3), $F(1.63, 570)=432.10$, $p<0.001$, $\eta_p^2=0.553$, as well as in the tunnel (see Fig. 4), $F(1.90, 667)=380.98$, $p<0.001$, $\eta_p^2=0.520$. In both cases, the Bonferroni pairwise comparisons revealed that feelings of safety were significantly higher in the presence of foot patrols compared to no uniformed presence ($p<0.001$ in both situations). In the park situation, feelings of safety were higher for foot patrols than in the presence of a police vehicle ($p<0.001$), and higher in the presence of a police vehicle than compared to no uniformed presence ($p<0.001$). In the tunnel situation respondents felt significantly safer by the police compared to the security guards and the police volunteers ($p<0.001$), and safer by the security guards than the police volunteers ($p=0.047$).

Additional analyses of the park situation, using split plot repeated measures ANOVA with the different pictures as the within subjects variables, and gender and age as between subjects factors, showed interaction effects for gender ($F(1.78, 619)=89.03$, $p<0.001$, $\eta_p^2=0.204$) and

age ($F(3.27, 567)=3.12$, $p=0.022$, $\eta_p^2=0.018$). However, the differences found in the Bonferroni pairwise comparisons revealed differences in levels of perceived safety, rather than altered patterns of safety in the different situations. Males felt slightly safer than women in all situations (ranging from $p<0.001$ to $p<0.005$), and young and middle aged adults (18–25 years and 26–40 years) felt safer than the respondents in the oldest age group in the situation (41–86 years) without uniformed presence ($p=0.031$ and $p=0.011$, respectively).

Additional analyses of the tunnel situation using split plot repeated measures ANOVA with the different pictures as the within subjects variables, and gender and age as between subjects factors, showed interaction effects for gender ($F(2.20, 770)=85.16$, $p<0.001$, $\eta_p^2=0.196$) and age ($F(3.87, 676)=5.43$, $p<0.000$, $\eta_p^2=0.030$). The Bonferroni pairwise comparisons revealed that results for males and females, as well as all age groups differed from the results of the total sample. Both males and females, and all age groups reported that the police contributed to the highest levels of feelings of safety ($p<0.001$ for all comparisons), while no differences were found for security guards or police volunteers.

Discussion

The overall purpose of the present study was to examine if and how uniformed presence and presence of a police vehicle was related to higher levels of feelings of safety. The hypothesis that individuals would not feel significantly safer in the presence of uniformed people and a police vehicle as compared to without such presence, in a situation already perceived as relatively safe, was supported. It should also be noted that an effect size analysis showed that the effect of two police officers was very small (i.e., Fig. 1) (Cohen's $d=0.11$; equivalent to 5.5 % change in safety)[1] and much smaller than the corresponding effect of two police officers in a situation perceived as relatively unsafe (i.e., Fig. 2) (Cohen's $d=1.23$; equivalent to a 61.5 % change in safety). Thus, it can be concluded that people do not feel safer by the presence of uniformed people and a police vehicle as compared to having no uniformed presence at all in the already safe situation, and the non-significant "effect" is also negligible.

The hypothesis that individuals would feel significantly safer in the presence of uniformed people and a police vehicle in comparison to without such presence, in different types of situations perceived as relatively unsafe (situations such as a vibrant downtown area at night, with other people present, and situations such as a park or a tunnel without other people present), was supported. The results showed that patrols in situations perceived as relatively unsafe create safety regardless of the type of unsafe situation and regardless of type of patrol. Thus, it can be concluded that people do feel safer by all types of uniformed presence (i.e., the police, security guards and police volunteers) as compared to having no uniformed presence at all in situations perceived as relatively unsafe and this "effect" is quite large (Cohen's $d=1.23$; equivalent to a 61.5 % change in safety in the presence of two foot patrolling officers).

The hypothesis that individuals would feel significantly safer in the presence of foot patrol as compared to patrol with a police vehicle was supported, as was the hypothesis that individuals would feel significantly safer in the presence of the police in comparison to security guards and police volunteers. The hypothesis that individuals would feel significantly

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[1] Percentage was calculated by dividing Cohen's d by two and then multiplying with 100 (Lipsey and Wilson 2001)

less safe by six foot patrolling police officers as compared to two foot patrolling police officers was not supported in our data, no matter if the situations were perceived as safe or unsafe.

The comparison made regarding if individuals felt equally safe by security guards and police volunteers, as compared to without such presence, showed that this was true, in some situations. Security guards and police volunteers contributed to equally much safety in a relatively unsafe area with other people present, but in a relatively unsafe area without other people present security guards were slightly more preferred (Cohen's $d=0.1$; equivalent to a 5 % change difference in safety in the presence of foot patrolling security guards versus police volunteers). Further, non-policing groups contributed to more safety than the police vehicle.

When examining the potential gender and age differences in feelings of safety in the presence of uniformed people and a police vehicle, compared to without such presence, some of the results were dependent on gender or age. Even though the patterns of results varied between situations, we can conclude that if males find themselves in populated and situations perceived as relatively unsafe, the police vehicle is as beneficial as the other non-police groups for enhancing safety. On the other hand, if females find themselves in the same situation, it would be more beneficial to use foot-patrol with non-police groups than the police vehicle. If males and females of all ages are exposed to situations without other people perceived as relatively unsafe, police volunteers are pretty much as beneficial as security guards in enhancing feelings of safety.

The Present Findings in Relation to Theory and Previous Research

Something that sets the present study apart from the majority of previous studies (although see Balkin and Houlden 1983; Rowland and Coupe 2013) is that comparisons were made concerning the associations between various forms of uniformed presence and feelings of safety. Another important contribution is whether the number of police officers present has an impact on feelings of safety, an aspect of patrolling which has not been covered in previous research (see, e.g., Balkin and Houlden 1983; Bennett 1991; Cordner 1986; Hinkle and Weisburd 2008; Holmberg 2005; Kelling et al. 1974; Knutsson 1995; Pate et al. 1986; Rowland and Coupe 2013; Salmi et al. 2004; Winkel 1986). The present study also contributes with knowledge regarding patrol with a police vehicle. Previous research shows that patrols with a police vehicle and patrols in the "wrong" places can produce opposite effects, in the form of induced levels of fear of crime (Salmi et al. 2004; Van de Veer et al. 2012). Given that vehicle patrol essentially is reactive rather than proactive (Holgersson 2008; Knutsson and Partanen 1986; Rubinstein 1980); one explanation to this is that police vehicles are associated with emergency call responses indicating that something has already happened. Because of this, it is no surprise that the police vehicle is associated with the indication of elevated crime in the area and thus decreases feelings of safety instead of increasing it (Holgersson 2008; Salmi et al. 2004; Winkel 1986).

Somewhat surprisingly and in contrast to previous research, the present study's results show that people do feel safer by the police vehicle, when compared to no patrol at all. Possibly, Sweden's relatively high level of perceived safety, high level of satisfaction with police work, and the relatively high confidence in the legal system may have contributed to these findings (Heber 2007; Holmberg 2005; Salmi et al. 2004). Nonetheless, this emphasizes how important it is to implement and evaluate police procedures in relevant contexts, and not just taking results from other countries for granted.

The results of the present study provide support for the theories and research stating that visible uniforms are a symbol that may induce higher levels of feelings of safety (Balkin and Houlden 1983; Hale 1996; Jackson and Bradford 2009; Winkel 1986). It also supports the idea that not only the police can contribute to safety. Rather, in some situations, security guards and police volunteers can promote safety as well (Balkin and Houlden 1983; Clarke and Felson 2008; Cohen and Felson 1979; Rowland and Coupe 2013). However, in line with previous research (Rowland and Coupe 2013), we show that even though the presence of a non-police uniform brings reassurance to the public, the police uniform is held at a higher regard, and that the uniform of other non-police groups, when creating feelings of safety, generally does not matter. Hence, we found partial support for the notion that other groups do not have the same symbolic aura as the police (see Loader 1997), as foot patrolling police officers contributed to greater feelings of safety than the other groups. However, the other patrol groups generally contributed to more feelings of safety than the police vehicle, which goes against this notion. From the present study's results we can conclude that if the "symbolic aura" of the police plays a role in how people value patrols of different groups, this aura only applies to foot patrolling police officers and not to police vehicle patrol.

A somewhat unexpected result of the present study was that there was no distinction between different numbers of foot patrolling police officers in enhancing feelings of safety. One could think that six police officers would reduce feelings of safety, because an increased number of police officers could signal to the people that something bad has occurred (see, e.g., Winkel 1986). In the present study, however, we found no evidence for that six foot patrolling officers would be perceived as less safe than two patrolling police officers. Maybe here also, Sweden's relatively high level of satisfaction with the police work (Heber 2007; Holmberg 2005; Salmi et al. 2004) contributed to these results?

Limitations and Strengths

The respondents participating in this study were not randomly selected from the Swedish population, but rather constituted a convenience sample. This may limit the generalizability of the results. However, there is on the other hand nothing that indicates that the respondents from this particular University or city would be extreme or atypical representations of the Swedish adult population at large. Whether the respondents are representative enough for the results to be transferred to other countries is a different question. The majority of previous research has been conducted in other countries than Sweden, particularly in the U.S. and England. In the same way that it is not certain that one can apply the results from a study conducted in the United States directly to the Swedish context, the reverse could be equally true. For example, in the Nordic countries there is already a relatively high level of perceived safety and also a relatively high level of satisfaction with the police work. Also, as briefly mentioned previously, Swedes have a relatively high level of confidence in the legal system in comparison to people in many other countries (Heber 2007; Holmberg 2005). This generally higher confidence and satisfaction can possibly affect the generalizability and transferability of the results of the present study.

Another potential limitation of the study is that the possible influence on feelings of safety of uniformed persons was not tested in real situations, but through pictures in a survey. Studies in natural conditions are necessary in order to draw firm conclusions about how valid these results are in real situations. However, such studies are hard to implement because of difficulties in ability to control the situation as well as the people in the situation. To conduct

a survey has an obvious advantage, because the only thing that is being varied between situations in the questionnaire is the uniformed presence or whether there is a police vehicle present or not. This allows us to draw conclusions about the uniformed persons' and the police vehicle's relation to feelings of safety, which is very difficult in natural situations. The isolated assessment of different forms of safety promoting strategies is also a limitation in some of the previous scientific studies in this area, because they assess several police procedures simultaneously (see, e.g., Cordner 1986; Hinkle and Weisburd 2008; Knutsson 1995; Trojanowicz and Baldwin 1982).

Even though the questionnaire method could be considered a limitation, the pictures in the questionnaire can be seen as a strength of the present study. Much of previous research does not study concrete situations (Hale 1996; Heber 2007; Hinkle and Weisburd 2008; LaGrange and Ferraro 1987; Salmi et al. 2004) and does not ask about fear of crime, specifically. Rather they ask in more general terms how fearful respondents feel when they are out walking in the evenings. It is a problem when the geographical area and the social context for the requested perceived safety are not specified in the question, because fear is continuously changing across situations and time (Cohen et al. 2009; EUCPN 2004; Farrall et al. 1997). In the present study, questions about crime experience and fear of crime were asked preceding the pictures, and the pictures explicitly show the geographical location, the context and time of day, which partly resolves the issues brought up in this criticism.

Whereas in previous research (Balkin and Houlden 1983), respondents had to imagine the uniformed presence as the police were not depicted in the pictures, in the present study, the various uniformed groups were made visible and the characteristics of the pictures were kept constant across respondents, groups of patrol, and situations. This allows us to draw more reliable conclusions about if it in fact is the different types of uniformed people or the signal value of the different uniforms that induced the levels of feelings of safety among the respondents, rather than factors related to other aspects of the appearance of the depicted persons. Also, the order of the pictures in the questionnaire was counterbalanced to prevent potential order effects, as described in the Method section.

Practical Implications

The results of the present study gives some direction as to how police work can be tailored according to situations, and how the work load of the police force potentially can be somewhat eased through the means of other uniformed groups. First of all, to maintain public safety, it seems as if patrol is not necessary in situations and contexts that are already perceived as relatively safe. When public safety is a key target, the police will contribute the most to feelings of safety, in comparison to security guards and police volunteers. However, people also feel noticeably safer by both security guards and police volunteers, in situations perceived as relatively unsafe. Also, it is important to note that the security guards and police volunteers create about as much feelings of safety. This clearly indicates that patrols with police volunteers can be a very cost-effective way to induce higher levels of feelings of safety.

In unsafe situations, where the risk of becoming a victim of crime is greater according to crime statistics and other crime information, foot patrolling police officers and possibly also security guards (if they have authority in the context) should be a priority, since they can intervene if crimes occur. If the risk of becoming a victim of crime is considered lower according to crime statistics and other crime information in a certain context, but feelings of unsafety still are relatively high, one can effectively use the security guards and/or police

volunteers for patrol. Further, the police vehicle is effective for the transport of police officers but not so much to induce higher levels of feelings of safety, according to the present study. Once the police arrive to unsafe contexts and situations, they should get out of the car.

In sum, based on the present study's results it is possible to make the police more effective in their work with creating feelings of safety, by allocating resources in a more time and cost effective manner, with the assistance of security guards and police volunteers. Police can use these results as a basis for discussion on how, when, and why to patrol. However, in these discussions one should be aware that this has not yet been tested in real situations.

Future Research Directions

Part of the explanation to why respondents feel safer in police presence compared to security guards and police volunteers is probably that the respondents have greater confidence in the police than they do in the other uniformed groups (see, e.g., Holland Baker et al. 1983; Jackson and Bradford 2009; Ren et al. 2005). Another explanation could be the level of correct knowledge among respondents about what authority the uniformed groups have according to the law. Incorrect knowledge about the authority of different groups could contribute to flawed expectations that may influence the degree of safety inserted. More research in this area can further the understanding of why the public feel as they do, and if knowledge about and confidence in the different groups is an aspect that affects feelings of safety.

Another important aspect is that the present study does not approach is what amount of time uniformed presence is needed in a context of situation, in order to achieve the best possible effect on feelings of safety. More research in this area can further assist the police in planning and better use of resources in their daily work to make people feel safe. Lastly, the present study should be replicated but in natural settings. Studies in real contexts are necessary in order to draw firm conclusions about how valid these results are in real life.

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