AGGRESSIVE BEHAVIOR
Volume 42, pages 471–482 (2016)

The Moderating Role of Aggressiveness in Response to Campaigns and Interventions Promoting Anti-Violence Attitudes

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This research indicates that a critical factor for understanding the success or failure of anti-violence campaigns is the aggressiveness of the target audience. We propose that person and situation interact in predicting post-intervention attitudes toward violence, fighting expectations, and intentions to learn how to use real guns. Across two studies conducted in different countries and with different age populations, we found that anti-violence campaigns were effective, only for those for whom the message was already pro-attitudinal (low trait aggressiveness). In contrast, for individuals with relatively higher scores in trait aggressiveness, there was no difference in attitudes toward violence between those who received the anti-violence intervention and those assigned to the control group. In fact, the anti-violence messages resulted in a boomerang effect, increasing the favorability of attitudes toward violence in one of the studies. Aggr. Behav. 42:471–482, 2016.

Keywords: attitudes; persuasion; aggressiveness; anti-violence; communication campaigns

INTRODUCTION

Violent behavior is a social problem with extremely negative consequences. For example, in 2010 the United States police recorded 14,748 homicides (4.8 per 100,000 inhabitants). The following year, Mexico recorded 27,199 homicides in its territory (23.7 per 100,000 inhabitants). Despite having lower numbers, violence also claimed many lives in Europe as well. For example, in Spain, there were 390 victims of homicide (0.8 per 100,000 inhabitants; UNODC, 2011).

Beyond its profound social and psychological impacts, violence also carries with it significant economic costs, both in funding efforts to prevent it altogether or to mitigate its consequences when it occurs. Most of the funds allocated toward preventing violence are spent on designing and implementing public policies. Thus, the World Health Organization recommends using media campaigns as a way to change attitudes, behaviors, and social norms with regard to violence (e.g., Vivolo, Matjasko, & Massetti, 2011).

Generally, the anti-violence campaign consists of an intervention that relies mainly on broadcasting persuasive messages with the purpose of increasing awareness about the harmful consequences of the use of violence. However, in view of the data showing the permanence of violence incidents, communication campaigns do not seem to achieve their goal of reducing the problem.

Effectiveness of Anti-Violence Campaigns: Variety of Outcomes

Research shows that the efficacy of communication campaigns varies greatly and is not always satisfactory (e.g., Cho & Salmon, 2007). Specifically, evidence suggests that these programs can produce both positive (e.g., Devlin, Eadie, Stead, & Evans, 2007), no effects at all (e.g., Foxcroft, Lister-Sharp, & Lowe, 1997), and negative effects (Bushman & Stack, 1996; Hart & Nisbet, 2012). Faced with such disparate results, it is difficult to anticipate when and, for whom, anti-violence campaigns

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Received 2 June 2015; Revised 17 November 2015; Accepted 3 December 2015

DOI: 10.1002/ab.21643
Published online 28 January 2016 in Wiley Online Library (wileyonlinelibrary.com).

will be effective, ineffective, or even counterproductive (e.g., Merrell, Gueldner, Ross, & Isava, 2008).

There is some preliminary evidence regarding possible moderators of the effectiveness of anti-violence campaigns. The majority of this work has focused on the components of a message's content that predict its persuasive efficacy (Fishbein, Hall-Jamieson, Zimmer, von Haeften, & Nabi, 2002). For example, messages that contain prohibitions or explicit warnings (Bushman & Stack, 1996) as well as messages that involve some type of dogmatic, external pressure (Legault, Gutsell, & Inzlicht, 2012), or seek to change behavior through fear appeals (Roskos-Ewoldsen, Yu, & Rhodes, 2004) tend to be ineffective or even counter-productive for reducing violent attitudes and aggressive behavior. Among other things, these kinds of messages are often perceived as threatening and can generate reactance from the intended audience (Byrne, Linz, & Potter, 2009; Kim, Levine, & Allen, 2014). Reactance can be defined as the state of psychological activation and resistance that arises when our freedom is limited or threatened: the most direct consequence of this state is a tendency to resist everything that could be considered as a threat to one's personal liberty (Brehm & Brehm, 1981). Indeed, the literature on persuasion has documented the counter-productive nature of messages that induce reactance (Petty & Cacioppo, 1979).

In addition to message variables, several studies have also considered variables related to the intervention recipients. These variables include active participation, age, and self-esteem. First, interventions tend to be more effective when the audience participate in them more actively (Wilson et al., 1999). For example, in an intervention designed to reduce the negative effects of media violence in fourth and fifth grade children, those children who participated in a cognitive activity immediately following the intervention (i.e., writing a paragraph about what they learned and reading it aloud while being videotaped) showed reduced willingness to behave aggressively (Byrne, 2009). Second, children with high self-esteem have been shown to be more reactant in this context and, therefore, more likely to reject a persuasive suggestion (Hong, Giannakopoulus, Laing, & Williams, 1994). Third, Nathanson and Yang (2003) found that the same intervention against violence produced different results in children depending on whether they were 5 or 12 years of age, the 12 year olds being less affected by the campaign than the 5 year olds.

Trait Aggressiveness as a Moderator of Anti-Violence Campaigns Effectiveness

In line with previous research, we propose that understanding the effectiveness of anti-violence campaigns can benefit from considering characteristics of the participants. Specifically, the present research was designed to examine a previously unexplored characteristic of the message recipient as a potential moderating factor in response to anti-violence communication campaigns. This is the receiver's trait aggressiveness. People differ in the degree to which they tend to behave in a violent way (Olweus, 1979). Aggressive behavior is any behavior that is intended to harm another person who does not want to be harmed (Bushman & Huesmann, 2010). The Aggression Questionnaire (AQ; Buss & Perry, 1992) is one of the most widely used tools in identifying individuals' trait aggressiveness. Individuals with high (vs. low) scores on the AQ have been found to behave more aggressively (Archer & Webb, 2006; Bushman, 1995; Bushman & Wells, 1998; Giancola & Zeichner, 1995).

Anti-violent messages and trait aggressiveness can produce a number of different attitudinal outcomes. For example, an anti-violent intervention may be expected to be effective regardless of the level of trait aggressiveness of the recipients. Alternatively, receiving an anti-violence campaign can paradoxically increase liking for violence if recipients perceive this persuasive attempt as being manipulative and they respond to the intervention with reactance. We propose that both of the above (main) effects can be true—anti-violence intervention can increase or decrease persuasion—but would do so for different individuals. This person-by-situation approach (according to which message and recipient factors can interact in predicting attitude change) is also consistent with theoretical models such as the General Aggression Model (GAM; Anderson & Bushman, 2002) and the Differential Susceptibility to Media Effects Model (DSMM; Valkenburg & Peter, 2013) that propose that media effects (e.g., effectiveness of anti-violence campaigns) are moderated by recipient variables (e.g., trait aggressiveness).

Even if one would anticipate an interaction (rather than main effects), there are still different ways in which trait aggressiveness and anti-violent campaigns could interact. For example, individuals high (vs. low) in trait aggressiveness could be a more sensitive target group when receiving an anti-violence campaign since they have more room (and also more need) for change in this context. In contrast, those low in trait aggressiveness would have less room and less need to change in response to an already pro-attitudinal intervention. Although this person and situation interaction is plausible, we predicted the opposite relationship. That is, we expected anti-violence interventions to work for those with previous negative attitudes toward violence (i.e., non-violent individuals) and, therefore, for those for whom the anti-violent message is pro-attitudinal. In general, pro-attitudinal messages tend to be more readily accepted than counter-attitudinal messages, since the

former are usually processed in a positively biased manner and the latter in a negatively biased manner (Clark & Wegener, 2013; Petty & Cacioppo, 1990).

Similar predictions for the link between the direction of the message and recipients' previous attitudes can be derived from other classic theories of persuasion. For example, according to Social Judgment Theory (Sherif & Hovland, 1961), the reaction to and the effect of a persuasive communication depends upon the way in which the receiver evaluates the position it advocates. According to this view, a persuasive message is expected to be accepted when it falls within the message recipient's range of acceptance. Otherwise, even if the message is understood correctly, if its position falls outside the range of acceptable opinions, it will produce no attitude change, or perhaps "boomerang" attitude to change (i.e., change in the direction opposite that advocated by the message).

Likewise, the functional approach to attitudes (e.g., Katz, 1960) posits that sometimes attitudes may serve to protect cognitions central to the self-concept from messages that challenge or attack them (i.e., ego-defensive function). Thus, when a person perceives that an essential element of the self (e.g., aggressiveness) has been threatened by counter-attitudinal information (e.g., anti-violence messages) they will attempt to maintain the self-concept in the faces of these threats by rejecting this kind of message.

In sum, the objective of this research was to examine the effect of the recipients' propensity for aggression on the success or failure of anti-violence campaigns. This leads to our main hypothesis:

Hypothesis 1: Individuals with higher (vs. lower) scores in aggressiveness would report more favorable attitudes toward violence. That implies that anti-violence messages would be considered counter-attitudinal appeals for those with higher (vs. lower) scores in aggressiveness.

Hypothesis 2: The effectiveness of antiviolence campaigns will be moderated by trait aggressiveness. Specifically, anti-violence campaigns will be more effective for individuals with low (vs. high) scores in trait aggressiveness. For those individuals, high in chronic aggressiveness anti-violence campaigns will be less effective, totally ineffective, or even counter-productive.

STUDY 1

The aim of this first study was to examine the extent to which a persuasive message against violence can be effective in changing the recipients' attitudes toward violence relative to a control message. Therefore, this study examined relative differences in persuasion between treatment and control groups (rather than testing differences in persuasion within the same person at different times). This study also tested whether recipients' aggressiveness influenced attitudes toward violence, and other relevant outcomes such as fighting expectations. We expected the anti-violence campaign to be particularly effective for individuals low (vs. high) in chronic aggressiveness, as for them the message would be pro (versus counter) attitudinal and therefore they will be likely to respond to the intervention more (vs. less) positively.

Method

Participants and design. Ninety undergraduate students from the University of Guanajuato, Mexico (31 females, 59 males, mean age = 20.2, SD = 2.17) volunteered for the experiment in return for course credit. Participants were randomly assigned to receiving either an anti-violence message or a control message, and their trait aggressiveness was measured, resulting in a design with two independent variables: one of a dichotomous nature (Message: anti-violence message vs. control message manipulated between-subjects) and one of a continuous nature (aggressiveness). Attitude toward violence and fighting expectations were measured as dependent variables.

Procedure. As part of a general opinion survey about youth leisure, participants read a brief article against the use of violence in conflict resolution or read an article about videogames that did not mention violence. After reading one of the two messages, all participants reported their attitudes toward violence and the perceived likelihood of being involved in a violent situation in the near future. Then, participants completed the Spanish version of the Aggression Questionnaire. Finally, participants were debriefed and dismissed.

Measures

Independent variables

Persuasive message. Participants were randomly assigned either to receiving the persuasive anti-violence message or the control message. In the anti-violence message condition, participants were asked to read an article in favor of cooperation strategies that was composed by arguments against violent behavior. The gist of some of the arguments were that violent behavior is a sign of a person's lack of social skills and low ability to manage their own emotions, and that people who display violent behavior are more socially isolated because they are perceived as being less competent. The information was quoted from reliable, credible sources such as scientists, psychologists, teachers, and experts. Thus, although most campaigns are more complex and include many aspects (different messages, repetition, etc.), the format of the persuasive message largely

resembled some of the messages typically used in public communication campaigns seeking to raise awareness against violent behavior. In contrast, participants in the control message group were presented with an article unrelated to violence, offering several arguments supporting the potential benefits of playing chess and other similar videogames. Both messages were designed so that they were matched for as many features as possible: same format or nature of the message (both described as newspaper articles), length (both messages were around 400 words long), and structure (both were composed by rhetorical arguments about the issue). In order to assess to what extent both messages were equivalent in the surface, we conducted a pilot test in which 44 participants were randomly assigned to read either the antiviolence message or the control message, and to state how convincing they perceived the message, with 1 = Not at all convincing, to 9 = Very convincing. As expected, participants perceived the antiviolence message ($M = 5.23$, $SD = 2.57$) to be as convincing as the control message ($M = 5.28$, $SD = 2.67$), $t(82) = -0.83$, $P = .93$.

Aggressiveness. The Aggression Questionnaire (AQ) (Buss & Perry, 1992), adapted to the Spanish language by Andreu, Peña, and Graña (2002), was used to measure the propensity for aggression or violence. The AQ consists of 29 items that relate to aggressive behavior and feelings. Responses to these items are provided on a five-point Likert scale (1 = Completely false for me, to 5 = Completely true for me). Sample items include: I have threatened people I know or I often engage in more fights than usual. In the present study, the AQ showed a high reliability ($\alpha = .86$), and the scores ranged from 1.10 to 3.72 ($M = 2.3$, $SD = .62$).[1] The scores on this questionnaire were not affected by the manipulation of the message ($P = .1$).

Dependent variables

Attitudes toward violence scale. The Revised Attitudes toward Violence Scale (Anderson, Benjamin, Wood, & Bonacci, 2006) was used to measure attitudes toward violence following the message. This instrument consists of 39 items rated on a five-point Likert scale (1 = Strongly disagree, to 5 = Strongly agree). Sample items include: A child who does not obey should be struck, A violent revolution can be perfectly right and It is alright to strike your partner if they provoke you. The items of the scale showed high internal consistency ($\alpha = .91$).

TABLE I. Correlations Between Measures and Descriptive Statistics

Variable	1	2	3	*M*	SD
1. Persuasive message				.53	.50
2. Aggressiveness	−.21			2.30	.62
3. Attitudes toward violence	−.22	.46*		1.81	.541
4. Fighting expectations	−.22**	.55*	.26**	21.72	16.37

*$P < .001$.
**$P < .05$.

Fighting expectations index. In order to measure an individual's perceived probability (rated between 0% and 100%) that he or she could be involved in a violent episode in the immediate future, participants were asked to complete a scale of seven items (*What is the probability that in the next month . . . you suffer physical or verbal aggression? . . . you yell at someone you have a close relationship with? . . . you have a big fight with someone? . . . you have a heated argument with someone? . . . you feel violent thoughts toward someone? . . . you have desires to injure someone? . . . you feel the urge to break an object?*). Given the high inter-correlation between items, they were combined together to create a single fighting expectations index ($\alpha = .79$). This measure is relevant for understanding the extent to which people believe that their environments are potentially hostile. Consistent with the self-fulfillment theory, having hostile expectations of people and situations have been shown to generate more aggressive and violent responses from others (e.g., Dill, Anderson, Anderson, & Deuser, 1997; Hasan, Bègue, & Bushman, 2012). These DVs (Attitudes and Expectations) were analyzed separately due to their relatively low correlation ($r = .26$, $P = .02$).

Results

Descriptive statistics and intercorrelations of all principal measures are displayed in Table I.

Following the procedures recommended by Aiken and West (1991), the dependent variables were subjected to multiple regression analysis, with Aggressiveness (continuous variable) and Message (dummy coded) as predictor variables. The main effects were interpreted in the first step of the regression and the interaction in the second (Cohen & Cohen, 1983).

Attitudes toward violence. The regression analysis[2] showed a main effect of Aggressiveness ($B = .37$),

[1] A Confirmatory Factor Analysis using the WLSMV estimator was conducted in accord with Beauducel and Herzberg (2006). The CFI (.81) fell below conventional standards for acceptable fit (i.e., CFI greater than 0.90), probably due to our sample size was not big enough to render reliable results (the current sample size $n = 90$ does not meet the criteria of at least 10 times the number of free model parameters—in this model we had 93—Bollen, 1990). However other relevant criteria for fit were met, such as $\chi^2/df = 1.40$ (less than 3.00) and RMSEA = .07 (less than .10) (Browne & Cudeck, 1993), indicating an acceptable pattern of fit.

[2] Participants who falied to complete any of the measures were excluded in both studies.

$t(59) = 3.43$, $P = .001$, such that higher scores on the AQ were associated with more favorable attitudes toward violence. This main effect confirmed that the instrument used to assess aggressiveness was capable of predicting the favorability toward violence. There was no main effect of the Message, ($B = -.10$), $t(59) = -0.77$, $P = .44$. Most importantly, the expected interaction between Aggressiveness and Message occurred, ($B = .43$), $t(58) = 2.04$, $P = .045$. This interaction was decomposed at one standard deviation above and below the mean of the trait aggression continuous measure. As predicted, the results showed a significant effect of the Message for those with low Aggressiveness ($B = -.36$), $t(58) = -2.01$, $P = .049$, but not for those with high Aggressiveness ($B = .16$), $t(58) = 0.89$, $P = .37$. As shown in Figure 1, attitudes toward violence were significantly more negative for participants with low (vs. high) aggressiveness after receiving the anti-violence message than after receiving the control message. Another way of describing this interaction is that, for those who received the anti-violence message, attitudes toward violence were less favorable for relatively low aggressive participants than for high ($B = .59$), $t(58) = 3.92$, $P < .001$. However, attitudes toward violence were not affected by aggressiveness for those participants who received the control message ($B = .15$), $t(58) = 1.05$, $P = .29$.

Fighting expectations index. Parallel to the attitudes results, expectations revealed a significant main effect of Aggressiveness ($B = 12.98$), $t(69) = 4.73$, $P < .001$. As one might expect, this main effect showed that high (vs. low) aggressive individuals estimated greater probabilities of being involved in a violent situation. This main effect confirmed the validity of the fighting expectations index in how these individuals see the world. No main effect of Message was found, ($B = -5.36$), $t(69) = -1.58$, $P = .12$. Most important for the current research, a significant interaction between Message and Aggressiveness was found, ($B = 11.92$), $t(68) = 2.23$, $P = .03$. As predicted, the results revealed a significant effect of the Message for individuals low (-1 SD) in Aggressiveness ($B = -12.96$), $t(68) = -2.73$, $P = .008$, but not for those individuals who scored higher ($+1$ SD) on Aggressiveness ($B = 1.91$), $t(68) = 0.41$, $P = .68$. As shown in Figure 2, expectations of violence were significantly lower for participants with low (vs. high) aggressiveness after receiving the persuasive message, than after receiving the control message. Another way of describing this interaction is that, although fighting expectations were not affected by aggressiveness for those participants who received the control message ($B = 6.56$), $t(68) = 1.67$, $P = .10$, for those who received the anti-violence message, fighting expectations were less favorable for relatively low aggressive participants than for relatively high aggressive students, ($B = 18.47$), $t(68) = 5.08$, $P = .001$.

Discussion

The results of this first study revealed that participants who reported higher propensity toward aggression showed more favorable attitudes toward violence and higher fighting expectations than those less predisposed to aggressiveness. This main effect confirmed our first hypothesis, which was that more aggressive individuals will have more favorable attitudes toward violence than those with lower scores in aggressiveness, irrespective of the type of message received. This finding is also consistent with our assumption that anti-violence messages are counter-attitudinal for those with high scores in aggressiveness.

The intervention designed to promote anti-violent attitudes was effective in changing attitudes specifically for those individuals with relatively low scores in trait aggressiveness. That is, participants with lower scores in aggressiveness who received the anti-violence message responded in accord with the message, reporting less favorable attitudes toward violence and less fighting expectations than the group that received the control

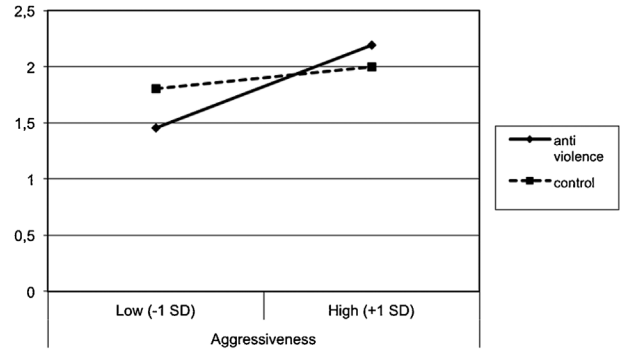

Fig. 1. Attitudes toward violence as a function of aggressiveness and message (Study 1).

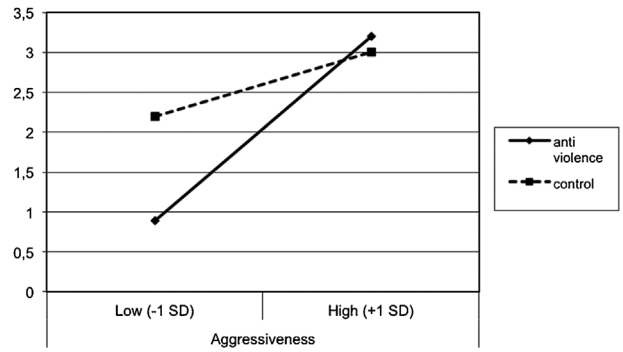

Fig. 2. Fighting Expectations Index as a function of aggressiveness and message (Study 1).

message. In contrast, participants with relatively high scores on aggressiveness resisted the anti-violence message and showed no difference from the control group in their attitudes and violent expectations. Therefore, the first study found that the anti-violence messages worked exclusively for those who are less aggressive, and did not result in changing attitudes for those who probably needed and could benefit from the intervention the most.

Even though the results of this first study are highly informative regarding the role of aggressiveness in anti-violence interventions, it is important to remember some potential limitations. First, the target population in this study (college undergraduates in Mexico) might be particularly responsive to these kinds of anti-violence messages given the relevance and current salience of violence in that particular country. It is important to examine whether the same effect would be found in target groups with different characteristics (country, educational period, etc.), especially among those groups that are particularly vulnerable to influence, such as children. Therefore, in order to generalize these findings, we conducted a second study using a different anti-violence intervention in a different population.

STUDY 2

The aim of this second study was to replicate and extend the results of the first study using a different intervention in another kind of population. The selected sample was Spanish children, who were an especially relevant population since children constitute a particularly vulnerable group. Although working with large samples of children can be challenging, it is critical to invest in interventions at early stages. This is a key target group given that important preventive work can be undertaken with children so as to avoid antisocial behavior in the future. Furthermore, this study was conducted in Spain where violence is relatively less salient than in Mexico, thereby allowing us to test the generalizability of the initial findings to a different context and population.

Instead of using a written message, in the current study we designed a more child-appropriate intervention. Children were exposed to the anti-violent or to control information as part of a theater performance. After receiving the intervention, participants were required to report their attitudes toward violence as well as other measures related to hostile behavior. As in the previous study, we expected the anti-violent intervention to be more effective than the control in changing evaluations for children with relatively low trait aggressiveness.

Method

Participants and design. The sample of participants consisted of 337 students (168 boys; 169 girls) in fifth and sixth grade from four schools located in Madrid. The schools were selected based on their socio-economic status, achieving a good representation of diversity. The children were all between the ages of 9 and 12 (Mean Age = 10.7, SD = .74). After the educational institutions obtained the informed consent from participants' parents, children were randomly assigned to the intervention groups (Anti-violence Message vs. Control Message manipulated between-subjects) and their propensity toward violence was measured, resulting in a design with two independent variables: one of a dichotomous nature (Message: Anti-violence Message vs. Control Message) and one of a continuous nature (Aggressiveness). Attitude and behavioral intention toward violence were measured as dependent variables.

Procedure. The study was conducted in the context of a theater break at school. Children assigned to the experimental group attended a short play that presented a number of arguments against violent behavior, whereas children assigned to the control group attended a short magic show in which there was no mention of violence. After attending one of these two performances, participants indicated their attitudes toward violence and their interest in learning to use a firearm. Then, all participants completed the Aggression Questionnaire in order to be classified as relatively low or high in trait aggressiveness. Finally, participants were debriefed and dismissed. No compensation for their participation was given.

Measures

Independent variables

Persuasive message. Children were assigned to the persuasive anti-violence message group or the control group. In the persuasive message condition, participants attended a theatrical performance in which the main character outlined arguments against violent behavior and in favor of peaceful conflict resolution. The performances used four different scenarios of situations thought to be familiar for children in fifth and sixth grade (e.g., friends inviting the student to fight against another group). In the anti-violent treatment conditions, the protagonist was a child who chose not to fight in those settings and everybody was happy and rewarded him for not being violent. On the other hand, in the control message condition, children attended a violence-neutral performance of magic. Control and experimental messages were designed so they were similar in most relevant features. For example, both had the same format (theater performances at school), and the same length (45′). Furthermore, both interventions were conducted outside the everyday class routine and took place on similar stages with the same characteristics of lighting and space, and at the same time to avoid contamination between subjects in the control and experimental groups.

Aggressiveness. In order to measure the propensity toward violence, we adopted the same instrument used in the previous study. The Spanish version of the Aggression Questionnaire has also been tested as a valid instrument for preadolescent population (Santisteban, Alvarado, & Recio, 2007). In addition, a few of the items in the Spanish version of the AQ were simplified in wording in order to make them more understandable for children. Specifically, the items including double negations were simplified. For example, instead of asking this item in the original form "when people do not agree with me, I cannot help but argue with them" we modified it to read, "when people disagree with me, I argue with them." Responses to these items were provided on a five-point Likert scale (1 = Completely false for me, to 5 = Completely true for me). The AQ showed a high reliability ($\alpha = .83$) and the scores ranged from 1.12 to 4.17 ($M = 2.6$, SD = .60).[3] Finally, the scores on this questionnaire were not affected by the manipulation of the message ($P = .73$).

Dependent variables

Attitude and behavioral intention. To measure the students' evaluations of violence after the intervention, all the children were asked to rate their degree of agreement or disagreement (nine-point Likert scale from 1 = Strongly disagree, to 9 = Strongly agree) with the following two sentences: *I think that violence is useful* and *I would like to learn to use real guns*. Given the age of the participants, we sought items that were familiar and easy to understand and that contained both evaluation and behavioral, concrete components. These items were analyzed separately due to their relatively low correlation ($r = .29$, $P = .001$). Previous research has shown that thinking of violence as something useful is a factor strongly associated with attraction to guns (Dodge & Coie, 1987; Tolan, Guerra, & Kendall, 1995). Moreover, the desire to possess or use guns among young people has been associated with other forms of aggressive behavior (e.g., responding violently to provocations: Shapiro, Dorman, Burkes, Welker, & Clough, 1997).

In order to assess empirically the reliability of the items used as dependent variables, we conducted a pilot study with an equivalent sample of 84 children (Mean Age = 12.6, SD = 1.81) in which we examined the convergent validity with another, more complete, instrument: *The Attitudes toward Guns and Violence Questionnaire* (AGVQ; Shapiro et al., 1997) ($\alpha = .83$; $M = .71$, SD = .31). The results showed medium-sized correlations with both our items *I think that violence is useful* and the AGVQ ($r = .49$; $P < .001$); *I would like to learn to use real guns* and the AGVQ ($r = .54$; $P < .001$).

We also examined the relationship between the two items used in this study and a self-report measure of aggressive behavior. Specifically, participants in the pilot study reported their past behavior on three items asking: *How many times have you hit something or someone for being very angry in the last month?, How many times have you made fun of your classmates or partners in the last month?, and How many times have you fought with someone and you have been hurt in the past month?* A composite measure was created by averaging the responses to these three items ($\alpha = .69$; $M = 2.29$, SD = 1.58). This measure of past behavior correlated with the item *I think that violence is useful* ($r = .52$; $P < .001$), and with the item *I would like to learn to use real guns* ($r = .43$; $P < .001$).

Results

Descriptive statistics and intercorrelations of all principal measures are displayed in Table II.

Dependent variables were subjected to multiple regression analyses with Aggression (continuous variable) and Message (dummy coded) as predictor variables (Aiken & West, 1991). The main effects were interpreted in the first step of the regression models and the interaction term in the second step (Cohen & Cohen, 1983).

Attitude. The results for this item showed a main effect of Aggressiveness ($B = .88$), $t(261) = 4.52$, $P < .001$, such that children scoring high (vs. low) in aggressiveness considered violence to be relatively more useful. The message did not have a main effect on this item, ($B = .30$), $t(261) = 1.32$, $P = .18$. Instead, as predicted, Message significantly interacted with Aggressiveness in predicting attitudes, ($B = .83$), $t(260) = 2.15$, $P = .03$. When this interaction was decomposed one standard deviation above and below the average of the Aggressiveness variable, there was a significant effect of the Message for individuals high in Aggressiveness ($B = .80$), $t(260) = 2.47$, $P = .01$, but not for those individuals who scored lower on Aggressiveness ($B = -.19$), $t(260) = -0.59$, $P = .55$. As shown in Figure 3, attitude toward violence was significantly higher for participants with high (vs.

TABLE II. Correlations Between Measures and Descriptive Statistics

Variable	1	2	3	*M*	SD
1. Persuasive message				.50	.50
2. Aggressiveness	.02			2.60	.60
3. Attitude	.05	.27*		2.10	1.93
4. Behavioral intention	−.06	.33*	.29*	3.37	3.09

*$P < .001$.

[3] In order to verify the structure of this measure we run a Confirmatory Factor Analysis using the WLSMV estimator (Beauducel & Herzberg, 2006). The measurement model including all the variables had and adequate fit of $\chi^2/df = 1.82$, CFI = .90, RMSEA = .05.

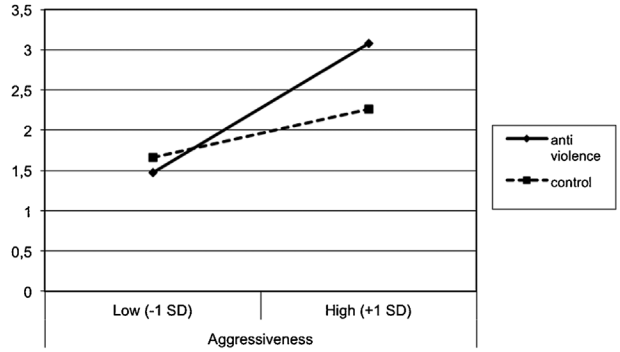

Fig. 3. Attitude toward violence as a function of aggressiveness and message (Study 2).

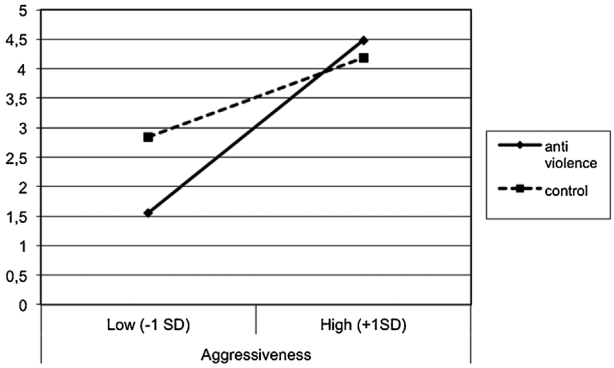

Fig. 4. Intentions to learn how to use real guns as a function of aggressiveness and message (Study 2).

low) aggressiveness after receiving the anti-violence message than after receiving the control message, a significant boomerang effect.

Another way of describing this interaction is that for those who received the anti-violence message, attitude toward violence was less favorable for relatively low aggressive participants than for relatively high aggressive kids ($B = 1.33$), $t(260) = 4.67$, $P = .001$. In contrast, attitude toward violence did not differ depending on aggressiveness for those participants who received the control message ($B = .49$), $t(260) = 1.87$, $P = .06$.

Behavioral Intention. The results showed a main effect of Aggressiveness ($B = 1.70$), $t(264) = 5.76$, $P < .001$. As one might expect, children with higher scores on aggressiveness reported greater intentions to learn to use real guns. There was no main effect of Message, ($B = -.50$), $t(264) = -1.41$, $P = .16$. As was the case for the attitudinal item, Message interacted with Aggressiveness ($B = 1.29$), $t(263) = 2.19$, $P = .03$. Analyses of this interaction showed a significant effect of the Message for individuals low in Aggressiveness ($B = -1.27$), $t(263) = -2.55$, $P = .01$, but not for those individuals who scored higher on Aggressiveness ($B = .27$), $t(263) = 0.55$, $P = .58$. As shown in Figure 4, intentions to learn to use real guns was significantly lower for participants with low (vs. high) aggressiveness after receiving the persuasive message than after receiving the control message. Another way of describing this interaction is that, although intentions to learn to use real guns were already greater for those with high (vs. low) aggressiveness in the control condition, ($B = 1.09$), $t(58) = 2.69$, $P = .007$, those differences were significantly greater in the treatment condition, ($B = 2.38$), $t(58) = 5.58$, $P < .001$.

Discussion

The results of the second study conceptually replicated the findings of the first study. First, children with high (vs. low) scores in trait aggressiveness showed more favorable attitudes toward violence. This main effect confirmed our prediction that anti-violence messages might be counter-attitudinal for high aggressive children. Second, Spanish children who received the anti-violence (vs. control) intervention showed less favorable evaluations of violence and lower intentions to learn to use real guns, but only when they were relatively low in chronic aggressiveness. For individuals with relatively higher scores in aggressiveness, when asked about their willingness to learn to use real guns, there was no difference between those who had attended the anti-violence intervention and those assigned to the control group, showing no effect of the anti-violence intervention. However, when asked about their opinions of violence, these aggressive participants who received the intervention not only did not consider violence to be less useful than their counter-partners assigned to the control group, but in fact showed the opposite effect. Thus, the anti-violence messages are not only ineffective for those high in trait aggression but they actually backfire and become counter-productive, provoking a boomerang effect in these individuals.

GENERAL DISCUSSION

The general goal of the present research was to identify factors that influence the success or failure of anti-violent campaigns. We predicted and found that different people respond to anti-violence interventions differently. Specifically, in two studies, the aggressiveness of the recipient was found to be a relevant moderating factor in understanding the relative success or failure of anti-violence campaigns. In both studies, we showed that anti-violence campaigns were only effective for less aggressive individuals. For relatively more aggressive individuals the anti-violence messages were ineffective in Study 1 and, in Study 2 were counter-productive (boomerang effect), producing more favorable attitudes toward violence.

It should be noted that the results followed the same pattern in both of the studies regardless of age of the

sample population (adults vs. children), their educational level (university vs. primary schools), nationality (Mexican vs. Spanish), and intervention format (written communication vs. theatrical representation). Also worth noting, these results held for both males and females.

Theoretical Implications

These results extend our knowledge in several ways. First, they identified a feature of the recipient (trait aggressiveness) capable of predicting whether and when anti-violence campaigns are most likely to succeed or fail to produce an effect. Second, our research introduces a new person × situation approach in which variables of the message and the person work in combination, showing interactive (rather than additive) effects.

Third, our studies discover a new outcome associated with trait aggressiveness. So far, we knew that trait aggressiveness could moderate the impact of violent videogames and violent television (Brändle, Cárdaba, & Rivera, 2015; Bushman, 1995; Slater, Henry, Swaim, & Anderson, 2003). Our findings show that trait aggressiveness is important not only when responding to violent material, but also when responding to anti-violent material.

Fourth, this new moderating factor tested in the current research might not only inspire new predictions about the success or failure of anti-violence interventions, in addition might also facilitate the reinterpretation of prior research findings. For example, Biocca et al. (1997) found that public service announcements (PSAs) designed to change the attitudes of adolescents toward violence did not have the desired effect. Based on our results it may be that the intervention was actually effective for some of the participants (the less aggressive ones) but ineffective for others (the more aggressive ones). Considering the entire sample together, it would seem to show that the intervention has failed or has no effect.[4]

The finding of a null or boomerang effect of the intervention for aggressive individuals is conceptually consistent with previous research conducted in different domains relevant to public policy, showing that people are less likely to agree with counter-attitudinal than pro-attitudinal messages. For example, in campaigns designed to reduce positive attitudes toward alcohol, anti-alcohol messages and warning labels have been found to be ineffective (and even counter-productive) for individuals who already consume alcohol frequently and for those who already hold a highly positive attitude toward alcohol (e.g., Snyder & Blood, 1992). Recent research has also shown that individuals highly committed to playing violent videogames reject information about the negative effects of such practices (Nauroth, Gollwitzer, Bender, & Rothmund, 2014). Similar to classic research on fear appeals that fail to influence fearful individuals (McGuire, 1968), recent research by Nyhan, Reifler, Richey, and Freed (2014) found that campaigns designed to increase vaccination rates (for measles-mumps-rubella) failed and even backfired among parents who had the least favorable vaccine attitudes, decreasing their intention to vaccinate their children. Furthermore, previous literature has found that warning labels in cigarette advertisements (Erceg-Hurn & Steed, 2011) and anti-marijuana campaigns (Kang, Cappella, & Fishbein, 2009) could increase the desire to smoke or consume marijuana, especially among heavy smokers and marijuana users. Thus, there are campaigns that work mainly for those who might not be their primary targets but seem to be ineffective and even harmful for the ones that could benefit the most from these campaigns.

Practical Implications for Designing Anti-Violence Campaigns

Our results suggest that it may be important to segment the target audience of campaigns to reduce violence by personalizing the type of message according to variables such as that studied in this case, the aggressiveness of the message recipient. In line with this reasoning, research on persuasion has shown that it is essential to take individual differences into account in order to successfully target interventions to specific groups (e.g., Briñol & Petty, 2006; Rimer & Kreuter, 2006). An interesting question for future research would be to examine how to create matching messages for those high in trait aggressiveness (e.g., by including aggressive language, by using violent sources and images, or by framing messages as an attack: Bizer, Larsen, & Petty, 2011).

One of the limitations of the current studies is that, although we have identified two different effects of anti-violence communication campaigns (assimilation effect for the less violent individuals and rejection or boomerang effect for the more violent), we cannot determine the precise psychological process by which these effects occurred. That is, it is unclear why less aggressive people changed in response to the intervention. As noted earlier, people can agree with pro-attitudinal messages either by generating more positive thoughts in response to the intervention or by using message position as a peripheral cue for agreement,

[4] In this regard, it is important to note that all means in the dependent measures are below the midpoint of the scale. Future research should examine to what extent the same results for anti-violence campaigns would be obtained for samples in which the initial responses in attitudes toward violence are mostly positive (e.g., beyond the midpoint of the scale).

depending of the level of elaboration they engage in (Briñol & Petty, 2015). Specifying the psychological process underlying an effect is particularly important since the process through which attitude change occurs predicts the strength of resulting attitudes (Petty, Briñol, & Priester, 2009; for an empirical example, see, Cárdaba, Briñol, Horcajo, & Petty, 2014).

It is also unclear when or why more aggressive people showed a null effect of the intervention in the first study and a boomerang effect in the second study. One could argue a priori that the anti-violent message used in Study 1 can be threatening for those high in aggressiveness since it mentioned associations between violence and other negative traits. However, the message also included other kinds of arguments against violence that were not based exclusively on making negative associations with violence, such as providing alternatives to violence (e.g., "cooperation and dialogue always provide much better results than direct confrontation"). Therefore, this message contains a combination of different types of arguments and this variety might contribute to the lack of boomerang effects in Study 1. Other potential variables that might be relevant for understanding when the null and the boomerang effect are more likely to occur include the age of the sample in each study. Study 1 used young children who might be particularly malleable and volatile in their views (Visser & Krosnick, 1998), and reactant (e.g., Grandpre et al., 2003; Van Petgem, Soenens, Vansteenkiste, & Beyers, 2015).

Although we predicted and found that a pro-attitudinal message is more likely to achieve acceptance than a counter-attitudinal message, that does not imply necessarily that attitudes cannot change in response to counter-attitudinal interventions. Counter-messages can sometimes be effective if they are processed carefully, the arguments are compelling, and the person is not strongly motivated to defend their attitudes by counter-arguing the intervention (see Clark & Wegener, 2013). As an example of this possibility, Lochman and Wells (2002) found that a systematic anti-violence intervention (Coping Power Program) was successful in reducing violence in highly aggressive children, and that these effects were present even a year after the intervention.

Therefore, future research should further examine what motivates more aggressive individuals to reject the kinds of anti-violent messages and interventions used in the present studies beyond reactance (Brändle, Cárdaba, & Ruiz San Román, 2011; Bushman & Stack, 1996; Ringold, 2002) For example, some violent individuals could reject an anti-violence campaign because the message threatens their identity and self-esteem, making them feel bad about themselves (Clark & Wegener, 2013). If this were the case, self-affirmation strategies (i.e., procedures that allow individuals to express and reaffirm their values) might be beneficial for aggressive individuals receiving an anti-violence threatening message (Sherman & Cohen, 2006; see also, Briñol, Petty, Gallardo, & DeMarree, 2007).

As these possibilities illustrate, understanding the cause of rejection of anti-violence messages could be crucial in helping to develop more effective and persuasive campaigns. Regarding future research, including measures relevant to elaboration and attitude strength, as well as testing the effects of different messages (e.g., irrelevant to violence, not linked to the self-concept, more pro-altitudinal) will contribute to understanding what motivates more aggressive individuals to reject the kinds of anti-violent messages and interventions used in the present studies. Finally, although our experimental manipulations did not influence trait aggressiveness in the present studies, future research could also benefit from measuring individual differences before providing an intervention in order to avoid any potential unwanted, contamination effects.

ACKNOWLEDGEMENTS

The authors would like to thank Richard Petty, David Santos and the members of the Attitudes and Persuasion Lab at Ohio State University for helpful comments on this research. This research was funded in part by Spanish grant PSI2014-58476-P.

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