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Predicting Perceived Risk of Crime: a Multilevel Study

Silvia Russo · Michele Roccato · Alessio Vieno

Abstract With a sample of Italians selected from 71 Italian counties ($N = 1{,}868$), we performed two multilevel analyses aimed at predicting the perceived risk of crime at local (i.e., in the participants' county of residence) and at societal (i.e., in the context of Italian society) levels. A significant proportion of the variation in local risk perception was at the county level. The following individual variables predicted higher levels of this variable: indirect victimization, the perception of social and physical disorder, being a woman, being poorly educated, and being an older person. Among the ecological predictors, the crime rate and unemployment rate predicted higher levels of local crime risk perception, while the immigrant rate did not. Perceived risk of crime at the societal level did not show significant variation at the county level. Education, being a man, trusting people, and adhesion to post-materialistic values predicted lower levels of societal crime risk perception, while number of sons/daughters and exposure to television news increased it. The limitations and possible development of this study are discussed.

Keywords Psychological reactions to crime · Perceived risk of crime · Multilevel analysis · Victimization · Disorder · Social peripherality

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Introduction

Since the 1960s, psychological reactions to crime have been widely studied in psychological and criminological research, primarily because of their consequences, which may undermine people's quality of life at intra-psychic (fostering anger, aggressiveness, anxiety states, disempowerment, and even psychiatric consequences), behavioral (leading to withdrawal from social participation and imposing constraints on one's own life), and social (fostering delegitimization of out-groups and reduction of cohesion and solidarity) levels (Stafford et al. 2007). At present, the literature on the topic recognizes the distinction between fear of crime and perceived risk of crime. Fear of crime is defined as a feeling of dread or anxiety about personal safety or about the preservation of personal possessions. According to Ross and Jang (2000), fear of crime should be conceived as "an affective—or emotional—response characterized by being afraid, worried, and concerned about being victimized" (p. 405). The second psychological reaction to crime—often used as a predictor of fear of crime (e.g. Wyant 2008)—is perceived risk of crime, i.e., the perception of the probability of being victimized (Rountree and Land 1996) or of crime problems in participants' everyday life, mainly in their block or neighborhood (Perkins et al. 1992). Fear of crime and perceived risk of crime have many predictors in common, even if not all of them (Rountree and Land 1996).

Fear of crime and perceived risk of crime are often treated as being interchangeable, both in terms of their conception and their measurement (Rountree and Land 1996). This is the case with much of the research conducted in Italy, in which the dependent variables we used in this study to measure perceived risk of crime (see below) are often presented as operationalizations of fear of crime

(see Amerio and Roccato 2005, 2007; Nardi 2003; Russo and Roccato 2009). However, their status is quite different in that fear of crime pertains to the emotional sphere, while the roots of perceived risk of crime are mainly cognitive (Durbow et al. 1979). Fear of crime has received much more attention than perceived risk of crime in psychological and social research. The purpose of this study was to examine the influence exerted by individual and contextual characteristics on perceived risk of crime. Beyond trying to predict perceived risk of crime at the local level (i.e., in our participants' everyday life), as is often done in the literature, we will try to predict perceived the risk of crime at the societal level (i.e., in the whole Italian territory), in order to show similarities and differences among the predictors of these two variables.

Researchers have relied on two main families of variables to explain different levels of perceived risk of crime at the local level, focusing primarily either on individual characteristics or on contextual features. Individual predictors are principally derived from the concept of vulnerability, which is usually defined as being twofold: (a) physical vulnerability (i.e., the perception of a high risk of being physically assaulted due to either limited mobility or the lack of physical strength and competence, (b) and social vulnerability (i.e., the lack of material and social resources necessary to protect one's own home and/or retrieve financial losses in the event of victimization) (Pantazis 2000).

Traditionally, physical vulnerability and social vulnerability have been assessed through socio-demographic variables, and researchers have identified the following social categories as reporting the highest levels of perceived risk of crime at the local level: (a) the elderly (Miceli et al. 2004); (b) women (Rountree and Land 1996); (c) low socio-economic status groups (Hipp 2010), and (d) people who have at least a son or a daughter (Hipp 2010). Research performed using multivariate analyses to control for respondents' vulnerability has identified a strong relationship between perceived risk of crime in people's everyday life and victimization experiences, either defined as an experience of being the victim of an offense (direct victimization) or of an incident involving members of one's social network (indirect or vicarious victimization) (Rountree and Land 1996; Santinello et al. 2005). Indeed, the literature shows that, beyond fostering perceived risk of crime (Rountree and Land 1996; Santinello et al. 2005) and fear of crime (Hale 1996), victimization may have severe psychological consequences, such as distress (Norris and Kaniasty 1994), lowered levels of well-being (Denkers and Winkel 1998), and lowered perceptions of health (Koss et al. 1990). The main reason why victimization is so psychologically negative is the perpetrator's intention to cause harm (Craig-Henderson and Sloan 2003), which jeopardizes people's assumption of relative invulnerability to negative events and of living in a substantially benevolent and meaningful world (Janoff-Bulman 1989).

The second family of studies, traditionally performed at the ecological level, used a series of variables to assess people's physical and social environment. The main ecological factors that foster perceived risk of crime in people's everyday life are as follows.

1. Actual crime spread, which may be considered as a proxy variable for the "objective" risk of being victimized. Even though fear of crime is more widespread than actual crime spread (Quillian and Pager 2010; Taylor 1995), their association was found to be quite consistent, especially as far as micro-criminal offenses are concerned (Miceli et al. 2004; Rountree and Land 1996).

2. Actual neighborhood characteristics, mainly in terms of: (a) economic disadvantage (Franklin et al. 2008), which weakens residents' control, efficacy, and even physical health; and (b) immigrant concentration (Taylor and Covington 1993), especially in the cases in which residents feel that their community has been "invaded" by people from different ethnic groups (Skogan 1995).

3. The spread of "incivilities" or "disorder" (LaGrange et al. 1992). Social incivilities refer to disruptive behaviors such as loiterers, unruly and rowdy teenagers, gangs, begging, public drunkenness, prostitution, and public drug use or sales. Physical incivilities refer to disorderly inanimate environments such as those in which there are abandoned cars, vandalized property, litter, graffiti, vacant houses, and dilapidated homes. In the literature, there are three complementary interpretations of the positive link between disorder and perceived risk of crime. According to the first interpretation, incivilities worry residents in that they are considered both as signs of the incapacity of people living in their community to manage their neighborhood, and as the incapability of law agencies to preserve order (Hunter 1978). According to the second interpretation, social and physical disorder makes residents fearful and/or worried because they conclude that social control has broken down (Kelling and Coles 1996; Skogan 1990). Finally, according to the third interpretation, the environments characterized by a wide array of incivilities are also characterized by the presence of high levels of criminality (Nardi 2003). From a methodological standpoint, two main approaches have been used to account for incivilities: self-report measures and on-site assessment. Even though these two measures were found to be correlated (Perkins and Taylor 1996), residents' perception of

incivilities was shown to be a stronger predictor of perceived risk of crime at the local level than the actual prevalence of incivilities (Taylor 1999).

So far we have considered a large number of studies in which the individual and environmental predictors of perceived risk of crime in people's everyday life have been analyzed. Unfortunately, there has been no thorough analysis of the predictors of such perception when referred to the whole society. Indeed, only a few studies have focused on this construct, sometimes labeling it as "abstract fear". Results obtained have shown that this construct is increased by three families of individual variables: (a) people's degree of social peripherality (assessed in terms of being a woman, being an older person, and/or being poorly educated and/or a person of low socio-economic status); (b) mass media exposure (mainly in terms of the frequency of watching the news on the television); and (c) the perception, representation, and evaluation of one's own social context, mainly in terms of distrust of others, ethnic prejudice, political disempowerment, and materialistic value priorities (Amerio and Roccato 2005; Heath and Petraitis 1987; Nardi 2003; Romer et al. 2003; Tyler and Cook 1984). However, no research has been conducted that analyzes the ecological predictors of this variable.

Since it is reasonable to postulate that people's psychological reactions to crime are clustered within geographic areas, hierarchical linear models (HLMs) provide the most appropriate approach of predicting them. Indeed, by using HLMs, some researchers were able to identify lagged impacts on fear of crime at the individual and at the ecological level for the predictors they took into consideration, showing that the proportion of total variation in fear of crime attributable to the neighborhood level usually ranges between 6 and 12% (Lindström et al. 2003; Taylor et al. 1997; Wyant 2008). However, this method has seldom been used to predict perceived risk of crime in people's everyday life (for an exception, see Robinson et al. 2003). Moreover, we are aware of just one study in which the predictors of perceived risk of crime at the societal level were analyzed using multilevel analysis. The study was conducted by Russo et al. (2010) in Piedmont, a North-Western Italian region, and showed that perceived risk of crime significantly depends on individual characteristics, but not on ecological ones. However, in the data set they analyzed, Russo and colleagues had to cope with poor variance of the ecological-level predictors. Thus, they concluded that their results should only be considered as a useful preliminary multilevel exploration of the predictors of perceived risk of crime at the societal level and that this issue should be more thoroughly analyzed in further research conducted in more heterogeneous contexts.

Goals and Hypotheses

The main purpose of the present study was to predict the perceived risk of crime at local (i.e., participants' everyday life) and at the societal (i.e., in the whole national territory) levels, taking into consideration the effects exerted by individual and contextual characteristics. In particular, as far as the variables at the individual level are concerned, we hypothesized that higher levels of perceived crime risk at the local level should be predicted by: (a) being a woman, being elderly, and being of low socio-economic status (Amerio and Roccato 2005; Hipp 2010: Miceli et al. 2004; Rountree and Land 1996); (b) direct and indirect victimization experiences (Rountree and Land 1996; Santinello et al. 2005); and (c) perceiving one's immediate environment to be characterized by many social and physical incivilities (LaGrange et al. 1992). For the variables at the ecological level, based on the above cited literature (Franklin et al. 2008; Skogan 1995; Taylor and Covington 1993), we hypothesized that (a) the crime rate, unemployment rate and immigration rate would increase perceived risk of crime; and (b) the education rate and county GDP would negatively influence it.

Based on the few studies that have focused on perceived risk at the societal level, we hypothesized that "socially peripheral" people would exhibit higher levels of perceived risk of crime than "socially central" ones (Amerio and Roccato 2005). In addition, we expected that adhesion to post-materialistic values and trusting people would negatively influence this perception, while frequent exposure to television news would positively influence it (Amerio and Roccato 2005; Heath and Petraitis 1987; Nardi 2003; Tyler and Cook 1984). Based on the literature, we could not draw any hypotheses concerning the influence exerted by ecological variables on perceived risk of crime at the societal level. Thus, we conducted an exploratory analysis on such influences by entering the same ecological variables we used to predict perceived risk of crime at the local level (the crime rate, unemployment rate, immigration rate, education rate, and county GDP) into our multilevel analysis.

Methods

Data Set

We performed a secondary analysis on the data gathered by the Observatory of the North-West, a research institute at the University of Turin that surveys the attitudes and behaviors of a representative sample of the Italian population three times a year. The questionnaire used in the survey we analyzed can be downloaded from the

Table 1 Differences between the Italian population and the study sample

	Italian population	Study sample
Women	52.0%	56.5%
Mean age	48.74	48.38 (SD = 16.21)
Area of residence		
North-western Italy	24.8%	25.0%
North-eastern Italy	21.7%	22.2%
Central Italy	17.5%	18.7%
Southern Italy	25.1%	25.9%
Italian islands	10.9%	8.2%
Living in towns of >100,000 inhabitants	20.4%	23.2%

Observatory's website (http//:www.nordovest.org). The original sample–composed of 2,002 respondents, interviewed by phone between January and February 2008 (response rate = 10.2%)—was representative of the Italian population over 18 years of age according to participants' gender, age, geopolitical area of residence, and size of area of residence (more details may be found at the http://www.nordovest.org/it/index_indagini.asp address). The ecological variables we could use in our analyses, available from the http://www.istat.it and the http://www.unioncamere.it/Atlante websites, were referred to the county level. In Italy, there are 110 counties which are local governmental entities whose jurisdictional territories usually include numerous towns geographically surrounding one main city. We decided to use data for just 71 of them. Indeed, some counties were founded only recently and aggregate data for them are not available yet. Based on Maas and Hox (2005), we also excluded counties where there were less than 10 respondents. Thus, we only worked on 1,868 participants. This led to a very slight loss in generalizability, in that—compared to the whole Italian population—in our sample, women were slightly over-represented, while substantially no differences emerged in relation to the other variables (see Table 1).[1]

Dependent Variables

We assessed perceived risk of crime using two-four-category items, ranging from "Very dangerous" to "Not dangerous at all." The first item was: "Think of micro-criminality. How would you define the situation regarding this problem in your area of residence?", and the second item was: "Think of micro-criminality. How would you define the situation regarding this problem in Italy?". We considered these items as operationalizations of perceived crime risk at the local and at the societal levels, respectively. Preliminary analysis showed them to correlate significantly but moderately, $r = .27$, $p < .001$.

Individual-Level Independent Variables

Based on the literature cited above, we chose four sets of individual-level variables to predict our dependent variables. The first set included socio-demographic characteristics: gender (0 = female, 1 = male), age, education (years of school attended), and number of sons/daughters.

The second set included victimization experiences: six kinds of criminal offenses (car theft, burglary in one's own home, pick-pocketing, robbery, violent assault, and sexual assault) were taken into consideration. Respondents reported whether they had been directly victimized, indirectly victimized (i.e., if a person belonging to their social network had been victimized), or if they had not been victimized at all over the 12 months preceding the survey. Based on Hale (1996), we then computed two synthetic indexes for direct and indirect victimization experiences, aggregating all the offenses involving the respondent and involving his/her social network.

The third set of variables included the perception of social and physical incivilities. Six items assessed respondents' perception of social disorder asking them with what frequency (always, often, seldom, never) they saw, in their area of residence, people on drugs, prostitutes, homeless and drunk people, loiterers, beggars, and people working illegally in the streets. The perception of physical disorder was estimated through two items assessing the presence (or the absence) in the respondents' area of residence of abandoned houses and signs of vandalism such as burnt out garbage bins, abandoned cars and broken telephone boxes. As in previous research (for a review see Taylor 1999), we then computed two synthetic indexes, assessing social incivilities and physical incivilities, respectively.

Finally, we used three variables pertaining to psychosocial and mass media domains. Specifically, interpersonal trust and frequency of watching the news on the television were assessed through single items, while for values orientation we used the four items developed by Inglehart (1990) to assess participants' adhesion to materialistic and post-materialistic values. Thus, we assessed our participants' values using two dummies, one for adhesion to materialistic values and another one for adhesion to post-materialistic values (we used adhesion to mixed values as the reference category).

[1] Parallel analyses, performed—as suggested by an anonymous reviewer—on all the counties for which aggregate data were available, without taking into consideration the number of respondents living in them, led to results substantially analogous to those we chose to publish.

Table 2 Individual and County level variables: descriptive statistics

Variables	Mean (95% CI)	SD	Min	Max
Individual level (N = 1,868)				
Perceived risk of crime (local level)	2.40 (2.36, 2.44)	0.80	1	4
Perceived risk of crime (societal level)	3.47 (3.44, 3.50)	0.59	1	4
Age	48.38 (47.64, 49.12)	16.21	18	90
Gender (1 = man)[a]	0.44 (0.42, 0.46)	0.50	0	1
Number of sons/daughters	1.30 (1.25, 1.35)	1.13	0	7
Years of formal education	12.14 (11.96, 12.32)	3.93	5	21
Interpersonal trust	0.18 (0.16, 0.20)	0.39	0	1
Materialistic	0.36 (0.34, 0.38)	0.48	0	1
Post-materialistic	0.10 (0.09, 0.11)	0.30	0	1
Direct victimization	0.13(0.11, 0.15)	0.40	0	3
Indirect victimization	0.68 (0.64, 0.72)	0.96	0	6
Perception of social disorder	5.47 (5.31, 5.63)	3.45	0	18
Perception of physical disorder	1.48 (1.42, 1.54)	1.32	0	5
Frequency of newscast watching	3.70 (3.67–3.73)	0.66	1	4
County level (N = 71)				
Crime rate	0.05 (.046–.055)	0.02	0.02	0.10
Unemployment rate	6.33 (6.16, 6.50)	3.79	2.20	16.70
Instruction rate	8.26 (8.24, 8.28)	0.44	7.33	9.61
Immigration rate	0.05 (.04–.06)	0.03	0.01	0.11
GDP (in Euros)	25005.63 (23615.58–26395.68	5978.65	13418.93	39557.08

[a] The "mean" of this and of the other dummy variables we used corresponds to the quota of the participants conventionally coded as 1 (in this case, of the men)

County-Level Independent Variables

Five county-level variables were included in the analysis: (a) official crime rate, calculated as the ratio between the entire amount of crimes reported to the police force during 2007 and the number of people living in each county; (b) unemployment rate, as the quota of unemployed residents out of the county's entire population; (c) immigration rate, as the ratio between the number of immigrants living in each county and the county population; (d) education rate, calculated as the mean level of education of the people living in each county; and (e) county GDP, as the county's gross domestic product *per capita*.

Data Analysis

We examined the predictors of perceived risk of crime at the local and at the societal level (see the Appendix for equations), discriminating between the independent variables lying at the individual and at the ecological level, by means of the multilevel regression technique of hierarchical linear modeling (HLM; Raudenbush and Bryk 2002).

Results

Preliminary Analyses

Descriptive statistics for the individual variables are shown in Table 2. A preliminary step in HLM involves fitting an unconditional model and examining the variance of the dependent variable, partitioning it into individual- and ecological-level components. In our sample, 11.3% of the variation in perceived risk of crime in participants' everyday life was at the county level, $\chi^2(70) = 371.53$, $p < .001$. Although much of the variability was attributable to individuals, the estimated county-level variance of this variable underscored a substantive portion of variance between counties.

On the other hand, the variation at the county level of perceived risk of crime at the societal level was not statistically significant, $\chi^2(70) = 85.60$, $p = .099$. Thus, we decided not to analyze the influence exerted by our ecological predictors on this measure. However, since the data we analyzed were aggregated at the county level, based on the suggestions of Murray et al. (2004), we decided to statistically control for the nested structure of the data by using multilevel analysis.

Table 3 Correlates of perceived risk of crime (local level)

Variables	Model A				Model B			
	Coeff. (95% CI)	*SE*	*t* ratio	*p*	Coeff. (95% CI)	*SE*	*t* ratio	*p*
Intercept	2.28 (2.12, 2.44)	0.08	27.36	.001	2.29 (2.13, 2.45)	0.08	27.67	.001
Level 1—individual								
Age	0.01 (−0.01, 0.03)	0.01	2.95	.001	0.01 (−0.01, 0.03)	0.01	2.98	.001
Gender (1 = male)	−0.15 (−0.23, −0.07)	0.04	−3.86	.001	−0.15 (−0.23, 0.07)	0.04	−3.97	.001
Number of sons/daughters	−0.03 (−0.05, −0.01)	0.01	−1.83	.060	−0.03 (−0.05, −0.01)	0.01	−1.94	.050
Years of formal education	−0.01 (−0.03, −0.01)	0.01	−2.08	.041	−0.01 (−0.03, −0.01)	0.01	−2.05	.040
Direct victimization	0.08 (−0.02, 0.18)	0.05	1.62	.105	0.08 (−0.02, 0.18)	0.05	1.49	.135
Indirect victimization	0.05 (0.01, 0.09)	0.02	3.18	.002	0.06 (0.02, 0.10)	0.02	3.26	.002
Perception of social disorder	0.06 (0.04, 0.08)	0.01	10.38	.001	0.06 (0.04, 0.08)	0.01	10.89	.001
Perception of physical disorder	0.09 (0.07, 0.11)	0.01	3.95	.001	0.09 (0.05, 0.13)	0.02	3.93	.001
County level (N = 71)								
Crime rate					8.80 (5.66, 11.94)	1.60	5.58	<.001
Unemployment rate					0.06 (0.02, 0.10)	0.02	4.08	<.001
Instruction rate					0.05 (−0.09, 0.19)	0.07	0.76	.446
Immigration rate					2.10 (−0.92, 5.12)	1.54	1.36	.177
GDP (in Euros)					0.01 (−0.01, 0.03)	0.01	0.01	.999
Variance components								
Within County	.49				.49			
Between County	.07				.03			
Percent of variance explained								
Within County	10.9%				–			
Between County	–				46.4%			

In this and in the next table we provided estimates with robust standard errors. The rough estimates, available upon request, were substantially analogous to those we presented

Predictors of Perceived Risk of Crime at the Local Level

The HLM model for individuals' perceived risk of crime at the local level is shown in Table 3. The variables we included in the model explained 10.9% of the variation of our dependent variable lying at the individual level (Model A). Among our socio-demographic predictors, being a woman, being poorly educated, and being an older person predicted higher levels of our dependent variable. On the other hand, indirect, but not direct, victimization increased it. Moreover, perception of social and physical disorder increased crime risk perception.

In order to evaluate the impact of between county variation in terms of the crime rate, unemployment, instruction, GDP, and immigration rate on crime risk perception, we included these characteristics as predictors at level 2 (Model B). The crime rate and unemployment rate exerted a moderate overall effect on our dependent variable, explaining nearly half (46.4%) of its variability across counties. On the contrary, immigration rate did not statistically influence it.

Predicting Perceived Risk of Crime at the Societal Level

The HLM model for individuals' perceived risk of crime at the societal level is shown in Table 4. The variables we included explained 7.9% of the variation of this dependent variable. Participants' level of education, being a man, trusting people, and adhesion to post-materialistic values predicted a lower level of this dependent variable, while number of sons/daughters and exposure to television news increased it.

Discussion

In this work we applied a multilevel technique to predict the perceived risk of crime at the local (i.e., people's everyday life) and at the societal (i.e., the whole national territory) levels On the whole, our multilevel results showed significant variation of the former variable and no significant variation of the latter variable at the county level. These results were consistent with those recently

Table 4 Correlates of perceived risk of crime (societal level)

Variables	Coeff. (95% CI)	*SE*	*t* ratio	*p*
Intercept	3.50 (3.19, 3.81)	0.12	30.35	.001
Level 1—individual				
Age	0.01 (−0.01, 0.03)	0.01	0.41	.967
Gender (1 = man)	−0.06 (−0.10, −0.02)	0.02	−3.10	.002
Number of sons/daughters	0.03 (0.01, 0.05)	0.01	2.01	.044
Years of formal education	−0.02 (−0.04, −0.00)	0.01	−5.84	.001
Interpersonal trust	−0.23 (−0.31, −0.15)	0.04	−5.55	.001
Materialistic	0.03 (−0.03, 0.09)	0.03	0.92	.359
Post-materialistic	−0.17 (−0.27, −0.07)	0.05	−3.53	.001
Frequency of newscast watching	0.07 (0.03, 0.11)	0.02	2.92	.004

obtained by Russo et al. (2010) in their preliminary multilevel exploration. To the best of our knowledge, Russo and colleagues' study was the first one in which a multilevel analysis aimed at predicting perceived risk of crime at the local and at the societal levels has been performed. However, their research had some weak points, mainly because the contextual level they took into account was characterized by a county-level variance too low to let the authors fully enjoy the power of multilevel analysis. However, given the convergence of their results and our results, we can conclude that perceived risk of crime in people's everyday life actually depends both on individual and contextual variables, while perceived risk of crime at the societal level depends on individual variables only.

Perceived risk at the local level was fostered by individual variables belonging to three domains: (a) socio-demographic variables; (b) victimization experiences; and (c) perception of social and physical disorder. Each of these domains is discussed further below

1. Socio-demographic variables. Consistent with Amerio and Roccato (2005), Hipp (2010), Miceli et al. (2004) and Rountree and Land (1996), female gender, a lower education level, and older age predicted fear of crime at the county level. Thus, consistent with Pantazis (2000), these socio-demographic may be considered as proxies for social and physical vulnerability when it comes to crime.

2. Victimization experiences. According to the literature, coping with victimization may be a hard task for people who have been victims of a crime. This line of reasoning helps explain a seemingly surprising result we obtained. Indeed, in our research, indirect but not direct victimization increased the perceived risk of crime at the local level. The literature on fear of crime shows that indirect victimization may have more severe consequences task direct victimization, because it does not strongly encourage the use of effective coping strategies (Hale 1996). Future research is needed to systematically test whether this result holds for the perception of the risk of crime.

3. Perception of social and physical disorder. This result was consistent with research by LaGrange et al. (1992). As discussed earlier, according to the literature, disorder and actual crime spread show strong, positive correlations (Nardi 2003). Thus, it is worth noting that we detected this consequence of disorder even after having controlled for the actual spread of criminality in the county in which our participants lived, fully using the potential of the multilevel approach. Thus, we showed that perceived disorder influenced perceived risk of crime at the local level net of the influence exerted by crime spread.

For the ecological predictors, our results were partially consistent with those in the literature (Franklin et al. 2008; Skogan 1995; Taylor and Covington 1993). Indeed, we showed perceived risk at the local level to be increased by the crime rate and by unemployment rate. However, immigration rate did not significantly influence it. According to Wacquant (1993), people integrate information derived from their personal experiences and the perception of their neighborhood with beliefs concerning the favorable (or otherwise) conditions of their living areas. Our data showed that our participants were able to build their local crime risk perception while distinguishing between relevant information (the "objective" risk of being victimized, as measured by official crime rates, and the social disadvantage which characterizes it) and irrelevant information (the more salient, but less diagnostic, information about immigrants) concerning their area of residence.

These results were consistent with two bodies of research. On the one hand, with the "rationality" of crime

risk perception (see, for example, Elchardus et al. 2008). Indeed, the correlation between crime spread at the ecological level and the intensity of individual crime risk perception suggests that the Italians living in the 71 counties we took into account generate crime risk perceptions which are, at least in part, pretty rational. On the other hand, the correlation between the unemployment rate and the perceived risk of crime at the local level was consistent with the theses expressed by the most radical researchers into psychological reactions to crime (e.g. Mathieu 1995). According to these researchers, the spread of fear of crime and of crime risk perception has—at least in part—the function of maintaining the *status quo*, changing the growing sense of economic insecurity experienced by people in Western countries into an insecurity which is much more innocuous for the dominant classes.

Compared to the perceived risk of crime at the local level, the picture concerning the perceived risk of crime at the societal level was much less complex and articulated. Indeed, in line with previous studies (Amerio and Roccato 2005; Heath and Petraitis 1987; Nardi 2003; Tyler and Cook 1984), our results showed that women and poorly educated people reached the highest levels of perceived risk of crime at the societal level, confirming the relevance of "social peripherality" in explaining such fear. The positive influence exerted by the number of sons and daughters on the construct provided additional support to this idea. Indeed today, at least in Italy, bearing a child may be considered as a prerogative of people enjoying favorable social and economic conditions (Bichi 2005). Moreover, interpersonal trust and adhesion to post-materialistic values exerted a negative influence on perceived crime risk at the societal level, thus confirming our hypotheses and previous results, highlighting the central role played by the way in which people represent their social world in shaping this perception (Amerio et al. 2004; Nardi 2003). The positive influence exerted by the frequency of watching news on the television on the construct gave additional support to this point. Indeed, this kind of risk perception has been traditionally studied in relation to mass-media variables because of the link between media exposure and societal level judgments (Tyler and Cook 1984).

The spread of fear of crime and that of perceived risk of crime—beyond negatively influencing people's quality of life—may also have negative social consequences, to the extent that the World Health Organization places them among the factors defining a community's quality of life (Oliver et al. 1997). Indeed, the combination of several individual defensive reactions may help to undermine the quality of the whole community, mainly by: (a) increasing the division between the rich and the poor, and between people who can afford private security measures and those who can not (Hale 1996); (b) increasing punitiveness and reducing the appeal of liberal penal policies (Langworthy and Witehead 1986); (c) transforming some public places into no-go areas (Wilson 1975); (d) exerting a chilling effect on participation (Saegert and Winkel 2004); (e) weakening social networks and thus social support (Perkins et al. 1990); and (f) fostering conflicts among social groups (Pantazis 2000). Moreover, almost paradoxically, fear of crime and perceived risk of crime may help increase crime levels themselves, leading people to spend more time in their homes and thus reducing the level of surveillance in public places (Goodstein and Shotland 1980). Hence, such variables may contribute to a decrease in cohesion and solidarity or, by contrast, may help developing communities whose solidity depends on their being closed and reactionary, and whose survival is based on exclusion and delegitimization of the outgroups. An "ideology of safety" may even develop, which has the power to turn the legitimate demand to live in safe communities into an attempt to legitimize the most violent racist and xenophobic behaviors (Jeudy 1986; Pitch 2001).

In light of this and based on our data, what suggestions can be given to policy makers to combat the negative consequences of perceived risk of crime? Changing people's vulnerability or societal disadvantage is probably not feasible. Thus, we suggest two other potential interventions. The first approach could consist of helping victimized people to cope with the negative consequences of victimization they experience. The second approach could consist of fighting against community disorder. As concerns the first approach, Russo and Roccato (2010) argued that, to be effective, victimized people should be helped by adequately trained primary care physicians in the first months after victimization. However, this kind of help would be rather hard to give to people who are indirectly victimized, who, according to our data, are those who show the highest probability of developing high levels of crime risk perceptions. Thus, we would like to suggest to policy makers to counter the negative consequences of crime risk perceptions by trying to reduce community disorder. As a matter of fact, the literature on this topic—which has been widely used to shape "zero tolerance" policies—has received severe criticism, and solid data showing that disorder has (or has not) a direct and causal relationship with crime spread are still unavailable (see, for example, Gau and Pratt 2008; Harcourt and Ludwig 2006). However, the links between disorder and perceived risk of crime are well established (e.g. Rountree and Land 1996). Moreover, our data strongly support that perceived physical and social disorder fosters perceived risk of crime.

Our study had some limitations, mainly because it was based on secondary analysis. Advantages and drawbacks of this method are well-known (e.g., Kiecolt and Nathan

1985). In our case, the use of secondary analysis made it possible to obtain low-cost, high-quality data gathered from a tendentially representative sample of the population living in 71 Italian counties. This was particularly important because representative samples are still seldom used in psychological research. On the other hand, we are aware that the variables we used to assess perceived risk of crime were not completely satisfactory, mainly because they consisted of single items and not scales. Moreover, past research has shown that psychological reactions to crime involve—besides the cognitive side referred to as perceived risk of crime—an emotional dimension, i.e. fear of crime (Ferraro 1995; Ross and Jang 2000; Rountree and Land 1996). Our indicators did not allow us to take into consideration this difference. Even if the literature shows that perceived risk of crime and fear of crime often show significant correlations (Chadee et al. 2007; Perkins and Taylor 1996) and share a number of predictors (Rountree and Land 1996), a new multilevel study that takes into account different levels of perceived risk of crime and emotional fear of crime at the same time would be welcome. Moreover, we had to rely on the county level of analysis, which was broader than what is traditionally considered in the literature (i.e., street-block or neighborhood level). Nonetheless, even if our assessment of ecological features was not entirely satisfactory in this regard, we still observed significant effects of contextual variables on perceived risk of crime at the local level. By relying on a representative sample of respondents, we thus reinforced previous findings highlighting the relevance of crime and economic conditions in shaping such constructs.

To summarize, in spite of these limitations our study informed our understanding of the origins of perceived risk of crime at the local and the societal levels. On the one hand, we showed that the perceived risk of crime at the societal level depends on individual variables only, mainly on people's "social peripherality", on frequency of newscast watching, and that two variables belonging to the social psychological sphere (interpersonal trust and adhesion to post-materialistic values) also reduced it. On the other hand, we showed that individual (vulnerability, indirect victimization, and perceived disorder) and ecological (the crime rate and unemployment rate, but not immigration rate) variables foster perceived risk of crime at the local level, suggesting policy makers need to combat this kind of risk perception mainly by trying to reduce social and physical incivilities.

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Appendix

Final model for:

Risk perception at the local level = $\gamma_{00} + \gamma_{10}$ (age) + γ_{20} (gender) + γ_{30} (education) + γ_{40} (number of sons/daughters) + γ_{50} (direct victimization) + γ_{60} (indirect victimization) + γ_{70} (perceived social disorder*) + γ_{80} (perceived physical disorder*) + γ_{01} (county crime rate) + γ_{02} (county unemployment rate) + γ_{03} (county instruction rate) + γ_{04} (county immigration rate) + γ_{05} (county GDP) + u_0 + r

**group mean centered*

Final model for:

Risk perception at the societal level = $\gamma_{00} + \gamma_{10}$ (age) + γ_{20} (gender) + γ_{30} (education) + γ_{40} (number of sons/daughters) + γ_{50} (materialistic) + γ_{60} (interpersonal trust) + γ_{70} (new cast) + u_0 + r.

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