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## BRIEF REPORT

## How Empathic Are War Veterans? An Examination of the Psychological Impacts of Combat Exposure

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How empathic are battle-experienced war veterans and demobilized ex-combatants? Individuals who have participated in war-related violence tend to show an increased risk of mental health problems, which makes their readaptation to postconflict civilian life much more difficult. This study is the first systematic attempt to evaluate whether war experiences are potentially related to empathic deficit among veterans. Based on a sample of 624 demobilized ex-guerrillas and ex-paramilitaries from the Colombian armed conflict, we identify 3 clearly distinct empathic profiles, suggesting that, while lack of empathy is not generalized among

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ex-combatants, there is an important subgroup of veterans who present such a dispositional profile. Identification of this critical subgroup will be crucial to policies aimed at assisting postconflict reintegration efforts.

#### **Public Significance Statement**

Empathy is a social dimension that plays a crucial role in the process of understanding other people's misfortunes, as well as in the generation of concern feelings toward counterparts. Subjects with limited levels of empathy tend to show atypical social behavior such as aggression. We suggest that the effect of exposure to war experiences has an impact on the empathic profiles of former combatants. Our study shows that ex-combatants' abilities to evaluate feelings of displeasure, associated with observing or hearing stories of others in unfortunate experiences, show low scorings in around 70% of the sample. These results suggest a potential causal relation between combat exposure and diminishing empathic levels, which demands a systematic evaluation in further studies.

**Keywords:** empathic dispositions, Interpersonal Reactivity Index, Latent class cluster analysis, ex-combatants, Colombian armed conflict

Evidence has been accumulating regarding the psychological impact of combat experience on war veterans. Among the different disorders observed after war, most works report high levels of post-traumatic stress disorder, depression, aggressive behavior, and diminishing empathic disposition. This array of psychological disorders and behaviors has been observed among veterans of international wars such as the Second World War and among ex-combatants of internal armed conflicts such as the one in Colombia. For instance, Tobón et al. (2015) found in a Colombian sample of former combatants evidence linking neurological mechanisms with varying empathy levels. Furthermore, distinguishing empathy levels among ex-combatants offers a promising avenue to enlighten the potential neurocognitive effects of war.

The Interpersonal Reactivity Index (Davis, 1980) is used to assess affective and cognitive empathic dispositions. Results using this instrument found that diminishing in the affective component of empathy may promote antisocial behavior and misinterpretation of social situations (Perez-Albeniz & de Paul, 2004). Complementarily, brain areas involved in affective processing describe hyperactivity in subjects with strong political interests (Gozzi, Zamboni, Krueger, & Grafman, 2010). Together, we suggest that the combination of reduction in the affective empathic component and the presence of radical political objectives might generate abnormal responses to social contingencies in ex-combatants.

Exploring the ways in which war experiences may affect emotional processing, such as empathic response at a psychological level, and discussing its theoretical association with neural functioning, this study examines individual profiles of the affective and cognitive components of empathy within a sample of ex-combatants from Colombian illegal armed groups. Using latent class cluster analysis (LCCA), we classified individuals into different groups according to empathic dispositions, while controlling for variability within the sample. We expect to find varying levels of empathic dispositions among ex-combatants.

## **Method**

### **Participants**

Ex-combatants from Colombian illegal armed groups who are actively involved in the official reintegration program were re-

cruited for this study. Our sample was comprised of ex-combatants with two main types of former affiliations: 38.3% came from Marxist–Leninist guerrilla groups mainly recruited from rural areas, and 60.1% of them were ex-paramilitaries who serve as a private security army for the protection of the land and inhabitants of regions controlled by guerrillas. No information about group affiliation was obtained from 10 subjects (1.6%). Other selection criteria included (a) answering a sociodemographic interview confirming their previous participation in Colombian illegal armed groups; (b) demonstrating at least 3 years of basic education; and (c) voluntary acceptance to participate in the study, by signing an informed consent according to the Declaration of Helsinki. Sociodemographic characteristics of the final sample are summarized in Table 1.

The enrollment process took place between February and July 2011, and a total of 624 subjects completed a Spanish version of the Interpersonal Reactivity Index (IRI; Mestre-Escrivá, Frías Navarro, & Samper García, 2004). Although this instrument follows a self-report format, a pilot study revealed that item complexity affects the performance of subjects with low education levels. To deal with this situation and to guarantee data collection quality, nearly 10% of the information was gathered via individual semi-structured interviews. The data collection instrument was applied in a classroom during psychosocial therapy.

### **Instrument**

The Interpersonal Reactivity Index (Davis, 1980) consists of four subscales, each measuring a different aspect of empathy: perspective taking (PT), empathic concern (EC), fantasy (F), and personal distress (PD). The questionnaire uses a multidimensional approach to evaluate dispositional empathy, underlying cognitive and affective constructs. The short version includes 28 items, divided into four 7-item subscales. *Fantasy* (F) evaluates the ability to share personal aspects or to identify oneself with characters from a book, a novel, a movie or an imaginary situation. *Perspective taking* (PT) evaluates the ability to understand and adopt other perspectives and to recognize the position or feelings of others. *Empathic concern* (EC) evaluates the response to feelings such as compassion, sympathy, or concern for others during difficult situations. *Personal distress* (PD) evaluates feelings of

displeasure associated with observing or hearing stories of others in unfortunate experiences. Using a Likert-type rating scale, participants rate each item with five response options, from “does not describe me well” to “describe me very well.” The total score ranges from 0 to 112 and from 0 to 28 for each subscale. Reliability analysis reports Cronbach’s alpha coefficients ranging from 0.7 to 0.78 (Davis, 1980). The Spanish version has reported internal validity values ranging from 0.64 to 0.70 (Mestre-Escrivá et al., 2004).

### Statistical Analysis

Descriptive statistics were calculated to depict the sample’s characteristics. Comparisons were made with analyses of variance, using Bonferroni’s post hoc pair group comparisons. Contingency tables with chi square distribution were developed to compare categorical variables. LCCA models for the scores on the four dimensions of the IRI were developed. By using the Latent GOLD 4.0 software (Statistical Innovations, Belmont, MA), we selected the best-fitting class out of 10 classes provided by the LCCA analysis, with no prior hypothesis. Latent GOLD uses both expectation/maximization (EM) and Newton-Raphson algorithms to find the maximum likelihood of each model after estimating model parameters. To avoid ending up with local solutions (a well-known problem in LCCA), we used multiple sets of starting values, which were automatically implemented in Latent GOLD. Because we were dealing with sparse contingency tables, we estimated  $p$  values associated with  $L^2$  statistics by means of parametric bootstraps (500 replications) rather than relying on asymptotic  $p$  values. According to the latent class model, no interactions between variables were initially considered. Local independence of the standard latent class model was supported by progressively controlling the bivariate residuals (BVRs), until the variable–variable and covariate–variable associations were fairly close to 1 or less. Latent GOLD calculates bivariate variable–variable and variable–covariate residuals that can be used to detect which pairs of observed variables are more associated, generating local depen-

dence effects. Successive LCCAs were conducted until elimination of all variable–variable and variable–covariate was completed, and residuals were greater than 1.5. Gender, age, and education level were explored as active and inactive covariables. The profiles almost collapsed at these points in all the explored models, and these demographic variables were excluded from the final LCCA. The final best model was selected by using the model fit  $L^2$  or LL, the lowest Bayesian information criteria (BIC), the number of parameters (Npar), the bootstrap  $p$  value of  $>.05$ , the BVRs, and the highest proportion Npar/sample size ( $n$ ). The BVRs corresponded to a Pearson chi-squared test divided by the degrees of freedom. The chi-squared test was computed on the observed counts in a two-way table using the estimated expected counts obtained from the estimated model. If the model were true, BVRs would not be substantially larger than 1 and the Npar/ $n$  proportion must be over 5 (see Magidson & Vermunt, 2004).

### Results

The LCCA of the IRI’s four dimension scores (F, PT, EC, PD), after determining likelihood goodness-of-fit indexes, the  $n/N$ par relation, and the residual control, yielded a model of three clusters as the best-adjusted model (LL = 1,692.29; BIC = 3474.68; Akaike information criterion = 3,412.61; Npar = 14). Cluster 1 included 284 participants (46%), Cluster 2 was made up of 202 participants (32%), and Cluster 3 of 137 participants (22%).

The profiles showed that Cluster 1 described low probabilities of obtaining high scores on F, PT, EC, and PD, which indicates a group of individuals with low cognitive and affective empathy. Cluster 2 showed high probabilities to score high on PT and EC, which correspond to the cognitive empathy dimensions. On the emotional F dimension, this Cluster describes similar scores to the global median, which means that participants informed a similar probability to show high or low median scores. Also, both Clusters 1 and 2 presented low PD scores, which could be interpreted as an indicator of low social stress about others’ misfortunes (see Figure 1). Cluster 3 presented high probabilities of obtaining mid to high

Table 1

*Demographic and Social Characteristics of the Three Latent-Class Clusters of IRI–Spanish Version, Answered by 624 Colombian Ex-Combatants From Illegal Armed Groups*

| Variable                   | All together |      | Cluster 1<br>( $n = 284$ ) |      | Cluster 2<br>( $n = 202$ ) |      | Cluster 3<br>( $n = 137$ ) |      | $p$               |
|----------------------------|--------------|------|----------------------------|------|----------------------------|------|----------------------------|------|-------------------|
|                            | $N$          | %    | $N$                        | %    | $N$                        | %    | $N$                        | %    |                   |
| Gender <sup>a</sup>        |              |      |                            |      |                            |      |                            |      | .000 <sup>b</sup> |
| Male                       | 517          | 82.9 | 257                        | 90.5 | 159                        | 78.7 | 101                        | 73.7 |                   |
| Female                     | 106          | 17.6 | 27                         | 9.5  | 43                         | 21.3 | 36                         | 26.3 |                   |
| Illegal group              |              |      |                            |      |                            |      |                            |      | .104              |
| Guerrilla                  | 239          | 38.3 | 93                         | 32.7 | 88                         | 43.6 | 58                         | 42.3 |                   |
| Paramilitary               | 375          | 60.1 | 186                        | 65.5 | 111                        | 55.0 | 78                         | 56.9 |                   |
| No information             | 10           | 1.6  | 5                          | 1.8  | 4                          | 2.0  | 1                          | 0.7  |                   |
|                            | Mean         | $SD$ | Mean                       | $SD$ | Mean                       | $SD$ | Mean                       | $SD$ |                   |
| Age (years)                | 31.9         | 8.0  | 32.02                      | 7.3  | 31.83                      | 6.9  | 31.95                      | 7.2  | .869              |
| Level of education (years) | 8.0          | 3.8  | 7.78                       | 3.8  | 8.53                       | 4.0  | 7.49                       | 3.5  | .029 <sup>c</sup> |

Note. IRI = Interpersonal Reactivity Index.

<sup>a</sup> One missing case. <sup>b</sup> Clusters 1 and 2 ( $p = .00$ ) and between Clusters 1 and 3 ( $p = .00$ ), and no difference was found between Cluster 2 and Cluster 3 in terms of gender distribution ( $p = .29$ ). <sup>c</sup> Difference between Cluster 2 vs. Cluster 3 ( $p = .05$ ), post hoc test Bonferroni. No other difference was found.

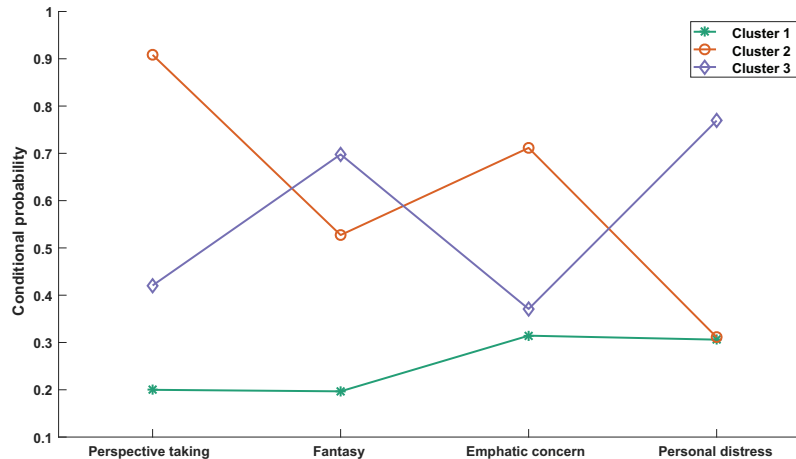


Figure 1. Interpersonal Reactivity Index (IRI) Spanish version dimensions. Axis Y corresponds to conditional probability scores of obtaining the IRI dimension scores higher than the median. Axis X shows the four IRI dimensions. See the online article for the color version of this figure.

scores on the three of the four dimensions of the IRI–Spanish version, while EC presented a higher probability to attain lower median scores in this cluster. The median obtained for each group in the four scales of the IRI are shown in Figure 1.

Table 1 summarizes the characteristics of each cluster. Cluster 2 displays a larger difference on educational level in comparison with Cluster 3 ( $p = .05$ ). Gender showed a significant difference across groups. Males were significantly predominant in all the clusters, which corresponds with the general characteristics of the overall ex-combatant population. A contingency table of  $3 \times 2$  cells showed statistically significant differences for gender between Clusters 1 and 2 ( $p = .001$ ) and between Clusters 1 and 3 ( $p = .001$ ), and no difference was found between Cluster 2 and Cluster 3 in terms of gender distribution ( $p = .29$ ). No other differences were observed for other demographic variables such as education or age.

## Discussion

The purpose of this study was to examine and describe the profiles of the affective and cognitive components of empathy in a sample of ex-combatants from Colombian illegal armed groups; this was achieved using a LCCA. Results indicated that three groups could clearly be identified from IRI scores. Interestingly, the selected individuals were similar in variables such as illegal group affiliation, age, education, and gender distribution. These results are essential for showing that people involved in illegal armed conflicts have different empathic profiles, which may indicate particular forms of affectively and cognitively consider their opponents.

In particular, Cluster 1 showed high probabilities of poor performance across the four dimensions of IRI. Thus, they exhibit a greater probability to display dispositional difficulties in recognizing and evaluating other people's feelings. These participants are prone to either manifest poor understandings of others' emotional states, or to take the perspective of others. In both cases, their emotional reactions do not reflect personal distress. Regarding war contexts, individuals with poor dispositional empathy are supposed to be more aggressive and unemotional in situations (such as torture and

massacres) and tend to assume a more active role in armed confrontations (Nordgren, McDonnell, & Loewenstein, 2011).

Further research is needed to explore the role of other motivational drives and psychopathological disorders on this cluster and its relation to politically oriented violence.

A recent study in ex-combatants showed a negative correlation between scores on empathy and neurobiological response suggested that, the worse empathy impairments were, the greater the reactivity to emotional saliency observed in the neurobiological response (Tobón et al., 2015). The relation between atypical emotional processing with larger aggressive expression, has been reported recently among ex-combatants (Quintero-Zea et al., 2017). The presence of this combined traits usually tends to be accompanied with an increased social skill profile.

Cluster 2 shows different cognitive and emotional processing patterns than those observed in Cluster 1. Participants from Cluster 2 have a high probability of scoring high in three of the IRI dimensions: F, PT, and EC. These results reveal an adequate ability to rationally understand displeasure or misfortune involving others in real or imaginary situations in comparison with the other clusters. Nevertheless, these individuals are less able to express anxiety or discomfort regarding negative situations experienced by others, which indicates some kind of incongruence between cognitive and emotional processing, as well as in comprehension and adaptive reactions. Limited empathic discomfort when observing others' negative feelings may result in indifferent reactions to their plight and less motivation to help (Decety & Ickes, 2009).

Behavioral evidence suggests that personal distress is alleviated by the performance of altruism, and cooperation; thus, it is possible to suggest that stress is one of the core mechanisms to promote compensatory or caring behavior (Decety & Ickes, 2009). Furthermore, the distress response is crucial for the inhibition of aggression due to the observation of distress in the victim. Failures in this type of empathy processing observed in the participants comprising Cluster 2 might suggest the presence of an impairment in prosocial functioning or the expression of disruptive behavior (de Wied, Gispen-de Wied, & van Boxtel, 2010).

The cognitive (PT and FS) and affective (PD) empathy scores observed in Cluster 3 were comparable to those of typical individuals in Spanish sample (Mestre-Escrivá et al., 2004). This is not an unexpected result, given that even in the presence of violent behavior, it is possible to observe appropriate dispositional empathy (Decety & Ickes, 2009). Similarly, a classic study with Vietnam veterans concluded that subjects with an adequate disposition to empathy could develop altruistic feelings for others, even after war involvement (Kishon-Barash, Midlarsky, & Johnson, 1999).

EC, meanwhile, was the only dimension with a high probability of returning lower median scores in this sample. Interestingly, a recent study showed that a second-order factor derived from confirmatory factor analysis has a strong association with the latent empathic concern dimension as measured in ex-combatants (García-Barrera, Karr, Trujillo-Orrego, Trujillo-Orrego, & Pineda, 2017). These authors suggested that it is necessary to evaluate the hypothesis that a low level of EC may be associated with an adaptive ability to personalize others' situations, allowing these ex-combatants to perpetrate violent actions against others in the war context. Particularly, military training appears to adjust reactions, diminish stress responses to confrontations and aggression against others, or both (Morgan et al., 2000).

In summary, the results of Cluster 3 support the hypothesis that recognition, evaluation, and reaction to other people's emotions are associated with social functioning. In addition, this group's scores suggest conservation of the regulating emotional response of goal directed actions and of the adaptive role of empathy (Decety & Ickes, 2009). The results observed for EC could also suggest an adaptive mechanism necessary to survive war. However, these data also suggest the need to consider military training as an element that may bias decisions and consequently modulate empathic reactions.

To our knowledge, this is one of the first articles to report individual dispositions among Colombian ex-combatants. Further studies should be taken into account in the following areas:

1. The inclusion of implicit measures of empathy due to limited social desirability derived from the implementation of direct interviews.
2. Future studies should also assess the possible relationship between individual differences in measures of empathy and violent behavior.
3. The inclusion of neuropsychiatric and cognitive measures aiming to complement the interpretation of the findings.
4. Our findings should be evaluated against studies considering anthropological and contextual backgrounds, underlying involvement in the group's activities, roles played in the group, and the configuration of political stereotypes.

This study on dispositional empathy among Colombian ex-combatants demonstrated that there is not a unique empathic profile among this population. We observed the conformation of three latent class clusters of ex-combatants that only differ in terms of cognitive and affective empathy configurations. For instance, Cluster 3 shows adequate cognitive and affective empathy, except for a diminished

capacity for empathic concern; in contrast, Cluster 1 presents the opposite characterization, in which cognitive and affective empathy returned the lowest value in the sample. Finally, Cluster 2 shows limited stress response, which may limit adaptive behavior in social contexts. Low scores in the personal distress dimension are shared by Clusters 1 and 2. Further research is needed to explore the relation of this dimension and aggression in social contexts.

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