

The Neuropsychological Impact of Conflict: An Analysis of Implicit Prejudice among Victims, Ex-combatants and Communities in Colombia¹

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ABSTRACT

Armed conflict impacts individuals at psychological level not only by causing illness, but also by affecting the mechanisms of information processing, opinion formation and decision-making. These effects negatively influence the effectiveness and durability of inter-group reconciliation approaches that ignore the protracted nature of biologically-driven implicit biases. By means of a computer-based Implicit Association Test (IAT), we tested pre-cognitive inter-group prejudices of 251 war victims, former guerrillas and victims in Colombia. We find that while ex-guerrillas identify themselves with the victims, there is a systematic bias against former combatants among communities and even more so among war victims. These results show not only that these groups have fundamentally different understandings of their immediate past of violence, but also that these conceptions are neurologically-imprinted in their cognitive and emotional processing mechanisms. We conclude on the need to deal with the neuropsychological effects of war on people's dispositions and perceptions in post-conflict societies.

KEYWORDS: implicit association, IAT, victims, ex-combatants, conflict, reconciliation, postconflict, prejudice

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Prejudice is planted in the root of conflict, exacerbates it, and complicates its resolution in the long term. But prejudice need not necessarily be regarded as an undesirable trait. On the contrary, many works suggest that the way automatic cognitive processes help individuals make quick judgments about situations in which they find themselves, saving time and resources that could prove vital for adaptation and even survival. This translates into quicker emotional responses in social situations (Payne 2001; Satpute and Lieberman 2006).

Prejudices are typical among groups at war. Extensive literature explains how embracing ingroup vs. outgroup identities enables violent confrontation along ethnic, religious and ideological lines². Adapting to these conflict logics, as a consequence, modulates the human brain and personality in ways that may not be compatible with postconflict contexts, where acceptance and coexistence between former antagonists are a prime societal goal.

The negative effect of conflict experiences on people's minds is deeper and harder to remove than generally acknowledged. Temporary explicit attitudinal changes between rival racial, political or social groups can be achieved through a good number of intervention techniques, mainly following the contact-hypothesis prescription (Allport 1979, Tropp 2012), or by means of inducing perspective-taking through step-in-the-other's-shoes type of exercises (Galinsky and Moskowitz 2000; Vescio, Sechrist and Paolucci, 2003). However, recent neuropsychological findings claim that prejudice and stereotyping actually have a biological basis, involving neural processes associated with long-lasting visceral

² See for example the works of Hewstone and Cairns (2001), Kaufman (2001) and Tropp (2012).

responses; as a result, successful short-term interventions may be enabling, under lab-controlled conditions, only reductions in the expression of unchanged biases, rather than modifying the underlying biological mechanisms that activates them (Amodio 2014). Awareness of potential implicit biases, beyond what explicit responses show under favorable circumstances, should enhance people's own cognitive control of behavior, which, if practiced in a systematic way, says Amodio, shall weaken prejudiced associations in the mind. Also, acknowledging implicit bias, while not reducing prejudice per se, should inform the design of more realistic, lasting and robust conflict reduction interventions that are capable of targeting underlying mechanisms behind both explicit and implicit biases (Dasgupta and Greenwald 2001).

This article describes how those who have suffered deep traumas derived from armed conflict-related victimization experiences develop emotional-processing mechanisms that unconsciously affect the prospects of reconciliation with former perpetrators. The automaticity of such mechanisms relies on a strong bias that in turn affects cognitive dispositions toward reconciliation.

By means of an Implicit Association Test (IAT) applied to a sample of war victims in Colombia, this article contends that exposure to victimization experiences is positively correlated to the size of prejudice against groups associated with the perceived perpetrators. The concept of implicit attitudes serves as a proxy by which we can not only describe the way prejudice results from biological mechanisms in the human brain, but also gauge its magnitude.³

³ We measure reaction times as a proxy for the rapid adaptive mechanism of the human brain.

I. THE PSYCHOLOGICAL IMPACT OF CONFLICT

Violent conflict experiences not only affect ex-combatants', victims', and communities' mental health, but also their attitudes and dispositions toward one another in the longer term.

Literature has reported how exposure to violence increases the risk of mental health and trauma-related disorders, depression, alcohol and drug abuse among war victims and ex-combatants (Angel et al. 2001; Hermenau et al. 2011; McCarroll et al. 2000; Mollica et al. 2001; Neuner et al. 2004; Odenwald et al. 2007; Rieder and Elbert 2013; Rosner et al. 2003; Schauer and Elbert 2010; Vasterling, Verfaellie and Sullivan 2009; Vinck, Pham, Stover and Weinstein 2007; Weierstall et al. 2013).

In many cases, such psychological effects are also accompanied by a decrease in social skills and ability to adapt to postconflict settings. Particularly, psychological disorders among war veterans have been associated with personal and employment instability, as well as stronger dispositions to display aggressive behavior (Gallaway et al. 2012; Hecker 2013; Jakupcak et al. 2007; Morin 2011, Slep et al. 2010; Taft et al. 2007; Taft et al. 2009; Teten 2008); to show a relative empathic deficit (Tobón et al. 2015); and even to resort to crime (Kaplan and Nussio 2016).

Many war victims and ex-combatants are forced to live in close proximity in postconflict contexts. Sometimes, social and community bonds with the receiving communities are restored, but this is not always the case, and accommodation between segments may turn out uneasy (McMullin 2013; Podder 2012). In the

Colombian case, social stigmatization against victims and ex-combatants has been widely reported (Ibañez and Velásquez 2009; Kaplan and Nussio 2015; Ugarriza and Nussio 2016). Demobilized ex-combatants often cite the absence of social acceptance as a source of frustration and an incentive to return to illegal activities.

Recent experimental research shows that individuals who have suffered greater levels of violence and trauma in the context of armed conflicts sometimes demonstrate increased levels of disposition to cooperate and participate in social groups, community projects, and even politics (Bauer et al. 2016). However, the willingness to participate in collective and public endeavors does mean facing, not to say mitigating or solving, inter-group conflict. In fact, social and community participation in contexts where silence and avoidance about the recent past of violence, and the current state of hostility, might be the norm (Rettberg and Ugarriza 2016; Eastmond and Selimovic 2012; McGinty 2014). Hence, most recent reconciliation research focuses not only in inter-group contact per se, but on the effects of the quality and types of such interactions (Tropp et al. 2017).

Trauma-related conflict narratives usually stand in the way of specific efforts to improving inter-group relations. The logics of war tend to create narratives where adversaries are stripped of their human condition and the world is reconfigured along allies-versus-enemy lines, as has been demonstrated both psychologically and neurologically (Aiken 2008; Hewstone and Cairns 2001; Harris and Fiske 2006; Northrup 1989). Typically, partisans project unwanted values and beliefs as belonging to the antagonist groups (Volkan 1999 and 2009). Conversely, reconciliation, from a psychological perspective, is about re-humanizing the other (Halpern and Weinstein 2004); transforming negative feelings and attitudes

towards the former antagonists (Bar-Tal and Bennink 2004; Brounéus 2009, Bruneau and Saxe 2012, Kaufman 2006; Long and Brecke 2003; Mukashema and Mullet 2010; Nadler, Malloy and Fisher 2008; Poitras 2010); and enabling personal healing (Abu-Nimer 2001; Brounéus 2010; Duncan 2009; Hirsch 2012).

Can we blame war traumas for the psychological barriers to reconciliation? Evidence suggests that those who claim victim status tend to show more partisan and divisive stances toward their antagonists (Brewer and Hayes 2011), and the stronger the trauma inflicted by war experiences, the lower the disposition among victims to reconcile and the greater to seek revenge (Bayer, Klasen and Adam 2007).

Scholarly approaches to measuring postconflict inter-group attitudes usually rely on items capturing explicit attitudes and dispositions toward the ingroup or outgroup (Gibson 2007; Bruneau and Saxe 2012; Paluck 2009 and 2010; Ugarriza and Nussio 2016). These explicit attitudes tend to be malleable, and a number of successful interventions have proven that temporary reconciliation in terms of positive attitude and emotional change is possible in postconflict settings (Pettigrew and Tropp 2006). Unfortunately, these successes in attitude change tend to diminish over time (Crano and Prislin 2006), given that deep-rooted, harder to mold implicit attitudes, such as inter-group prejudice, are factually less susceptible to short term change (Serrani 2011) and may conspire against observable attitude change. As a result, the study of implicit attitudes becomes necessary in order to determine not only the magnitude of the existing biases and prejudices, but also the long-term prospects of intervention-driven effects.

Victimization and implicit attitudes

Attitudes, be they explicit or implicit, can be seen as memory-based associations between a concept and an evaluation of it (Peter 2010). But although most works on inter-group conflict rely on the evaluation of explicit attitudes, the persistence of prejudices and stereotypes can be partially explained by the existence of a neural basis for biases (Amodio 2014). Prejudice can be understood as an attitude toward individuals on the basis of their group membership that might operate unconsciously. Stereotypes, conversely, can manifest through explicit attitudes, since they can be understood as generalizations made by the conscious mind about other people.⁴ In other words, we can regard prejudice as an emotional component of bias, through which the brain relies on automatized information processing; in contrast, stereotyping can be considered the cognitive components, where aspects such as social desirability and behavioral coherence are also in play.

Implicit attitudes, or implicit biases, are prejudice-led, memory-based, effortless neural resources that provide a default response and that are uncontrollable in nature (Banaji et al. 1995; Banaji et al. 2001; Bargh 1997; Greenwald et al 1998; Fazio et al 1986; Neumann et al. 2004; Perez 2010; Wilson et al. 2000). They provide information as to what lies deep in the individual's mind,

⁴ Both prejudice and stereotypes, in turn, are typical components of ingroup and outgroup identities. See Roccas and Elster (2012).

beyond the control of cognitive dispositions, affecting a person's judgments in a sustained, yet unnoticed, manner (Burdein, Lodge and Taber 2006).⁵

Critics argue that implicit attitudes are not the only variable affecting individual judgments and question the utility of focusing solely on them (Greenwald et al. 2009; Nosek et al. 2007). And some authors have gone so far as to call into question the very existence of implicit attitudes, arguing that people's decisions can be explained merely by their conscious, rationally-controlled beliefs (Fazio and Towles-Schwen 1999; Fazio and Olso, 2003). Hence, we still need to examine in detail those mechanisms guiding conscious judgments and the role implicit attitudes in play. However, evidence already shows that implicit attitudes serve as proxies for verifiable biologically-based processes that have a real impact on opinion formation and behavior. Implicit attitudes fall next to more basic biological processes and are correlated to neurobiological measurable phenomena such as EEG (Williams and Themanon 2011). Some authors have suggested that implicit political attitudes might even be imprinted in human genes and could potentially be transmitted (Smith et al. 2011). In fact, neurophysiological studies have already described variation of biological markers associated with intergroup bias processing during IAT tasks which occur too early to allow for metacognitive interference (Hurtado et al. 2009). Although it is possible to consciously adjust explicit behavior towards social groups, it is sensible to expect that implicit processes are harder to change, because interventions occur first at an explicit level, which is only indirectly related to and partially caused by earlier implicit bias.

⁵ It is not uncommon for implicit attitudes to contradict one's self-reported view toward the same target. See Dovidio et al. 2001, Devos and Banaji (2005), and Arcuri et al. (2008).

The presence of neurophysiological markers during the IAT task is strong evidence to support the task's role in the evaluation of intergroup bias. By looking at implicit attitudes, we trace pre-cognitive or automaticized processes, close to biological-level mechanisms of opinion formation. Such involuntary processes can be understood as an evolutionary tool for fast decision-making, in which a rational assessment of every piece of information collected by the brain is rendered unnecessary.

This article now sets out to find out to which extent war experiences, particularly forms of victimization, have an impact on people's implicit attitudes and whether they are related to explicit self reported victimization. We will assess the neuropsychological effect of war experiences on victims' attitudes by means of measuring prejudice levels. The next section elaborates on the use of Implicit Association Tests as a strategy to explore the existence of automatic biases, and to establish their relation to victimization experiences.

II. METHODS

In order to measure implicit attitudes, we rely on Implicit Association Tests (IATs), which are computer-based tasks that elicit rapid responses from individuals by exposure to stimuli. In general terms, IATs are designed to capture people's automatic—involuntary—associations between concepts (Greenwald et al. 1998; Greenwald et al. 2009; Perez 2010).

Social scientists have utilized IATs in order to measure implicit attitudes toward racial groups and social minorities (Gaba and Nosek 2010; Hurtado et al. 2010; Ibañez et al. 2010; Knowles, Lowery and Schaumberg 2010; Lyle 2008;

Perez 2010; Todd, Boddenhausen and Galinski 2012); religious attitudes (Albertson 2011; Hartman et al 2012; MaCauley 2014; Rowatt et al. 2005); gender-related attitudes (Banse et al. 2001; Boysen et al. 2006; Jellison et al. 2004; Rudman and Kilianski 2000; Spisak et al. 2012; White and White 2006); and political sophistication (Choma and Hafer 2009). More recently, these tests have been also used to predict political behaviors like voting (Arcuri 2008; Friese et al. 2012; Galdi, Arcuri and Gabronski 2008; Glaser and Finn 2012; Greenwald et al. 2009; Kam 2007; Lundberg and Payne 2014; Pasek et al. 2009; Payne 2010; Roccato and Zogmaister 2010). In contexts of violent conflict, such as those of Northern Ireland, Côte D'Ivoire and Sudan, IATs have been used to measure the strength of group identities and prejudice, as well as attitudes toward human rights issues (Tam et al. 2008; MacCaulay 2014; Vogt et al. 2016).

WORKING PAPER

Participants

The decades-old Colombian armed conflict has provoked one of the biggest humanitarian crises in the world. Official figures estimate that, between 1985 and 2016, more than eight million people were victims of human rights violations related to the armed conflict.⁶ Of those eight million victims, almost seven million were internally displaced people. Between six and ten thousand armed forces soldiers and civilians were killed or hurt by landmines between 1990 and 2013, the greatest figure on the planet. About thirty-nine thousand cases of ransom kidnapping were reported between 1970 and 2010 (CNMH 2013). As a

⁶ The Victims Unit of the Office of the Presidency registered almost eight million war victims by 2016.

consequence, about one third of Colombians claim to have been severely affected by the armed conflict, such as by losing a relative or being displaced (Lapop 2012).⁷

Most war victims in Colombia have been forcibly displaced, and they have had to resettle, usually in urban areas. Ex-combatants coming from either paramilitary or guerrilla groups, after collective and individual demobilization processes between 2002 and 2017, in turn, tend to settle in areas with historically marginalized populations, including city outskirts, where they find themselves living in close proximity to war victims (Prieto 2012, Ugarriza and Nussio 2016). All in all, victims and ex-combatants must adapt to living among traditionally marginalized and violence-affected communities that do not necessarily offer them a warm welcome. In fact, both groups are commonly affected by negative stigmatization and distrust.⁸

Between 2016 and 2017, the official Colombian Agency for Reintegration (ACR)⁹ implemented a series of community-focused interventions in ten municipalities where war victims and former guerrilla ex-combatants resettled in recent years,¹⁰ and inter-group conflict was prominent. As part of this larger state-

⁷ An interesting study pointing to the effects of victimization on trust levels in Colombia can be found in Cuesta and Alda (2012).

⁸ On how displaced victims and ex-combatants are stigmatized, see Ibáñez and Velásquez (2009) and Nussio (2011). An official report revealed that 41% of members of receiving communities are afraid of ex-combatants, and 82% distrust them (CNC 2011).

⁹ Now renamed Colombian Agency for Reincorporation and Normalization (ARN).

¹⁰ Choice of municipalities by the ACR reflect mostly the Southeastern zones where former guerrillas have tended to resettle after demobilization: Puerto Asís, Jamundí, Pasto, Neva, Florencia,

sponsored program, under ACR supervision, we visited those municipalities in order to invite the participants (ex-combatants, victims, and receiving communities) to join discussion groups about the state of inter-group relations and potential actions to mitigate conflict at community level.

Researchers asked them for their consent to participate in the psychological evaluation, and then took them to classrooms where psychometric tests were verbally administered. Participants were given a pretest questionnaire immediately before the discussion exercise and a post-test one immediately after it. Pre-test items consisted of basic demographic information (e.g. age, gender, education level), whether they considered themselves conflict victims, and measures of explicit attitudes toward excombatants¹¹. Additionally, in two municipalities we had the opportunity to apply an instrument to gauge levels of victimization¹². This specific instrument was applied in the presence of trained

San Vicente del Caguán, Chaparral, Cali, El Bagre, Santo Domingo y Marinilla. Most ex-paramilitaries who demobilized a decade before had already been released from the reintegration program, and were not the primary focus of the community interventions.

¹¹ A total of six interspersed Likert-type items were used for measuring attitudes to ex-combatants. In each case, half of the sentences were worded in positive terms and the other half in a more negative tone. Sentences aimed to capture biases in terms of who is to blame for political, economic, social, and security problems and who is contributing to solving them. Items were aggregated in order to estimate scores on a scale from minus 6 to plus 6.

¹² Hardly any town in Colombia has been spared from conflict-related violence since at least 1964, and one of the most affected in history is Santo Domingo. Located in the eastern part of the province of Antioquia, this municipality appears at the top of the list of homicide rates for the 1990-2013 period: While the national average was then 55.65, Santo Domingo reached 125 (Human Rights Observatory 2013). During that period, this town of eleven thousand people (figure from

psychologists form our research group in order to assist in case of need. Here, instead of just asking for victimization status, we applied 18 items aimed to provide a deeper insight on the depth of victimization experiences.¹³ Right after the discussions, participants were invited to take the IAT.

Procedures: How does our IAT work?

Participants were placed in a separate classroom in front of a computer desk. Researchers then offered basic verbal instruction for what the test was

2013) witnessed the expulsion of 3,079 displaced persons, in the context of violent actions committed by FARC and ELN guerrillas, as well as by AUC paramilitaries. Particularly traumatic events such as urban combat between armed forces and illegal groups have left an impression in the memory of today's inhabitants. Not far from there, also in Antioquia, the town of Marinilla offers an ideal contrast to this legacy of armed conflict-related violence. Inhabitants did not suffer any particularly traumatic collective war-related events—only 25 people were registered as internally displaced between 1990 and 2013 from a total population of 57,000—while their homicide rates remained close to the national average.

¹³ In order to measure exposure to war, we applied the VIVO Protocol for extreme experiences, whose methodology and validation procedures are described in Perez-Sales et al. (2013). We adapted 18 items from this scale (Cronbach's alpha = 0.8) in order to capture relevant war-related experiences. We asked participants if they, their relatives or close friends suffered any of these events as a direct consequence of the armed conflict: death threats, aggressions or beatings; kidnapping; intimate partner violence; sexual abuse; political repression; theft; threat to personal integrity; chronic or handicapping illness; termination of affective relations; disruption of life plans; forced disappearance; killing; or dissolution of parents' relation.

about,¹⁴ helped them to put on earphones for the audio-recorded words, and let them take the test.

The Implicit Association Tests identify the type of association between concepts (e.g. “man,” “woman,” “Latin,” “Arabic”) on the one hand, and reviews of valence (e.g. “good,” “bad,” “pleasant,” “unpleasant”) or stereotypes (e.g. “nerd,” “athlete,” “clumsy”) on the other. The main assumption behind the test is that participants answer more easily—and more quickly—when the elements are closely related in their mind and therefore can easily share the same response key.

The pairs of concepts whose mental association will be tested can be presented in several forms: IATs may make use of images, sounds, simply words. For the purposes of our study, we ask participants to associate words’ audio recordings¹⁵ with images presented on a computer screen. These words have been chosen from among a set of emotionally-charged terms that were submitted to a validation procedure,¹⁶ ensuring that half of them actually trigger pleasant emotions, and the other half unpleasant ones, independently of their content meaning and potential cognitive associations.

¹⁴ Protocol instruction reads: “This test does not gauge your personal opinions. You just need to associate the words you will hear with images to be displayed on the screen. Whenever you answer correctly, you will see a right check mark. Whenever you answer incorrectly, you will see a wrong check mark. Please, try to answer quickly”.

¹⁵ The use of audio recordings greatly simplifies the number of elements to be handled by participants during the test. In contrast, most IATs make use of written words on the screen. Similar simplifications for ex-combatant population have been tested in Tobón et al (2015).

¹⁶ Procedures for the validation and selection of these words can be found in the Supplementary Material.

We use “ex-combatant” and “victim” as our contrasting group categories. Participants are told to associate each of these groups with an image: a weapon for former guerrilla ex-combatants and a grieving group for victims. Likewise, we use images associated with valence categories “pleasant” or “unpleasant:” smiley and sad faces, respectively. All participants are instructed in advance about which audio-recorded words correspond to which image. For instance, by means of practice tests, researchers reinforce the association between the smiley face with pleasant words—e.g. “happy,” “win,” “free,” “health,” “life”—and the sad face with unpleasant words—e.g. “jail,” “hurt,” “horror,” “poor,” “anger”.¹⁷

After practice test trials, participants are shown blocks of trials with a four-element screen¹⁸. Every time participants listen to an audio-recorded word, be it pleasant or unpleasant, they must press an answer key corresponding to the side where the correct answer is located. When a correct association is provided, a green check mark appears. When association is incorrect, a red check mark is displayed instead. It is important to note that participants are not asked to answer according to their personal opinions, but rather according to the associations explained beforehand.

Combining practice and test blocks, each participant is exposed to a total of 152 one-word audio recordings during the 15-minute test. Each episode in which participants are asked to match the audio stimulus with a given visual answer is called a trial. Table 1 shows how 152 trials are distributed during the test.

¹⁷ Association between concepts and images are presented in the Supplementary Material, Figure 1.

¹⁸ Screenshots are presented in the Supplementary Material, Figure 2.

<i>Blocks</i>	<i>Number of trials</i>	<i>Function</i>	<i>Stimuli associated with left-side responses</i>	<i>Stimuli associated with right-side responses</i>
1	6	Practice	ex-combatant	Victim
2	20	Practice	Pleasant words	Unpleasant words
3	20	Practice	Pleasant words + ex-combatant	Unpleasant words + victim
4	40	Test	Pleasant words + ex-combatant	Unpleasant words + victim
5	6	Practice	victim	ex-combatant
6	20	Practice	Pleasant words + victim	Unpleasant words + ex-combatant
7	40	Test	Pleasant words + victim	Unpleasant words + ex-combatant

As we see in Table 1, the first two blocks of trials correspond to practice. In Block One, participants reinforce the associations between the audio stimulus “ex-combatant” with the weapon picture and the audio stimulus “victim” with the people picture. In Block Two, they reinforce the associations between pleasant words and the happy-face picture and unpleasant words with the sad-face picture. Participants have less than 3,000 milliseconds to select either the left or right response key. Every time they take longer, or answer incorrectly, the trial is automatically retaken.

Blocks Three, Four, Six and Seven (shaded) are known as the test blocks. Here, participants are confronted with a four-element screen such as the one shown in Figure 2. Every time they listen to audio recordings of pleasant or unpleasant words, as well as audio recordings of the words “ex-combatant” or

“victim”, they must make the correct associations in order to move ahead in the test.

Visual interference caused by having pleasant or unpleasant pictures on the same side as ex-combatant-associated and victim-associated pictures leads participants to take either a shorter or longer time to answer correctly. IAT design permits researchers to estimate which associations are harder for participants to make—e.g. ex-combatant/pleasant or victim/unpleasant—by looking at their reaction times. The shorter the reaction time, the easier the association is made in the participant’s mind.

Traditionally, IAT designs include only five blocks. Our current design corresponds to the improved scoring algorithm proposed by Greenwald, Nosek and Banaji (2003), where time responses for test blocks Three, Four, Six and Seven are all taken into account in the estimation of the IAT score.¹⁹

The resulting IAT scores indicate the magnitude and direction of prejudice for each individual. In the case of our test, a negative IAT score signals a bias against ex-combatants when compared to victims, and vice versa: the lower the

¹⁹ In order to estimate IAT scores, we use data from Blocks B3, B4, B6, and B7. First, we eliminate trials with response latencies above 3,000ms. Then, we eliminate trials with incorrect answers. After that, we estimate the average reaction time for each of the four blocks. Then we compute one pooled SD of reaction times for all trials in B3 and B6, and another pooled SD of reaction times for all trials in B4 and B7. We then compute the difference between B6 and B3 reaction time averages, and divide that difference by their pooled SD, through which we estimate the practice IAT score. We repeat this later procedure with B7 and B4 averages, in order to estimate the test IAT score. Finally, we average practice and test IAT scores in order to obtain a final IAT score. See more details in Greenwald, Nosik and Banaji (2003).

score, the stronger the prejudice.²⁰ By no means this test implies an normative judgement of this scale: particular preferences, opinions and biases, ever-present in our daily lives, need to be judged as desirable or not by normative, not empirical standards.

One of the greatest strengths of IATs versus explicit attitude instruments is that it captures fast and basic bias processes before major metacognitive sources of bias take place, such as social desirability: Because it contrasts responses for different kind of stimuli within the same subject, it is suitable for within-subject experimental designs, which favors statistical power.

Also, implicit measures are rather stable when compared to explicit attitudes, and typically need of long-running exposures to cognitive and emotional stimuli if they are to be modified. While sensible to the existing bias, there is little to no effect or noise that short-term external stimuli might produce in the measurement process.

It is important to note that IAT measures are more reliable at a group level, and less at individual level. While participants' scores are estimated out of outcome responses to series of 152 repeated measures, the fact that they are subjected to time pressure in order to respond can produce variability in the score obtained, if the test were re-taken. In strict sense, each IAT trial can be understood as a sample of a given individual's distribution of potential responses, and systematic trial repetition helps to adjust for the correct measure. When individual

²⁰ Since we subtract reaction times in prejudice-incompatible blocks from reaction times in the prejudice-compatible ones, lower—and negative—differences reflect greater prejudice levels and vice versa.

measures are in turn aggregated at group level, IAT scores can be regarded as a much more precise statistic²¹.

The following section presents a summary of results, before moving on to the analysis of association between prejudice and war victimization.

III. RESULTS

Table 2 presents the average IAT effect for the full sample, as well as for different sub-groups of participants with differing war experiences.

TABLE 2. IAT SCORES AND REACTION TIMES PER GROUP

	<i>IAT Effect*</i>	<i>Δ RT (ms) ex-guerrillas positive minus negative**</i>	<i>Δ RT (ms) victim positive minus negative**</i>	<i>Δ RTs</i>
TOTAL (N)				
<i>All subjects (251)</i>	-0.143 (0.350)	46	-142	188
GROUPS ²²				
<i>Victims²³ (91)</i>	-0.226 (0.316)	83	-174	257
<i>Community members²⁴ (84)</i>	-0.106 (0.375)	4	-160	164
<i>Ex-guerrillas (74)</i>	-0.077 (0.345)	50	-89	139
GENDER				
<i>Female (161)</i>	-0.139 (0.352)	47	-131	178
<i>Male (90)</i>	-0.152 (0.347)	45	-164	209

*Standard deviation in parentheses.

²¹ IAT's repeated measures, and further aggregation at group-level, also mitigates potential biases generated by emotions that specific verbal and visual pieces might evoke in a given individual.

²² One individual did not report her group status. A second one reported to have been a former member of the Army, and was excluded from the group analysis.

²³ We consider self-reported victims those non-ex-combatant participants who answered "yes" to the following survey item: "Please indicate if you have been a direct victim of the armed conflict".

²⁴ We consider community members those non-ex-combatant participants who answered "no" to the item question above.

** Reaction times are estimated as an average of practice and test blocks. For ex-combatants/positive, and victim/negative, the average is calculated from corresponding B3 and B4 trials. For ex-combatants/negative, and victims/positive, the average is calculated from corresponding B6 and B7 trials.

For the full sample of subjects (251 observations), we report an average IAT effect of minus 0.143. The fact that the implicit attitudes score falls below zero means that, overall, our sample has a negative evaluation of ex-combatants when compared to evaluation of victims.

We also present average IAT effects for subsamples of non-excombatant participants who did and did not report having been direct victims of the armed conflict. Differences among groups are statistically significant ($F = 4.46$, $\rho = 0.012$). As we see in Table 2, negative IAT effects are bigger in magnitude for victims (minus 0.226) than for non-victims (minus 0.106). This difference is statistically significant ($t = -2.304$ $df = 173$; $\rho = 0.022$). Crucially, there is a clear and significant difference between scores as observed in ex-guerrillas and war victims ($t = -2.884$; $df = 163$; $\rho = 0.004$). Differences of scores among men and women are not significant in turn ($t = -0.291$; $df = 249$; $\rho = 0.771$).

The third column from the left in Table 2 show the difference of average reaction times when the audio stimulus “ex-combatant” was associated with a positive image minus when it was associated with a negative image. As we see here, every figure is positive, telling us that participants, on average, took longer to answer correctly when ex-combatants were associated with a positive image than when they were associated with a negative one. In the second column from the right, we observe exactly the opposite effect: All figures are negative, indicating that reaction times when victims were associated with a positive image were on

average shorter than when victims were associated with a negative one. The far right column describes the magnitude of distance between reaction times as reported on third and fourth columns. Here we observe that the effect of prejudice, as reflected in reaction times, is stronger again in victims.

When comparing groups according to their explicit attitudes toward ex-combatants (as explained in footnote 11), we observe that victims tend to report a positive attitude on average (mean= 2.09, sd= 2.06 range= -3 to 6), although half in magnitude than that reported by ex-combatants themselves (mean= 3.98, sd= 2.02 range= -1 to 6). Again, just as in the implicit measures, non-victim community members lie in between (mean= 2.32, sd= 2.32 range= -4 to 6). Overall, these explicit measures seem to be less negative toward ex-guerrillas, although there is a positive correlation between them and the IAT scores ($r = 0.242$, $p = 0.007$).

All the results above indicate that the sample tended to hold an implicit negative prejudice against ex-guerrillas as compared to war victims, and this tendency seems clearly stronger for those who reported having been victimized in the context of the armed conflict. We now turn to an analysis of which words tended to be associated by participants with each of the groups.

Explaining postconflict prejudice

Assisted by trained clinic psychologists, we also had the chance to apply a psychometric instrument to a sub-sample of 100 participants, in order to assess varying levels of victimization (as explained in the Methods section). Table 3 presents the average IAT effect for the subsample, as well as for different groups of participants with differing war trauma experiences.

TABLE 3. IAT SCORES AND REACTION TIMES PER VICTIMIZATION STATUS

	<i>IAT Effect*</i>	<i>Δ RT (ms) ex-combatants positive minus negative**</i>	<i>Δ RT (ms) victim positive minus negative**</i>
TOTAL (N)			
<i>All subjects (100)</i>	-0.148 (0.339)	46.332	-132.134
STATUS ²⁵			
<i>Victims (48)</i>	-0.249 (0.313)	112.971	-160.316
<i>Non-victims (35)</i>	-0.073 (0.359)	12.951	-86.237
TRAUMA ²⁶			
<i>Self-reported direct trauma (57)</i>	-0.213 (0.342)	101.081	-156.491
<i>Self-reported no direct trauma (26)</i>	-0.089 (0.331)	0.468	-95.910
<i>Self-reported indirect trauma (64)</i>	-0.199 (0.341)	100.131	-133.634
<i>Self-reported no indirect trauma (19)</i>	-0.089 (0.339)	-34.681	-150.586
GENDER			
<i>Female (73)</i>	-0.169 (0.345)	60.612	-125.501
<i>Male (27)</i>	-0.094 (0.323)	7.723	-163.589

*Standard deviation in parentheses.

** Reaction times are estimated as an average of practice and test blocks. For ex-combatants/positive,

²⁵ We consider self-reported victims those participants who answered “yes” to the following survey item: “Please indicate if you have been a direct victim of the armed conflict.”

²⁶ We consider self-reported direct trauma as those cases where participants answered “yes” to any of the following items: “Please indicate if you: a. suffered death threats, aggressions or beat ups by a member of a military, paramilitary or guerilla group; b. were kidnapped; c. suffered violence by conflict-involved partner; d. were victim of sexual abuse by a member of a military, paramilitary or guerilla group; e. have been a direct victim of the armed conflict; f. were victim of political repression by members of a military, paramilitary or guerilla group; g. were victim of theft by members of a military, paramilitary or guerilla group; h. were a victim of threat to your personal integrity; i. suffered a chronic or handicapping illness due to your experience in the armed conflict; j. broke your relation with a significant other due to your experience in the armed conflict; k. saw your life plans utterly disrupted due to the armed conflict.” We considered self-reported indirect trauma the cases where participants answered ‘yes’ to any of the following items: “Please indicate if you: a. suffered the kidnapping of a relative or close friend; b. suffered the death of a relative or close friend as a consequence of a painful experience related to the armed conflict; c. suffered the forced disappearance of relative or close friend as a consequence of the armed conflict; d. suffered the killing of a relative or close friend as a consequence of the armed conflict; e. suffered a relative’s or a friend’s chronic or handicapping illness due to your experience in the armed conflict”; f. suffered the split of your parents’ relation as a consequence of the armed conflict.”

and victim/negative, the average is calculated from corresponding B3 and B4 trials. For ex-combatants/negative, and victims/positive, the average is calculated from corresponding B6 and B7 trials.

Results in Table 3 consistently show that participants who self-reported having been victims in the armed conflict are the ones with the strongest implicit prejudices against former guerrilla ex-combatants. Besides, the analysis of this sub-sample also indicates that the deeper the trauma (i.e. direct victimization), the stronger the prejudice. Results are statistically tested through OLS regression models shown in Table 4.

TABLE 4. IAT SCORE PREDICTORS

DV: IAT score	MODEL 1	MODEL 2	MODEL 3
Demographics			
<i>Gender (1=female, 0=male)</i>	-0.072 (0.076)		
<i>Education</i>	-0.013 (0.009)		
<i>Age</i>	-0.001 (0.002)		
Victimization status			
<i>Victim (1=self-reported victim, 0=non-victim)</i>		-0.138 (0.130)	
<i>Direct victim (1= self-reported direct victim, 0= non-direct victim)</i>		0.019 (0.141)	
<i>Indirect victim (1=self-reported indirect victim, 0= non-indirect victim)</i>		0.004 (0.108)	
<i>Victimization experiences (Number of traumatic experiences, 0-18)</i>		-0.031 (0.020)	-0.034 (0.010)*
<i>Combat exposure (0= not exposed; 1= exposed)</i>		0.062 (0.028)	
N (valid)	100	78	89
Adjusted R ²	-0.002	0.060	0.094

Standard deviation in parenthesis.

* Significant at p<0.01 level.

Model 1 from Table 4 shows no significant statistical relation between demographics and prejudice levels. Additionally, none of the relations between categorical variables of victimization and IAT scores are statistically supported, as reflected in Models 2 and 3. On the contrary, Model 3 shows that the continuous variable accounting for the number of war-related traumatic experiences reported by participants is statistically related to prejudice: the higher the number of traumatic experiences reported, the lower the IAT score.²⁷

IV. IMPLICATIONS

Trends observed within the sample of Colombian war victims show the prevalence of ingroup-outgroup attitudinal patterns that amount to prejudice, and the magnitude of the victimization experiences actually helps us to explain in turn the magnitude of such implicit bias.

Does this mean victims might not want to reconcile with perpetrators? By providing evidence that victims may tend to show a relatively high degree of divisive and partisan behavior, Brewer and Hayes (2011) challenged the notion under which war victims should serve as “moral beacons” in postconflict societies. In a similar fashion, Bayer et al. (2007) warned about the prevalence of vengeful, rather than reconciliatory, feelings among war victims in the Congo. Both works counsel us on the importance of properly weighting the heavy impact of conflict on victims before charging them with the additional responsibility of paving the way for postconflict reconciliation.

²⁷ Scores below zero reflect particularly negative biases against ex-combatants.

Acknowledging the depth of damage inflicted on war victims should serve to better qualify the potential effectiveness of short-term initiatives aimed at provoking superficial attitudinal change. Taking into account variance among the different victimization levels, future researchers should assess which strategies have a better chance of enabling an enduring positive attitude change—and even behavioral change—among postconflict groups, and under which circumstances.

The fact that implicit biases and former war antagonisms seem to persist in postconflict contexts speaks of how deeply rooted war adaptation mechanisms can be embedded, affecting people's views and attitudes not even realizing it. That said, we argue that even if processing of cognitive and emotional information is systematically biased among ex-combatants, victims and communities, as a result of adapting neuropsychological networks to conflict environments and war-related traumatic and experiences, this by no means suggest people are condemned to follow through these implicit tendencies.

In fact, the willingness of many participants to share spaces with members from outgroups, sometimes even engaging in deliberative excercises, demonstrate how individuals can overcome incounscious impulses that might discourage them from showing a positive explicit attitude. Individuals, either victims or ex-combatants, can control their decision-making processes, act accordingly, and are accountable for their interactions with others.

But real life also shows how explicit positive dispositions generate fragile and waning positive effects if they do not address the roots of inter-group conflict. Individuals' day-to-day ordinary interactions, as well as social and political choices, capture in a accumulative way the effects of biased information

processing, challenging the more scarce and less systematic reconciliatory experiences.

But there is also a brighter side to the results. The fact that victims' explicit attitudes toward ex-combatants tended to be mildly positive, as opposed to the overall negative implicit measure, reinforces the idea that people might have incentives to force themselves to express better explicit dispositions toward the out-group than impulses might dictate. Also, the implicit identification of ex-guerrillas with victims –and their consequent lack of significant bias against them– highlight a potential for reconciliation, and a positive trend that public policies and society as a whole might capitalize.

Our results strongly suggest that the IAT can be used as a tool for effectively assessing deep sources of bias that would otherwise be hard to observe directly and unaffected by social desirability. This means that interventions can be assessed and selected in terms of their deeper effects with the hope of finding optimal, long lasting social strategies.

Instead of calls for pessimism, our results point to the need to realistically assess the inherent difficulties in accommodating groups that may have suffered psychological harm that transcends their own conscious dispositions to contribute to societal reconciliation. If adaptation to conflict was enacted, a re-adaptation to a post-conflict environment is, on paper, feasible. However, the depth of inter-group bias, as we have shown, demand in turn profound psycho-social interventions. Acknowledging this, rather than demanding immediate and superficial change in inter-group attitudes, could be the first contribution to victims, ex-combatants and communities' mental healing.

REFERENCES

- Abu-Nimer, Mohammed. 2001. Conflict Resolution, Culture, and Religion: Toward a Training Model of Interreligious Peacebuilding. *Journal of Peace Research*, 38(6), 685–704.
- Aiken, Nevin T. 2008. Post-conflict peacebuilding and the politics of identity: Insights for restoration and reconciliation in transitional justice. *Peace Research: The Canadian Journal of Peace and Conflict Studies*, 40(2), 9-38.
- Albertson, Bethany L. 2011. Religious Appeals and Implicit Attitudes. *Political Psychology*, 32(1), 109–130.
- Allport, Gordon W. 1979. *The nature of prejudice*. Reading, MA: Basic Books
- Amodio, David M. 2014. The neuroscience of prejudice and stereotyping. *Nature Reviews Neuroscience*, 15(10), 670–682.
- Angel, Birgitta., Hjern, Anders., and Ingleby, David. 2001. Effects of War and Organized Violence on Children: A Study of Bosnian Refugees in Sweden. *The American Journal of Orthopsychiatry* 71(1): 4–15.
- Arcuri, Luciano., Castelli, Luigi., Galdi, Silvia., Zogmaister, Cristina., and Amadori, Alessandro. 2008. Predicting the Vote: Implicit Attitudes as Predictors of the Future Behavior of Decided and Undecided Voters. *Political Psychology*, 29(3), 369–387.
- Banaji, Mahzarin R., and Greenwald, Anthony G. 1995. Implicit gender stereotyping in judgments of fame. *Journal of Personality and Social Psychology*, 68(2), 181–198.
- Banaji, Mahzarin., Lemm, Kristi M., and Carpenter, Siri J. 2001. The social unconscious. In A. Tesser and N. Schwartz (Eds.), *Blackwell handbook of social psychology: Intraindividual processes* (pp. 134-158). Oxford, UK: John Wiley and Sons.
- Banse, Rainer., Seise, Jan., and Zerbes, Nikola. 2001. Implicit attitudes towards homosexuality: reliability, validity, and controllability of the IAT. *Zeitschrift Für Experimentelle Psychologie: Organ Der Deutschen Gesellschaft Für Psychologie*, 48(2), 145–160.
- Bargh, John A. 1997. The automaticity of everyday life. In R. S. Wyer Jr. (ed.), *The automaticity of everyday life: Advances in Social Cognition* 10, pp. 1-61.
- Bar-Tal, Daniel and Bennink, Gemma H. 2004. The Nature of Reconciliation as an Outcome and as a Process. In *From Conflict Resolution to Reconciliation*, edited by Yaacov Bar-Siman-Tov, 11–38. New York: Oxford University Press.
- Bauer, Michal., Blattman, Christopher., Chytilová, Julie., Henrich, Joseph., Miguel, Edward., and Mitts, Tamar. 2016. Can War Foster Cooperation? *Journal of Economic Perspectives*, 30(3), 249–274.

- Bayer, Christophe., Klasen, Fioonna., and Adam, Hubertus. 2007. Association of trauma and ptsd symptoms with openness to reconciliation and feelings of revenge among former ugandan and congolese child soldiers. *JAMA*, 298(5), 555–559.
- Boysen, Guy A., Vogel, David L., and Madon, Stephanie. 2006. A public versus private administration of the implicit association test. *European Journal of Social Psychology*, 36(6), 845–856.
- Brewer, John D., and Hayes, Bernadette C. 2011. Victims as moral beacons: victims and perpetrators in Northern Ireland. *Contemporary Social Science*, 6(1), 73–88.
- Brounéus, Kare. 2010. The Trauma of Truth Telling: Effects of Witnessing in the Rwandan Gacaca Courts on Psychological Health. *Journal of Conflict Resolution*, 54(3), 408–437.
- Brounéus, Karen. 2009. Reconciliation and Development. In K. Ambos, J. Large, and M. Wierde. *Building a Future on Peace and Justice. Studies on Transitional Justice, Peace and Development*. Göttingen: Springer.
- Bruneau, Emile G., and Saxe, Rebecca. 2012. The Power of Being Heard: The Benefits of 'Perspective-giving' in the Context of Intergroup Conflict. *Journal of Experimental Social Psychology* 48(4): 855–866.
- Choma, Becky L., and Hafer, Carolyn L. 2009. Understanding the relation between explicitly and implicitly measured political orientation: The moderating role of political sophistication. *Personality and Individual Differences*, 47(8), 964–967.
- CNC - Centro Nacional de Consultoría. 2011. Informe final evaluación de impacto, seguimiento y sistematización de la estrategia de reintegración comunitaria. Bogotá: Centro Nacional de Consultoría.
- CNMH - Centro Nacional de Memoria Histórica. 2013. *¡Basta ya! Colombia: Memorias de guerra y dignidad*. Bogotá: Centro Nacional de Memoria Histórica.
- Crano, William., and Prislin, Radmila. 2006. Attitudes and Persuasion. *Annual Review of Psychology*, 57, 345–374.
- Cuesta, José., and Alda, Erik. 2012. The effects of trust on victimization in Colombia. *Journal of Peace Research*, 49(6), 833–846.
- Dasgupta, Nilanjana., and Greenwald, Anthony G. 2001. On the malleability of automatic attitudes: Combating automatic prejudice with images of admired and disliked individuals. *Journal of Personality and Social Psychology*, 81, 800-814 .
- De Houwer, Jan., Baeyens, Frank., and Field, Andy. 2005. Associative learning of likes and dislikes: Some current controversies and possible ways forward. *Cognition and Emotion*, 19, 161–174.
- Devos, Thierry., and Banaji, Mahzarin R. 2005. American = White? *Journal of Personality and Social Psychology*, 88(3), 447–466. <http://doi.org/10.1037/0022-3514.88.3.447>

- Dovidio, John F., Kawakami, Kerry., and Beach, Kelly R. 2001. Implicit and explicit attitudes: Examination of the relationship between measures of intergroup bias. *Blackwell handbook of social psychology: Intergroup processes*, 4, 175-197.
- Duncan, Christopher R. 2009. Reconciliation and Revitalization: The Resurgence of Tradition in Postconflict Tobelo, North Maluku, Eastern Indonesia. *The Journal of Asian Studies*, 68(4), 1077.
- Eastmond, Marita., and Selimovic, Johanna M. 2012. Silence as Possibility in Postwar Everyday Life. *The International Journal of Transitional Justice*, 6, 502–524
- Fazio, Russell H., and Olson, Michael A. 2003. Implicit Measures in Social Cognition Research: Their Meaning and Use. *Annual Review of Psychology*, 54(1), 297–327.
- Fazio, Russell H., and Towles-Schwen, Michael T. 1999. The MODE model of attitude-behavior processes. In S. Chaiken and Y. Trope (Eds.), *Dual process theories in social psychology* (pp. 97-116). New York: Guilford
- Fazio, Rusell H., Sanbonmatsu, David M., Powell, Martha C., and Kardes, Frank R. 1986. On the automatic activation of attitudes. *Journal of Personality and Social Psychology*, 50(2), 229–238.
- Friese, Malte., Smith, Colin T., Plischke, Thomas., Bluemke, Matthias., and Nosek, Brian A. 2012. Do Implicit Attitudes Predict Actual Voting Behavior Particularly for Undecided Voters? *PLOS ONE*, 7(8), e44130. DOI: 10.1371/journal.pone.0044130
- Galdi, Silvia., Arcuri, Luciano., and Gawronski, Bertram. 2008. Automatic Mental Associations Predict Future Choices of Undecided Decision-Makers. *Science*, 321(5892), 1100–1102.
- Gallaway, Michael S., Fink, David S., Millikan, Amy M., and Bell, Michael R. 2012. Factors associated with physical aggression among US Army soldiers. *Aggressive behavior*, 38(5), 357-367.
- Galinsky, Adam D., and Moskowitz, Gordon B. 2000. Perspective-taking: Decreasing stereotype expression, stereotype accessibility, and in-group favoritism. *Journal of Personality and Social Psychology* 78, 708–724.
- Gibson, James L. 2007. 'Truth' and 'Reconciliation' as Social Indicators. *Social Indicators Research* 81, 2: 257–81.
- Glaser, Jack., and Finn, Christopher. 2013. How and Why Implicit Attitudes Should Affect Voting. *PS: Political Science and Politics*, 46(03), 537–544.
- Greenwald, Anthony G., McGhee, Debbie E., and Schwartz, Jordan L. 1998. Measuring individual differences in implicit cognition: the implicit association test. *Journal of Personality and Social Psychology*, 74(6), 1464–1480.
- Greenwald, Anthony G., Nosek, Brian A., and Banaji, Mahzarin R. 2003. Understanding and using the implicit association test: I. An improved scoring algorithm. *Journal of Personality and Social Psychology*, 85(2), 197–216.
- Greenwald, Anthony G., Smith, Colin T., Sriram, N., Bar-Anan, Yoav., and Nosek, Brian A. 2009. Implicit Race Attitudes Predicted Vote in the 2008 U.S. Presidential Election. *Analyses of Social Issues and Public Policy*, 9(1), 241–253.

- Halpern, Jodi., and Weinstein, Harvey M. 2004. Rehumanizing the Other: Empathy and Reconciliation. *Human Rights Quarterly*, 26(3), 561-583.
- Harris, Lasana T., and Fiske, Susan T. 2006. Dehumanizing the Lowest of the Low. Neuroimaging responses to Extreme Out-groups. *Psychological Science* 17(10), 847-853.
- Hartman, Todd K., and Newmark, Adam J. 2012. Motivated Reasoning, Political Sophistication, and Associations between President Obama and Islam. *PS: Political Science and Politics*, 45(03), 449–455.
- Hecker, Tobias., Hermenau, Katharin., Maedl, Anna., Hinker Harald., Schauer, Maggie., and Elbert, Thomas. 2013. Does Perpetrating Violence Damage Mental Health? Differences Between Forcibly Recruited and Voluntary Combatants in DR Congo. *Journal of Traumatic Stress* 26, 142-148.
- Hermenau, Katharin., Hecker, Tobias., Ruf, Martina., Schauer, Elisabeth., Elbert, Thomas., and Schauer, Maggie. 2011. Childhood adversity, mental ill-health and aggressive behavior in an African orphanage: Changes in response to trauma-focused therapy and the implementation of a new instructional system. *Child and Adolescent Psychiatry and Mental Health*, 5, 29. DOI: 10.1186/1753-2000-5-29.
- Hewstone, Miles., and Cairns, Ed. 2001. Social psychology and intergroup conflict. In D. Chirot and M. E. P. Seligman (Eds.), *Ethnopolitical warfare: Causes, consequences, and possible solutions* (pp. 319–342). Washington, DC, US: American Psychological Association.
- Hirsch, Alexander (ed.). 2012. *Theorizing Post-Conflict Reconciliation. Agonism, Restitution and Repair*. New York: Routledge.
- Human Rights Observatory. 2013. *Atlas del impacto regional del conflicto armado en Colombia. Volumen 1. Dinámicas locales y regionales en el período 1990-2013*. Bogotá: Vicepresidency Office of Colombia.
- Hurtado, Esteban., Haye, Andrés., González, Ramiro., Manes, Facundo., and Ibáñez, Agustín. 2009. Contextual Blending of Ingroup/Outgroup Face Stimuli and Word Valence: LPP Modulation and Convergence of Measures. *BMC neuroscience*, 10(69), 1-21.
- Ibáñez, Ana M., and Velásquez, Andrea. 2009. Identifying Victims of Civil Conflicts: An Evaluation of Forced Displaced Households in Colombia. *Journal of Peace Research*, 46(3), 431–451.
- Ibáñez, Agustín., Gleichgerrcht, Ezequiel., Hurtado, Esteban., González, Ramiro., Haye, Andrés., and Manes, Facundo F. 2010. Early neural markers of implicit attitudes: N170 modulated by intergroup and evaluative contexts in IAT. *Frontiers in Human Neuroscience*, 4, Article 188, 1-14.
- Jakupcak, Matthew., Conybeare, Daniel., Phelps, Lori., Hunt, Stephen., Holmes, Hollie. A., Felker, Bradford., Klevens, Michele., and McFall, Miles E. 2007. Anger, hostility, and aggression among Iraq and Afghanistan war veterans reporting PTSD and subthreshold PTSD. *Journal of traumatic stress*, 20(6), 945-954.

- Jellison, William A., McConnell, Allen R., and Gabriel, Shira. 2004. Implicit and explicit measures of sexual orientation attitudes: in group preferences and related behaviors and beliefs among gay and straight men. *Personality and Social Psychology Bulletin*, 30(5), 629–642.
- Joy-Gaba, Jennifer A., and Nosek, Brian A. 2010. The Surprisingly Limited Malleability of Implicit Racial Evaluations. *Social Psychology*, 41(3), 137–146.
- Kam, Cindy D. 2007. Implicit Attitudes, Explicit Choices: When Subliminal Priming Predicts Candidate Preference. *Political Behavior*, 29(3), 343–367.
- Kaplan, Oliver., and Nussio, Enzo. 2015. Community counts: The social reintegration of ex-combatants in Colombia. *Conflict Management and Peace Science*, DOI: 10.1177/0738894215614506
- Kaplan, Oliver., and Nussio, Enzo. 2016. Explaining Recidivism of Ex-combatants in Colombia. *Journal of Conflict Resolution*, DOI: 10.1177/0022002716644326.
- Kaufman, Stuart J. 2001. *Modern Hatreds: The Symbolic Politics of Ethnic War*. Ithaca, NY: Cornell University Press.
- Kaufman, Stuart J. 2006. Escaping the Symbolic Politics Trap: Reconciliation Initiatives and Conflict Resolution in Ethnic Wars. *Journal of Peace Research*, 43(2), 201–218.
- Kinoshita, Sachiko., and Peek-O’Leary, Marie. 2005. Does the compatibility effect in the race Implicit Association Test reflect familiarity or affect? *Psychonomic Bulletin and Review*, 12(3), 442–452.
- Knowles, Eric D., Lowery, Brian S., and Schaumberg, Rebecca L. 2010. Racial prejudice predicts opposition to Obama and his health care reform plan. *Journal of Experimental Social Psychology*, 46(2), 420–423.
- LAPOP 2012. *Cultura política de la democracia en Colombia y en las Américas, 2012: Hacia la igualdad de oportunidades*. Latin American Public Opinion Project. Bogotá: Vanderbilt University, Universidad de Los Andes, et al.
- Long, William J., and Brecke, Peter. 2003. *War and Reconciliation: Reason and Emotion in Conflict Resolution*. MIT Press.
- Lundberg, Kristjen B., and Payne, Keith B. 2014. Decisions among the Undecided: Implicit Attitudes Predict Future Voting Behavior of Undecided Voters. PLOS ONE, 9(1), e85680. <http://doi.org/10.1371/journal.pone.0085680>
- Lyle, M. L. 2008. Dueling consciousness: The psychological implications of the American ideology of racial dominance. Doctoral dissertation, Department of Political Science, Duke University.
- McCarroll, James E., Ursano, Robert J., Liu, Xian., Thayer, Laurie E., Newby, John H., Norwood, Ann E., and Fullerton, Carol S. 2000. Deployment and the probability of spousal aggression by U.S. Army soldiers. *Military Medicine*, 165(1), 41–44.
- McCauley, John F. 2014. Measuring and Reducing Religious Bias in Post-Conflict Zones: Evidence from Côte d’Ivoire. *Political Psychology*, 35(2), 267–289.

- MacGinty Roger. 2014. Everyday peace: Bottom-up and local agency in conflict-affected societies. *Security Dialogue*, 45(6), 548–564.
- McMullin, Jaremey R. 2013. Integration or separation? The stigmatisation of ex-combatants after war. *Review of International Studies*, 39(2), 385–414.
- Mierke, Jan., and Klauer, Karl C. 2003. Method-specific variance in the implicit association test. *Journal of Personality and Social Psychology*, 85(6), 1180–1192.
- Mollica Richard F., Sarajlić, Narcisa., Chernoff, Miriam., Lavelle, James., Vuković, Iris., and Massagli, Michael P. 2001. Longitudinal Study of Psychiatric Symptoms, Disability, Mortality, and Emigration among Bosnian Refugees. *JAMA* 286(5): 546–54.
- Morin, Rich. 2011. The Difficult Transition from Military to Civilian Life. Retrieved from <http://www.pewsocialtrends.org/2011/12/08/the-difficult-transition-from-military-to-civilian-life/>
- Mukashema, Immaculée., and Mullet, Etienne. 2010. Current mental health and reconciliation sentiment of victims of the genocide against Tutsi in Rwanda. *Revista de Psicología Social*, 25(1), 27–34.
- Nadler, Arie., Malloy, Thomas., and Fisher, Jeffrey. D. (Eds.). 2008. *Social Psychology of Intergroup Reconciliation: From Violent Conflict to Peaceful Co-Existence* (1 edition). Oxford ; New York: Oxford University Press.
- Neumann, Roland., Hülsenbeck, Katharina., and Seibt, Beate. 2004. Attitudes towards people with AIDS and avoidance behavior: Automatic and reflective bases of behavior. *Journal of Experimental Social Psychology*, 40(4), 543–550.
- Neuner, Frank., Schauer, Maggie., Karunakara, Unni., Klaschik, Christine., Robert, Christina., and Elbert, Thomas. 2004. Psychological trauma and evidence for enhanced vulnerability for posttraumatic stress disorder through previous trauma among West Nile refugees. *BMC Psychiatry* 4-34. DOI: 10.1186/1471-244X-4-34.
- Northrup, Terrell. 1989. The Dynamic of Identity In Personal and Social Conflict. In L. N. Kriesberg, Terrell A; Thorson, Stuart J (Ed.), *Intractable conflicts and their transformation*. Syracuse: Syracuse University Press
- Nosek, Brian A., Greenwald, Anthony G., and Banaji, Mahzarin R. 2007. The Implicit Association Test at Age 7: A Methodological and Conceptual Review. In *Social psychology and the unconscious: The automaticity of higher mental processes* (pp. 265–292). New York, NY, US: Psychology Press.
- Nussio, Enzo. 2011. How ex-combatants talk about personal security. Narratives of former paramilitaries in Colombia. *Conflict, Security and Development*, 11(5), 579–606.
- Odenwald, Michael., Lingenfelder, Birke., Schauer, Maggie., Neuner, Frank., Rockstroh, Brigitte., Hinkel, Harald., and Elbert, Thomas. 2007. Screening for Posttraumatic Stress Disorder among Somali ex-combatants: A validation study. *Conflict and Health*, 1(1), DOI: 10.1186/1752-1505-1181-1110.

- Paluck, Elizabeth L. 2009. Reducing intergroup prejudice and conflict using the media: A field experiment in Rwanda. *Journal of Personality and Social Psychology*, 96(3), 574–587.
- Paluck, Elizabeth L. 2010. Is it better not to talk? Group polarization, extended contact, and perspective taking in Eastern Democratic Republic of Congo. *Personality and Social Psychology Bulletin*, 36(9), 1170–1185.
- Pasek, John., Tahk, Alexander., Lelkes, Yphtach., Krosnick, Jon A., Payne, Keith B., Akhtar, Omair., and Tompson, Trevor. 2009. Determinants of Turnout and Candidate Choice in the 2008 U.S. Presidential Election Illuminating the Impact of Racial Prejudice and Other Considerations. *Public Opinion Quarterly*, 73(5), 943–994.
- Payne, Keith B. 2001. Prejudice and perception: the role of automatic and controlled processes in misperceiving a weapon. *Journal of personality and social psychology*, 81(2), 181-192
- Payne, Keith B., Krosnick, Jon., Pasek, John., Lelkes, Yphtach., Akhtar, Omair., and Tompson, Trevor. 2010. Implicit and explicit prejudice in the 2008 American presidential election. *Journal of Experimental Social Psychology*, 46(2), 367–374.
- Pérez, Efren O. 2010. Explicit Evidence on the Import of Implicit Attitudes: The IAT and Immigration Policy Judgments. *Political Behavior*, 32(4), 517–545.
- Perez-Sales Paul., Eiroa-Orosa Francisco., Fernández, Irene., Olivos Pablo., Vergara, María., Vergara, Sergio., and Barbero, Elena. 2013. *La medida del impacto psicológico de experiencias extremas. Cuestionario VIVO. Diseño, validación y manual de aplicación*. Madrid: Irredentos Libros.
- Pettigrew, Thomas F., and Tropp, Linda R. 2006. A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology*, 90(5), 751–783.
- Podder, Sukanya. 2012. From Recruitment to Reintegration: Communities and Ex-combatants in Post-Conflict Liberia. *International Peacekeeping*, 19(2), 186–202.
- Poitras, Jean. 2010. Mediation: depolarizing responsibilities to facilitate reconciliation. *International Journal of Conflict Management*, 21(1), 4–19.
- Prieto, Juan D. 2012. Together After War While the War Goes On: Victims, Ex-Combatants and Communities in Three Colombian Cities. *The International Journal of Transitional Justice* 6(3), 525–46.
- Rettberg, Angelika. and Ugarriza, Juan E. 2016. Reconciliation: A Comprehensive Framwework for Empirical Analysis. *Security Dialogue*, 47(6), 517-540.
- Rieder, Heide., and Elbert, Thomas. 2013. Rwanda – lasting imprints of a genocide: trauma, mental health and psychosocial conditions in survivors, former prisoners and their children. *Conflict and Health*, 7, 6. <http://doi.org/10.1186/1752-1505-7-6>
- Roccas, Sonia. and Elster, Andrey. 2012. Group Identities. En *The Oxford Handbook of Intergroup Conflict*, ed. Linda R. Tropp, 106-117. Oxford: Oxford University Press.

- Roccatto, Michele., and Zogmaister, Cristina. 2010. Predicting the Vote through Implicit and Explicit Attitudes: A Field Research. *Political Psychology*, 31(2), 249–274.
- Rosner, Rita., Powell, Steve., and Butollo, Willi. 2003. Posttraumatic stress disorder three years after the siege of Sarajevo. *Journal of Clinical Psychology*, 59, 41-55.
- Rothermund, Klaus., and Wentura, Dirk. 2004. Underlying processes in the implicit association test: dissociating salience from associations. *Journal of Experimental Psychology. General*, 133(2), 139–165.
- Rowatt, Wade C., Tsang, Jo-Ann., Kelly, Jessica., LaMartina, Brooke., McCullers, Michelle., and McKinley, April. 2006. Associations Between Religious Personality Dimensions and Implicit Homosexual Prejudice. *Journal for the Scientific Study of Religion*, 45(3), 397–406.
- Rudman, Laurie A., and Kilianski, Stephen E. 2000. Implicit and Explicit Attitudes Toward Female Authority. *Personality and Social Psychology Bulletin*, 26(11), 1315–1328.
- Satpute, Ajay B., and Lieberman, Matthew D. 2006. Integrating automatic and controlled processes into neurocognitive models of social cognition. *Brain Research*, 1079(1), 86-97.
- Schauer, Elisabeth., and Elbert, Thomas. 2010. The Psychological Impact of Child Soldiering. In E. Martz (Ed.), *Trauma Rehabilitation After War and Conflict* (pp. 311–360). New York: Springer.
- Serrani Azcurra, Daniel. 2011. El trabajo de observación del adulto mayor. Una herramienta pedagógica para modificar actitudes ageístas en estudiantes de psicología. *Revista electrónica de investigación educativa*, 13(1), 71–85.
- Slep, Amy M., Foran, Heather M., Heyman, Richard E., and Snarr, Jeffrey D. 2010. Unique risk and protective factors for partner aggression in a large scale air force survey. *Journal of Community Health* 35(4), 75–383.
- Smith, Kevin B., Oxley, Douglas R., Hibbing, Matthew V., Alford, John R., and Hibbing, John R. 2011. Linking Genetics and Political Attitudes: Reconceptualizing Political Ideology. *Political Psychology*, 32(3), 369–397.
- Spisak, Brian R., Dekker, Peter H., Krüger, Max., and Vugt, Mark van. 2012. Warriors and Peacekeepers: Testing a Biosocial Implicit Leadership Hypothesis of Intergroup Relations Using Masculine and Feminine Faces. *PLOS ONE*, 7(1), e30399. <http://doi.org/10.1371/journal.pone.0030399>
- Taber, Charles S., and Lodge, Milton. 2006. Motivated Skepticism in the Evaluation of Political Beliefs. *American Journal of Political Science*, 50(3), 755–769.
- Taft, Casey T., Street, Amy E., Marshall, Amy D., Dowdall, Deborah J., and Riggs, David S. 2007. Posttraumatic stress disorder, anger, and partner abuse among Vietnam combat veterans. *Journal of Family Psychology: JFP: Journal of the Division of Family Psychology of the American Psychological Association (Division 43)*, 21(2), 270–277.
- Taft, Casey T., Weatherill, Robin P., Woodward, Halley E., Pinto, Lavinia A., Watkins, Laura E., Miller, Mark W., and Dekel, Rachel. 2009. Intimate Partner and General

Aggression Perpetration among Combat Veterans Presenting to a Posttraumatic Stress Disorder Clinic. *The American Journal of Orthopsychiatry*, 79(4), 461–468.

Tam, Tania., Hewstone, Miles., Kenworthy, Jared B., Cairns, Ed., Marinetti, Claudia., Geddes, Leo., and Parkinson, Brian. 2008. Postconflict Reconciliation: Intergroup Forgiveness and Implicit Biases in Northern Ireland. *Journal of Social Issues*, 64(2), 303–320.

Teten, Andra L., Miller, Lisa A., Bailey, Sara D., Dunn, Nancy J., and Kent, Thomas A. 2008. Empathic deficits and alexithymia in trauma-related impulsive aggression. *Behavioral Sciences and the Law*, 26(6), 823–832.

Teten, Andra L., Sherman, Michelle D., and Han, Xiaotong. 2009. Violence between therapy-seeking veterans and their partners: prevalence and characteristics of nonviolent, mutually violent, and one-sided violent couples. *Journal of Interpersonal Violence*, 24(1), 111–127.

Tobón, Carlos., Ibañez, Agustín., Velilla, Lina., Duque, Jon., Ochoa, John., Trujillo, Natalia., Decety, Jean., and Pineda, David. 2015. Emotional processing in Colombian ex-combatants and its relationship with empathy and executive functions. *Social Neuroscience*, 10(2), 153–165.

Todd, Andrew R., Bodenhausen, Galen V. and Galinsky, Adam D. 2012. Perspective taking combats the denial of intergroup discrimination. *Journal of Experimental Social Psychology*, 48(3), 738–745.

Tropp, Linda R. ed. 2012. *The Oxford Handbook of Intergroup Conflict*, Oxford: Oxford University Press.

Tropp, Linda R., Hawi, Diala R., O'Brien, Thomas C., Gheorghiu, Mirona., Zetes, Alexandra., and Butz, David A. 2017. Intergroup Contact and the Potential for Post-Conflict Reconciliation: Studies in Northern Ireland and South Africa. *Peace and Conflict: Journal of Peace Psychology*, 23(3), 239–249.

Ugarriza, Juan E., and Nussio, Enzo. 2016. The Effect of Perspective-Giving on Postconflict Reconciliation. An Experimental Approach. *Political Psychology*, 38(1), 3-19.

Vasterling, Jennifer J., Verfaellie, Mieke., and Sullivan, Karen D. 2009. Mild traumatic brain injury and posttraumatic stress disorder in returning veterans: perspectives from cognitive neuroscience. *Clinical Psychology Review*, 29(8), 674–684.

Vescio, Theresa K., Sechrist, Gretchen B., and Paolucci, Matthew P. 2003. Perspective taking and prejudice reduction: The mediational role of empathy arousal and situational attributions. *European Journal of Social Psychology*, 33, 455–472.

Vinck, Patrick., Pham, Phuong N., Stover, Eric., and Weinstein, Harvey M. 2007. Exposure to war crimes and implications for peace building in northern Uganda. *JAMA*, 298(5), 543–554.

Vogt, Sonja., Zaid, Nadia A.M., Ahmed, Hilal E.F., Fehr, Ernst and Efferson, Charles. 2016. Changing cultural attitudes towards female genital cutting. *Nature*, 538, 506-510.

- Volkan, Vamik D. 1999. Post-traumatic states: Beyond individual PTSD in societies ravaged by ethnic conflict. *Canadian Foreign Policy Journal*, 7(1), 27-38.
- Volkan, Vamik D. 2009. Large-group identity: 'Us and them' polarizations in the international arena. *Psychoanalysis, Culture and Society*, 14(1), 4-15.
- Weierstall, Roland, Bueno, Claudia P., Neuner, Frank, and Elbert, Thomas. 2013. Relations among appetitive aggression, post-traumatic stress and motives for demobilization: a study in former Colombian combatants. *Conflict and Health* 7:9.
- White, Michael J., and White, Gwendolen B. 2006. Implicit and Explicit Occupational Gender Stereotypes. *Sex Roles*, 55(3-4), 259-266.
- Williams, John K., and Themanson, Jason R. 2011. Neural correlates of the implicit association test: evidence for semantic and emotional processing. *Social Cognitive and Affective Neuroscience*, 6(4), 468-476.
- Wilson, Timothy D., Lindsey, Samuel., and Schooler, Tonya Y. 2000. A model of dual attitudes. *Psychological Review*, 107(1), 101-126.

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