

Person-Environment Transactions: Personality Traits Moderate and Mediate the Effects  
of Child Sexual Victimization on Psychopathology

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## **Abstract**

Personality, environmental adversity and psychopathology are related, and different models have been proposed to explain their interaction. The theory of person-environment transactions may elucidate the role of personality in these interactions beyond traditional conceptualizations. To our knowledge, hardly any studies have explored the relationships between the Five Factor Model, child sexual victimization and general psychopathology. We hypothesized (1) that neuroticism and conscientiousness will moderate the effect of sexual victimization on psychopathology; and (2) that neuroticism will mediate the relationship between sexual victimization and psychopathology, both taking the form of a reactive person-environment transaction. Our findings partially support these hypotheses. Neuroticism, conscientiousness and sexual victimization have a direct effect on psychopathology, whereas extraversion, openness to experience and agreeableness does not. With regard to interactive effects, conscientiousness, but not neuroticism, moderates the effect of sexual victimization on psychopathology, and neuroticism does mediate the aforementioned effect. No other interactions were found with the extraversion, agreeableness or openness to experience. To our knowledge, the present study represents the first global test of person-environment transactions with regard to psychopathology and sexual victimization within the framework of the Five Factor Model.

# Person-Environment Transactions: Personality Traits Moderate and Mediate the Effects of Child Sexual Victimization on Psychopathology

## Introduction

It has recently been stated that the study of psychopathology is molecular biology, and that personality psychology is a gene hunt (Caspi, 2002). In this context, it is important to rediscover personality psychology as the science of human organisms. Clearly, personality, environmental adversity and psychopathology are often related, and different models have been proposed to explain their interaction. One of the most important is the vulnerability model, for which there is strong empirical support. At all events, it should be remembered that personality and environmental adversity are not independent events, and they can interact in a variety of ways. As such, it is essential to understand how personality traits combine with experiences to influence behavior patterns, future choices and, eventually, psychopathology. This is known as person-environment transactions (Caspi & Roberts, 2001). Reactive person-environment transactions refer to the recognition that there are individual differences in how people construe, and then respond to environmental events. Evocative person-environment transactions refer to the phenomenon by which different individuals evoke different reactions in others. Proactive person-environment transactions refer to the tendency for individuals to choose environmental settings in which they are comfortable. Similar approaches have led to the discovery of interactions between specific genes and specific environmental factors (Caspi et al., 2002) which seem to influence subsequent personality and abnormal behavior. However, the role of personality in these processes remains unclear.

The theory of person-environment transactions may elucidate the role of personality in the risk for and maintenance of psychopathology beyond traditional

conceptualizations of diathesis and stress. For example, neuroticism is known to constitute a personality disposition or vulnerability to a wide range of psychopathology, that is, considering personality disposition as diathesis (Widiger & Smith, 2008). Neuroticism probably influences vulnerability to psychopathology through both reactive and evocative person-environment transactions. The former would be as a tendency to react to events with high levels of distress, anxiety and worry that may increase the risk for various forms of psychopathology. The latter would occur when a person's frequent expressions of upset, worry and vulnerability produce negative reactions in others, thus reinforcing and increasing the original distress (Widiger & Smith, 2008).

However, as noted above, personality is not unique among the multiple causes of mental disorder, and environmental adversities also play a key role. Among these, sexual victimization is a prevalent and serious social problem that affects as many as four out of every ten females, and approximately half as many males prior to the age of eighteen (Pereda, Guilera, Forns, & Gómez-Benito, 2009). Based on the classical proposal of Finkelhor and Hotaling (1984) child sexual victimization is usually defined as either: 1) contact and non-contact sexual experiences between a person under 18 years of age and an adult or other person at least five years older; or 2) sexual experiences resulting from coercion, no matter what the age of the other person. One of the most well-established consequences of sexual victimization is precisely its association with the onset of psychopathology (Kessler, Davis, & Kendler, 1997), as well as with maladaptive personality functioning (Glaser, van Os, Portegijs, & Myin-Germeys, 2006). Neurobiological models developed to explain the effects of victimization on psychopathology have proposed a dysregulation of the HPA axis, not only in child sexual victimization in particular but in trauma victims in general (Pereda

& Gallardo-Pujol, in press). However, a substantial group of victims has been found to be free of these negative consequences and no causal relationship has been established between the experience of child sexual victimization and the development of psychopathology in adulthood (Browning & Laumann, 1997). The question is therefore why some victims develop mental disorders and others prove to be resilient. Although there is some research on this topic the findings remain inconclusive (Fergusson & Lynskey, 1996; Jaffee, Caspi, Moffitt, Polo-Tomás, & Taylor, 2007; Kessler, Davis, & Kendler, 1997). Interestingly, among the variables studied, individual differences in personality are of particular interest as they are significant predictors of important life outcomes such as psychopathology or resilience (Ozer & Benet-Martínez, 2006). Similarly, their relative contribution in terms of magnitude is practically indistinguishable from the effects of socioeconomic status or cognitive ability (Roberts, Kuncel, Shiner, Caspi, & Goldberg, 2007).

Neuroticism is the personality trait that has shown the strongest relationship with the development of psychopathology, especially depression and anxiety (Ozer & Benet-Martínez, 2006). Other personality traits that have been related to abnormal behavior are conscientiousness, (negatively related to substance abuse), extraversion (negatively correlated with depression), agreeableness (negatively correlated with different personality disorders) and openness to experience (positively related to substance abuse). A study from Malouff, Thorsteinsson, & Schutte (2005) showed that the typical pattern found associated with clinical disorders or measures of clinical disorders was high neuroticism, low conscientiousness, low agreeableness, and low extraversion. Actually, they found that neuroticism had a large effect size on clinical symptoms, whereas effect size for conscientiousness was medium. Extraversion and

agreeableness showed small size effects, but openness to experience revealed to be non-significant in their study.

A more recent meta-analysis by Kotov et al. (2010) examined the relationship between personality traits and mental disorders and found that all diagnostic groups were high in neuroticism and low in conscientiousness. Individuals high in neuroticism tend to show more worry, anxiety, moodiness and depression, while individuals low in conscientiousness tend to behave less persistently and are more disorganized and negligent. These findings suggest that the Five Factor Model may well provide an adequate framework for integrating and understanding individual differences that are linked to psychopathology following child sexual victimization, thereby offering an excellent opportunity to test hypotheses about person-environment transactions, especially the dimensions of neuroticism and conscientiousness.

Talbot et al. (2000) were the first to explore the relationship between the personality domains of the Five Factor Model and the experience of child sexual abuse, but they found no significant associations between personality domains of neuroticism and conscientiousness and sexual victimization. However, they found that different characteristics of sexual victimization were associated extraversion and openness to experience, namely sexual intercourse, parental or non-parental abuse, and multiple or single perpetrator. Roberts et al. (2009) were also unable to find significant relationships between sexual victimization and conscientiousness in a sample of healthy adults. They stated that the more severe forms of abuse seemed to be unrelated to conscientiousness. In contrast, other authors have found that neuroticism compromised the association between minor stressors, as perceived by their participants, and PTSD symptoms (Engelhard & Van den Hout, 2007). Lockenhoff, Terracciano, Patriciu, Eaton, & Costa (2009) observed some longitudinal changes in

personality, namely decreases in extraversion and conscientiousness as well as increases in neuroticism, that predicted lower mental health after experiencing extremely adverse life events.

Research with other structural models has also related personality to trauma. For instance, Rademaker et al. (2008) found that self-reported childhood trauma predicted adult personality in a military sample. Pickering et al. (2004) also identified significant relationships between child abuse and broad personality dimensions, namely high extraversion, high neuroticism and high psychoticism, as well as with impulsivity (Pickering et al., 2004). Trait hostility and anger have also been related to histories of childhood abuse (Perroud et al., 2010; Roy, 1999; van Zuiden, Kavelaars, Rademaker, Vermetten, Heijnen, & Geuze, 2011).

However, although there is extensive evidence linking environmental adversity (e.g. in the form of child sexual victimization) and psychopathology, little research has explored these aspects jointly with personality or personality-related constructs. Nevertheless, it seems conceivable to explore the relationships between environmental adversity, personality and psychopathology, and a reasonable first step would be to test the relationships between them from the perspective of person-environment transactions.

Caspi and Roberts (2001) chose the term ‘transaction’ because it is method-analytically free, although we consider that person-environment transactions can be viewed as different forms of relationships between variables, and therefore they may be approached from different methodological perspectives (Rutter, 1983). For example, reactive person-environment transactions may resemble a moderated relationship as one variable (e.g. personality) moderates the impact of another (e.g. environmental adversity) on a third one (e.g. psychopathology). Other forms of

reactive person-environment transactions might take the form of a mediated relationship, as one variable (e.g. personality) is presumed to be responsible for the effect of another (e.g. environmental adversity) on a third variable. When data on variables like social support, spousal reports, or similar were gathered and incorporated into these models, then evocative person-environment transactions could be tested. Thus, one might expect that conscientiousness and neuroticism would moderate the way in which victims would cope with sexual victimization (reactive person-environment transactions). On the other hand, neuroticism would amplify the effects of child sexual victimization on psychopathology, involving more negative transactions that would lead to greater neuroticism and, therefore, more psychopathology. In this way, person-environment transactions are related to the mechanisms by which psychopathology can be developed and maintained (Widiger & Smith, 2008).

To our knowledge there is no study that has explored the relationships between the Five Factor Model, child sexual victimization and general psychopathology. Thus, based on the theory of person-environment transactions, we hypothesize that some personality variables will moderate the relationship between sexual victimization and psychopathology, while others will mediate it, thereby producing different forms of person-environment transactions. More specifically, we predict: (1) that neuroticism and conscientiousness will moderate the effect of sexual victimization on psychopathology; and (2) that neuroticism will mediate the relationship between sexual victimization and psychopathology, both taking the form of a reactive person-environment transaction. In other words, we would expect neurotic participants to show greater psychopathology under conditions of high sexual victimization, and that those participants who score higher on conscientiousness will show lower levels of

psychopathology under high sexual victimization. With regard to the mediation model, we predict that the direct effect of sexual victimization on psychopathology will vanish (fully or partially) when neuroticism is introduced into the model.

## **2. Material and methods**

### **2.1 Sample**

The final sample consisted of 119 undergraduates (20% males) enrolled in introductory psychology and criminology courses at the University of Barcelona. Mean age of the sample was 23.31 years ( $SD = 7.48$ ). All participants described themselves as Caucasian and they volunteered to participate after giving written informed consent. A cross-sectional design was used to gather the data. Six participants were eliminated from the analyses due to the presence of outliers or missing data in the variables of interest.

### **2.2 Measures**

**2.2.1 NEO-FFI (Costa & McCrae, 1992).** This measure consists of five 12-item scales which measure the high-order personality traits of Neuroticism (N), related to emotional adjustment; Extraversion (E), related to the quantity of social interaction; Openness (O), which assesses the search for and appreciation of intellectual experiences; Agreeableness (A), which measures the quality of social interaction; and, Conscientiousness (C), which refers to goal-directed behaviors. These dimensions tap five basic factors of personality (according to the Five Factor Model) and reflect a converging general consensus in differential psychology. Responses are recorded on a five-point scale ranging from ‘strongly agree’ to ‘strongly disagree’. The adaptation into Spanish of this questionnaire has shown good psychometric properties previously (Ramos, Morán, & Manga, 2004).

### **2.2.2 *Juvenile Victimization Questionnaire-Adults Retrospective Version, JVQ***

(Finkelhor, Hamby, Ormrod, & Turner, 2005). This is a comprehensive self-report measure that assesses a broad range of victimizations related to childhood and adolescence. The inventory obtains information on 34 forms of offenses against youth that cover six general areas: Conventional Crime, Child Maltreatment, Peer and Sibling Victimization, Sexual Victimization, and Witnessing and Indirect Victimization. For the present study we only considered scores in the JVQ domain of sexual victimization. This module contains items referring to both contact sexual victimization (such as sexual assault and attempted or completed rape) and non-contact sexual experiences (e.g. flashing/sexual exposure and verbal sexual harassment). This questionnaire has shown good psychometric properties (Pereda, Guilera, & Abad, 2011).

**2.2.3 *Brief Symptom Inventory, BSI (Derogatis, 1993)***. This is a self-report clinical rating scale comprising 53 items that reflect nine primary symptom dimensions (Somatization, SOM; Obsessive-Compulsive, O-C; Interpersonal Sensitivity, I-S; Depression, DEP; Anxiety, ANX; Hostility, HOS; Phobic Anxiety, PHOB; Paranoid Ideation, PAR; and Psychoticism, PSY), along with four items of significant clinical interest but which are not subsumed under any of the primary symptom dimensions. It also presents three global indices of distress: the Global Severity Index (GSI), the Positive Symptom Distress Index (PSDI) and the Positive Symptom Total (PST). It can be completed in ten minutes (Derogatis & Melisaratos, 1983) and is rated on a 5-point scale of distress, ranging from ‘not at all’ (0) to ‘extremely’ (4). Only the GSI was considered in the present study. The Spanish adaptation showed excellent psychometric properties (Pereda, Forns, & Peró, 2007).

## **2.3 Procedure**

The inventories were administered anonymously in groups of 20 to 30 students. We sought to ensure that they were completed and that the data of all participants remained confidential at all times. A support service was offered to any participants who experienced psychological distress as a result of completing the questionnaires. Less than 1% of the sample required follow-up.

## 2.4 Statistical analyses

After computing descriptive statistics we followed the procedures described in Aiken and West (1991) in order to test the reactive person-environment transaction hypothesis, assuming that personality variables are potential moderators between sexual victimization and psychopathology. We then tested the hypothesis of evocative person-environment transaction between sexual victimization, environmental adversity and psychopathology, assuming that neuroticism may mediate this relationship.  $p$ -values are two-tailed, and statistical significance was set at  $p < 0.05$ . PASW version 18.0 for MacOS was used for statistical computations. The power analysis was done using G-Power 3 software for MacOS (Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G., 2009).

## 3. Results

### 3.1 Descriptive statistics

The means, standard deviations and correlation matrix for all the variables studied can be found in Table 1. Means and standard deviations were within their expected ranges. Interestingly, JVQ sexual victimization was not significantly correlated with the other variables, except for the BSI Global Severity Index ( $r=.67, p<.01$ ), which also correlated significantly with Neuroticism ( $r=.24, p<.01$ ). With regard to the experience of sexual victimization, 44% of the sample experienced at least one episode in childhood, although the mean number of victimization episodes was 0.45.

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### ***3.2 Personality traits moderate the relationship between child sexual victimization and psychopathology***

In order to test our moderation hypothesis, we centered personality dimensions and sexual victimization and then computed the interaction terms by simply multiplying these centered variables (Aiken & West, 1991). We then performed a hierarchical regression in which GSI scores were regressed on personality dimensions, sexual victimization, and the interaction between personality and sexual victimization in three consecutive steps. In the final model, Neuroticism ( $\beta=.33$ ;  $p<.01$ ), Conscientiousness ( $\beta=-.21$ ;  $p=.02$ ), Sexual Victimization (marginally significant;  $\beta=.26$ ;  $p=.05$ ) and the interaction between Sexual Victimization and Conscientiousness ( $\beta=-.59$ ;  $p<.01$ ) accounted for up to 59% (Adjusted  $R^2 = .55$ ) of the variance in global severity scores. No other personality variables (Extraversion, Openness and Agreeableness) were found to be significant neither it was any interaction involving Neuroticism, Extraversion, Openness or Agreeableness. First-order interactions between personality dimensions were also explored, but no significant effects of these interactions on psychopathology were found (data not shown).

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To understand the nature of the interaction, and following Aiken and West (1991), we then estimated GSI scores for individuals who scored low (-1 SD) versus high (+1 SD) on Sexual Victimization and low (-1 SD) versus high (+1 SD) on

Conscientiousness. These estimated means are shown graphically in Figure 1. It can be seen that participants with lower levels of conscientiousness showed higher levels of psychopathology according to the GSI under conditions of high sexual victimization. On the other hand, under conditions of low sexual victimization, participants with high levels of conscientiousness scored slightly higher than did those with low levels of conscientiousness. Post-hoc power analysis indicated that this multiple regression analysis had a power greater than 0.99 to detect our observed effect size (Faul et al., 2009).

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### ***3.3 Neuroticism mediates the relationship between child sexual victimization and psychopathology***

Finally, we explored the role of neuroticism as a potential mediator between sexual victimization and psychopathology. As defined by Baron and Kenny (1986), tests of mediation require that we first show significant associations (a) between sexual victimization and psychopathology, (b) between neuroticism and psychopathology and (c) between sexual victimization and neuroticism. A mediating effect is shown if the association between sexual victimization and psychopathology is either diminished or becomes non-significant when both sexual victimization and neuroticism are used to predict psychopathology.

Figure 2 summarizes the results for the present mediation model. The initial model (excluding Neuroticism) yielded significant relationships between sexual victimization and psychopathology ( $\beta=.20, p=.03$ ). Subsequent analyses (including Neuroticism as a mediator) revealed that Neuroticism mediates the association between sexual

victimization and psychopathology. For participants in this study, greater sexual victimization was linked to higher levels of neuroticism ( $\beta=.25, p=.006$ ), which in turn were linked to increased levels of psychopathology ( $\beta=.35, p<.001$ ). The initial association was completely eliminated by the inclusion of Neuroticism ( $\beta=.11, p=.21$ ), indicating full mediation (Sobel's  $z=2.27, p=.02$ ). The variance in psychopathology scores accounted for by sexual victimization and neuroticism in this model was 15%. With regard to the power of this mediation analysis, post-hoc analysis revealed a power of 0.97 to detect a medium effect size of  $f^2=0.17$  (Faul et al., 2006).

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#### **4. Discussion**

The aim of the present study was to investigate, from the perspective of person-environment transactions, the potential mediation and moderation effects of Big Five personality traits of the association between child sexual victimization and psychopathology. We hypothesized that the personality traits of neuroticism and conscientiousness would moderate the effect of sexual victimization on psychopathology, and that neuroticism would mediate the relationship between sexual victimization and psychopathology. Our findings partially supported these hypotheses, as we found that conscientiousness, but not neuroticism, moderated the effect of sexual victimization on psychopathology, and that neuroticism mediated the aforementioned effect.

In line with previous studies (Lockenhoff et al., 2009; Rademaker et al., 2008; Roberts et al., 2009; Talbot et al., 2000) we did not find a significant direct association between sexual victimization and conscientiousness or other personality traits.

Consistent with our expectations, however, we did find a significant interaction between conscientiousness and sexual victimization, accounting for up to 60% of variance. It is worth to further expand the meaning of the moderating effect that conscientiousness has between sexual victimization and psychopathology. Under conditions of sexual victimization, those who scored higher on conscientiousness showed lower psychopathology scores than did those who scored low on conscientiousness. Arguably this could be a clear illustration of a differential response to sexual victimization based on levels of conscientiousness, and an example of a reactive person-environment transaction. This is one of the contributions of the present study, which expands knowledge in this area that has so far been focused on neuroticism (Caspi & Roberts, 2001; Shiner & Caspi, 2003; van Os & Jones, 1999). In this particular case, from the perspective of individual differences, conscientious people are usually described as persistent, industrious, competent and organized (McCrae & Costa, 2003), and part of their success results from their organization and orderliness. In some respects, however, conscientious people are inhibited, adhering scrupulously to their moral precepts, and they have a strong sense of dutifulness. They are high in achievement striving, pursue excellence in everything they do, and they are necessarily high in self-discipline so as to be able to accomplish their goals. Finally, they are characterized by deliberation, making plans in advance and thinking carefully before acting. Theirs is a life clearly directed along the paths they choose to pursue (McCrae & Costa, 2003). Hence, individuals high in conscientiousness may tend to respond to sexual victimization with greater efforts to seek help or to cope with the situation through rational problem-solving strategies (D'Zurilla, Maydeu-Olivares, & Gallardo-Pujol, 2011), the latter being defined as the rational, deliberate and systematic application of effective problem-solving skills (D'Zurilla, Nezu, & Maydeu-Olivares, 2002). Rational problem solving

would be associated with the use of adaptive problem-engagement coping strategies (D'Zurilla et al., 2002), which would therefore be associated with more adaptive behavior in adulthood and lower levels of general distress.

An alternative explanation for this finding would be that conscientious individuals may under-report symptoms of psychopathology or may deny sexual victimization. Although personality traits have been linked to recall bias, the trait which has shown the strongest association in this regard is neuroticism (Leikas & Lindeman, 2009). Furthermore, it is unlikely that conscientiousness would produce recall bias, as conscientious individuals engage actively in research and take it seriously (McCrae & Costa, 2003). By contrast, it is likely that non-conscientious individuals may under-report sexual victimization. At all events, it is worth noting that as in previous studies (Kotov et al., 2010; Malouff et al., 2005), conscientiousness and neuroticism did predict psychopathology scores in the expected direction. As regards the fact that we found no interaction between neuroticism and sexual victimization, this finding could be due to the lack of statistical power, which can be inferred from the marginal significance of the interaction. Independent replications in larger samples should be able to confirm this interaction.

Regarding neuroticism, we found that it fully mediated the effect of sexual victimization on psychopathology, but it did not moderate it. According to the literature, this may be another form of a reactive person-environment transaction (Roberts, Wood, & Caspi, 2008). A neurotic individual may often express feelings of worry and upset which might evoke negative reactions from others. For instance, a victim of sexual victimization may frequently express his or her distress, and thus evoke negative reactions from their close context (e.g. denying the nature of sexual victimization, the burden related to it, etc.). Negative reactions from the victim's social environment when

sexual victimization is disclosed increases the risk of guilt cognitions and internalizing psychological symptoms in the victim (Ullman, 2001). In addition, this lack of social support decreases the effectiveness of psychological treatment (Cohen & Mannarino, 2000). This is consistent with the findings of other authors regarding the mediating effect which neuroticism has between environmental adversity and psychopathology (Gomez, Krings, Bangerter, & Grob, 2009). It is worth to mention the fact that neuroticism showed a direct effect in the moderation analysis and became a mediator in the mediation analysis may reflect different realities. In one hand, neuroticism has been historically clearly related to neurotic psychopathology (REF), hence its direct and mediation effects, as both high neuroticism scores and general psychological distress show some conceptual overlapping (REF). We also found this overlapping, as neuroticism was the only personality variable significantly correlated with GSI scores. On the other hand, if there were also possible moderating effects, they would be small to medium sized, and we did not have enough power to detect them in this study. An alternative explanation for this mediation effect could be that extremely adverse life events, such as sexual victimization, may lead to an increase in neuroticism levels (Lockenhoff et al., 2009). These higher levels of neuroticism could explain the subsequent higher levels of general distress or psychopathology.

One of the limitations of the present study is that we cannot determine whether adult personality may be caused by the interaction between life history and the gene pool, or if personality interacts with environmental adversity over the life course. There is evidence for both statements. For instance, Caspi et al. (2002) showed the effect of the MAOA gene and environmental adversity in terms of predicting scores on the aggressiveness scale of the MPQ, but of course, personality or temperament are subject to strong biological influences. In this regard, neuroticism showed the highest rates of

heritability. By contrast, conscientiousness could be less temperamental and its development is likely to be more influenced by environmental adversity than are other traits. Another important limitation of our study concerns the cross-sectional design, and more powerful conclusions could undoubtedly be drawn from a longitudinal study. Nevertheless, we firmly believe that the present results are still informative, as they provide a first snapshot of those relationships that could provide insights to be tested later on in a longitudinal design. Mention should also be made of the sample characteristics. It has been argued that conclusions drawn from university students cannot be generalized to the general population (Henrich et al., 2010), although it has also been shown that there are no major differences between these populations in terms of exposure to environmental adversity and related circumstances (Wiecko, 2010). Interestingly, the prevalence of sexual victimization in our sample was higher than international rates reported in previous retrospective studies (Pereda, Guilera, Forns, & Gómez-Benito, 2009). However, the fact that we included a composite of contact and non-contact sexual victimization experiences, rather than a single measure of sexual abuse in childhood, may account for these results.

To our knowledge the present study represents the first global test of person-environment transactions with regard to psychopathology and sexual victimization within the framework of the Five Factor Model. We believe that the findings may help to understand the role of individual differences in the development of psychopathology, beyond the vulnerability model or the pathoplasty model. The main contribution of this study is two-fold. First, it contributes to knowledge about the mechanisms through which personality and life history may influence the development of psychopathology. Second, it may have applied contributions, since taking individual differences into account can help both to improve interventions in individuals affected by trauma and to

promote resilience by 1) knowing where to target efforts at change, 2) generating hypotheses about treatment efficacy, and 3) matching treatment to personality (Harkness & Lilienfeld, 1997). For instance, conscientiousness strongly influences the patient's willingness to do the work of psychotherapy, whereas neuroticism influences the intensity and duration of the patient's distress (Miller, 1991). In this regard, some authors have used personality information to predict patient outcomes (Talbot et al., 2003), while others have identified areas that may benefit from specific training in social skills and coping strategies (McMurrin, Duggan, Christopher, & Huband, 2007). We hope that the present findings stimulate further research on the interface between personality, psychopathology and victimization experiences in order to develop an integrative perspective of psychological functioning.

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## **6. Declaration of Conflicting Interests**

The authors declare that there are no conflicts of interest with respect to their authorship or the publication of this article.

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Table 1.

Descriptive statistics and Pearson correlations for all study variables

	Mean	SD	Media	Min	Max	Alpha	1	2	3	4	5	6	7
			n										
1. Neuroticism	24.87	5.36	24.50	12.00	39.00	.65	-						
2. Extraversion	28.38	4.18	28.00	18.00	39.00	.57	.53*	-					
3. Openness to Experience	27.51	5.39	27.00	16.00	40.00	.45	.48*	.54*	-				
4. Agreeableness	26.67	5.48	26.00	13.00	42.00	.55	.33*	.59*	.62*	-			
5. Conscientiousness	30.92	4.99	30.00	20.00	44.00	.59	.33*	.59*	.54*	.52*	-		
6. JVQ Sexual Victimization	2.72	7.06	.00	.00	63.00	.54	.12	.06	-.04	.03	.02	-	
7. Global Severity Index	.92	.96	.76	.04	9.00	.69	.24*	.08	.02	-.03	-.05	.67*	-

*Note:* JVQ, Juvenile Victimization Questionnaire; \* $p < 0.01$ .

Table 2.

Hierarchical regression analyses: personality and sexual victimization

Variables	B	SE	$\beta$	t	$R^2/\Delta R^2/\Delta d$	$P$	95% confidence interval
					justed $R^2$		
Step 1					.08/-.04	n.s.	
N	.05	.02	.29	2.64		.001	[0.01, 0.09]
E	.01	.03	.06	.45		.65	[-0.05, 0.08]
O	-.01	.02	-.05	-.42		.68	[-0.06, 0.04]
A	-.01	.02	-.07	-.55		.58	[-0.06, 0.03]
C	-.02	.02	-.11	-.94		.35	[-0.07, 0.02]
Step 2					.49/.41/.47	<.001	
N	.03	.02	.19	2.20		.03	[0.01, 0.06]
E	.01	.02	.05	.54		.59	[-0.03, 0.06]
O	.01	.02	.06	.65		.52	[-0.02, 0.05]
A	-.02	.02	-.12	-1.14		.26	[-0.05, 0.02]

Step 3	C	-.03	0.2	-.13	-1.43	.16	[-0.06, 0.01]
	SV	.09	.01	.65	9.49	<.001	[0.07, 0.11]
						.59/.10/.55	<.001
	N	.06	.02	.33	3.26	<.001	[0.02, 0.10]
	E	-.01	.03	-.05	-.46	.65	[-0.06, 0.04]
	O	.02	.02	.10	.99	.33	[-0.02, 0.05]
	A	-.02	.02	-.08	-.86	.39	[-0.05, 0.02]
	C	-.04	.02	-.21	-2.34	.02	[-0.08, -0.01]
	SV	.04	.02	.26	1.95	.05	[-0.01, 0.07]
	SV x N	.01	.01	.38	1.51	.14	[-0.01, 0.02]
	SV x E	.00	.01	.06	.32	.75	[-0.01, 0.02]
	SV x O	.00	.01	-.12	-.50	.62	[-0.01, 0.01]
	SV x A	.00	.01	.06	.46	.65	[-0.01, 0.01]
	SV x C	-.02	.01	-.60	-3.47	<.001	[-0.03, -0.01]

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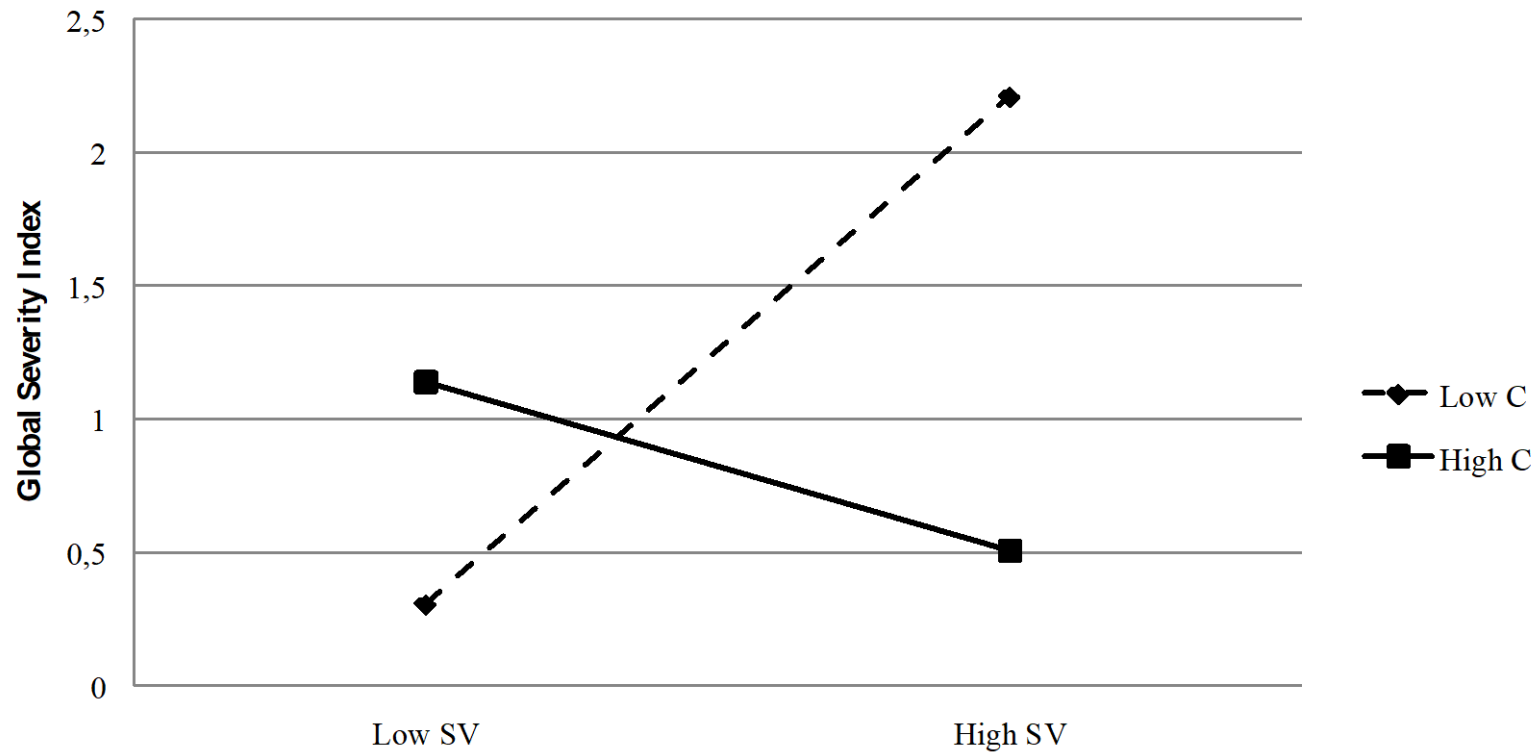
Note: N, Neuroticism; E, Extraversion; O, Openness to Experience; A,

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Agreeableness; C, Conscientiousness; SV, Sexual Victimization.

Figure 1.

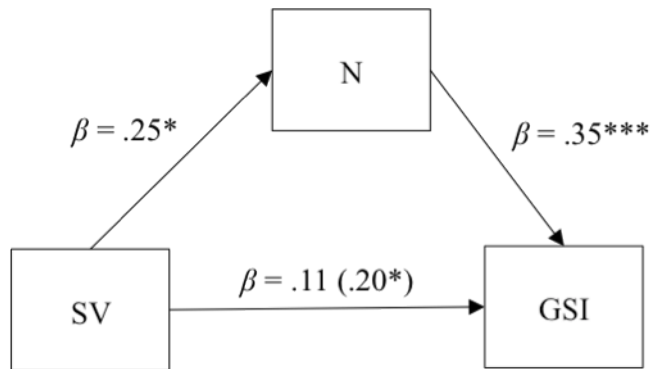
Psychopathology scores as a function of the Conscientiousness x Sexual Victimization interaction.



*Note:* SV, Sexual Victimization; C, Conscientiousness

Figure 2.

Direct and indirect associations from sexual victimization and personality to psychopathology.



Note: Final standardized regression weights are reported.  $*p < .05$ .  $**p < .01$ .  $***p < .001$