

ISSN: 1889-1861

***THE EUROPEAN JOURNAL
OF
PSYCHOLOGY APPLIED
TO
LEGAL CONTEXT***



Volume 4, Number 1, January 2012

The official Journal of the
SOCIEDAD ESPAÑOLA DE PSICOLOGÍA JURÍDICA Y FORENSE
Website: <http://www.usc.es/sepjf>

The European Journal of Psychology Applied to Legal Context, 2012, 4(1)
Eur. j. psychol. appl. legal context, 2012, 4(1), 1-98, ISSN: 1889-1861
www.usc.es/sepjf

Editor

Ramón Arce, University of Santiago de Compostela (Spain).

Associate Editors

Gualberto Buela-Casal, University of Granada (Spain).
Francisca Fariña, University of Vigo (Spain).
Günter Köhnken, University of Kiel (Germany).
Ronald Roesch, Simon Fraser University (Canada).

Editorial Board

Rui Abrunhosa, University of O Miño (Portugal).
Ray Bull, University of Leicester (UK).
Thomas Bliesener, University of Kiel (Germany).
Fernando Chacón, Complutense University of Madrid (Spain).
Ángel Egido, University of Angers (France).
Antonio Godino, University of Lecce (Italy).
Friedrich Lösel, University of Cambridge (UK).
María Ángeles Luengo, University of Santiago de Compostela (Spain).
Eduardo Osuna, University of Murcia (Spain).
Francisco Santolaya, President of the Spanish Psychological Association (Spain).
Juan Carlos Sierra, University of Granada (Spain).
Jorge Sobral, University of Santiago de Compostela (Spain).
Max Steller, Free University of Berlin, (Germany).
Francisco Tortosa, University of Valencia (Spain).
Peter J. Van Koppen, Maastricht University (The Netherlands).

Indexation

ANEP
ACPN
DIALNET
DICE
DIE ELEKTRONISCHE ZEITSCHRIFTENBIBLIOTHEK (EZB)
DOAJ
EBSCO
GOOGLE SCHOLAR
ISOC
LATINDEX
PASCAL
PSICODOC
REFDOC
SCIRUS
SCOPUS
ULRICHS WEB

Official Journal of the *Sociedad Española de Psicología Jurídica y Forense* (www.usc.es/sepjf)

Published By: SEPJF.

Published in: Santiago de Compostela (Spain)

Volume 4, Number 1.

Order Form: see www.usc.es/sepjf

Frequency: 2 issues per year (January, July).

E-mail address: ejpalc@usc.es

Postal address: The European Journal of Psychology Applied to Legal Context, Facultad de Psicología, Universidad de Santiago de Compostela, E-15782 Santiago de Compostela (Spain).

ISSN: 1889-1861.

D.L.: C-4376-2008

THE RELATIONSHIP OF ANGER AND COGNITIVE DISTORTIONS WITH VIOLENCE IN VIOLENT OFFENDERS' POPULATION: A META-ANALYTIC REVIEW

Simona V. Chereji, Sebastian Pinteau, and Daniel David

Babeş-Bolyai University, Cluj-Napoca (Romania)

(Received 3 May 2011; revised 2 October 2011; accepted 5 October 2011)

Abstract

In the present meta-analysis, the magnitude of the relationship between cognitive distortions and anger and violent behaviour of incarcerated offenders, based on selected data for the relationship between anger and violence, and cognitive distortions and violence was empirically assessed. Out of nineteen studies included for analysis nine of them contain statistical indicators regarding the relationship between anger and violence, and fourteen studies regarding cognitive distortions and violence. The results indicated a strong relationship both between anger and violence, and between cognitive distortions and violent behaviour. Furthermore, the moderating effect of the type of instruments (self-reported vs. observational behavioural measurements) used for violence assessment was tested. The results indicated that the type of instruments had no significant influence on the cognition-violence relationship, $Q_B(1) = 0.12, p > .05$, while in case of the anger-violence relationship, a significant moderating effect was identified, $Q_B(1) = 14.26, p < .01$, which supports a higher effect size when violence was measured by a self-reported than when was measured by behavioural observation.

Keywords: anger; cognitive distortions; violence; incarcerated offenders; meta-analysis; moderation analysis.

Resumen

La magnitud de la relación entre las distorsiones cognitivas y la ira con el comportamiento violento de delincuentes encarcelados, se evaluó empíricamente mediante un meta-análisis. De los diecinueve estudios hallados que estudiaban la relación entre estas variables, nueve incluían datos estadísticos sobre la relación entre ira y violencia, y catorce entre distorsiones cognitivas y la violencia. Los resultados apoyan una fuerte relación entre ira y violencia, y entre distorsiones cognitivas y comportamiento violento. Además, el efecto moderador del tipo de instrumentos (medidas de auto-informe vs. registro conductual) que se utiliza para la evaluación de la violencia fue sometido a estudio. Los resultados indicaron que el tipo de medida no influye la relación cognición-violencia, $Q_B(1) = 0.12, p > .05$, mientras que en el caso de la relación entre ira y violencia, se halló un efecto moderador del instrumento de medida, $Q_B(1) = 14.26, p < .01$, de modo que el tamaño del efecto era mayor cuando se tomaba una medida autoinformada de la violencia que cuando se basaba en el registro conductual.

Palabras clave: ira; distorsiones cognitivas; violencia; presos; meta-análisis; moderadores.

Introduction

Anger and cognitive distortions are considered as being the main predictive factors that explain the appearance of human aggression. According to cognitive behavioural theories anger is an emotional consequence of specific cognitive processing, while violence is the behavioural consequence. For a better understanding of the role of anger and cognitive distortions in violent offending behaviour the present study was conducted as a quantitative review which provides estimates of the magnitude of the association between these mechanisms and violence.

Anger and violence

Beck (1999) has asserted that cognitive distortions involved in anger and violence are generated by a type of narrow and automatic thinking named „primary thinking” that is activated in conflictual situations. In forensic institutions anger is considered the main emotional cause of violent behaviour. Therefore, it became an important criminogenic need considered in the structure of treatment programs for violent offenders.

The various attempts to define anger have determined the multidimensional perspective which consists of physiological, cognitive, subjective, and behavioural variables. The cognitive component refers to the threat perception (i.e., on the corporal integrity, on the property, self image and social status) and anger is associated with irrational beliefs and attributions about the others intentions (DiGiuseppe & Tafrate, 2007).

Many researches have focused on anger related with aggression and/or violent behaviour. Gardner and Moore (2008) have developed a clinical model of anger which stated that aggressive behaviour is a response used to reduce the initial anger or to avoid the angry episode, and a way to have control over others. This model incorporates a more generally accepted idea that violence is an action tendency of angry people towards reducing the anger state. It is supposed that those who engage in violent behaviour are less likely to be able to control their behaviour and are more liable to experience high levels of anger and to act based on this emotional state.

The cognitive theories of anger indicate the role of cognitive component in eliciting anger. Novaco's (1975) episodic model of anger has emphasized that anger is a sufficient condition, but not a necessary one for aggression to appear. From the

cognitive behavioural perspective anger along with the aggressive behaviour are consequences of the specific types of cognitive processing (Beck, 1999; Ellis, 1994; Novaco, 2007).

The review of the literature regarding the causal role of anger in violent behaviour provides contradictory results on this topic. Therefore, there is a variability of results regarding the intensity of anger and violence relationship, which prevent us from knowing how implicative the function of anger is in violent offending behaviour.

There are authors who have concluded that the role of anger in recidivism is being exaggerated and that there is no difference between violent and nonviolent offenders in anger assessment (Loza & Loza-Fanous, 1999; Mills & Kroner, 2003; Wood & Newton, 2003). Other studies have revealed that anger problem is a predictor of adolescent aggression (Cornell, Peterson, & Richards, 1999), of assaults (Novaco & Taylor, 2004), disciplinary problems and adjustment disorders (Marsee & Frick, 2007). Studies regarding intimate partner violence demonstrated the role of high levels of anger out and anger expression in intimate violence and they have also indicated more deficiencies in revealing anger control statements (Dye & Eckhardt, 2000; Eckhardt & Jamison, 2002; Lafontaine & Lussier, 2005; Murphy, Taft, & Eckhardt, 2007).

The role of cognitive distortions in violence

Violence was widely approached in relation to cognitive distortions which were found to support the offending behaviour (Healy & O'Donnell, 2006). Consequently, the purpose of the current meta-analysis was to identify the intensity of the association between cognitive distortions and violent behaviour within the forensic population.

A variety of cognitive theories have been developed to explain aggression. One early view was that of Dollard in 1936 (Power & Dalgleish, 1997), who asserted that frustration was the cause of aggression and the intensity of aggressive behaviour was determined by the strength of the frustration and the punishment. Subsequently, Berkowitz's (1990) have developed the cognitive-neoassociationistic model which has postulated that aggression is the result of the associative networks between feelings, thoughts, memories, and expressive motor and physiological reactions in the presence of an aversive event and the perception of danger. Bandura's (1973) social learning theory has stated that aggressive people are influenced by their living culture - that offers aggressive models and reinforces aggressive behaviours - and not by innate

instincts. Another important aspect in aggression refers to the informational processing in social situations where aggressive people learn different schemas through early experience that are easily activated in ambiguous social situations (Dodge & Crick, 1990; Huesmann, 1998).

Beck (1999) has considered that the beliefs system in violence derives from the misinterpretations that the individual makes about the conflictual social interactions and uses in the future situations. When the individual negatively perceives the other's intentionality, they have the tendency to protect and to bring under control their threatened or hurt self-image, and, as a consequence, the violent behaviour appears. A further study has demonstrated that the cognitive schema of "grievance/revenge" is involved in violent offending (Milner & Webster, 2005), a result that confirms Beck's (1999) view about the violent offenders which hold rigid schemas against authorities, spouses, outsiders and other people, that are categorized in three schemas: to maintain my freedom/pride/security, I need to fight back; physical force is the only way to make people to respect you; if you don't get even, people will run all over you.

Sexual offending literature has provided a comprehensive description of cognitive distortions that facilitate and justify the offending behaviour of sexual abusers. Ward (2000) has posited that cognitive distortions of sexual offenders emerge from causal theories organized as maladaptive implicit theories about their victims, offences and the world. These theories contain mental representations through which an offender interprets and explains their victims' actions, desires, and beliefs and therefore justifies and maintains their future offending behaviour.

Welsh and Gordon (1991) have found out that the intention toward aggression mediates the aggressive behavior, showing that the thinking process is a more important mediator than anger emotion. Offenders' most common identified cognitive distortions refer to denial of accusation, blame denial, justification, minimizing, mislabelling, external blame attribution, "self-serving" thinking, rationalization, and immediate gratification (Barriga, Hawkins, & Camelia, 2008; Barriga, Landau, Stinson, Liao, & Gibbs, 2000; Ward, 2000). The same researchers have tried to identify and separate cognitions that appear before and after the offence commission, but the delimitations could not be clearly established. Chambers, Eccleston, Day, Ward, and Howells (2008) have demonstrated that blaming others, external attributions, minimizing, hostile

attributions, and mislabeling are cognitive distortions used by offenders to justify their offending behaviour.

Hostility is considered an important cognitive component studied in relationship with anger and violent offending, and it was defined according to these two concepts. On one hand, it has been seen as the disposition to perceive different events as annoying and frustrating, generating anger, and on the other hand it can result in verbal and behavioural expressions as violent behaviour. Hostility has been seen as a negative evaluation of others and of the encountered situations (Guyll & Madon, 2003; Miller, Smith, & Turner, 1996). Hutchings, Gannon, and Gilchrist (2010) have suggested that individuals high in aggression make more hostile interpretations of other people's behaviour and have aggression-supporting cognitions like hostile attributions and entitlement. Researches have found out that hostile thinking is one of the main cognitive mechanism involved in general violent behaviour (Baker, van Hasselt, & Sellers, 2008; Firestone et al., 2005; James & Seager, 2006; Seager, 2005; Simourd & Mamuza, 2000; Standford, Houston, Mathias, Villemarette-Pittman, Helfritz, & Conklin, 2003), and also in intimate partner violence (Parrott & Zeichner, 2003; Robertson & Murachver, 2007).

Being aware that in the forensic literature there is a controversy regarding the link between anger and violence, and that the findings may vary, the first purpose of the present study was to quantitatively examine the existing research on the relationship between anger and violent behaviour hoping that the current meta-analysis would offer a clearer image about the strength of the direct causal involvement of anger in violence. The second purpose of the study was to identify the intensity of the relationship between cognitive distortions and violence in offenders' population, based on the empirical results regarding the mediating role of cognitive processing in violent behaviour. In addition, the present review offers a unitary frame about the relevant existing studies that provided statistical results and conclusions about the link between anger and violent offending behaviour, and different types of cognitive distortions and violent offending behaviour.

Method

Procedure

Literature search

Empirical studies were systematically collected using three strategies. Firstly, computerized database searches of PsycINFO and Medline were conducted using the following keywords only in English language: *anger, cognitions, cognitive distortions, irrational beliefs, criminal attitude, offenders, violence, aggression*. The words were introduced in different pairs containing the keywords of anger and violence/aggression. Secondly, the reference sections of previously reviewed articles were searched for related studies. Thirdly, authors in the field were asked to provide any related articles that were not available in the searched database. Overall, 285 studies were selected, among them 133 studies were relevant for the aimed meta-analysis.

Criteria for inclusion

In order to identify a relevant sample of studies for the present meta-analysis, the following selection criteria were applied for each study:

- To be published in peer-review journals
- To offer statistical information that allow the calculation of the intensity of the relationship between: anger and violence or aggression, and cognitive distortions and aggression or violence
- The selected subjects are offenders incarcerated for violent/nonviolent offences
- Psychometric assessment of anger and cognitive distortions constructs

Coding of studies

The following variables were coded on each study:

- Anger and cognitive distortions in violent offenders' population.
- Participants selection procedures.
- Demographic data.
- The assessment of the target constructs.
- Number of participants.
- Cognitive distortions related with violence.

- Anger related with violence.
- Violence/aggression measurements.

The coding procedure determined the exclusion of 114 studies due to the statistical results that did not offer relevant information that allowed the calculation of the effect sizes for the relationship between the targeted constructs, or the samples were not formed by offender subjects. Therefore, the data set contained a total of 19 coded studies reporting on various correlations and statistical values other than r , that were converted into d for the relationship between cognitive distortions and violence, and anger and violence. From the overall number of 19 studies we were able to identify 9 studies that contained statistical values for anger and violence/aggression, and 14 studies with statistical values for cognitive distortions and violence.

Calculation of effect size estimates

The obtained mean effect sizes (d) in the present study were compared with Cohen's effect size reference values: weak relationship for effect sizes around 0.2; moderate relationship around 0.5 and strong relationship for effect sizes around 0.8. In the present study effect sizes were treated as dependent variables and study characteristics were considered as independent variables. In order to estimate the overall effect of constructs association, the confidence interval was calculated at a 95% probability.

Results

Analysis of the relationship between cognitive distortions and violence

The weighted average effect size of the sample of studies was calculated using the procedure recommended by Hedges and Olkin (1985), based on results obtained from 14 publications (see Table 1). Considering each publication that contained more than one size effect, we have calculated an average of the size effects reported. The weight analysis used in the study is the inverse of the variance. The obtained value was $d = 0.82$ which, according to Cohen (1992), means a large size effect. Based on the variance of the weighted average effect size in the sample, we estimate that the population effect size is situated between 0.75 and 0.89 with a probability of 95%. The

Z statistic used to test whether the population average effect is different from 0, proved a significant difference, $Z = 21.57, p < .01$.

Table 1. Effect sizes for cognitive distortions and violence.

Studies	Samples' characteristics	Measurements for cognitive distortions	Measurements for violence	Mean ES
1. Baker et al. (2008)	Violent adults, inmates $N = 1\ 308, n = 959$ men; $N = 349$ women	Novaco Anger Scale - Part A (NAS, 1994), Buss-Durke Hostility Inventory (BDHI, 1957)	Novaco Anger Scale – Part B (NAS, 1994), Buss-Durke Hostility Inventory (BDHI, 1957)	$d = 1.05$
2. James & Seager (2006)	Violent men, inmates $N = 40$	vignettes measuring schemas for hostile world, dichotic shadowing tasks measuring schemas for hostile world	violence index	$d = 1.18$
3. Seager (2005)	Violent men, inmates $N = 50$	vignettes measuring schemas for a hostile world (Serin, 1988)	violence rating, assault convictions	$d = 1.03$
4. Firestone et al. (2005)	Violent men, inmates $N = 656$	Buss-Durke Hostility Inventory (BDHI, 1957)	violence in index offence, violent recidivism	$d = 0.41$
5. Mills et al. (2002)	Sexual offenders, inmates $N = 341$	Measures of Criminal Attitudes and Associates (MCAA, 1999)	violent convictions and incarceration index	$d = 2.29$

Table 1 (continued). Effect sizes for correlations between cognitive distortions and violence.

Studies	Samples' characteristics	Mesurements for cognitive distortions	Measurements for violence	Mean ES
6. Simourd & Mamuza (2000)	Violent men, inmates <i>N</i> = 146	Hostile Interpretation Questionnaire (1997)	Aggression Questionnaire (AQ, 1992)	<i>d</i> = 0.67
7. Stanford et al. (2003)	Physically aggressive men <i>N</i> = 93	Buss-Perry Aggression Questionnaire, (BPAQ, 1992)	Impulsive/premeditated Aggression Scales (IPAS)	<i>d</i> = 0.47
8. Haapasalo & Moilanen (2004)	Violent offenders, inmates <i>N</i> = 110	interview and self-reported childhood abuse, psychological and sexual abuse	self-reported criminality, files	<i>d</i> = 0.17
9. Robertson & Murachver (2007)	Violent offenders, inmates <i>N</i> = 172	Personal and Relationship Profile (PRP, 1999)	Revised Conflict Tactics Scale (CTS2, 1996)	<i>d</i> = 0.79
10. Healy & O'Donnell (2006)	Violent offenders convicted under probation, <i>N</i> = 72	Psychological Inventory of Criminal Thinking Style (PICTS)	violence index, number of prior incarcerations	<i>d</i> = 0.89
11. Welsh & Gordon (1991)	Violent offenders, inmates <i>N</i> = 51	Buss Durkey Hostility Inventory, BDHI, 1957, conflict role-play scene, 7-point Likert scale by Ajzen and Fishbein (1980)	conflict role-play scene	<i>d</i> = 0.79
12. Nunes et al. (2007)	Sexual offenders, inmates <i>N</i> = 56	Implicit Association Test (1998)	violence index	<i>d</i> = 0.16

Table 1 (continued). Effect sizes for correlations between cognitive distortions and violence.

Studies	Samples' characteristics	Measurements for cognitive distortions	Measurements for violence	Mean ES
13. Dodge et al. (1990)	Incarcerated adolescent $N = 128$	hostile vignettes	Revised Behavior Problem Checklist (RBPC, 1987), Conners Teacher Rating Scale (CTRS, 1969), violence convictions, Revised Behavior Problem Checklist (RBPC, 1987)	$d = 0.43$
14. Hornsvelt et al. (2008)	Violent offenders, court ordered for treatment, $N = 166$	domestically violent offenders scores on anger hostility	violence index	$d = 1.24$

Another question has been whether or not there is a common population effect size for the observed sample. To test the null hypothesis that all the studies come from the same population we have calculated the homogeneity statistic. The results have indicated a significant heterogeneity of the observed effect sizes, $Q_T(13) = 120.13$, $p < .01$. Consequently, further moderating analysis has been considered appropriate.

Moderation analysis

The next goal was to predict the variations in effect sizes from the values of one possible moderating variable: type of violence measurement (observational behavioral ratings vs. self-reported).

The method of testing the moderators selected here is based on fixed effect models which allow us to generalize the results only in case of studies quite similar to those of the observed sample. We selected the Q_B statistic for the between-groups homogeneity which measures how much variability can be explained by the categorical moderators. Increased values of it indicate that the moderator can explain a significant amount of the variability contained in the effect sizes sample.

The results for the observational behavioural measurements selected from 9 studies ($n = 1259$) indicated a moderate effect size, $d = 0.69$, 95% CI [0.58, 0.80], significantly different from 0 value, $Z = 15.5$, $p < .001$. The effect size obtained for the self-reported measurements selected from 5 studies ($n = 1710$) was high, $d = 0.90$, 95% CI [0.81, 0.99], and also statistically significant, $Z = 18.10$, $p < .001$. The results indicated that the type of violence measurements divided into self-reported vs. behavioral ratings (violence index, condemnations, prior incarcerations for violence, staff rating of violence etc.) had no significant influence on the cognition-violence relationship, $Q_B(1) = 0.12$, $p > .05$.

Analysis of the relationship between anger and violence

The weighted average effect size of the sample of studies have been calculated using the procedure recommended by Hedges and Olkin (1985), based on the results obtained from 9 publications (see Table 2). Considering each publication that contained more than one size effect, we have calculated an average of the size effects reported. The obtained value was $d = 0.86$ which, according to Cohen (1992), means a large size effect. The weight used in the study was the inverse of the variance. Based on the variance of the weighted average effect size in the sample, we estimate that the population effect size is situated between 0.82 and 0.90 with a probability of 95%. The Z statistic used to test whether the population average effect is different from 0, proved a significant difference, $Z = 21.50$, $p < .001$.

Another question was whether or not there is a common population effect size for the observed sample. To test the null hypothesis that all the studies come from the same population we calculated the homogeneity statistic. The results showed a significant heterogeneity of the observed effect sizes, $Q_T(8) = 106.08$, $p < .001$. Consequently, further moderating analysis was considered appropriate.

Table 2. Effect sizes for correlations between anger and violence.

Studies	Samples' characteristics	Measurements for anger	Measurements for violence	Mean ES
1. Baker et al. (2008)	Violent adults, inmates N=1 308, n=959, men; n=349, women	Novaco Anger Scale (NAS, 1994)	Buss-Durke Hostility Inventory (BDHI, 1957)	$d = 1.25$
2. Novaco & Taylor (2004)	Violent/nonviolent men, detained in a psychiatric institution N=129	State-Trait Anger Expression Inventory (STAXI, 1988), Novaco Anger Scale (NAS, 1994)	Ward Anger Rating Scale (WARS, 1994)	$d = 0.62$
3. Mills et al. (2002)	Violent/nonviolent men, adults, inmates, N=341	State-Trait Anger Expression Inventory (STAXI, 1988)	violence index of offence	$d = 0.61$
4. Simourd & Mamuza (2000)	Violent men, adults, inmates N=146	anger-aggression, $r=0.26$ (Novaco Anger Scale (NAS, 1994)	Aggression Questionnaire (AQ, 1992)	$d = 0.53$
5. Cornell et. al. (1999)	Violent male adolescents, inmates N=65	Novaco Anger Scale (NAS, 1994), (State-Trait Anger Expression Inventory (STAXI, 1996), Novaco Anger Scale –Part A (NAS, 1994) (Novaco Anger Scale – Part B (NAS, 1994)	violent index, staff ratings of aggressive behavior	$d = 0.29$
6. Loza & Loza-Fanous (1999)	Violent/nonviolent men, inmates N=252	Novaco Anger Scale Part A (NAS, 1994), Novaco Anger Scale Part B (NAS, 1994, State-Trait Anger Expression Inventory (STAXI, 1996)	violent index	$d = 0.14$

Table 2 (continued). Effect sizes for correlations between anger and violence.

Studies	Samples' characteristics	Measurements for anger	Measurements for violence	Mean ES
7. Welsh & Gordon (1991)	Violent offenders, inmates N=51	State-Trait Anger Expression Inventory (STAXI, 1996)	conflict role-play scene	$d = 0.92$
8. Stanford et al. (2003)	Physically aggressive men N=93	State-Trait Anger Expression Inventory (STAXI, 1996), Buss-Perry Aggression Questionnaire (BPAQ, 1992)	Impulsive/Premeditated Aggression Scale (IPAS)	$d = 0.47$
9. Smallborne & Milne (2009)	Sexual offenders N=56	State-Trait Anger Expression Inventory (STAXI, 1996)	offenders who used verbal aggression, threats of death, threats of harm	$d = 0.04$

Moderation analysis

The next goal was to predict the variations in effect sizes from the values of one possible moderating variable: type of violence measurement (behavioral vs. self-reported).

The method of testing the moderators selected here is based on fixed effect models which allow us to generalize the results only in case of studies quite similar to those from the observed sample.

The results for the observational behavioural measurements selected from 4 studies ($n = 618$) indicated a low to moderate effect size, $d = 0.38$, 95% CI [0.22, 0.54] but statistically significant, $Z = 4.75$, $p < .001$. The effect size obtained for the self-reported measurements selected from 3 studies ($n = 1564$) was high, $d = 1.07$, 95% CI [0.98, 1.16] and also statistically significant, $Z = 21.40$, $p < .001$.

The between-groups homogeneity statistic value calculated in the case of the potential moderator (behavioral vs. self-reported measures of violence), indicated a significant variability explained by the levels of the moderator, $Q_B(1) = 14.26$, $p < .01$. In other words, the size of effect obtained when the violence was self-reported was significantly higher than the one obtained with observational measured violence.

Discussion

Despite the obvious relationship between anger and violence and the important role of cognitive processing in violent behaviour, the previous researches could not make a certain statement about the influence of these two concepts in violence, given the obtained inconsistent results on this relationship. The purpose of the present review was to evaluate how strong the relationship between anger and violence, and cognitive distortions and violence in violent offending behaviour may be, based on the empirical results. Anger is one of the most studied emotions within offender populations, starting from the assumption that aggression is caused primarily by an angry disposition.

The present meta-analysis has indicated a large relationship between anger and violent behaviour. The results have demonstrated that anger has a significant predictive role in eliciting violent offences. Even though theories have stated that there is not a necessary causal relationship between anger and violence (Deffenbacher, 1993; Novaco, 2007), however anger remains an emotion that can accompany aggressive reactions. From a cognitive-behavioural perspective, anger remains an important emotional consequence of cognitive processing, whereas violence is the behavioural consequence. The likelihood of these consequences occurrence is influenced by the cognitions system that the offender holds and activates in the encountered situations.

The present meta-analysis has found out a large effect size for the relation between cognitive distortions and violence. The results confirm the proximal influence that cognitions have on aggressive and violent acts. The existing research studies on the cognitive distortions' role in antisocial behaviour have demonstrated different types of the offenders' errors of thinking (Barriga et al., 2000), the low moral engagement mechanisms that separate antisocial behaviour from self-evaluation (Bandura, 1973), the biased aggression processing model (Dodge & Crick, 1990), and the cognitive distortions that sexual abusers hold to avoid negative feelings about oneself (Ward, Hudson, & Marshall, 1995) or to justify their offending behaviour (Ward, 2000).

Another purpose of this research was to evaluate whether the type of violence measurement affects the estimated effects sizes of the relationship between cognitions and violence, and anger and violence in the incarcerated offenders' populations. This analysis has showed that the relationship between cognitive distortions and violence is not affected by the type of violence measurement. As for the anger-violence relationship, the results have illustrated that the type of violence measurement is a

significant moderator, indicating that the obtained effect size when the violence was self-reported is significantly higher than the one obtained by observational violence measurements. The results suggest that even offenders tend not to confess the real level of their anger state, though they are more likely to correctly estimate their level of anger intensity by means of self-reported measurements for aggressive behaviour.

This review has derived from the variety of researches results concerning the etiological role of anger in violent and nonviolent offenders. As an evidence for the cognitive behavioural theory and the outcomes of forensic literature, the first conclusion that can be drawn is that anger constitutes a strong emotional predictor of violent behaviour. The variability of the studies' results may be due to the response distortions influenced by the perceived disadvantages of the inmates to report anger. Secondly, the meta-analysis has empirically demonstrated the magnitude of cognitive processing involvement in violent offending behaviour.

References

- Bandura, A. (1973). *Aggression. A social learning analysis*. Englewood Cliffs, NJ: Prentice-Hall.
- *Baker, M. T., Van Hasselt, V., & Sellers, A. H. (2008). Validation of the Novaco Anger Scale in incarcerated offender population. *Criminal Justice and Behavior*, 35, 741-754. doi: [10.1177/0093854808316275](https://doi.org/10.1177/0093854808316275)
- Barriga, A. Q., Landau, J. R., Stinson, B. L., Liao, A. K., & Gibbs, J. C. (2000). Cognitive distortion and problem behaviors in adolescents. *Criminal Justice and Behavior*, 27, 36-56.
- Barriga, A. Q., Hawkins, M. A., & Camelia, C. R. T. (2008) Specificity of cognitive distortions to antisocial behavior. *Criminal Behavior and Mental Health*, 18, 104-116. doi: [10.1002/cbm.683](https://doi.org/10.1002/cbm.683)
- Beck, A. T. (1999). *Prisoners of hate: The cognitive bias of anger, hostility and violence*. New York: Harper Collins.
- Berkowitz, L. (1990). On the consideration of automatic as well as controlled psychological processes in aggression. *Aggressive Behavior*, 34, 117-129. doi: [10.1002/ab.20244](https://doi.org/10.1002/ab.20244)

- Chambers, J. C., Eccleston L., Day, A., Ward, T., & Howells, K. (2008). Treatment readiness in violent offenders: The influence of cognitive factor on engagement in violence programs. *Aggression and Violent Behavior, 13*, 276-284. doi: [10.1016/j.avb.2008.04.003](https://doi.org/10.1016/j.avb.2008.04.003)
- Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*, 155–159. doi: [10.1037/0033-2909.112.1.155](https://doi.org/10.1037/0033-2909.112.1.155)
- *Cornell, D. G., Peterson, C. S., & Richards, H. (1999). Anger as a predictor of aggression among incarcerated adolescents. *Journal of Consulting and Clinical Psychology, 67*, 108-115.
- Deffenbacher, J. L. (1993). General anger: Characteristics and clinical implications. *Psicología Conductual, 1*, 49-67.
- DiGiuseppe, R., & Froh, J. J. (2002). What cognitions predict state anger? *Journal of Rational-Emotive & Cognitive-Behavior Therapy, 20*, 133-149.
- DiGiuseppe, R., & Tafrate, R.C. (2007). *Understanding anger disorders*. New York: Oxford University Press.
- Dodge, K. A., & Crick, N. R. (1990). Social information-processing biases of aggressive behavior in children. *Personality and Social Psychology Bulletin, 16*, 8-22. doi: [10.1177/0146167290161002](https://doi.org/10.1177/0146167290161002)
- *Dodge, K. A., Price, J. M., Bachorowski, J. A., & Newman, J. P. (1990). Hostile attributional biases in severely aggressive adolescents. *Journal of Abnormal Psychology, 99*, 385-392.
- Dye, M. L., & Eckhardt, C. I. (2000). Anger, irrational beliefs, and dysfunctional attitudes in violent dating relationships. *Violence and Victims, 15*, 337-350.
- Eckhardt, C., & Jamison, T. R. (2002). Articulated thoughts of male dating violence perpetrators during anger arousal. *Cognitive Therapy and Research, 26*, 289-308. doi: [10.1023/A:1016045226185](https://doi.org/10.1023/A:1016045226185)
- Ellis, A. (1994a). *Anger: How to live with and without it*. New York: Carol Publishing Group.
- *Firestone. P., Nunes, K. L., Moulden, H., Broom, I., & Bradford, J. M. (2005). Hostility and recidivism in sexual offenders. *Archives of Sexual Behavior, 34*, 277-283. doi: [10.1007/s10508-005-3116-8](https://doi.org/10.1007/s10508-005-3116-8)
- Gardner, F. L., & Moore, Z. E. (2008). Understanding clinical anger and violence. *Behavior Modification, 1*-15. doi: [10.1177/0145445508319282](https://doi.org/10.1177/0145445508319282)

- Guyll, M., & Madon, S. (2003). Trait hostility: The breadth and specificity of schema effects. *Personality and Individual Differences*, 34, 681-693. doi: [10.1016/S0191-8869\(02\)00054-5](https://doi.org/10.1016/S0191-8869(02)00054-5)
- *Haapasalo, J., & Moilanen, J. (2004). Official and self-reported childhood abuse and adult crime of young offenders. *Criminal Justice and Behavior*, 31, 127-149. doi: [10.1177/0093854803261328](https://doi.org/10.1177/0093854803261328)
- *Healy, D., & O'Donnell, I. (2006). Criminal thinking on probation: A perspective from Ireland. *Criminal Justice and Behavior*, 33, 782-802. doi: [10.1177/0093854806288066](https://doi.org/10.1177/0093854806288066)
- Hedges, L. V., & Olkin, I. (1985). *Statistical methods for meta-analysis*. Orlando, FL: Academic Press.
- *Hornsvelt, R. H., Bezuijen, S., Leenars, E. E. M., & Kraaimaat, F. W. (2008). Domestically and generally violent forensic psychiatric outpatients: Personality traits and behavior. *Journal of Interpersonal Violence*, 23, 1380-1393. doi: [10.1177/0886260508314303](https://doi.org/10.1177/0886260508314303)
- Huesmann, L. R. (1998). The role of social information processing and cognitive schema in the acquisition and maintenance of habitual aggressive behavior. In R. G. Geen & E. Donnerstein (Eds.), *Human aggression. Theories, research and implications for social policy* (pp. 73-104). New York: Academic Press.
- Hutchings, J. N., Gannon, T. A., & Gilchrist, E. (2010) A Preliminary Investigation of a New Pictorial Method of Measuring Aggression-Supportive Cognition Among Young Aggressive Males. *International Journal of Offender Therapy and Comparative Criminology*, 54, 236-249. doi: [10.1177/0306624X08325350](https://doi.org/10.1177/0306624X08325350)
- *James, M., & Seager, J. A. (2006). Impulsivity and schemas for a hostile world: Postdictors of violent behaviour. *International Journal of Offender Therapy and Comparative Criminology*, 50, 47-56. doi: [10.1177/0306624X05279804](https://doi.org/10.1177/0306624X05279804)
- Lafontaine, M. F., & Lussier, Y. (2005). Does anger towards the partner mediate and moderate the link between romantic attachment and intimate violence? *Journal of Family Violence*, 6, 349-361. doi: [10.1007/s10896-005-7797-5](https://doi.org/10.1007/s10896-005-7797-5)
- *Loza W., & Loza-Fanous, A. (1999). Anger and prediction of violent and nonviolent offenders' recidivism. *Journal of Interpersonal Violence*, 14, 1014-1029. doi: [10.1177/088626099014010002](https://doi.org/10.1177/088626099014010002)

- Marsee, M. A., & Frick, P. J. (2007). Exploring the cognitive and emotional correlates to proactive and reactive aggression in a sample of detained girls. *Journal of Abnormal Child Psychology*, *35*, 969-981. doi: [10.1007/s10802-007-9147-y](https://doi.org/10.1007/s10802-007-9147-y)
- Miller, T., Smith T., & Turner, C.W. (1996). A meta-analytic review of research on hostility and physical health. *Psychological Bulletin*, *119*, 829-843.
- Mills, J. F., & Kroner, D. G. (2003). Anger as a predictor of institutional misconduct and recidivism in a sample of violent offenders. *Journal of Interpersonal Violence*, *18*, 282-293. doi: [10.1177/0886260502250085](https://doi.org/10.1177/0886260502250085)
- *Mills, J. F., Kroner, D. G., & Forth, A. E. (2002). Measures of criminal attitudes and associates (MCAA): Development, factor structure, reliability, and validity. *Assessment*, *9*, 240-253.
- Milner, R. J., & Webster, S. D. (2005). Identifying schemas in child molesters, rapist, and violent offenders. *Sexual Abuse: A Journal of Research and Treatment*, *17*, 425-439. doi: [10.1177/107906320501700406](https://doi.org/10.1177/107906320501700406)
- Murphy, C. M., Taft, C. T., & Eckhardt, C. I. (2007). Anger problem profiles among partner violent men: Differences in clinical presentation and treatment outcome. *Journal of Counseling Psychology*, *2*, 189-200. doi: [10.1037/0022-0167.54.2.189](https://doi.org/10.1037/0022-0167.54.2.189)
- Novaco, R. W. (2007). Anger dysregulation. In T. A. Cavell & K. T. Malcolm (Eds.), *Anger, aggression, and interventions for interpersonal violence* (pp. 3-49). New Jersey: LEA.
- Novaco, R. W. (1975). *Anger control: The development and evaluation of an experimental treatment*, Lexington, MA: D. C. Heath.
- *Novaco, R. W., & Taylor, J. L. (2004). Assessment of anger and aggression in male offenders with developmental disabilities. *Psychological Assessment*, *16*, 115-124. doi: [10.1037/1040-3590.16.1.42](https://doi.org/10.1037/1040-3590.16.1.42)
- *Nunes, K. L., Firestone, P., & Baldwin, M. W. (2007). Indirect assessment of cognitions of child sexual abusers with the implicit association test. *Criminal Justice and Behavior*, *34*, 454-475. doi: [10.1177/0093854806291703](https://doi.org/10.1177/0093854806291703)
- Parrott, J., & Zeichner, A. (2003). Effects of trait anger and negative attitudes towards women on physical assault in dating relationships. *Journal of Family Violence*, *18*, 301-306. doi: [10.1023/A:1025169328498](https://doi.org/10.1023/A:1025169328498)
- Power, M., & Dalgleish, T. (1997). *Cognition and emotion: From order to disorder*. Hove, East Sussex: Psychology Press.

- *Robertson, K., & Murachver, T. (2007). Correlates of partner violence for incarcerated women and men. *Journal of Interpersonal Violence*, 22, 639-655. doi: [10.1177/0886260506298835](https://doi.org/10.1177/0886260506298835)
- *Seager, J. A. (2005). Violent men: The importance of impulsivity and cognitive schema. *Criminal Justice and Behavior*, 32, 26-49. doi: [10.1177/0093854804270625](https://doi.org/10.1177/0093854804270625)
- *Simourd, D. J., & Mamuza, J. M. (2000). The Hostile Interpretations Questionnaire: psychometric properties and construct validity. *Criminal Justice and Behavior*, 27, 645-663. doi: [10.1177/0093854800027005006](https://doi.org/10.1177/0093854800027005006)
- *Smallborne, S. W., & Milne, L. (2009). Association between trait anger and aggression used in the commission of sexual offenses. *International Journal of Offender Therapy and Comparative Criminology*, 44, 600-617.
- *Stanford M. S., Houston R. J., Mathias C. W., Villemarette-Pittman N. R., Helfritz L. E., & Conklin S. M. (2003). Characterizing aggressive behavior. *Assessment*, 10, 183-190. doi: [10.1177/1073191103010002009](https://doi.org/10.1177/1073191103010002009)
- Ward, T. (2000) Sexual offenders' cognitive distortions as implicit theories. *Aggression and Violent Behavior*, 5, 491-507. doi: [10.1016/S1359-1789\(98\)00036-6](https://doi.org/10.1016/S1359-1789(98)00036-6).
- Ward, T., Hudson, S. M., & Marshall, W. L. (1995). Cognitive distortions and affective deficits in sex offenders: A cognitive deconstructionist interpretation. *Sexual Abuse: A Journal of Research and Treatment*, 7, 67-83. doi: [10.1007/BF02254874](https://doi.org/10.1007/BF02254874).
- *Welsh, W. N., & Gordon, A. (1991). Cognitive mediators of aggression: Test of a causal model. *Criminal Justice and Behavior*, 18, 125-145. doi: [10.1177/0093854891018002002](https://doi.org/10.1177/0093854891018002002)
- *Wood, J., & Newton, A. K. (2003). The role of personality and blame attribution in prisoners' experience of anger. *Personality and Individual Differences*, 34, 1453-1468. doi:[10.1016/S0191-8869\(02\)00127-7](https://doi.org/10.1016/S0191-8869(02)00127-7)

Instructions

Presentation

The *European Journal of Psychology Applied to Legal Context*, the Official Journal of the Sociedad Española de Psicología Jurídica y Forense, publishes empirical articles, theoretical studies and focused reviews of topics dealing with psychology and law (e.g., legal decision making, eyewitness). Only original papers (not published or submitted elsewhere) will be published. Papers driven to both legal systems, inquisitorial and adversarial, will be welcome as well as papers based in concrete laws of a European country. Neither the Editors nor Publishers accept responsibility for the views or statements expressed by the authors.

Paper submission

Manuscripts should be submitted electronically to the Editors to the e-mail address of the journal (ejpalc@usc.es). Postal address should be used exceptionally (The European Journal of Psychology Applied to Legal Context, Facultad de Psicología, Universidad de Santiago de Compostela, E-15782 Santiago, Spain). Submission of a paper to this journal implies that it represents original work not previously published, and that it is not being considered elsewhere for publication.

Review

The manuscripts will be reviewed by two external blind referees. The reviews are anonymous for authors and reviewers. Author identities will be removed before sending out a manuscript to the reviewers. See Application for reviewers in www.usc.es/sepjf.

Copyright

Authors submitting a manuscript do so with the understanding that if it is accepted for publication the copyright of the manuscript, including the reproduction of the paper in all forms and media, shall be transferred to the publisher. See Copyright transfer and Declaration of originality in www.usc.es/sepjf.

Permissions and responsibility

The author is responsible for obtaining permission necessary to quote from other works, to reproduce material already published, and to reprint from other publications. The opinions expressed and the contents of the paper are under exclusive responsibility of the author(s) and do not reflect the point of view of The European Journal of Psychology Applied to Legal Context.

Style

Manuscripts must adhere to the instructions on references, tables, figures, abstract, format, narrative style, etc. as described in the Publication Manual of the American Psychological Association (5th edition). Manuscripts that do not fit to the style set forth in this manual will not be considered for publication. See more details in www.usc.es/sepjf.

Check list of requirements

The abstract should be 150-200 words.

Title page (include the authors' name, affiliations, full contact details).

Full paper text (double spaced with numbered pages and anonymised).

References (APA style).

Tables and figures placed at the end of the paper or attached separately.

CONTENTS

Articles

The effects of impulsiveness and alcohol abuse on traffic code violations

Beatriz González-Iglesias, José Antonio Gómez-Fraguela, Estrella Romero and Jorge Sobral

1

Negative reactions of men to the loss of power in gender relations: Lilith vs. Eve

M. Carmen Herrera, Francisca Expósito and Miguel Moya

17

The effects of presentation methods and semantic information on multi-ethnicity face recognition

Kristjan Kask and Kaarel Rundu

43

The relationship of anger and cognitive distortions with violence and violent offenders' population: a meta-analytic review

Simona V. Chereji, Sebastian Pintea and Daniel David

59

Speeding or not speeding? When subjective assessment of safe, pleasurable and risky speeds determines speeding behavior

Florent Lheureux

79