Parental perception of social risk and of positive potentiality of outdoor autonomy for children: The development of two instruments

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Abstract

An important factor that limits children’s autonomy outdoors is parental perception of social danger and traffic danger. To obtain quantitative instruments for these dimensions, this work aimed to explore the validity and reliability of three scales. Two of them describe, respectively, problematic aspects of the area of residence linked to traffic and situations of social degradation that could constitute risk factors for the child’s psychological and physical safety (Traffic Danger Perception Scale, Social Danger Perception Scale). The third scale investigates parental perception of the positive potentiality of outdoor autonomy for children’s maturation and growth. Interviews were conducted with 377 mothers of children between 8 and 10 years of age residing in six different areas in Italy. The results indicated weak reliability of the Traffic Danger Perception Scale, which requires further investigation, and they confirmed the reliability and the construct validity of the Social Danger Perception Scale and the Perception of Positive Potentiality of Outdoor Autonomy for Children Scale. The perception of social danger was higher in mothers who live in larger urban contexts and who have more personal fear of crime and a lower sense of community. The positive perception of children’s autonomy of movement was higher among mothers who live in greener areas, who have a greater sense of community and who have more neighbourhood relations.

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1. Introduction

In recent years, we have seen a worrying change in the daily habits of children in western countries. They are increasingly less occupied in play and free movement activities in the open and less present in public areas, being confined to the house and occupied in programmed activities and under adult surveillance. Studies carried out in many countries of the European Union (i.e. Italy, Great Britain, Finland and Sweden), in the United States and in Australia have warned of the dangerous progression of this phenomenon (Giuliani, Alparone, & Mayer, 1997; Hillman, Adams, & Whitelegg, 1991; Hillman, Henderson, & Whalley, 1973; Horelli, 2001; Johansson, 2003; Kyttä, 2004; Prezza, Morabito, Pilloni, Sersante, & Alparone, 2000). Concerning this, Gaster (1995) stated that one of the reasons why the studies on home-range have faded is that the home-range as a reality has faded. Maybe, as Carr and Lynch (1968) feared, children are already estranged from their neighbourhood.

The lack of independent mobility, the reduction in outdoor play and in getting around on foot have an effect on children’s development and well-being. Particularly negative are the effects on their environmental knowledge, the development of spatial, motor and analytical skills (for a review, see Rissotto & Giuliani, in press), their sociability (Prezza, Pilloni, Morabito, Alparone, & Giuliani, 2001) and their motor and social development (Hüttenmoser, 1995). Because a sedentary life often leads to an increase in obesity, some authors hold (Hillman, 1999/2000) that children who are less autonomous outdoors are more...
prone to weight problems. In fact, Mackett (2004) found that children who play outdoors burn more calories than those who are involved in structured after-school activities, such as clubs and tuition.

Many characteristics of the children, the environment and the culture have been individuated that facilitate or hinder freedom of movement.

Some studies have specifically dealt with the demographic characteristics of children. Independent mobility increases with age (Blakely, 1994; Giuliani et al., 1997; Prezza et al., 2001) and is differentiated for gender, supporting the widely accepted social stereotype that gives more freedom to males (Alparone, Prezza, Tucci, & De Ruosi, 2003; Giuliani et al., 1997; Hillman et al., 1991; Prezza et al., 2001; Spencer & Woolley, 2000). These factors are particularly important for parental evaluation of the child’s maturation process and the consequent development of specific abilities considered indispensable for freedom of movement (care and skill when facing road danger, the intuition of danger, etc.). Parents’ beliefs about the ages at which children should be able to cope with autonomous environmental experiences also depend strongly upon their cultural context (Hillman, 1997; Sauvage & Gauvain, 1998).

Other research has analysed the environmental characteristics that facilitate children’s outdoor autonomy. They include typology of the neighbourhood (new vs. old, Prezza et al., 2001; van der Spek & Noyon, 1997), low degree of urbanisation (suburban vs. inner city, Anderson & Tindall, 1972; rural village vs. city, Kytta, 2002; small town vs. city, Alparone et al., 2003), and suitable spaces for play near home (Chawla, 1992; Prezza et al., 2001). On the contrary, the dangers of automobile traffic and of atmospheric pollution (Björklid, 1995; Bonanomi, 1994; Heurlin-Norinder, 1996; Hillman et al., 1991) hinder children’s outdoor freedom. Road traffic dangers depend on the intensity, type of road (e.g. fast roads, lack of pavements, dangerous crossroads) or on the improper habits of drivers (e.g. parking on sidewalks, no respect for traffic lights). Fear of traffic is largely responsible for the changes in children’s habits of movement and particularly for the fact that they are driven everywhere (Björklid, 1995; Heurlin-Norinder, 1996).

Added to dangers and fears related to traffic, parents and children also fear dangers of a social nature (Giuliani et al., 1997; Johansson, 2003; Matthews & Limb, 1999; Sissons Joshi, MacLean, & Carter, 1999; Valentine, 1997), such as being victimised by aggression and molestation. Social fears are mostly linked to micro-crime (drug pushing, drug addiction, bag snatching), to the presence of social groups that are targets for strong prejudice (gypsies, immigrants, homeless, people with strange dress and behaviour) and, to a lesser degree, to paedophiles and to the phenomenon of bullying (Björklid, 2003; Blakely, 1994; Cicognani, 2003; Johansson, 2003).

Some parents (Alparone et al., 2003) also pointed out that in cities people live anonymously, that it is difficult to meet people you know on the street and to be recognised. The importance of being integrated in the neighbourhood was confirmed by Hüttenmoser (1995) and Prezza et al. (2001). These two studies demonstrated that children whose parents had a more extensive neighbourhood network enjoyed more independent mobility.

1.1. General aim of the research

Studies in this area have identified many factors that either facilitate or hamper outdoor autonomy. However, there lacks an understanding of the processes through which this influence is exerted. Research in this area has been primarily qualitative; therefore, it is difficult to understand if—and to what degree—the social and physical characteristics of the neighbourhood influence parental behaviour and that of the children through the parents’ experience/perception of the neighbourhood and through their opinion on the children’s independent mobility. Quantitative measures allow for easier testing of complex models that simultaneously consider the influence of many variables and the relationships between them.

Our general aim in this study was to obtain quantitative measures by constructing scales to reveal parents’ opinions and perceptions associated with children’s autonomy in the urban context. Specifically, the three scales regard parents’ social and traffic fears and the importance they attribute to outdoor autonomy for children’s growth and development. The scores obtained on these three scales will be related to different variables such as size of residential area, presence of green, fear of crime, sense of community and neighbourhood relations, as well as to many of the parents’ socio-demographic characteristics. We will first analyse the constructs associated with the scales and will then describe the research hypothesis in detail.

1.2. Parental fear of traffic

Hillman (1999/2000) believes that, more than social fear, what is justified is parental concern over the risk of road injury to their children when they are alone. Indeed, children and young people are 100 times more likely to be killed by road users than by strangers (Sustrans, 2001). The level of traffic consistently influences the level of fear: Heurlin-Norinder (1996) found that parents living in areas where traffic is heavier are more worried about traffic than those living in traffic segregated areas. Also, intense traffic and a high level of car parking in the vicinity (as perceived by children from 7 to 11 years old) are accompanied by a perception of the area as not very safe from a social point of view and poor in neighbourhood relationships. “A downward spiral of fear can be created in response to road safety fears in which reductions in play, cycling and walking activities among children and young people can diminish the general social activities levels of an area which can heighten fears of stranger danger” (Mullan, 2003, p. 352). Skjaeveland (2001) did not consider fear of traffic...
but rather the effects of added urban furnishings (benches, trees, plants, etc.) and traffic calming on neighbourhood relations. These changes increased the supportive interaction between neighbours and children’s play outdoors, but also led to neighbour annoyance. Plas and Lewis (1996) carried out a study using qualitative methods at Seaside, a Gulf of Mexico resort town. This town was built according to the new, traditional urbanism principle (Morris, 1994) to foster inter-personal contact and to discourage the use of automobiles. Their data confirmed that the urban structure of the city and the moderate traffic encouraged neighbourhood relations and positively influenced sense of community.

We do not know of any studies that have found a clear relationship between the presence of green areas and the perception of traffic risk. However, street designers who are concerned with slowing down traffic often have greenery planted between the road dividers. This helps to reduce the negative effects of motor vehicle use and improves conditions for nonmotorised street users. Moreover, studies on environmental preference and route choices show that pedestrians prefer certain routes because of their environmental qualities, such as greenery (Sarkar, 1999). People often associate the presence of greenery with its ability to reduce pollution. Francis (1987) argued that engineers and designers should actively seek to promote a wide range of qualities in residential areas, such as greenery. This is a common request from residents because greenery reduces noise, improves air quality and creates visual relief.

Lam (2001)—the only study we know of on this topic—specifically focused on parental road risk perception and found that parents who perceive a higher level of risk for their children (from 4 to 12 years old) in connection with traffic are those with smaller children who live in areas with more traffic and do not work full time. Lam also reported that fathers perceive fewer risks than mothers. This finding is coherent with results reported in the literature on risk perception (Davidson & Freudenburg, 1996; Heino, Van der Molen, & Wilde, 1996).

1.3. Parental social fears

Parents often refer to social fears to justify restricting their children’s movements. In the last few decades, social fears have become more pervasive. Hillman (1999/2000) claims that they are not justified by the increase in real dangers for children in urban areas. He holds that this ‘parental paranoia’ is mainly provoked by the media.

Little research, however, has tried to understand what the intensity of parental social fears depends on. O’Neil, Parke, and McDowell (2001) found a weak relationship between the ‘objective’ characteristics of the environment and mothers’ perceptions of neighbourhood child-related problems. On the other hand, through interviews with parents Alparone et al. (2003) and Johansson (2003) found that cities were described as less safe than rural villages or small towns.

Forni (2002) found that fear of crime and parental concern for children are both expressions of a more generalised sense of insecurity that pervades modern post-capitalist societies. This feeling of insecurity is attributed to uncertainty about the environmental, political, economic and work future, but is directed toward other topics (for example, the social construction of moral panic around deviance issues) by economic and political elitist groups. In this perspective, adults’ fear for themselves and for the safety of children in cities is strongly related and should be predicted by the same variables.

There is an entire area of investigation concerned with adults’ fear for themselves in the urban context, which is focused on fear of crime or feelings of insecurity. Many authors (Furstenberg, 1971; Moser, 1992) consider this a multidimensional concept. Fear of crime is only slightly connected with the local crime rate (Taylor, 1995) and it can be accentuated by mass media or minimised by political analysis (Zani, 2003). It is particularly strong in large cities (Hale, 1996) that are characterised by heterogeneity or social diversity and high residential density (Moser, 1999). Having a lot of people around increases fear; however, this mainly occurs when people are poorly integrated in the neighbourhood. Their lack of social interactions makes them perceive others as less available to help. Freudenburg (1986) claims that fear of crime can be considered as an indicator of the general social climate in a neighbourhood and also as a consequence of the progressive weakening of social ties and limited use of public spaces (Taylor, Gottfredson, & Brower, 1984). Many authors (Zani, 2003) have underlined the positive effect of social ties among neighbours and sense of community. Lower fear of crime is accompanied by more extended/intense neighbourhood relations (Farrall, Bannister, Ditton, & Gilchrist, 2000; Ross & Jang, 2000; Santinello, Gonzi, & Scacchi, 1998), by a stronger sense of community (Chipuer, 2001; Santinello et al., 1998) or neighbourhood attachment (Brown, Perkins, & Brown, 2003; Riger, LeBailly, & Gordon, 1981). However, these relationships are not confirmed in all studies (Davoli, Pastore, Santinello, & Vieno, 2003; Moser, 1992) or are only partially confirmed (Albanesi, 2003a).

Findings on the relationship between fear of crime and green are rather complex. Kuo, Bacaicaon, and Sullivan (1998) conducted a study using computer-based photo-simulation in a poor neighbourhood in the United States. They asked inhabitants of an urban public housing development to indicate their preference and sense of safety associated with many images of their courtyard. The density and positioning of trees and the level of grass maintenance were different in these images. The highest preference and sense of safety were associated with photos showing the greatest density of trees and good grass maintenance. Another study, conducted by Kuo, Sullivan, Coley, and Brunson (1998), concerned women who lived in
a poor neighbourhood in 18 buildings surrounded by different levels of vegetation. They found that the presence of green in common areas encouraged the use of these spaces, and that this use in turn encouraged links with the neighbours. The presence of green was also associated with a greater sense of safety, in part thanks to more extended/intense neighbourhood social ties. In these studies, the presence of more vegetation was linked to a greater sense of safety; at times, however, the more densely wooded parts of urban areas are perceived as less safe (Schroeder & Anderson, 1984). Children also have mixed feelings about woods: they are attracted, but they are also afraid (Wohllwill & Heft, 1987). More generally, children (Matthews & Limb, 1999) and youth (Albanesi, 2003b) are afraid of poorly lighted or deserted parks, as well as parks used by troublemakers and dark natural spaces. Also, some parents consider parks as unsafe for children (Johansson, 2003; Valentine, 1997).

1.4. Parental Perception of Positive Potentiality of Outdoor Autonomy for Children

Some of the parents interviewed (Alparone et al., 2003) on the habits of their children when outdoors reported that they had reflected on more useful ways to encourage their children’s autonomy. These parents were aware of being victims of excessive fears themselves and of wrongfully transferring this fear to their children. They forced themselves to overcome their feelings of insecurity and lack of trust toward the urban environment and to support their children on the path toward autonomy. They recognised that the urban environment has positive qualities and offers children necessary opportunities for growth and for personality development. The parental Perception of Positive Potentiality of Outdoor Autonomy for Children could, therefore, counterbalance the negative perception of neighbourhood child-related problems and support children’s outdoor autonomy.

To our knowledge, there are no studies on the positive potentiality of outdoor autonomy. Therefore, it is difficult to predict which environmental and parental characteristics might favour it. It may be that if parents judge an environment child-friendly they will consider children’s autonomy in that context as a positive growth agent. Parents who live in cities might perceive children’s autonomy as less adequate for supporting their development since the city is not considered an ideal place for children, while this is not true for suburban areas (Brower, 1996) or small cities (Porco Gallina, 2003).

Natural landscapes (parks, undeveloped land, natural features) are among the characteristics children appreciate most (Chawla, 1992, 2002; Pacilli, Prezza, & Barchetta, 2003). Green spaces allow children to engage in a wide range of activities, to experience intense feelings, to come into contact with a variety of materials and organisms (Moore, 1986), to meet friends and to understand the natural cycles of the seasons and of life; they also counter the pollution caused by traffic. Moreover, mothers and professionals working with children consider green as one of the most important characteristics of an urban context adapted to children (Pacilli et al., 2003).

Taylor, Wiley, Kuo, and Sullivan (1998) showed the importance of green courtyards for children in poor neighbourhoods. Indeed, green spaces more than barren spaces encourage play, creativity and interaction with adults. Moreover, some research documents the importance of natural elements for the children’s well-being: they support attentional functioning (Taylor, Kuo, & Sullivan, 2001; Wells, 2000) and moderate the negative effects of stressing events (Wells & Evans, 2003). Moreover, the naturalness of the apartment view was found to increase self-discipline, that is, the ability to concentrate, as well as impulse inhibition and delay of gratification in girls (Taylor, Kuo, & Sullivan, 2002) In fact, if we exclude a few possible adverse effects (for example, allergies or contact with pesticides or pollution), there is a great deal of documentation that open spaces benefit people of all ages in terms of health and life quality (for a review, see Morris, 2003).

Finally, as we have already seen, children’s outdoor play is favoured by the informal supervision of adults and by parents’ neighbourhood relations (Alparone et al., 2003; Hüttenmoser, 1995; Prezza et al., 2001). On the contrary, low social integration in the neighbourhood and low neighbourhood attachment or sense of community1 have been identified as factors that mediate the negative effects of poor and degraded metropolitan districts on children and youth, mainly in terms of deviant behaviour, learning problems and abuse (Martinez, Black, & Starr, 2002; McGuire, 1997).

The construction of the three scales used in this work began with a preliminary study recently published in Italian (Alparone et al., 2003); therefore, we will present a synthesis of that research before providing details on the aims and hypotheses of this work.

2. Preliminary study

Initially, free interviews were conducted with 39 parents (10 fathers and 29 mothers) of school-age children (6–12 years) residing in large cities, small cities, and in towns in central and southern Italy. The aim was to collect opinions and beliefs about the dangers children might encounter when they had to face the world outside home and about the importance of a free and direct relationship with the outside environment for child development. Thirty items were formulated by putting together the results of the interviews and indications from the literature. In part, the items describe the physical and social characteristics of the area of residence and, in part, they refer to parental

1We agree with Pretty, Chipuer, and Bramston (2003) that the concepts of sense of community and place attachment have not been clearly articulated and overlap considerably.
perception of the positive potentiality of outdoor autonomy. The 30 items were administered to 80 parents and, after slight changes, to another 325 parents of 7–11-year-old children. Three factors were extracted from the principal component factorial analysis (oblimin rotation). They explained 35% of the total variance. These factors describe aspects of area of residence linked to chaos and intensity of automobile traffic, to situations of social degradation that might constitute risk factors for the psychological and physical safety of a child, and to positive potentiality for growth linked to the experience of independent mobility. After seven items were eliminated (four because they had a high factor loading in two factors, two because their contents was not coherent with other items on the scale and, finally, one because it had an item-total correlation lower than 0.30), the Social Danger Perception Scale \( (z = 0.83) \) and Perception of the Positive Potentiality of Outdoor Autonomy for Children Scale \( (z = 0.74) \) presented more than satisfactory reliability indexes; the Traffic Danger Perception Scale was weaker due to lower internal consistency \( (z = 0.69) \). The latter scale was also strongly correlated with the Social Danger Perception Scale \( (r = 0.54) \), probably because there were several items on traffic disorder and lack of respect for driving regulations that also refer to a social type of disorder.

The Traffic Danger Perception Scale and the Social Danger Perception Scale correlated positively with size of urban context and personal fear of crime: the larger the area of residence and the greater parents’ fear of going out in the evening the greater their perception of traffic and of social risks. The Perceptions of Positive Potentiality of Outdoor Autonomy for Children Scale was negatively correlated (although with modest values) with size of urban context and fear of going out in the evening. The socio-demographic variables of age, educational level and number of children were not associated with the scores on the three scales. Finally, all scales were related to children’s autonomy of movement in the urban space: greater social and traffic fears reduce children’s level of autonomy, whereas greater consideration of the value of autonomy favours freedom.

3. The research

3.1. Aims and hypotheses

The present work is a continuation of Alparone et al.’s (2003) research. The aim was to further explore the validity and reliability of the three scales in a different group of mothers, and to investigate their relation to other variables. In particular, in addition to the variables already studied by Alparone et al. (2003) (age of parent, education, number of children, fear of going out alone in the evening, size of place of residence), we also considered mothers’ possible full-time work, sense of community, neighbourhood relations, and the presence of green areas near their area of residence.

Following is a detailed description of the hypotheses, presented separately for the three scales.

3.1.1. Traffic Danger Perception Scale

Based on the results of the already-cited literature and on those obtained in our preliminary research, we expected that the perception of risks linked to traffic would be greater in mothers who lived in larger urban areas and in those who had greater fear of crime, i.e. in the sense of personal fear, and in those with low neighbourhood relations and a low sense of community. Regarding occupation outside the home, we hypothesised that mothers who worked full time would obtain lower scores on the Traffic Danger Perception Scale, similar to what Lam (2001) found. Instead, we did not expect any relationship between the scores on the Traffic Danger Perception Scale and age, number of children, and education. Finally, we intended to explore whether the presence of green spaces in the area was related to perception of the risk posed by automobiles.

3.1.2. Social Danger Perception Scale

Holding that—as previously discussed—adult’s fear for themselves and for the safety of children in cities should be foreseen by the same variables and considering Alparone et al.’s (2003) results, we hypothesised that living in larger urban contexts and having greater fear of crime would accentuate parents’ perception of social danger. We also hypothesised that sense of community and mother’s neighbourhood relationships would be negatively related to the perception of social danger. We expected that the scale would be independent of age, number of children, and educational level. Instead, we set out to explore whether full-time work and the presence of green spaces in the area of residence are connected to the perception of social danger. No hypothesis on green spaces was made because the findings reported in the literature are contradictory. Moreover, some studies only considered particular types of green areas. However, in this study the presence of green and natural spaces was considered more generally, and these could include courtyards and green squares, gardens and parks as well as cultivated fields and woods. Also, in this study we did not consider the level of maintenance of these spaces.

3.1.3. Perception of Positive Potentiality of Outdoor Autonomy for Children Scale

We held that the physical characteristics of the area of residence and of the parents’ relations with their neighbourhood that already showed a positive link with children’s well-being or that were perceived as child-friendly would be related to parental perception of potentiality of outdoor autonomy. Therefore, we expected that living in small cities or towns, in areas with more green spaces, having more neighbourhood relations and a greater
sense of community would lead parents to attribute more importance to children’s freedom of movement in fostering their growth and maturation. We also hypothesised that a favourable perception of autonomy of movement would be greater in mothers who had less personal fear of crime, as already found in preliminary research. Finally, we expected the scale would be independent of age, educational level, full-time work and number of children.

4. Methods

4.1. Research areas

The research was conducted in six different areas. One area is a peripheral neighbourhood in Rome (Torre Maura; 24,797 inhabitants) with many illegally built, working class apartment buildings, rather far and isolated from the city centre. The neighbourhood is crossed by several major roads with heavy traffic and has few meeting areas and few public green areas, most of which are degraded. Two other areas are small coastal cities. One, Nettuno (36,082 inhabitants), in the province of Rome, has a historical city centre reserved for pedestrians and a coast road with very busy traffic in the summer. The other, Vasto (35,116 inhabitants), on the Adriatic coast, has a historical centre with a great deal of traffic and a more modern area near the sea with large tourist buildings. The fourth, Sant’Angelo dei Lombardi (4236 inhabitants), is a town in a hilly area in the Campania region that was almost completely rebuilt after an earthquake in 1980. At rush hour traffic is very heavy, primarily on the main roads. There were also two small communities in the Calabria region. One, Girifalco (6461 inhabitants), has an old medieval centre that was totally rebuilt following an earthquake in 1626 and a peripheral area where traffic conditions are particularly intense. The other, Serra San Bruno (7093 inhabitants), is an important agricultural and tourist area. Its historical centre is separated from a more recently built area, where most of the inhabitants live and where urban traffic is acceptable and orderly.

4.2. Recruitment and data collection

Mothers were contacted through the local elementary schools. The elementary school teachers of several third-, fourth- and fifth-grade classes invited all the mothers of their pupils to participate; 80% of the mothers agreed. It was emphasised that participation was voluntary. An interviewer living in the region administered the questionnaires to small groups of 10–15 mothers at the schools. Each session lasted about 25 min.

4.3. Sample

Interviews were conducted with 377 mothers between 28 and 51 years of age who had at least one child between 8 and 10 years of age: 45 lived in the Torre Maura neighbourhood in Rome, 45 in Sant’Angelo dei Lombardi, 45 in Serra San Bruno, 45 in Girifalco, 95 in Nettuno, and 102 in Vasto. Regarding socio-demographic characteristics, all of the mothers interviewed had resided for at least 1 year in their current area; the medium length of residence in the same area was about 13 years. Regarding educational level, 12.0% were university graduates, 47.3% had a high school diploma, 23.7% had finished middle school and 4.8% elementary school. Almost 49% of the mothers worked; approximately 32% declared they worked 36 or more hours a week. More than half (58%) had two children, 17.5% had only one child, and 24.5% had three or more children.

4.4. Measurement instruments

Several instruments were administered. A questionnaire comprising:

a. a section to collect socio-demographic information: age; level of schooling (1 = elementary school, 2 = middle school, 3 = professional school; 4 = high school diploma, 5 = university diploma, 6 = graduate degree); work condition and number of working hours per week (the variable full-time work was then constructed: 0 = mother does not work outside the home or works less than 36 hours a week; 1 = mother works 36 or more hours a week); number of children and number of years residing in the neighbourhood. The variable size town/city of residence was constructed by attributing a value of 1 to mothers residing in the three small towns (with less than 8000 inhabitants), a value of 2 to mothers residing in the two small cities, Vasto and Nettuno, with 35,000–36,000 inhabitants and, finally, a value of 3 to mothers who lived in the Rome neighbourhood.

b. One question to show mother’s personal fear of crime: “Are you afraid to go out alone in the evening?” (Fear of going out alone in the evening or personal fear of crime). The response was given on a 10-point analogical scale (0 = not at all/10 = very much).

c. Two questions to show the presence of green spaces in the area of residence: “In the area where you live the green areas are...” (4 = many, 3 = sufficient, 2 = few, 1 = nonexistent) and “Near your home is it possible to be in contact with nature” (4 = true, 3 = true, 2 = false; 1 = very false). The responses to the two questions were highly correlated ($r = 0.53$). Therefore, a new variable was created; it was obtained from their mean and called presence of green.

The Social Danger Perception Scale (consisting of ten items), the Traffic Danger Perception Scale (consisting of six items), and the Perception of Positive Potentiality of Outdoor Autonomy for Children Scale (also called Positive Potentiality Perception Scale) (consisting of seven items). In Alparone et al.’s (2003) study, Cronbach’s $\pi$ was, respectively, 0.83, 0.74 and 0.69. The scales presented in the
introduction have a 4-point response modality. When they were administered, the items from the three scales were mixed in the order presented in Appendix A.

The Neighbourhood Relations Scale (Prezza & Pacilli, 2002): The scale consists of seven items on a 5-point scale that measure the quality and quantity of neighbourly relations. Four items were taken from Buckner’s (1988) scale; the other items were formulated as follows: “How many of your neighbours would you ask without qualms to lend you small things?”; “How many of your neighbours do you consider as friends?”; “I spend some time with my neighbours and we do things together”. In the Italian validation on 934 subjects (Prezza & Pacilli, 2002), the scale had a Cronbach’s \( \alpha \) of 0.88; in this study the \( \alpha \) was 0.84.

The Italian Scale of Sense of Community: Prezza, Costantini, Chiarolanza, and Di Marco (1999) developed this scale by translating and modifying Davidson and Cotter’s (1986) Scale of Sense of Community. Some examples of items are: “If you want to, in this town (or city or neighbourhood) it’s possible to participate in local politics”; “It would take a lot for me to move away from this town”; “In this town it’s difficult to have good social relations”. The Italian version consists of 18 items (Cronbach’s \( \alpha \) = 0.83) with a 4-point scale; 10 of these are literal translations of items 3, 4, 5, 6, 8, 9, 11, 14, 16 and 17 of the Sense of Community Scale. In this research, the scale revealed a Cronbach’s \( \alpha \) of 0.77.

4.5. Statistics

To verify the reliability of the scales, we used Reliability Analysis (corrected item-total correlation) as well as Cronbach’s \( \alpha \) coefficient. Factor analysis (Principal Component Analysis Method and Oblimin rotation) was used only to explore the dimensionality of the Traffic Danger Perception Scale. The hypotheses with respect to the relations between the scales and mothers’ socio-demographic variables, environmental and psycho-social variables were tested using Multiple Linear Regression Analysis (enter method). Zero-order correlation and partial correlation were also calculated. The SPSS Software, 8.0 version, was used for data analysis.

5. Results

5.1. Reliability of the three scales

Considering the means and standard deviations (Tables 1 and 2), all items on the three scales were sufficiently discriminative; therefore, we calculated the Reliability Analysis.

In the Social Danger Perception Scale (Table 1) the item “In the streets around my house there are neglected areas” obtained a rather low corrected item-total correlation \( r_c = 0.27 \). However, both in Alparone et al.’s (2003) study and in another one—recently conducted in a big city (Prezza, Alparone, & Pietrobono, unpublished)—it obtained higher item-total correlation (respectively, 0.47 and 0.36). In these two studies, parents mostly lived in large cities where dirty and abandoned areas were frequented by drug pushers and prostitutes and therefore linked to situations of social degradation. In this study, more subjects lived in small cities and towns where abandoned and isolated areas were sometimes used as a dumping site but did not evoke feelings of fear. So we decided to keep the item in the scale so this scale can also be adopted for big cities. Two other items of the Social Danger Perception Scale also had item-total correlations lower than 0.40. On the basis of this and further reflection on the clarity of their content, we decided to eliminate them. In the preliminary study, the item “In the streets around my home, if someone is in trouble he/she is immediately helped by passers by” (Table 1) also had a rather low value \( (0.33) \). Its content expresses the perception of being able to find help in case of need, which is negatively associated with the perception of social danger even if it is not necessarily opposite to it. The other item “A child who goes out alone can feel disoriented among people” \( (r_c = 0.39) \) could reflect disorientation due to strange encounters but may also be due to the child’s difficulty with spatial orientation.

Reflecting on the remaining items, we realised that drug problems were over-represented. Two items were somewhat similar: “In the streets around my home, there are areas frequented by drug pushers and/or drug addicts” and “A child who goes out alone can come into contact with drugs”. We decided to keep the item with the highest Cronbach’s \( \alpha \). Thus, we eliminated the second item.

After we eliminated the three items, the scale had a lower reliability (Cronbach’s \( \alpha \) = 0.76); however, we felt it was more congruent and balanced. Summing the seven remaining items (Table 1) and dividing the sum by their number, the total score of the Social Danger Perception Scale \( (M = 2.16, SD = 0.54) \) was obtained.

The Perception of Positive Potentiality of Outdoor Autonomy for Children Scale showed a rather good Cronbach’s \( \alpha \) \( (0.75) \), calculated with the seven items identified in the preliminary research. Two items were not highly correlated with the total \( (r_c < 0.40, \text{Table 1}) \) and were eliminated, also because their content showed a certain incongruity with the general aims of the scale. These two items (“In the area I live in you can see groups of children playing” and “A boy or girl who goes out alone in the area around my home can find someone willing to help him/her in case of trouble”) refer to positive characteristics of the social environment rather than to positive effects of freedom of movement for a child. After reducing the number of items, the reliability index of the scale was slightly lower (Cronbach’s \( \alpha \) = 0.74), but remained good. The total score of the Positive Potentiality Perception Scale was calculated with the five remaining items \( (M = 2.95, SD = 0.52) \).
Table 1
Means, standard deviations, corrected item-total correlations of items on Social Danger Perception Scale and on Perception of Positive Potentiality of Outdoor Autonomy for Children Scale

<table>
<thead>
<tr>
<th>Social Danger Perception Scale</th>
<th>Mean</th>
<th>SD</th>
<th>Corrected item-total corr.</th>
<th>Corrected item-total corr. a</th>
<th>Corrected item-total corr. b</th>
</tr>
</thead>
<tbody>
<tr>
<td>In the streets around my home there are areas frequented by drug pushers and/or drug addicts</td>
<td>2.25</td>
<td>1.00</td>
<td>0.61</td>
<td>0.58</td>
<td>0.65</td>
</tr>
<tr>
<td>A child who goes out alone can encounter ill-intentioned adults</td>
<td>2.48</td>
<td>0.90</td>
<td>0.57</td>
<td>0.51</td>
<td>0.55</td>
</tr>
<tr>
<td>In the area I live in you can find syringes on the ground</td>
<td>1.52</td>
<td>0.70</td>
<td>0.54</td>
<td>0.55</td>
<td>0.60</td>
</tr>
<tr>
<td>A child who goes out alone can come into contact with drugs</td>
<td>2.02</td>
<td>0.91</td>
<td>0.54</td>
<td>—</td>
<td>0.65</td>
</tr>
<tr>
<td>A child who goes out alone can see things that may frighten her/him</td>
<td>2.33</td>
<td>0.87</td>
<td>0.52</td>
<td>0.46</td>
<td>0.65</td>
</tr>
<tr>
<td>In the area I live in there are robberies and bag-snatching</td>
<td>1.89</td>
<td>0.76</td>
<td>0.48</td>
<td>0.48</td>
<td>0.37</td>
</tr>
<tr>
<td>In the area I live in there are people who dress and/or behave strangely</td>
<td>1.82</td>
<td>0.59</td>
<td>0.45</td>
<td>0.45</td>
<td>0.51</td>
</tr>
<tr>
<td>A child who goes out alone can feel disoriented among people</td>
<td>2.16</td>
<td>0.82</td>
<td>0.39</td>
<td>—</td>
<td>0.43</td>
</tr>
<tr>
<td>In the streets around my home there are neglected areas (dirty, with large abandoned objects, etc.)</td>
<td>2.80</td>
<td>0.96</td>
<td>0.27</td>
<td>0.32</td>
<td>0.47</td>
</tr>
<tr>
<td>In the streets around my home if someone is in trouble he/she is immediately helped by passersby</td>
<td>2.14</td>
<td>0.74</td>
<td>0.26</td>
<td>—</td>
<td>0.33</td>
</tr>
<tr>
<td>Cronbach’s $\alpha$</td>
<td></td>
<td></td>
<td>0.78</td>
<td>0.76</td>
<td>0.83</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Perception of Positive Potentiality of Outdoor Autonomy for Children Scale</th>
<th></th>
<th></th>
<th>0.78</th>
<th>0.76</th>
<th>0.83</th>
</tr>
</thead>
<tbody>
<tr>
<td>A child who goes out alone can meet and/or play with other children</td>
<td>3.21</td>
<td>0.78</td>
<td>0.58</td>
<td>0.48</td>
<td>0.49</td>
</tr>
<tr>
<td>A child who goes out alone can become more responsible</td>
<td>2.96</td>
<td>0.67</td>
<td>0.58</td>
<td>0.59</td>
<td>0.52</td>
</tr>
<tr>
<td>A child who goes out alone can make new friends</td>
<td>2.79</td>
<td>0.81</td>
<td>0.57</td>
<td>0.51</td>
<td>0.43</td>
</tr>
<tr>
<td>A child who goes out alone can learn to make out alone</td>
<td>2.77</td>
<td>0.73</td>
<td>0.42</td>
<td>0.46</td>
<td>0.43</td>
</tr>
<tr>
<td>A child who goes out alone can learn her/his way around</td>
<td>3.01</td>
<td>0.74</td>
<td>0.41</td>
<td>0.49</td>
<td>0.43</td>
</tr>
<tr>
<td>In the area I live in you can see groups of children playing</td>
<td>2.80</td>
<td>0.90</td>
<td>0.37</td>
<td>—</td>
<td>0.44</td>
</tr>
<tr>
<td>A child who goes out alone can find someone willing to help her/him in case of need</td>
<td>2.98</td>
<td>0.68</td>
<td>0.31</td>
<td>—</td>
<td>0.41</td>
</tr>
<tr>
<td>Cronbach’s $\alpha$</td>
<td></td>
<td></td>
<td>0.75</td>
<td>0.74</td>
<td>0.74</td>
</tr>
</tbody>
</table>

$^a$After the elimination of some items.
$^b$Values obtained in Alparone et al.’s (2003) research.
In Alparone et al. (2003), the Traffic Danger Perception Scale had lower reliability than the other scales. In this study, its internal consistency was even lower (Cronbach’s $\alpha = 0.64$) and three out of six items obtained corrected item-total correlations less than 0.30. Since several scale items refer specifically to risk conditions due to a lack of respect for driving rules (lack of respect for traffic lights, parking on sidewalks), and others consider a different aspect of traffic, i.e. hurrying, intensity and chaos, the possibility of separating these two aspects was hypothesized. A principal component factorial analysis was calculated with oblimin rotation. Two factors were extracted based on the eigenvalue greater than one and the scree test. Together they explain 59% of the total variance. In the pattern matrix (Table 2), three items have very high loadings only on the first factor ("In the area I live in, motor traffic is...", "A boy or girl who goes out alone in the area around my house can be exposed to the risk of road accidents", "In the streets around my home people are in a hurry"); two items load strongly only on the second factor ("In the streets around my home pedestrian areas are invaded by cars and/or motor scooters", "In the area I live in motorists and motorcyclists respect the rules"). The last item: "In the streets around my home there are dangerous intersections for pedestrians", loads on both factors, but with a slightly higher value in the second. The new solution with two separate sub-scales (Traffic intensity perception and Perception of nonrespect for traffic rules), consisting of three items each (Table 2), did not seem to improve the measure of perception of road risk, because the indices of internal consistency were still too low (Cronbach’s $\alpha$, respectively, 0.43 and 0.59). These results showed that the scale was not reliable enough. Thus, we decided to continue by considering only the two scales that showed good reliability and content validity.

### 5.2. Relations between Social Danger Perception Scale, Perception of Positive Potentiality of Outdoor Autonomy for Children Scale and the other variables

First, Pearson’s coefficient $r$ was calculated between the Social Danger Perception Scale and the Positive Potentiality Perception Scale. The $r$ value was significant (0.14, $p<0.01$), but not very high.

As expected, many of the independent variables were statistically significant intercorrelated, with a maximum $r$ value equal to 0.26 (Table 3). In particular, the size of the urban context correlates at the univariate level with many variables and, among these, with three of the mothers’ socio-demographic variables: In the towns with fewer inhabitants, the mothers interviewed were on average younger ($p<0.05$), more educated ($p<0.05$) and had more children ($p<0.01$). To attempt to compensate for the lack of balance between these characteristics in the different localities in which the research was conducted (and not only for this) we felt it was necessary to use multivariate analysis to verify our hypotheses. Thus, two multiple
Regressions were carried out with the enter method by considering the scores on the two scales as dependent variables and all others as independent variables (age, level of schooling, full time work, number of sons/daughters, size town/city of residence, presence of green spaces, sense of community, neighbourhood relations, fear of going out alone in the evening).

The inserted independent variables explained 26% of the variance in the Social Danger Perception Scale (Table 4), with three significant variables. Size of area of residence ($p < 0.001$) and personal fear of crime ($p < 0.001$) confirmed the hypotheses, showing a very strong influence on the scale scores. Also, as hypothesised, a greater sense of community was associated with lower parental perception of social danger related to children’s independent mobility ($p < 0.05$).

The scale score was not influenced by full-time work, by the presence of green spaces, or by mother’s age, level of instruction or number of children.

Finally, contrary to our hypothesis, neighbourhood relations did not help to significantly predict the scores of the Social Danger Perception Scale in the regression analysis, while these two variables were weakly correlated at the univariate level ($r = 0.10; p < 0.05$).

Since it emerged from the relations at the univariate level that in smaller towns mothers have more neighbourhood relations, we wanted to explore whether the size of the urban context mediates the relationship between neighbourhood relations and social danger perception. Thus, we first calculated the partial correlations, controlling for the mother’s socio-demographic variables (Table 5) among the three variables: Social Danger Perception Scale, neighbourhood relations and size of town/city of residence. All three correlations were significant. Then we calculated two multiple regressions still considering the Social Danger Perception Scale (Table 6) as dependent variable. In the first regression, we inserted the mother’s socio-demographic variables and the neighbourhood relations variable...
as predictors; in the second, we inserted the mother’s socio-demographic variables, neighbourhood relations and size of town/city of residence. In the first regression the standardised $\beta$ coefficient of neighbourhood relations was significant ($\beta = -0.12$, $p = 0.023$), while in the second regression the $\beta$ for neighbourhood relations ($\beta = -0.05$, $p = 0.238$) became nonsignificant. Therefore, we can affirm that at the multivariate level neighbourhood relations did not predict parents’ social fears, because the neighbourhood relations’ influence was absorbed by the size of the town/city of residence.

Regarding the Perception of Positive Potentiality of Outdoor Autonomy for Children Scale (Table 4), the independent variables explained a rather low percentage (9%) of the total variance. Three variables were significant. As hypothesised, the presence of green spaces in the area of residence ($p < 0.01$), sense of community ($p < 0.01$) and neighbourhood relations ($p < 0.05$) were predictive. Also, the scale’s independence from age, level of instruction, full-time work and number of children was confirmed. Instead, the hypotheses about the size of the urban context and personal fear of crime were not confirmed; however, a relationship emerged with both at the univariate level.

To better understand these results we calculated the partial correlation coefficients between the scale scores, the environmental variables and the mother’s psycho-social variables, controlling for mother’s age, level of schooling, number of children and full-time work (Table 5). When we observed these partial correlations, we saw that the relationship between the Positive Potentiality Perception Scale and fear of crime was no longer significant ($p_r = -0.09$, $p < 0.10$), while the relationship between the scale scores and urban size was still significant ($p_r = -0.15$; $p < 0.01$). Thus, we explored whether the presence of green mediated between scale scores and size of city/town. We wanted to understand whether, compared to the city, the smaller towns were contexts where children’s autonomy was accompanied by greater advantages primarily due to the presence of more green and natural spaces. Since the partial correlation between presence of green and size of town/city was also significant as was that between the scale scores and presence of green (Table 5), the pre-conditions for verifying the mediation effect of green existed. Thus, we

---

**Table 5**

Partial correlation coefficients controlling for mother’s age, level of schooling, number of children and full-time work

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presence of green</td>
<td>-0.25***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size of town/city of residence</td>
<td>-0.15**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neighbourhood relations</td>
<td>0.06</td>
<td>-0.12*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sense of community</td>
<td>0.11*</td>
<td></td>
<td>0.11*</td>
<td></td>
<td>-0.18***</td>
<td>-0.01</td>
</tr>
<tr>
<td>Fear of going out in the evening alone</td>
<td>-0.04</td>
<td>0.11*</td>
<td>-0.12*</td>
<td>-0.15**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Danger Perception</td>
<td>-0.10</td>
<td>0.41***</td>
<td>-0.12</td>
<td>-0.15**</td>
<td>0.29***</td>
<td></td>
</tr>
<tr>
<td>Positive Potentiality of Outdoor Autonomy</td>
<td>0.17***</td>
<td>-0.15**</td>
<td>0.18***</td>
<td>0.20***</td>
<td>-0.09</td>
<td>-0.16**</td>
</tr>
</tbody>
</table>

Two-tailed significance.

$p < 0.10^*; p < 0.05^*; p < 0.01^*; p < 0.001$.

**Table 6**

Multiple regressions to test the effect of mediation

<table>
<thead>
<tr>
<th>dependent variables</th>
<th>Social Danger Perception Scale</th>
<th>Positive Potentiality of Outdoor Autonomy Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>First regression</td>
<td>$\beta$</td>
<td>$\beta$</td>
</tr>
<tr>
<td>Mother’s age</td>
<td>0.001</td>
<td>Mother’s age</td>
</tr>
<tr>
<td>Level of schooling</td>
<td>-0.17**</td>
<td>Level of schooling</td>
</tr>
<tr>
<td>Full-time work</td>
<td>-0.08</td>
<td>Full-time work</td>
</tr>
<tr>
<td>Number of children</td>
<td>-0.12*</td>
<td>Number of children</td>
</tr>
<tr>
<td>Neighbourhood relations</td>
<td>-0.12*</td>
<td>Size of town/city of residence</td>
</tr>
<tr>
<td>Second regression</td>
<td></td>
<td>Second regression</td>
</tr>
<tr>
<td>Mother’s age</td>
<td>-0.07</td>
<td>Mother’s age</td>
</tr>
<tr>
<td>Level of schooling</td>
<td>0.02</td>
<td>Level of schooling</td>
</tr>
<tr>
<td>Full-time work</td>
<td>-0.07</td>
<td>Full-time work</td>
</tr>
<tr>
<td>Number of children</td>
<td>0.04</td>
<td>Number of children</td>
</tr>
<tr>
<td>Neighbourhood relations</td>
<td>-0.05</td>
<td>Size of town/city of residence</td>
</tr>
<tr>
<td>Size of town/city of residence (mediator)</td>
<td>0.41***</td>
<td>Presence of green (mediator)</td>
</tr>
</tbody>
</table>

$p < 0.05^*; p < 0.01^*; p < 0.001^*$. 
calculated two multiple regressions by considering the Perception of Positive Potentiality of Outdoor Autonomy Scale (Table 6) as the dependent variable in both. In the first regression, as predictors we inserted the mother’s socio-demographic variable and the size of the town/city of residence variable, which resulted significant ($\beta = -0.14, p = 0.01$). In the second regression, we inserted as predictors the mother’s socio-demographic variable and the size of town/city of residence and presence of green variables. The introduction of this last variable decreased the $\beta$ for size of town/city of residence ($\beta = -0.08, p = 0.155$) so that it became nonsignificant; however, the coefficient of greenery was extremely significant ($p<0.001$). Therefore, parents who live in smaller towns were more convinced that outdoor freedom of movement is favourable to children’s growth mainly by virtue of the fact that the area where they lived was richer in green and in natural spaces.

6. Discussion

The results described above confirm the internal consistency and the construct validity of two of the three scales previously constructed by Alparone et al. (2003) to investigate the factors that inhibit or facilitate children’s freedom of movement in the urban environment. After some items were eliminated, the two scales were more homogeneous with respect to content.

The Social Danger Perception Scale reflects parents’ perception of the importance of social dangers in their area of residence that are often perceived as problematic for children’s freedom of movement. This scale was constructed based on results from qualitative studies. It emerged clearly that even in neighbourhoods with a low level of risk linked to traffic, parents do not easily allow their children to move outdoors autonomously for fear they will be endangered. The most recurring fears are that the children might come into contact with drugs, or that they might encounter ill-intentioned adults or witness episodes of micro-crime. These were also the greatest fears of mothers of adolescents from 12 to 15 years of age in a recent quantitative study carried out in Italy on mothers’ feelings of insecurity (Cicognani, 2003).

Returning to the results of this study, the Social Danger Perception Scale, as hypothesised, was connected to mothers’ personal fear of crime. Both can be seen as expressions of feelings of nonsafety linked to one’s own territory. Still, the perception of social dangers depended strongly on the size of the urban context: those who lived in small towns perceived their area as safer. This finding corresponds with the results of many studies on fear of crime (Hale, 1996; Kennedy & Krahn, 1984). Also, a greater sense of community is associated with a lower perception of social danger in the area of residence, confirming that sense of community can be considered a protective factor against feelings of insecurity.

The hypothesis that neighbourhood relations might contribute to decreasing feelings of environmental social danger for children was not completely verified. In our study, in fact, neighbourhood relations no longer exerted their effect on parents’ social fears after the influence of the size of the urban context was considered.

Among the variables inserted for exploratory purposes, the presence of green spaces and full-time work did not help to predict the scores on the Social Danger Perception Scale. Finally, as hypothesised, the Social Danger Perception Scale was independent from mother’s socio-demographic characteristics.

It would be interesting to study whether the score on the Social Danger Perception Scale is linked to the real level of micro-crime and drug use in the territory and to the number of crimes committed against minors. In this regard, much of the research on the diffusion of fear of crime carried out recently in Italy shows little agreement with official data: constant growth of citizens’ fear of crime corresponds to a decrease in the most serious crimes and an increase in convictions for crimes committed (Davoli et al., 2003). Even studies that focused on the perception of risk and on the assessment of the probability of occurrence of various types of risk, agree on the low correspondence with official statistics (Zani & Cicognani, 2000). This leads us to hypothesise that the relationship between parents’ social fears and the real amount of micro-crime in the area of residence is rather low. In confirmation of this hypothesis, parents’ social fears, as they emerged in Alparone et al.’s (2003) interviews, do not refer to facts or episodes that actually involved their children or children they know (molestation, aggression, offer of drugs, etc.) or to personal experiences of victimisation. Parents link fear for their children to fears they have developed for themselves and recognise they are amplified by media campaigns on criminal acts toward children. Thus, fear seems to be translated into an undifferentiated ‘fear of strangers’ which, in a study by Sissons Joshi et al. (1999), was shown to be associated with outdoor freedom of movement allowed by parents. Also, fear of strangers is transmitted to children through parents’ daily warnings and, as underlined by Erikson (1964), can negatively influence their future ability to develop interpersonal relationships. In this regard, a retrospective study (Terrell, Terrell, & Von Drashek, 2000) showed that fear of strangers which develops during childhood increases fear of intimacy during adolescence both in relations with peers of the same sex and in those with peers of the opposite sex.

The score of the Perception of Positive Potentiality of Outdoor Autonomy for Children Scale was independent from mothers’ socio-demographic characteristics. The results confirmed that the availability of green spaces leads mothers to attribute greater value to the experiences a child

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3In Italy, it is very difficult to find statistical data on crime broken down for neighbourhood, city or town.
can have when he/she is alone and has to face the outside world. Both sense of community and mother's neighbourhood relations influenced the score on this scale. Social exchanges with neighbours and connections with one's own community lead mothers to perceive children's autonomy in the neighbourhood as more favourable for their growth and maturation. Instead, the influence of personal fear of crime on the Positive Potentiality Perception Scale was not confirmed by the multivariate analysis. The influence of the size of area of residence on the scale was instead mediated by the availability of green spaces, mostly present in smaller areas. This reconfirms the importance of green spaces and natural areas: the mothers seemed aware of their beneficial effects on children, without knowing about the latest research that is starting to document their effects with greater precision (Taylor et al., 2001, 2002, 1998; Wells, 2000; Wells & Evans, 2003).

Overall, the relations we found demonstrate that the construct validity of the social danger scale and of the scale on the positive aspects of autonomy of movement are satisfactory.

A different point must be made about the results on the perception of traffic danger scale. This scale was problematic in Alparone et al.'s (2003) research, and in this study it was even weaker. Even the attempt to break it down into two sub-scales, one related to traffic intensity and the other to nonobservance of rules, did not provide satisfactory results. However, the negative effects of the increase in traffic constitute a risk factor strongly felt by parents and children. Most researchers agree in considering it one of the main causes of the change in children's perception of traffic danger and in this field. The scales presented here could be used to verify the degree to which changes in children's habits depend on the factors that support the possibility for children to explore the outdoor environment on their own and to which those that inhibit it. At an applied level, the two scales could also be used to verify whether structural changes in the neighbourhood lead to the modification of parental opinions.

The Social Danger Perception Scale and the Perception of Positive Potentiality of Outdoor Autonomy for Children Scale have been validated in Italy and, as for all instruments of this type, in their current form they may not be suitable for use by other nations. Indeed, in the case of national differences are accentuated a adaptation and a new validation would be necessary.

The two scales are quite short (seven and five items, respectively), which may be an advantage or a disadvantage. The scale on social dangers deals with aspects that are most often mentioned by parents when speaking of social dangers that lie waiting in the road (gypsies, thieves, drug addicts, tramps, robbers, people with strange attitudes), while the scale of positive potentiality of independent mobility is mainly focused on social and cognitive development. The latter aspects are those that parents have associated most with autonomous mobility (Alparone et al., 2003), and on which a great deal of empirical research has been conducted. As a referee has suggested, it would be interesting to enrich the scale on the potential of outdoor autonomy with new items, for example, on the child's motor development and physical condition.

Acknowledgements

The authors wish to thank the reviewers of this paper for their helpful suggestions.
Appendix A. Traffic Danger Perception Scale, Social Danger Perception Scale and Perception of Positive Potentiality of Outdoor Autonomy for Children Scale

Now you will see a set of items regarding the streets in the area you live in; please indicate your degree of agreement/disagreement with the following statements by putting a cross in the corresponding box.

<table>
<thead>
<tr>
<th>In the streets around my home:</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>TDP People are in a hurry</td>
<td>Strongly agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly disagree</td>
</tr>
<tr>
<td>TDP There are dangerous</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>intersections for pedestrians</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TDP Pedestrian areas (pavements) are invaded by cars and/or motor scooters</td>
<td>Strongly agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly disagree</td>
</tr>
<tr>
<td>SDP* There are neglected areas (dirty, with large abandoned objects, etc.)</td>
<td>Strongly agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly disagree</td>
</tr>
<tr>
<td>SDP* There are areas frequented by drug pushers and/or drug addicts</td>
<td>Strongly agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly disagree</td>
</tr>
<tr>
<td>SDP If someone is in trouble he/she is immediately helped by passers by</td>
<td>Strongly agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly disagree</td>
</tr>
</tbody>
</table>

Note: Scores were attributed as follows: ‘Strongly agree’ = 4; ‘Agree’ = 3; ‘Disagree’ = 2; ‘Strongly disagree’ = 1.

Now please respond to the following items by choosing the answer that best describes the area you live in.

<table>
<thead>
<tr>
<th>Very heavy</th>
<th>Heavy</th>
<th>Not very heavy</th>
<th>Not at all heavy</th>
</tr>
</thead>
<tbody>
<tr>
<td>TDP In the area I live in, motor traffic is</td>
<td>Very likely</td>
<td>Likely</td>
<td>Not very likely</td>
</tr>
</tbody>
</table>

Note: Scores were attributed as follows: ‘Very heavy’ = 4; ‘Heavy’ = 3; ‘Not very heavy’ = 2; ‘Not at all heavy’ = 1.

Now, please express your opinion about the following statements regarding 9- or 10-year-olds (boys or girls) who go out alone in the area around your home.

<table>
<thead>
<tr>
<th>I believe that a 9- 10-year-old boy or girl who goes out alone in the area around my house can:</th>
<th>Very likely</th>
<th>Likely</th>
<th>Not very likely</th>
<th>Unlikely</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPAC* Make new friends</td>
<td>Very likely</td>
<td>Likely</td>
<td>Not very likely</td>
<td>Unlikely</td>
</tr>
<tr>
<td>TDP Be exposed to the risk of road accidents</td>
<td>Very likely</td>
<td>Likely</td>
<td>Not very likely</td>
<td>Unlikely</td>
</tr>
<tr>
<td>PPAC* Learn to make out alone</td>
<td>Very likely</td>
<td>Likely</td>
<td>Not very likely</td>
<td>Unlikely</td>
</tr>
<tr>
<td>SDP* Encounter ill-intentioned adults</td>
<td>Very likely</td>
<td>Likely</td>
<td>Not very likely</td>
<td>Unlikely</td>
</tr>
<tr>
<td>PPAC* Learn his/her way around</td>
<td>Very likely</td>
<td>Likely</td>
<td>Not very likely</td>
<td>Unlikely</td>
</tr>
</tbody>
</table>

Note: Scores were attributed as follows: ‘Very likely’ = 4; ‘Likely’ = 3; ‘Not very likely’ = 2; ‘Unlikely’ = 1.
SDP* Come into contact with drugs
PPAC* Meet and/or play with other children
SDP* See things that may frighten her/him
PPAC* Become more responsible
PPAC Find someone willing to help her/him in case of trouble
SDP Feel disoriented when among people

Note: Scores were attributed as follows: ‘Very likely’ = 4 ‘Likely’ = 3; ‘Not very likely’ = 2; ‘Unlikely’ = 1.
SDP = Item belonging to the Social Danger Perception Scale.
TDP = Item belonging to the Traffic Danger Perception Scale.
PPAC = Item belonging to the Perception of the Positive Potentiality of Outdoor Autonomy for Children Scale.
*Item included in the final version of Social Danger Perception Scale or Perception of Positive Potentiality of Outdoor Autonomy for Children Scale.

References


