

Are College Students' Assessments of Threat Shaped by the Dangers of Their Childhood Environment?

Journal of Interpersonal Violence
2016, Vol. 31(11) 2006–2025
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sagepub.com/journalsPermissions.nav
DOI: 10.1177/0886260515572473
jiv.sagepub.com


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Abstract

Humans internalize environmental cues of mortality risk at an early age, which influences subsequent risk perceptions and behavior. In this respect, an individual's current risk assessment may be viewed as an adaptive response to the dangers present within his or her early local environment. Here we examine the relationship between several variables indicating threat within an individual's early environment (e.g., prevalence of violent and property crimes, registered sex offenders) and their perception of crime risk within both the childhood and current adult environments. We recruited a group of 657 students who hail from diverse geographic backgrounds to provide the zip code location of their childhood residence along with subjective ratings of danger of that and their current location, which enabled us to compare their ratings of risk/danger with the federally reported crime statistics of each setting. Our results indicate that the early prevalence of registered sex offenders indeed influences an individual's risk perception in adulthood, and that these factors have a differential effect on males and females. Our findings provide support for the theory that early environmental factors signaling danger affect how individuals assess risk within their adult environment.

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Keywords

decision making, early environment, fear of crime, life-history theory, risk perception, risk-taking

Introduction

The current study combines the principles of evolutionary life-history theory with psychological decision-making research to investigate the mechanisms that drive an individual's risk perceptions. Our aim is to explore whether an individual's early developmental environment relates to patterns of risk assessment in their current environment.

Perceptions of Risk and Benefit Drive Behavior

Research indicates that an individual's risk-taking propensity is not necessarily consistent across domain contexts, and is best predicted using a risk-return framework (Hanoch, Johnson, & Wilke, 2006; Johnson, Wilke, & Weber, 2004; Weber, Blais, & Betz, 2002; Wilke et al., 2014). In this light, each decision to engage (or not to engage) in a risky behavior is a calculated trade-off between the perceived risk and expected benefit. Just as different individuals show high variability in the risks they are willing to take, an individual who is highly risk-seeking, for instance, in the financial domain (e.g., gambling at a casino every weekend), is not necessarily as likely to take risks in the recreational domain, and avoid any activities that seem too physically daring (e.g., going skydiving). Although this person might think that both are fairly high-risk ventures, their preferences for certain types of risk might stem from differences in the perceived benefit from engaging in these behaviors (i.e., the financial benefit of gambling outweighs the risks more so than the benefit from skydiving).

An individual's life-history profile (e.g., age, sex, parental status, subjective life expectancy) predicts their propensity for engaging in risky behaviors across a variety of contexts. The results of a recent study by Wang, Kruger, and Wilke (2009) provide additional support for the predictions stemming from life-history theory—particularly when comparing the mean risk domain scores of men and women. Everything else being the same, men's mean risk scores were consistently higher than women's scores across all risk-taking domains. Males generally perceive less inherent risk across a variety of behaviors when compared with females, so it is intuitive that they would also report a higher frequency of engaging in these behaviors than their female counterparts. These findings provide further evidence that life-history variables have

a significant and predictable effect on the likelihood of engaging in domain-specific risky behaviors (see Wilke et al., 2014, for a replication and extension of these findings). As subjective life expectancy derives mainly from environmental cues of harshness and unpredictability (Chisholm, 1993; Ellis, Figueredo, Brumbach, & Schlomer, 2009), we expect that environmental factors contributing to our assessments of mortality risk are likely to be playing a large part in shaping our enduring patterns of risk assessment—more specifically, our perceptions of danger within our current environment.

Do the Dangers of Our Childhood Shape Assessment of Risk Later in Life?

Evolutionary behavioral scientists propose that the particular decision-making strategy that an individual uses can be viewed as an adaptive response to the risks present within the developmental setting (Chisholm, 1993; Dunkel, Mathes, & Decker, 2009; Nettle, 2010) and can be expressed as a trade-off between present and future values (Ellis et al., 2009; Wang et al., 2009). In this respect, patterns of decision making can be thought of as preferences that are calibrated over a lifetime of exposure to the immediate environment. Hill, Ross, and Low (1997) were among the first to highlight the utility of applying a life-history framework to study risk perception. They note that human cognition has been molded by natural selection, and has likely been subject to selective forces that cue individuals to specific environmental conditions (e.g., resource scarcity, environmental instability, and life expectancy). They investigated how sex, early environmental cues of adversity and beliefs about future unpredictability relate to risk-propensity across a variety of contexts. Their results indicate that those who came from environments with high unpredictability indeed developed persistent expectations of unpredictability in the future, and concluded that personal beliefs of environmental unpredictability may be a driving force behind internal models of risk assessment.

Throughout evolutionary history, violence and sexual assault are very likely to have been selective pressures affecting female cognition (e.g., Smuts, 1992). Researchers have investigated how early ecological conditions have influenced female mate choice, and findings indicate that crime rates, income inequality, and socioeconomic status within a female's early living environment predict her mate preferences and reproductive behavior in adulthood (Davis, 2012; Snyder et al., 2011). Rather than framing the preference for reproducing earlier or pairing with an aggressive or formidable mate as deficiencies (as it is well-noted that aggressive men are likely to use similar tactics in dealing with both rivals and mates), researchers argue that this may

be attributable to an evolved psychological mechanism that acts in response to the observed cues of adversity or threat within her local environment (Snyder et al., 2011).

Sex Differences in Risk-Taking

Many explanations for sex differences in risk-taking behavior have focused on social influences (Gardner & Steinberg, 2005), physiological mechanisms (e.g., Bröder & Hohmann, 2003; Lieberman, Pillsworth, & Haselton, 2011), and various dimensions of personality such as impulsivity and sensation-seeking (cf. Stanford et al., 2009; Zuckerman & Kuhlman, 2000). Other findings suggest that a fundamental difference between the sexes may lie in the role of risk-taking in reproductive competition, which is generally more intense for young men than for older men or women (Wilke, Hutchinson, Todd, & Kruger, 2006; Wilson & Daly, 1985). As males and females have differing variances in reproductive success, their life-history strategies are expected to reflect this in their risk-taking propensity (Fetchenhauer & Rohde, 2002; Wilke et al., 2014; Wilson & Daly, 1997). Men also tend to have a shorter expected life span than women; which explains why they are generally more willing to take risks (especially in environments with a high variance in wealth and reproductive return; see Griskevicius, Tybur, Delton, & Robertson, 2011; Wang et al., 2009). Fetchenhauer and Rohde (2002) used multilevel modeling to test the assumption that men are more often the victim of negative events like violent crimes and car accidents than women *because* males tend to perceive less inherent risk in many actions than females, and found conclusive evidence supporting this hypothesis.

Prevalence of Crime and Its Influence on Risk Assessment

Federal crime statistics indicate that men have a significantly higher risk of violent victimization than females, with the rates of 64 per 1,000 versus 46 per 1,000 people, respectively (U.S. Department of Justice, 1997). When considering the risk of victimization in terms of rape and sexual assault, however, the National Crime Victimization Survey indicates that females are about 13 times more likely to be a victim than males—with a rate of 3.9 versus 0.3 per 1,000 people. Several decades of research have revealed that sex is the most powerful predictor of fear of victimization, and there is evidence that college women are significantly more fearful of all types of non-sexual violence and sexual victimization than are college men (Fisher & Sloan, 2003). This makes sense in light of recent reports from the 2007 Campus Sexual Assault Study (Krebs, Linquist, Warner, Fisher, & Martin,

2009). indicating that 1 in 5 women in college have been sexually assaulted during their time on campus

Not all crimes have the same impact on fear (Valera & Guàrdia, 2014). Tseloni and Zarafonitou (2008) report that according to research based on the 1989 to 2000 International Crime Victims Survey, individuals who had experienced crime within their household were slightly more fearful of crime than victims of an offense against the person outside of the home. It is clear that an individual's direct prior victimization and crime exposure predominantly shape perceived future risk—however, this is not to say that fear of crime is derived exclusively from personal experience—it is also influenced by others' experiences conveyed by various information “conduits,” for example, by the media or by the personal account of a close acquaintance (Tseloni & Zarafonitou, 2008). Valera and Guàrdia (2014) note that shared information about the danger of a place is central in defining perceived insecurity. In support of this claim, researchers found that when surveying individuals about perceived safety at home or after dark, those who were directly or indirectly affected by crime were more likely to report feelings of insecurity about their safety than non-victims, or those not acquainted with victims (Tseloni & Zarafonitou, 2008; cf. Fetchenhauer & Rohde, 2002).

Additional research has shown that the higher the disorder people perceive in their neighborhood, the more apprehensive they are about their safety. Disorder can be thought of as being either physical (e.g., vandalism, graffiti, or damage to furniture) or social (e.g., related to disordered or threatening behaviors, social incivilities, or loitering; cf. Boyd, 2006; Fyfe, Bannister, & Kearns, 2006). Therefore, we conclude that characteristics about an individual's living environment that indicate threat or danger that cannot be described simply by local crime statistics must be influencing their assessment of risk within these environments. One question remains unanswered in all of this though: Do we adapt our risk assessments strictly according to the characteristics of our current environment, or does our early living environment shape the way we assess risk and danger within different living environments later in life?

The Current Study

This study investigates the relationship between characteristics of college students' early environments indicating threat and their assessments of danger within their current (adult) environments. We deduced that if perceptions of risk and behavior are influenced by mortality threats within one's early environment, risk assessments of crime and estimates of sexual predators within local environments should follow the same principle.

Hypothesis 1: We predict a positive relationship between the prevalence of crime in the childhood environment and the risk assessment of a college student's current environment. This makes sense if an individual is moving from an environment that is high in crime to another dangerous location, or for someone who has moved from a small town to another relatively safe area (as their risk perceptions would be "properly tuned" for these environments). However, it is not entirely clear what we should predict for an individual who moves from a high-crime environment to a low-crime environment, or alternatively, moves from a low-crime environment to a high-crime environment. One possibility is that individuals absorb cues of environmental instability or mortality within these early environments, and these internalizations calibrate their current risk assessments in a positive (e.g., if future assessments increase because they come from a dangerous background) or negative direction (e.g., if assessments of the current environment decrease because they are judging it as *relatively* safer than the earlier environment).

Although men are more often the victims of violent crime, college women are significantly more fearful of all types of non-sexual violence and sexual victimization than are college men. Therefore we predict that

Hypothesis 2: Sex will be an important factor influencing the subjective ratings, with females providing systematically higher crime assessments than males within each environment.

In addition, we investigated how personal experience relates to subjective assessments of crime. In line with the literature, we predicted that even though the objective crime statistics show sex differences in rates of violent victimization:

Hypothesis 3: The subjective sexual crime assessments of both sexes will be elevated if they report having experienced sexual assault (or know someone who has).

Materials and Method

Participants and Procedure

We recruited a group of university students who originate from diverse geographic backgrounds to compare their subjective assessments of crime within their past (unique) and present (shared) college-town environment. We

analyzed a total of 657 survey responses (453 males and 204 females; $M_{\text{age}} \pm SD = 18.8 \pm 1.01$ years), with the geographic distribution of childhood environments among seven states (Maine, Massachusetts, New Hampshire, New Jersey, New York, Vermont, Connecticut). About 75.8% of our subject pool came from within New York State, and the remaining 24.2% came from the surrounding New England area. Reported ethnic background was 89.3% Caucasian, 2.6% African American, 2.9% Asian, 3.7% Hispanic, 0.3% American Indian, and 1.2% "Other."

Subjects were recruited from university introductory psychology courses, and responded to survey questions via a web-based questionnaire (the Institutional Review Board at Clarkson University approved this survey for participants aged 18 years or older; IRB#11-22). This approach provided efficient survey administration, and provided the participants with a higher degree of privacy than a face-to-face interview. All participants reported basic demographic information (e.g., age, sex, ethnicity) and then provided the 5-digit zip code for the location of their childhood environment (age 3-7 years). Participants were instructed to consider the surrounding college community as their current adult environment.

Next, students were asked to give a subjective assessment of danger within each of these locations in terms of general and sexual crime, on a 4-point Likert-type scale ranging from 1 (*not dangerous at all*) to 4 (*very dangerous*). The items were presented as follows: "*In hindsight, to what degree do you consider this area to be dangerous in terms of general crime rate*" (GCR) and "*In hindsight, to what degree do you consider this area to be dangerous specifically in terms of the amount/frequency of sexual crime?*" (SCR). Participants were then asked to give a predator rating (PR), "*Approximately how many sexual predators lived in this area during your childhood?*" on a similar 4-point scale ranging from 1 (*none*) to 4 (*many*). Finally, we asked participants to provide a point estimate of the number of sexual predators within each of the target environments. Participants were asked simply to "*estimate the number of sexual predators that lived in this area during your childhood,*" and were provided with a text box to type in a numerical predator estimate (PE).

The current environment for all students was the small college-town of Potsdam, New York (United States), which contains a population of about 15,000 people. Roughly half of the town's populace comes from the students enrolled in either of the two colleges centrally located in town ("Zip Code 13676," 2012). The average frequency of violent and property crime (murder, robbery, assault, auto-theft, etc.) is lower within this area compared with the national average with the sole exception of rape, which was equal to the 2009 U.S. national average at a rate of 30.4 per 100,000 people ("Crime in Potsdam," 2012).

Table 1. Roadmap of Predictions and Results Across Environments.

Variable	Prediction	Finding	Childhood Environment	Current Environment
Sex	Men < Women	Men < Women	SCR, PR, PE	GCR, PE
Prevalence of violent/property crime (childhood location)	Crime ratings positively associated	Crime ratings positively associated	GCR, SCR	
Number of registered sex offenders (childhood location)	Crime ratings positively associated	Crime ratings positively associated	GCR, SCR, PR	PE
Has acquaintance/personal experience with sexual abuse	With > Without	With > Without	Females: PE Males: SCR, PR	Females: PR Males: GCR, SCR, PR, PE

Note. SCR = sexual crime rating; PR = predator rating; PE = predator estimate; GCR = general crime rating.

Indicators of Crime Risk in the Childhood Environment

We used several federally administered websites to collect crime statistics at the zip code-specific level (e.g., <http://www.fbi.gov/stats-services/crimestats>; <https://www.crimereports.com>; <http://www.city-data.com>) and were able to gather data for 350 of the childhood locations. As we could not acquire a variable indicating the “number of criminals” within each environment, we searched the National Sex Offender Registry (Family Watchdog, 2013) to collect the number of registered sex offenders (RSOs) at each reported zip code location to be used as a proxy for the overall number of criminal offenders (we were able to acquire these data for all 657 respondents). All independent and dependent variables are reported in the appendix.

Results

Our goal was to investigate the relationship between the students’ early environment and their assessment of crime risk within the present college-town environment. We predicted that sex, early prevalence of crime, early prevalence of sex offenders, and personal exposure to violent crime would all have an effect on the subjects’ subjective crime ratings of the current environment. We have provided a summary of our predictions and results in Table 1.

Effects of Past Environments on the Subjective Assessment of Risk in the Present Environment

In an ANCOVA model with sex and subjective childhood predator estimate (PE_{child}) as predictors for the subjects' estimate of the current number of sex criminals (PE_{current}), there was a significant interaction effect, Sex \times PE_{child} $F(1, 653) = 7.08, p = .008$, as well as significant main effects, Sex $F(1, 653) = 20.81, p < .001$; PE_{child} $F(1, 653) = 312.60, p < .001, R^2 = .34$. The regression models for males and females were qualitatively similar (Male: $\log PE_{\text{current}} = 0.27 + 0.56 [\pm SE 0.06] \log PE_{\text{child}}$; Female: $\log PE_{\text{current}} = 0.42 + 0.40 [\pm SE 0.10] \log PE_{\text{child}}$). In other words, the subjective assessment of the number of sex criminals in the childhood environment (which is positively associated with actual prevalence) is positively associated with male and female subjects' estimates of the number of sex criminals in the current college environment.

We summed the three Likert-type scale items of subject's subjective ratings of general crime, sex crime, and sex predators in their childhood environment ($GCR + SCR + PR = \text{SumScore}$), as these three scales were highly inter-correlated (all $r > .60$, 95% confidence interval [CI] [0.55, 0.65], $N = 657, p < .001$). The computed SumScore was highly correlated with the subjects' estimates of the number of sex offenders within that location ($r = .62$, 95% CI [0.57, 0.66], $N = 657, p < .001$).

As the numbers of actual reported property crimes and violent crimes at a subject's childhood zip code address were also highly correlated ($r = .88$, 95% CI [0.86, 0.90], $n = 362, p < .001$), we summed these two statistics to create a composite index of crime prevalence within the childhood environment. The SumScore was correlated with the summed crime statistics ($r = .12$, 95% CI [0.02, 0.22], $n = 362, p < .001$), and correlated much more strongly with the number of RSOs ($r = .30$, 95% CI [0.20, 0.39], $n = 362, p < .001$). In an ANCOVA model with Sex and SumScore as predictors and the students' estimates of the number of sex criminals in the current college environment (PE_{current}), there was a significant interaction, Sex \times SumScore $F(1, 653) = 4.22, p = .04$, as well as significant main effects, Sex $F(1, 653) = 14.81, p < .001$; SumScore $F(1, 653) = 35.07, p < .0001, R^2 = .34$. The regression models for males and females did not differ significantly (Male: $\log PE_{\text{current}} = 0.11 + 0.09 [\pm SE 0.03] \text{SumScore}$; Female: $\log PE_{\text{current}} = 0.45 + 0.04 [\pm SE 0.03] \text{SumScore}$). Again, the subjective assessment of crime prevalence in the childhood environment, which is positively associated with actual prevalence, predicts male and female subjects' estimates of the number of sex criminals in the current college environment; those who grew up in higher crime environments believe the number is higher in the college environment than those from areas with less crime.

Table 2. Subjective Crime Ratings by Sex.

Variable	Male (n = 453)		Female (n = 204)		t Test	
	M	SE	M	SE	t	p
Childhood environment						
General crime rating	1.30	0.03	1.37	0.04	1.37	.17
Sexual crime rating	1.29	0.02	1.37	0.04	1.96	.05
Sexual predator rating	1.89	0.03	2.10	0.06	3.53	<.001
Current environment						
General crime rating	1.25	0.02	1.34	0.04	2.25	.03
Sexual crime rating	1.34	0.02	1.41	0.04	1.68	.09
Sexual predator rating	1.97	0.03	2.08	0.04	2.17	.03

Table 3. Predator Estimates by Sex.

Variable	Male (n = 453)		Female (n = 204)		Mann–Whitney U Test
	Median	Range	Median	Range	p
Childhood predator estimate	2.00	1-1,200	3.00	1-200	<.001
Current predator estimate	3.00	1-500	5.00	1-101	<.001

Effect of Sex on Subjective Crime Ratings Within the Childhood and Adult Environments

Women averaged higher scores than men for each of the subjective crime ratings within the childhood and adult environment (Table 2). The difference in childhood GCR and current SCR between men and women indicated the same trends, but were not statistically significant.

Female estimates of the number of sex offenders present in the current college environment were higher than males’ (Mann–Whitney U test, $z = 4.2$, $p < .001$; Table 3).

We then compared the subjective estimates with the actual number of RSOs for that zip code with data provided by the National Sex Offender Registry (Figure 1).

Subjective estimates of the number of sexual criminals within the childhood zip code location (or PE) were positively correlated with the actual number of RSOs in the area ($r = .15$, 95% CI [0.08, 0.22], $N = 657$, $p < .001$), and males and females did not differ in the magnitude of this association ($z =$

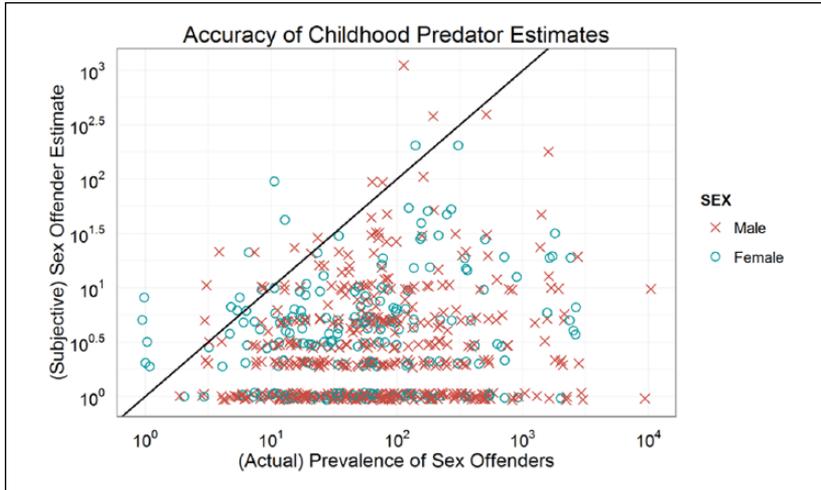


Figure 1. Accuracy of childhood predator estimates.

Note. X and Y axes are on a logarithmic scale, and the line on the graph represents a perfect estimate of predators within their respective childhood environments.

0.98, $p = .3$). There was no difference in the prevalence of registered sex offenders within the childhood environment between female and male subjects, $t(651) = 1.8$, $p = .07$; 95% CI Male locations [63.09, 72.44], 95% CI Female locations [47.86, 60.26]. Subjects generally tended to severely underestimate the prevalence of sex offenders within their early living environment (Figure. 1), but there was no significant difference between sexes in the magnitude of the underestimation, $t(653) = .23$, $p = .82$; $M_{\text{Male}} \pm SE = -208.42 \pm 21.36$; $M_{\text{Female}} \pm SE = -199.62 \pm 32.98$).

Violent Victimization: The Influence of Individual Experience on Risk Assessment

Respondents reported whether they knew someone who had suffered sexual assault or abuse. As expected, the prevalence of “yes” responses were higher for female respondents than males (38.6% of 453 males vs. 55.4% of 204 females; Fisher’s exact test, $p < .001$). When grouped together, there were significant differences between respondents who answered “yes” versus “no” for 5 of the 6 subjective crime ratings, with those who knew an abused individual reporting higher mean crime ratings than those who do not within both the childhood and adult environments. Students who responded “yes”

reported higher childhood sexual crime and PRs, SCR_{child} : $t(655) = 2.84$, $p = .005$; PR_{child} : $t(655) = 3.30$, $p = .001$, and higher subjective ratings of crime in the adult environment than those who reported “no,” GCR_{current} : $t(655) = 3.59$, $p < .001$; SCR_{current} : $t(655) = 4.42$, $p < .001$; PR_{current} : $t(655) = 3.84$, $p < .001$. When these results are split by sex, however, we found that male assessments of crime in their childhood and their current environment are elevated if they reported knowing an abused individual—whereas only the PRs within the current environment were higher for females who responded “yes.” Female PR within the early environment follows the same trend, but was not statistically significant (see Table 4).

In a similar comparison, we explored the extent to which the PEs within the childhood and adult environments differed between those respondents who reported having an acquaintance who had experienced sexual assault or abuse with those who did not. Those who answered “yes” provided significantly higher estimates than those who responded “no,” $\log PE_{\text{child}}$: $t(655) = 2.8$, $p = .005$; $M_{\text{Yes}} \pm SE = 0.53 \pm 0.03$, $M_{\text{No}} \pm SE = 0.42 \pm 0.02$; $\log PE_{\text{current}}$: $t(655) = 4.2$, $p < .001$; $M_{\text{Yes}} = 0.63 \pm 0.03$, $M_{\text{No}} = 0.48 \pm 0.02$). When this analysis was split by sex, males who reported knowing an abused individual provided higher PEs within the adult environment, but showed no difference in the estimates of the childhood environment. Female students showed the opposite effect; if they knew an abused individual they reported higher estimates within the childhood environment, but not within their current environment.

Discussion

Our findings indicate that individuals may assess the dangers of their early local environment and calibrate their enduring patterns of risk assessment accordingly. Our results confirm the predicted sex differences in subjective ratings of crime within the childhood and adult environments, with females providing systematically higher crime ratings than males, as well as higher sexual PRs and absolute PEs. The sex differences in the crime ratings within the adult environment are particularly noteworthy, as these are ratings of the exact same environment (unlike the childhood environments, where the majority of participants grew up in different areas). If males and females were responding solely to the objective risks within their living environments (rather than the subjective perceived risks)—with everything else being the same—we would expect males to give higher general crime ratings because they technically are more at risk of every type of violent crime. Instead, it is clear that females report higher crime ratings and PEs despite this fact.

Our data indicate that a student’s sex and subjective assessment of danger (in this case, their estimate of the prevalence of sex offenders within their

Table 4. Subjective Crime Ratings by Sex and by Acquaintance of an Abused Individual.

	Yes (<i>n</i> = 175)		No (<i>n</i> = 278)		t Test	
	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Males						
Childhood environment						
General crime rating	1.33	.04	1.28	.03	0.92	.36
Sexual crime rating	1.35	.04	1.25	.03	2.13	.03*
Sexual predator rating	1.97	.05	1.83	.04	2.14	.03*
Current environment						
General crime rating	1.35	.04	1.19	.02	3.78	<.001*
Sexual crime rating	1.47	.04	1.25	.03	4.55	<.001*
Sexual predator rating	2.07	.05	1.90	.04	2.94	.003*
Females						
Childhood environment						
General crime rating	1.41	.06	1.32	.06	0.99	.32
Sexual crime rating	1.42	.06	1.31	.05	1.44	.15
Sexual predator rating	2.19	.08	1.99	.07	1.80	.07
Current environment						
General crime rating	1.35	.05	1.32	.05	0.51	.61
Sexual crime rating	1.43	.05	1.37	.05	0.85	.40
Sexual predator rating	2.15	.06	1.99	.06	1.98	<.05*

childhood environment) interact and have a positive association with their PE within the current environment. We found the same interaction when pairing sex and the actual prevalence of violent and property crime within the developmental setting. In short, individuals may form a bias in reasoning about the prevalence of sex offenders within their current environment depending on the pervasiveness of offenders within their developmental setting. These findings simply provide evidence that cues of environmental danger are internalized early in development, and may have a significant contribution toward the formation of enduring patterns of risk assessment. Further investigation is needed to more rigorously investigate these relationships.

In line with our predictions, individuals who reported knowing someone who has experienced sexual assault provided consistently higher crime ratings and PEs in their past and present living environments than those who do not. However, knowing an individual who has experienced assault did not seem to have a robust effect on a female's subjective assessment of general crime

within her environment (although her PR and PE were elevated compared with a female without this acquaintance). These results indicate that females apparently do differentiate between general and sexual crime risk and the prevalence of sexual predators within a location, and that these assessments differ based on personal experience. In light of the results shown in Table 4, it appears that knowing an individual who has been sexually assaulted affects a male's perception of crime stronger than it does female perceptions. We are not arguing that females are unaffected by knowing an abused individual (as shown by the elevated PE); but perhaps we do not see a similar difference in the female subjective ratings because these concerns are already reflected in their higher overall mean scores. From these findings, we conclude that sex and individual experience interact to have a measurable effect on the perception of sexual predators within the current living environment.

Sexual crimes are often undisclosed by victims and, to a certain degree, are hidden from public view. As a large percentage of violent crimes are not reported (Bureau of Justice Statistics, 2010), there is a "grey number" of criminality that the federally reported crime statistics cannot account for. Nevertheless, a number of these cases are brought to light by reports from the media, or by the social exchange of information. Students in the college where this study was conducted, for example, receive an email notification if someone reports an individual acting in a strange or lewd manner around the campus. They also receive similar warnings that originate at one of the other local universities (because of their close proximity). If an individual is particularly interested in the prevalence of sexual offenders within his or her area, websites such as familywatchdog.com and crimereports.com are available to provide the public with the address, physical description (sometimes even a photo), and past convictions of the registered sex offenders within the area. Our analysis revealed that the number of registered sex offenders in the early environment does influence our risk perceptions in adulthood.

Limitations

A concern that may be raised is that our measures of early crime rates do not indicate the true exposure to local crime during childhood. Due to the limited availability of historical crime data, we were unable to aggregate crime statistics from the time period of our subjects' childhood (10-20 years ago). Instead, we used the current statistics, under the assumption that there should be little change in relative crime rates among locations between then and now. A careful revision of recent crime reports released by the U.S.' Census Bureau revealed a 13% overall decrease in the rate of violent crime victimizations (across the board) since 2001 (Bureau of Justice Statistics, 2010,

2011). However, though the absolute rates have changed, they have not changed in any systematic way (e.g., all the east coast rates increased whereas all the west coast rates decreased). As crime rates have generally declined over the last 10 years, our proxy for crime likely underestimates the prevalence of crime present within our participants' early living environments. As crime statistical data have now been consistently reported since the late 1990s, it will soon be possible to do a longitudinal study that carefully measures crime rates throughout a participant's early developmental period, permitting a more detailed test of the critical window hypothesis.

Future Directions

As our sample consisted entirely of students within one university in the northeastern United States, further testing of a more diverse population is necessary to confidently report that these results are generalizable to the broader population. This study also draws its findings primarily from a Caucasian participant pool; replication with a more diverse sample (in terms of age, educational level, ethnicity, and the location of their childhood and adolescent environments) would provide the data necessary to further explore the interaction among these variables on one side and the perception of crime and risky behaviors on the other (cf. Weber & Hsee, 1998, 2000).

Conclusions

Factors in an individual's past life experiences affect her or his risk perceptions to local environmental conditions in adulthood. Our data provide support to the existing literature that environmental factors signaling risk during an individual's childhood have an influence on risk perception within the adult environment. Our research shows that students move to new environments with pre-formed tendencies or patterns of assessing crime and danger depending on where they originate from. In a sense, their developmental environment may be priming them toward certain expectations of safety/danger within future living environments. Previous research has shown that perceived insecurity, previous experience with victimization, and personal competences related to the ability to cope with victimization (e.g., perceived control) are strongly related to fear of crime. However, to our knowledge, our study is the first to show that a proxy as simple as the number of registered sex offenders is significantly correlated to an individual's subjective ratings of danger within their local living environments. Our results suggest that further research is needed to expand our understanding of the developmental factors influencing risk assessment in adulthood, including college students.

Appendix

Table of Independent and Dependent Variables

Independent variables: Crime statistics^a

Number of registered sex offenders^b

Rate of registered sex offenders^c

Number of crimes^b

Number of murders

Rate of murder^c

Cases of rape

Rate of rape^c

Number of robberies

Rate of robbery^c

Cases of aggravated assault

Rate of aggravated assault^c

Crime rate^c

Number of violent crime offenses^b

Violent crime rate^c

Number of property crime offenses^b

Property crime rate^c

Cases of burglary

Rate of burglary^c

Cases of larceny-theft

Rate of larceny-theft^c

Cases of motor-vehicle theft

Rate of motor-vehicle theft^c

Dependent variables: Subjective crime ratings (early and adult/current)

GCR^d

SCR^d

PR^d

PE^{b,e}

Note. GCR = general crime rating; PR = predator rating; SCR = sexual crime rating; PE = predator estimate.

^aCollected from <http://www.fbi.gov/stats-services/crimestats>.

^bLog-transformed.

^cAbsolute number of crimes/zip code population.

^d4-point Likert-type scale.

^eNumerical estimate.

Acknowledgments

We thank the members of the Evolution and Cognition Lab for their support in this project (including George Apau for helping to collect the demographic statistics). We are grateful for the tremendous amount of thought and effort that our reviewers have contributed toward improving the quality of our manuscript.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: We acknowledge National Science Foundation (DBI-0926568) for partial financial support through the Undergraduate Biology-Mathematics (UBM) program.

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