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A preliminary investigation into a range of Implicit and Explicit Offense Supportive Cognitions in Perpetrators of Physical Intimate Partner Violence

**Abstract**

The current study assessed a wide range of offense supportive cognitions in relation to the

perpetration of physical intimate partner violence (IPV). This research used both implicit and

explicit measures in a UK sample of 19 male IPV perpetrators recruited from a community-

based IPV intervention program and 20 men from the community with no history of IPV. The

study also explored the ability of the implicit measures to differentiate between the two

groups. The cognitions assessed included gender-role stereotype, attitudes condoning

violence against a partner, attitudes condoning violence in general, hostile attitudes toward

women, sense of entitlement in the relationship and over the intimate partner (control and dominance), and general sense of entitlement. Participants completed a number of established self-report measures and a series of computer-based reaction time tasks including two

Implicit Association Tests, one Go/No-go Association Task, and four Sentence Judgment Tasks. Significant group differences emerged across all measures both at the explicit and at

the implicit level. Most implicit measures had very good discriminatory power and the combination of all implicit measures showed excellent discriminatory power, equal to that of the explicit measures combined. These findings suggest that some IPV perpetrators hold

offense supportive cognitions which may have become fairly well established and have

started to operate at an automatic level. Implicit measures could be useful tools for risk assessment purposes and identification of treatment needs alongside already established measures.

*Keywords*: implicit measures, implicit attitudes, cognitive distortions, intimate partner

violence

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Intimate partner violence (IPV) can have detrimental effects on victims (Coker et al., 2002) and on children who witness it (Holt, Buckley, & Whelan, 2008). An evidence-based understanding of its aetiology is important in order to tackle effectively this type of

aggressive behaviour. Offense supportive cognitions are among factors that contribute to

understanding the aetiology of IPV. Such cognitions include hostile attitudes toward the

opposite gender, attitudes condoning partner abuse and control, minimisation of the

seriousness and impact of IPV, entitlement, and gender-role stereotypes (see Pornari, Dixon,

& Humphreys, 2013) and constitute treatment targets during interventions.

Traditionally, the measurement of attitudes has been limited to self-report questionnaires, inherently assuming that attitudes always operate under awareness and conscious control, and that people are always willing to report them accurately. However,

research has established that attitudes, evaluations, and stereotypes can be activated and can operate automatically, outside conscious control, and without awareness of how they were activated and by what (e.g., Banaji, Hardin, & Rothman, 1993; Bargh & Ferguson, 2000).

This prompted the development and use of indirect measurement methods, commonly

referred to as implicit measures, which aim to assess the strength of association between

concepts stored in long-term memory (De Houwer, 2006). Implicit measures do not require

individuals to report their attitudes directly and explicitly. Instead, such measures assess attitudes *indirectly*, through the examination of individuals’ performance on a task on which the construct of interest is expected to have an effect. The nature of these measures makes

them less susceptible to control of the outcome and socially desirable responding (De Houwer, 2006; Nosek, Greenwald, & Banaji, 2007).

Attitudes can guide behaviour through two main processes: (i) an automatic and largely unconscious process where cognitive associations in relation to an attitude object stored in long term memory are automatically activated upon encounter with it, and (ii) a

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deliberative and effortful process which involves active introspection, reflection, evaluation and validation of one’s own attitudes (Fiske & Taylor, 2013). In everyday life behaviour is largely guided by automatically activated pre-existing attitudes and schemas. It has been

suggested that implicit measures “can provide a unique perspective on real life behaviour”

because they measure automatically activated rather than deliberate responses (De Houwer,

2006, p. 25; Fazio & Olson, 2003). This makes the use of implicit measures relevant to IPV

research (and research on aggression in general) because aggressive acts against a partner

very often occur under circumstances which hinder effortful processing of the attitude-

behaviour effect. Such circumstances include intense anger, frustration, stress, jealousy, intoxication, and loss of control (e.g., Cascardi & Vivian, 1995; Henning, Jones, & Holdford, 2005). The assessment of IPV related cognition with implicit measures would allow access to such automatically activated cognitions.

The use of implicit measures for the assessment of implicit attitudes in the study of offense-related cognition is relatively new and predominantly encountered in research on sexual offending (Snowden, Craig, & Gray, 2011). Implicit measures also have been used in studies with psychopathic murderers (e.g., Snowden, Gray, Smith, Morris, & MacCulloch,

2004) and high-risk violent offenders (Polaschek, Bell, Calvert, & Takarangi, 2010). These

existing findings are promising and provide evidence that such measures can differentiate offender from non-offender samples, in addition to distinguishing samples with different types of criminal behaviour (e.g., Banse, Schmidt, & Clarbour, 2010; Kamphuis, de Ruiter, Janssen,

* Spiering, 2005; Smith, & Waterman, 2004). Furthermore, scores in implicit measures have been found to associate with scores on a risk assessment tool in child sex offenders (Nunes, Firestones, & Baldwin, 2007) and high-risk violent offenders (Polaschek et al., 2010), in addition to predicting aggressive behaviour in lab-based paradigms with non-forensic samples (Grumm, Hein, & Fingerle, 2011; Richetin, Richardson, & Mason, 2010).

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To date, a handful of studies have employed implicit measures to assess IPV-related cognitions. Robertson and Murachver (2007) explored differences in implicit measures assessing gender-role stereotype, attitudes toward violence, and positive/negative attitudes

toward men and women between a group of male and female prisoners, in addition to a group

of men and women from the community. The prisoner group demonstrated more positive

implicit attitudes toward violence. Jouriles, Grych, Rosenfield, McDonald, and Dodson

(2011) found levels of aggression in automatic cognitions to associate positively with levels of

dating violence in antisocial teens (14-17 years old) and to predict changes in partner violence

in a 3-month follow-up period. Eckhardt, Samper, Suhr, and Holtzworth-Munroe (2012)

assessed implicit and explicit attitudes toward women, toward violence, and the cognitive association between women and violence in a group of IPV men and a group of nonviolent

controls. IPV men showed more implicit positivity toward violence and a stronger implicit association between women and violence. No differences were found in explicit attitudes towards gender-roles and IPV approval, or in implicit attitudes toward women (good vs. bad).

Eckhardt and Crane (2014) explored whether explicit and implicit measures of IPV-related

attitudes administered before treatment could predict attrition from court-mandated IPV

treatment programs and criminal recidivism over a 6-month period. Positive implicit attitudes

toward violence were found to predict greater treatment non-compliance and criminal

recidivism. They were also associated with more self-reported IPV perpetration during the previous year. Non-compliance to treatment was also found to associate with implicit

associations between women and violence. Implicit attitudes toward women (good versus bad) were not associated with any of the outcome measures. On the other hand, the explicit

measures failed to predict previous violence or recidivism, and explicit negative partner violence outcome expectancies were only marginally associated with treatment compliance.

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The use of implicit measures in the study of IPV is still in its infancy. Considering previous promising research with other types of offenders, the understanding of the attitude-

behaviour models, and the underlying mechanisms of implicit measures, there is a need to explore IPV perpetrators’ implicit cognition more extensively. The effectiveness of standard IPV intervention programs on post-treatment recidivism has been found to be small (Babcock,

Green, & Robie, 2004), and their ability to lower the risk for IPV has been shown to be

equivocal (Eckhardt et al., 2013). This indicates that there is room for improvement.

Researchers have suggested that offender intervention programs should target deep-level, core

cognitions (i.e., Implicit Theories, schemas) (Beech, Oliver, Fisher, & Beckett, 2005; Drake, Ward, Nathan, & Lee, 2001; Polaschek, Calvert, & Gannon, 2009), as it is these from these core cognitions that automatically activated individual cognitive distortions emanate.

Therefore, bringing the latter to offenders’ awareness and working to challenge or even revise them, could potentially make interventions more effective.

In their work with sexual offenders, Ward and colleagues (Ward, 2000; Ward & Keenan, 1999) proposed that sexual offenders’ cognitive distortions emerge from underlying causal theories about the nature of their victims, the world, and themselves, referred to as

Implicit Theories. Implicit Theories are core, underlying, causal theories (i.e., deep-level

cognitions), comprising coherent, interlocking ideas and concepts that people hold about themselves, others, and the social world. In this sense, they are similar to schemas. They develop from early in life and they are the result of life experiences and the product of

individuals’ effort to organise knowledge about their own and others’ experiences and behaviour. Implicit Theories function like scientific theories and are used to explain

interpersonal situations and mental states, and to make predictions about the world. They may keep developing and can undergo transformations over the life span if they fail to explain contradictory evidence and experiences. Maladaptive Implicit Theories can negatively bias

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the way people interpret the world and interpersonal phenomena, leading to cognitive distortions, that is, dysfunctional beliefs, attitudes, and thinking styles.

The notion that individuals develop theories to understand their world is prominent

within the psychological field. Ward and colleagues’ suggestions about offenders’ Implicit

Theories (Ward, 2000; Ward & Keenan, 1999) have been largely guided by previous research

in the areas of developmental, cognitive, and personality psychology. One of the main

theories which shaped their argument is the ‘Theory theory’ (Gopnik &Meltzoff, 1997).

According to the Theory theory children develop implicit theories to infer and understand the

mental state of others (e.g., beliefs, perceptions, emotions, desires, intentions) and this helps them explain and predict other peoples’ behaviour. These implicit theories can undergo revisions as the child acquires more information through new knowledge and experiences.

The Theory theory suggests that children act like scientists, collecting evidence, formulating hypotheses, testing them, and revising them in light of additional evidence.

A schematic organisation and interpretation of the world is also at the core of the cognitive model of psychopathology (Beck, 1996; Beck, Rush, Shaw, & Emery, 1979; Butler, Chapman, Forman, & Beck, 2006; Hofmann, Asnaani, Vonk, Sawyer, & Fang, 2012). The

model suggests that various psychological disorders stem from a person’s dysfunctional and

distorted thoughts and beliefs about their self, the world, and the future. Such disorders include (but are not limited to) depression, anxiety-related disorders, stress disorders, bipolar disorder, eating disorders, phobias, and obsessive-compulsive disorder. These distorted cognitions cause

emotional distress and negative feelings which can lead to maladaptive behavioural reactions. Distorted cognitions are the product of faulty or negative schemas often acquired in childhood

as a result of negative experiences or traumatic events. Cognitive distortions give rise to negative thoughts and ideas which come to the individual’s mind spontaneously, rapidly, and involuntarily, referred to as ‘automatic thoughts’ (surface-level cognitions). People may have

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little or no conscious control over these automatic thoughts and may not be aware of them. The cognitive model suggests that therapy requires re-learning through the challenging of

automatic thoughts as well as the alteration of maladaptive schemas to more adaptive ones.

The latter should lead to a decrease in negative automatic thoughts.

The cognitive model has also been applied to the treatment of anger, aggression, and

violence, including partner violence (Beck, 1999; Babcock et al., 2004; Hofmann et al., 2012).

The model proposes that aggressive individuals may have developed a hostile worldview and

anti-social schemas at a very young age, which influence the way they perceive and interpret

their social world in adult life. Aggressors tend to believe they have been wronged which makes them view themselves as the victim and the others as the enemy and victimisers. This makes them hypersensitive to specific social confrontations and likely to perceive and interpret

social interactions and situations in a biased and negative way. Such erroneous beliefs and interpretations are automatically activated, they cause emotional distress, anger, a desire to

retaliate or attack, and can consequently result in aggressive or violent behaviour. Cognitive therapy with aggressive individuals focuses on reframing the aggressor’s perception of their

‘enemy’. The recognition and a rational/realistic examination of the aggressor’s dysfunctional

automatic cognitions is necessary for such cognitions to be modified.

**The Present Study**

The present study aims to provide further insight into the implicit thinking of perpetrators of physical IPV by assessing a number of IPV-related offense supportive

cognitions using implicit measures and their conceptually corresponding explicit measures. The study involved a group of male IPV perpetrators recruited from a community-based IPV

intervention program and a group of non-IPV community controls. As discussed earlier, attitudes assessed with implicit measures are considered the product of automatic activation processes. Implicit measures could, therefore, help with the identification and assessment of

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automatic attitudes and beliefs stemming from deep-level core cognitions. It was hypothesised that the IPV group would demonstrate higher levels of offense supportive cognitions at the explicit level. Given the limited previous research on implicit attitudes in IPV perpetrators, no

firm hypotheses were made regarding the implicit attitudes. It was, therefore, explored

whether a trend similar to the explicit attitudes would emerge.

Two confounding variables were considered when analysing responses in self-report

measures, that is, social desirability and relationship satisfaction. The need to control for

social desirability is self-explanatory, and research has consistently found an association

between relationship satisfaction and attitudes about intimate relationships and intimate

partners (Eckhardt & Dye, 2000). Therefore, to ensure that group differences were not obscured by these two factors, both were assessed with self-report questionnaires and these scores were controlled for in statistical analyses.

**Method**

**Participants**

The final sample consisted of 19 male IPV perpetrators (*M*age = 38.17, *SD* = 8.19) and

20 male community non-IPV controls (*M*age = 37.05, *SD* = 7.57). The IPV sample was

recruited from a community-based charity organisation which delivers an IPV intervention program in the UK with a focus on emotion/affect regulation. The total course time is 36

hours. These men were predominantly court referred or referred from solicitors or counsellors and were tested after their initial intake assessment and before or shortly after the beginning of

the course. Potential participants were informed about the study through an information sheet handed out to them by the Manager of the organisation. Those who expressed an interest in

taking part in the study notified the Manager who, in turn, arranged a convenient date and time with the researcher for the data collection to take place.

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The non-IPV group was a non-student convenience sample and snowball sampling was also employed. Some of these participants were recruited through the first author’s social network and were then asked to share the study’s information sheet with people they knew.

Participants in this sample who self-reported at least one violent incident against an intimate

partner were excluded.

All participants were heterosexual, of British nationality, and predominantly White

(73.7% in the IPV group and 70% in the non-IPV group). The two groups did not differ in

mean age (*t*(36) = 0.44, *p* = .665) or years of education (IPV *M* = 12.47, *SD* = 2.27, non-IPV *M*

* 13.90, *SD* = 2.12, *t*(35) = -1.98, *p* = .056). There was a statistically significant difference in mean annual income (IPV group *M* = £17,440, *SD* = £11,543, non-IPV group *M* = £24,200, *SD*
* £7,344, *t*(34) = -2.11, *p* = .042) but this was driven by two men in the IPV sample who were unemployed at the time of the data collection. The exclusion of these participants resulted in a non-statistically significant difference.

**Measures**

**Demographics.** Participants recorded their gender, age, ethnic background, education,

sexual orientation, and violence in the family of origin. The latter was assessed with two items:

‘As a child or adolescent, have you ever seen your parents being physically violent toward each

other?’ and ‘As a child or adolescent, have your parents ever been physically violent toward you?’ Participants also reported the frequency with which this happened: 1-2 times ever, 1-3 times/year, 1-3 times/month, 1-3 times/week, or ‘other’ (define).

**Implicit measures*.*** The content of the implicit measures used in the current studywas guided by six of the seven Implicit Theories previously suggested for IPV perpetrators

after a systematic review of the cognitive correlates of IPV (Pornari et al., 2013). These are: I am the man (gender-role stereotype), Opposite sex is dangerous (hostile and negative emotions and beliefs about the opposite gender), Relationship entitlement (sense of

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entitlement and superiority over the intimate partner which gives the right to control), General entitlement (general sense of entitlement and superiority, not restricted to intimate relationships), Normalisation of relationship violence (attitudes condoning physical

aggression between partners), and Normalisation of violence (attitudes condoning physical

aggression in general).

Two computer-based Implicit Association Tests (IAT) assessed gender-role

stereotype. The first IAT examined the association between gender and the concepts of

Career-Domestic (CD-IAT) and the second IAT examined the association between gender

and the concepts of Dominance-Submission (DS-IAT). The IAT is a dual categorisation task measuring the strength of association between concepts stored in long-term memory. Participants have to assign the words that appear in the middle of a computer screen to one of

the two paired concepts the labels of which appear on the two upper corners of the screen. It is expected that if two concepts are closely associated, participants will respond faster and

make fewer errors when these concepts share the same response key. The ease with which a person associates two given concepts indicates a stronger automatic association between them. The outcome measure is called the *IAT effect* which is an indicator of the strength of

association between the concepts of interest (Nosek, et al., 2007). In the current study, a

larger IAT effect indicates a stronger association between (i) men-career and women-home,

and (ii) men-dominance and women-submission, rather than the opposite.

A computer-based Go/No-go Association Task (GNAT; Nosek & Banaji, 2001) was

administered for the assessment of implicit positivity toward violence (Violence-GNAT).

This task examined the association between the concepts of violence and

pleasantness/unpleasantness (Normalisation of violence Implicit Theory). The GNAT is a single categorisation task measuring the strength of association between concepts stored in

long-term memory. During the critical blocks, target and distractor words are presented one

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at a time in the middle of the computer screen. Participants have to press the spacebar (‘Go’ response) if the word belongs to either of the two categories (violent or pleasant in the current study) the labels of which appear on the two upper corners of the screen, or to do nothing

(‘No-go’ response) if the word does not belong to either category. The response window in

this task was 1,500 ms across all trials. It is expected that people will be able to categorise

target words faster and more accurately when the two category labels represent concepts for

which people hold stronger associations. A difference score is computed for each participant.

In the current study, a higher positive difference score indicates a stronger association

between violence and *un*pleasantness (otherwise, a more negative association between violence and pleasantness), while a higher negative difference score indicates a stronger association between violence and pleasantness.

Finally, four Sentence Judgement Tasks (SJTs) were administered to tap into the following Implicit Theories: Opposite sex is dangerous, General entitlement, Relationship

entitlement, and Normalisation of relationship violence. The SJT is a variation of a type of a lexical decision task which uses context sentences as primes (e.g., Baldwin, Fehr, Keedian, Seidel, & Thomson, 1993; Keown, Gannon, & Ward, 2008). In our task participants are *not*

required to make a decision based on the *lexical identity* of the target word (word/non-word),

but to decide if the word that follows the context sentence stem completes the latter in a way that *makes sense or not*. This is to ensure that participants read the sentence stems for comprehension. Participants read each sentence stem at their own pace and press the space bar

when done. Then a target word appears in the middle of the screen and participants decide if the word completes the sentence in a way that makes sense or not by pressing the correct

computer key within 1,500ms. This task is based on the assumption that the sentence content will facilitate responses to those target words which complete the sentences in a way which is congruent with the respondent’s attitudes. A difference score is computed for each participant

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for each SJT by subtracting their mean RT in the Implicit Theory-inconsistent condition

(target words completing the sentence in a way inconsistent with the respective Implicit

Theory) from the mean RT in the Implicit Theory-consistent condition (target words

completing the sentence in a way consistent with the respective Implicit Theory). A higher

positive difference score indicates stronger Implicit Theory-*in*consistent thinking style, while a

higher negative difference score indicates a stronger Implicit Theory-consistent thinking style.

**Explicit Measures.**

***Intimate partner violence.*** IPV perpetration was assessed with the 12 physical

aggression items of the Revised Conflict Tactics Scale (CTS2; Straus, Hamby, Boney-McCoy,

* Sugarman 1996). Participants reported the frequency with which they had engaged in each violent behaviour against their partner within the last 12 months (0 = *never* to 4 = *very* *frequently*), and whether each act had also happened before the past 12 months (yes/no). ThisCTS2 subscale has shown high internal consistency (Straus, 2004; Straus et al., 1996) good construct validity (Straus, 2004), and very good test -retest reliability in males, court-mandated to a batterer intervention program (Vega & O’Leary, 2007). Participants were also asked if they had been physically aggressive in past relationships and, if so, to report the number of previous partners towards whom this had happened.

***Conceptually corresponding to the Gender-roles IATs explicit measure.*** Genderrole stereotype was assessed with the Attitudes toward Women Scale (AWS; Spence, Helmreich, & Stapp, 1973), a 25-item scale assessing traditional/conservative attitudes about gender roles. This scale has demonstrated very good psychometric properties (Smith & Bradley, 1980; Spence et al., 1973). A higher score indicates more egalitarian attitudes.

***Conceptually corresponding to the Violence-GNAT explicit measure.*** Explicitattitudes toward violence were assessed with the 8-item instrumental beliefs about aggression subscale of the Revised Expagg Scale (Campbell, Muncer, McManus, & Woodhouse, 1999).

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This subscale has shown very good internal consistency (Campbell et al., 1999; Driscoll, Campbell, & Muncer, 2005) and good convergent validity with other physical aggression

scales (e.g., Archer & Haigh, 1997). Higher scores indicate more instrumental beliefs about

aggression.

***Conceptually corresponding to the Opposite sex is dangerous SJT explicit measure.***

Hostility toward the opposite gender was assessed with the 31-item Hostility toward women

subscale of the Gender Hostility Scales (Yodanis & Straus, 1996), which assesses negative

emotions and beliefs about women. This subscale has shown very good reliability and

construct validity (Yodanis & Straus, 1996). Higher scores indicate higher levels of hostility.

***Conceptually corresponding to the General entitlement SJT explicit measure.*** The9-item Psychological Entitlement Scale (PES; Campbell, Bonacci, Shelton, Exline, &

Bushman, 2004) was used as an explicit measure of entitlement. It measures beliefs that one deserves and is entitled to more, compared to others. This scale has demonstrated very good psychometric properties (Campbell et al., 2004) and high scores indicate a stronger sense of entitlement.

***Conceptually corresponding to the Relationship entitlement SJT explicit measures.***

Two scales were employed as indicators of relationship entitlement. First, the 24-item

Revised Controlling Behaviours Scale (CBS-R; Graham-Kevan, & Archer, 2005) which

assesses the use of various controlling behaviours between partners. The scale has shown to be reliable and valid (Graham-Kevan & Archer, 2005, 2009) and higher scores indicate

greater use of control in intimate relationships. Second, the 32-item Dominance Scale (Hamby, 1996) was administered which measures three types of power and control in

intimate relationships: authority, restrictiveness, and disparagement. This scale has demonstrated good psychometric properties (Hamby, 1996) and high scores indicate more dominance in the relationship.

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***Conceptually corresponding to the Normalisation of relationship violence SJT***

***explicit measure.*** Explicit approval of intimate partner violence was assessed with the

Inventory of Beliefs about Wife Beating (IBWB; Saunders, Lynch, Grayson, & Linz, 1987), a

31-item scale measuring attitudes and beliefs about male perpetrated violence toward wives.

This scale has shown good construct validity and reliability (Saunders et al., 1987). For the

purpose of this study, the words ‘wife’ and ‘husband’ were replaced with the words ‘partner’

and ‘man’/’woman’, as appropriate. A higher score indicates more condoning attitudes about

physical abuse against an intimate partner.

***Social desirability.*** Participants were administered the 20-item impression

management subscale of the Balanced Inventory of Desirable Responding (BIDR; Paulhus, 1984). The continuous scoring method was employed, with higher scores indicating more impression management (deliberate self-presentation).

***Relationship satisfaction*.**This was assessed with the Dyadic Adjustment Scale (DAS;

Spanier, 1976), a 32-item measure of relationship quality and satisfaction. The scale has shown good psychometric properties (Graham, Liu, & Jeziorski, 2006; Sharpley & Cross,

1982) and higher scores indicate more positive dyadic adjustment and relationship satisfaction.

**Procedure and ethical considerations**

The study was conducted according to the British Psychological Society’s ethical standards and guidelines (British Psychological Society, 2010). Ethical approval was obtained from the University’s Research Ethics Committee and permission was also obtained by the

Manager of the organisation where the IPV sample was recruited from. Participation was voluntary and informed consent was given by all participants. Responses were anonymous and participants were free to withdraw any time during or after participation. It was highlighted to all participants in the IPV group that their decision to participate or not would not affect the services provided to them. Participants completed all measures individually and in privacy.

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The implicit measures were administered first, followed by the explicit measures. Upon completion participants were thanked, debriefed, and directed to appropriate avenues of

support in case of any discomfort caused by the study. Each participant was paid £10 in the

form of a supermarket gift card.

**Results**

**Prevalence of IPV and Family Violence**

The control group did not report any physical abuse against a partner in the CTS2.

The IPV group had a mean physical aggression score of 17.21 (*SD* = 4.12; min = 0, max =

48). Minor violence was far more frequent than severe, but all participants in this sample had engaged in at least one severe act of physical aggression. Slapping and grabbing a partner were the two acts of minor violence most frequently reported. The most frequent severe acts

were “I slammed my partner against a wall”, followed by “I choked my partner”, while “I burned or scalded my partner on purpose” and “I used a knife or gun on my partner” were not

reported by any of these men. Eighty-nine percent of these men reported the perpetration of at least two of the CTS2 minor violence acts before the past 12 months, and 58% reported the perpetration of at least three minor violence acts. Fifty-three percent reported at least two

acts of severe violence before the past 12 months, and 32% reported at least three acts.

Thirty-seven percent had been aggressive in one previous relationship, 27% in two previous

relationships, and 6% in more than two previous relationships.

In terms of violence in the family of origin, significantly more IPV than nonviolent

men (44.4% vs. 10%) had witnessed interparental violence (χ2(1) = 5.80, *p* = .027) and at higher frequency. Twice as many IPV men as non-IPV had been the receivers of physical

violence from parents (44.4% vs. 20%), and at higher frequency, but this difference was not

statistically significant (χ2(1) = 2.62, *p* = .106).

**Explicit Attitudes**

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All variables were checked for assumptions violations prior to parametric testing. A small number of non-extreme outliers were present in the IBWB and the CBS-R scores of

both groups, and in the IPV group’s DAS scores. The values of those outliers were winsorinsed, that is, replaced with the value corresponding to 2*SD* above or below the scale’s mean (depending on which side of the distribution the outlier was). The IBWB and the CBS-

R were further subjected to log-transformation which improved their distribution.

The descriptive statistics of the scores on the explicit measures, group differences

statistics, and Cronbach’s α coefficients are presented in Table 1. Statistically significant

differences were observed across all variables with the IPV group reporting more relationship

dominance, controlling behaviours, psychological entitlement, gender-roles stereotype, hostility toward women, attitudes condoning physical IPV, instrumental beliefs about (general) aggression, and less relationship satisfaction.

A MANCOVA was performed controlling for social desirability and relationship satisfaction. Box’s M test was significant (*p* = .006). However, this test is highly sensitive to departures from multivariate normality and it is suggested that unless the significance of the test is < .001 and the sample sizes are unequal, it should not be interpreted as an indication of

the violation of the assumption of equality of covariance matrices (Tabachnick & Fidell, 2001,

p. 80). The main effect of group membership was significant *F*(7, 28)= 4.38, *p* = .002, ηp2 =

.52 (Obs. Power = .97). Post-hoc analyses revealed significant group differences in all

variables: psychological entitlement *F*(1, 35) = 6.44, *p* = .016, ηp2 = .16; gender-roles attitudes *F*(1, 35) = 11.05, *p* = .002, ηp2= .24; dominance *F*(1, 35) = 6.68, *p* = .014, ηp2= .16;controlling behaviours *F*(1, 35) = 9.58, *p* = .004, ηp2 = .22; hostility toward women *F*(1, 35) = 10.81, *p* = .002, ηp2 = .24; and attitudes toward physical IPV *F*(1, 35) = 10.42, *p* = .003, ηp2 =

.23. The Levene’s test for equality of error variances was significant for instrumental beliefs

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about (general) aggression and the Welch test was used in this case, indicating a significant

group difference (Welch (1, 25.20) = 20.05, *p* < .001, ηp2 = .36).

Insert Table 1 about here

**Implicit Attitudes**

There were few non-extreme outliers in the DS-IAT, the GNAT, and the Relationship

entitlement SJTs difference scores. These values were winsorised to the minimum or

maximum cut-off point (2 *SD* above or below the mean) as appropriate. Compared to the

control group, the IPV group exhibited more stereotypical gender-role attitudes (IATs), more

implicit positivity toward violence (Violence GNAT), more negative/hostile attitudes toward women (Opposite sex is dangerous SJT), a higher sense of relationship entitlement and general entitlement, as well as more approval of IPV (Normalisation of relationship violence SJT) (see Table 2).

ROC analyses were performed to examine the ability of the implicit measures to

classify the IPV and non-IPV participants accurately (i.e., the measures’ discriminatory power). The area under the curve (*AUC*) was calculated for (i) each implicit measure

separately, (ii) all implicit measures combined, and (iii) all explicit measures combined (see

Table 3). For the last two ROC analyses, the resulting probability estimates from a binary

logistic regression were entered as the predictor variable. In the analysis involving the explicit measures combined, the resulting probabilities also included the two control variables (social desirability and relationship satisfaction). In the current study, the *AUC* represents the

probability that a randomly selected IPV male will have higher levels of offence supportive cognitions than a randomly selected non-IPV male. For example, an *AUC* of .70 would mean

that an IPV male will have higher levels of offence supportive cognitions than 70% of the non-IPV males. An *AUC* of 1.00 indicates excellent discriminatory power of the measure(s) and an *AUC* of .05 indicates that the measure predicts the criterion at chance level.

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The discriminatory power of the Violence-GNAT and of all four Sentence Judgment Tasks was very good and corresponded to a large effect (*AUC* ≥ .71 corresponds to Cohen’s *d*

* .80; Rice & Harris, 2005). The DS-IAT demonstrated good discriminatory power corresponding a medium-to-large effect size (*AUC* = .68 equals to Cohen’s *d* = .68), while the CD-IAT did not reach significance. The confidence intervals of most of the implicit measures show considerable overlap indicating that these measures have similar discriminatory power with the exception of the Violence GNAT which seemed to perform better. The combination of all implicit measures showed excellent discriminatory power, equal to that of the explicit measures combined (*AUC* = .95 corresponds to Cohen’s *d* = 2.36).

A discriminant function analysis was conducted to explore the relative importance of each implicit measure in the prediction of group status (IPV vs. non-IPV). The discriminant function significantly differentiated the two groups (Λ = .45, χ2(7) = 26.80, *p* = < .001) and revealed a canonical correlation with group status of .742 which indicates that 55% of the variability between the two groups is explained by the combination of the implicit measures. The function correctly classified 87.2% of the cases and performed slightly better for the non-IPV group compared to the IPV group (95% and 78.9% correct classifications, respectively).

The standardised discriminant function coefficients were examined as these indicate each predictor’s unique contribution to the function, independently from the other predictors. The larger the absolute value of the coefficient the larger the respective predictor variable's unique contribution to the discrimination between the two groups. The coefficients were as follows: Violence GNAT (0.59), General entitlement SJT (0.46), Normalisation of relationship violence SJT (0.44), Opposite sex is dangerous SJT (0.33), CD-IAT (0.30), Relationship entitlement SJT (-0.17), and DS-IAT (-0.06). These results indicate that the Violence GNAT contributed most to group classification while the Relationship entitlement

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SJT and the DS-IAT had little impact on the discriminating process (their coefficients were near zero).

Insert Tables 2 & 3 about here

**Implicit-Explicit associations**

Bivariate correlations were conducted to explore the convergence between the

implicit measures and their explicit analogues, as well as any additional meaningful

correlations (see Table 4). The Opposite sex is dangerous SJT and the Normalisation of

relationship violence SJT correlated statistically significantly with their explicit analogues

while the correlation between the Violence GNAT and Expagg-instrumental approached significance (*p* = .052). All these correlations were in the expected direction. The remaining implicit measures did not correlate with their explicit analogues. However, with the exception

of the CD-IAT and the Relationship entitlement SJT, a number of meaningful and in the expected direction associations with other constructs were observed. Implicit positivity

toward violence (Violence GNAT) correlated with explicit approval of intimate partner violence. A stronger implicit association between men-dominance and women-submission (DS-IAT) was associated with higher levels of self-reported use of control in intimate

relationships and explicit approval of intimate partner violence. A stronger implicit general

sense of entitlement and superiority was associated with higher levels of use of control in intimate relationships and explicit hostility toward women. Finally, stronger implicit attitudes condoning physical IPV were associated with higher levels of explicit gender role stereotype

and hostility toward women. A marginally significant association also emerged between implicit hostility toward women and self-reported dominance in a relationship (Dominance scale).

Insert Table 4 about here

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**Discussion**

The current study examined several offense supportive cognitions in relation to

physical IPV perpetration, using both implicit and explicit measures. Comparisons were

made between men with and without a history of IPV. Consistent with previous research, the

IPV group reported (explicitly) less relationship satisfaction (Stith, Green, Smith, & Ward,

2008) in addition to higher levels of relationship dominance and controlling behaviours (e.g.,

Graham-Kevan & Archer, 2009; Stets & Burke, 2005), hostility toward the opposite gender

(e.g., Copenhaver, 2000; Holtzworth-Munroe & Hutchinson, 1993), instrumental beliefs

about physical aggression (Próspero, 2008), stereotypical views of gender-roles (e.g.,

Saunders, 1992; Stith & Farley, 1993), condoning attitudes toward physical IPV (e.g., Hanson, Cadsky, Harris, & Lalonde, 1997; Holtzworth-Munroe, Meehan, Herron, Rehman, &

Stuart, 2000), and psychological entitlement (e.g., Rothschild, Dimson, Storaasli, & Clapp, 1997; Simmons, Lehmann, Cobb, & Fowler, 2005). These group differences remained

significant after controlling for social desirability and relationship satisfaction suggesting that participants were generally honest in their responses and that any negative thinking patterns in relation to intimate relationships and intimate partners in this sample were not due to

unhappiness with their relationship.

Significant group differences also emerged across the implicit measures suggesting

that IPV perpetrators may hold automatic cognitions facilitating this aggressive behaviour.

As discussed in the introduction, implicit measures are assumed to assess associations

between representations of concepts in long term memory which are automatically activated.

According to the spreading activation model of memory (Collins & Loftus, 1975), concepts

which are frequently activated together (e.g., through previous learning or personal experience) form strong connections. This allows these linked concepts to activate one another faster and more consistently. Likewise, the schemas/implicit theories theoretical

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frameworks in understanding social cognition and behaviour, propose that people develop schemas from early in life which are defined and shaped by life experiences. Through repeated use these schemas/theories can become fairly well established, making the

processing of information largely automatic, and giving rise to cognitive distortions (Beck,

1996; Beck et al., 1979; Ward, 2000). In other words, overtime, biased and maladaptive

thinking can become a cognitive habit. These theoretical explanations can assist in

explaining why offense supportive attitudes in our IPV sample seemed to operate at an

automatic level.

Many men in the IPV sample had aggressed against a partner in the period before the

past 12 months, and a proportion of them had been abusive toward one or more previous partners. In addition, although non-severe violence was more frequent than severe, all

participants in the IPV group had engaged in at least one severe act of physical aggression. This is in line with research demonstrating that IPV selected samples (i.e., convicted IPV

offenders, court-ordered to IPV intervention programs) are generally characterised by a history of more frequent and/or severe IPV, and more maladjusted thinking styles and offense supportive attitudes compared to non-selected IPV samples (i.e., students, community

surveys) (see Dixon & Browne, 2003). Therefore, it is likely that our IPV group held

relatively stable and readily accessible offense supportive mental associations which had an effect on their performance in the implicit measures, resulting in stronger observed effects compared to the non-IPV group. These findings suggest the possibility that, in IPV selected

samples, offense supportive cognitions might have become a cognitive habit, operating at an automatic level.

Another possible explanation could be related to the fact that significantly more IPV than nonviolent men in the current sample had witnessed interparental violence during childhood and twice as many had been the receivers of physical violence from parents. These

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findings support previous research which has established that experiencing and/or witnessing violence in the family of origin is a risk factor for IPV perpetration later in life and can influence one’s beliefs about the acceptability of violence and aggression between intimate

partners (e.g., Dutton & White, 2012; Reitzel-Jaffe & Wolfe, 2001; Stith et al., 2000;

Wareham, Boots, & Chavez, 2009). As discussed earlier in the current paper, people start

developing theories/schemas from an early age in order to understand, explain, and predict

their social world (Beck, 1996; Gopnik &Meltzoff, 1997; Ward, 2000. Therefore, the family

environment plays a key role in this process. Individuals who grew up in abusive homes

would have had to develop theories to account for that social environment, including their parents’ behaviour and mental states. Therefore, for some IPV abusers, cognitive distortions such as ‘women are untrustworthy’, ‘it is okay for a man to hit his partner if she does not do

as he says’, or ‘no one has the right to talk back to me’, may have been part of their thinking style since childhood.

Drawing on developmental research on children’s theory of mind (i.e., the ability to attribute mental states to oneself and to others, and to understand that our mental states may be different from those of others) (Astington, Harris, & Olson, 1988; Premack, & Woodruff,

1978), may be also useful in interpreting these data. It is possible that some IPV perpetrators

who experienced/witnessed abuse in the family of origin have developed a deficit in theory of

mind. Research on attachment in IPV perpetrators demonstrates a link between insecure attachment styles (due to experiencing poor and inconsistent parenting, including violence

and neglect) and perpetration of IPV (Dutton & White, 2012). In addition, there is empirical evidence supporting a positive association between attachment security in childhood and

theory of mind competence (Fonagy, Redfern, & Charman, 1997; Laranjo, Bernier, Meins, & Carlson, 2010, 2014; Symons, & Clark, 2000). Theory of mind deficits could possibly lead to deficits in understanding a partner’s feelings or perspective. This can happen through

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incorrect and biased inferences about the partner’s mental states and motives. Misrepresentation of the partner’s reality could result in conflict and non-constructive ways of dealing with it, including aggression. All these are yet to be explored.

Two of the implicit measures (Opposite sex is dangerous SJT and the Normalisation

of relationship violence SJT) correlated with their explicit analogues, and the correlation

between the Violence GNAT and its explicit analogue approached significance. Except for the CD-IAT and the Relationship entitlement SJT which did not correlate with any of the explicit measures in the current study, all other implicit measures had meaningful correlations

with other explicit measures even if they did not correlate with their explicit analogue. This provides evidence of some level of convergence validity, but non-significant implicit-explicit correlations should not come as a surprise. Implicit-explicit correlations are not always

significant, or can be weak when the topic under investigation is personal and sensitive, when the explicit measure is a scale, and when responses in the explicit measure are characterised

by low level of spontaneity (Hofmann, Gawronski, Gschwendner, Le, & Schmitt, 2005). All these three characteristics apply to the current study and this could explain why not all implicit measures correlated with their explicit analogue. Despite this, the implicit measures

demonstrated know-groups validity and all but the CD-IAT had good discriminatory power.

When combined, their discriminatory power was excellent and equal to that of the explicit measures. The Violence GNAT seemed to perform better relative to other implicit measures in discriminating the two groups.

**Limitations**

There are limitations to the current study that need to be considered when interpreting the results. First, the sample was self-selected, heterosexual-male only, and of limited ethnic diversity. It was also relatively small, although not significantly different in size compared to previous research of similar nature with forensic populations (Robertson & Murachver, 2007;

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Snowden et al., 2011). Therefore, these results may not generalise to perpetrators involved in same-sex relationships (especially the findings in relation to gender-role stereotype and hostility toward women), to more ethnically diverse samples, or to female IPV perpetrators.

The latter have been found to share many common offense supportive cognitions with their

male counterparts (see Pornari et al., 2013) and it would be fruitful for future research to

explore similarities and differences in implicit offense supportive cognitions between male

and female IPV perpetrators. It is, therefore, important that future similar studies include

larger and more diverse and representative samples.

In addition, the IPV sample comprised men who were not incarcerated and who were aware that the current study was independent of the organisation delivering the intervention programme and that their responses would be anonymous. It is likely that these men were

more honest in their responses to the explicit measures compared to perpetrators whose responses on such measures might influence decisions in relation to treatment completion,

sentencing, release, or transfer to lower security facilities. Consequently, the current findings may not generalise to IPV samples that have a self-serving interest in distorting their responses in self-report questionnaires.

**Implications and Future Directions**

We suggest that, when it comes to offender assessment, the use of both implicit and explicit measures has the potential to provide a more accurate assessment of attitudes. First, as discussed earlier this paper, it has been suggested that interventions should not only

challenge automatic thoughts but should also identify and alter any core negative and maladaptive schemas, as it is from these that automatic individual cognitive distortions

emanate (e.g., Beck et al., 1979; Beech et al., 2005; Polaschek et al., 2009). Since attitudes assessed with implicit measures are considered the product of automatic activation processes, implicit measures could help with the identification of offense supportive schemas.

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Interventions can then help offenders gain an insight into their own maladaptive implicit/automatic attitudes, understand how these are the product of their own schemas, and work to challenge and change these. Implicit measures could be used as a tool to educate

offenders about implicit attitudes and such attitudes’ influence on behaviour, and to get them

thinking about their own offense supportive attitudes before working to change them.

According to the influential dual-attitude model of attitudes proposed by Wilson,

Lindsey, and Schooler (2000), people may simultaneously hold both implicit and explicit

attitudes about the same attitude object. Implicit and explicit attitudes can be different from

each other and guide behaviour in different ways. Implicit attitudes are assumed as being difficult to change because they originate from early socialisation experiences which makes them relative stable. On the other hand, explicit attitudes can change relatively easily

because they are acquired more recently. The model suggests that even if there is a change in the explicit attitude, the original habitual attitude (i.e., the implicit) may remain the same and

people will endorse and behave according to their explicit attitude only if the explicit can override the implicit one. The latter requires the effortful retrieval and elaboration of the explicit attitude.

More contemporary dual-attitude models (Fazio & Olson, 2003; Gawronski &

Bodenhausen, 2006) propose that changes in implicit attitudes are possible with the creation of *new* automatic associations about the attitude object. These may influence explicit attitudes if people have the opportunity and the motivation to engage in effortful deliberation

of additional information about the attitude object. According to the Associative-Propositional Evaluation (APE) Model (Gawronski & Bodenhausen, 2006, 2011), the product

of implicit measures is the spontaneous affective response toward an object. This response can be dismissed upon reflection or consideration of additional evidence. This can result in an explicit attitude which is different from the implicit one if the new evidence is inconsistent

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with the initial spontaneous evaluation. The model also proposes that effortful elaboration of one’s own attitudes can bring about changes in automatic evaluations which can be reflected in performance in implicit measures. Repeated elaboration and evaluation of one’s own

attitudes can make the attitude more automatically accessible, through the formation of new

associations in memory. Therefore, the APE Model suggests that implicit attitudes can

change and that new automatic associations can be created. To date, both suggestions have

found empirical support.

A large body of research has shown that implicit attitudes can change and that implicit

measures can detect this change (for a review see Gawronski & Bodenhausen, 2006; Gawronski & LeBel, 2008). For example, Dijksterhuis (2004), using subliminal evaluative conditioning, found that participants who were repeatedly presented with trials in which the

word ‘I’ was paired with a positive trait, showed enhanced self-esteem across three different measures of implicit self-esteem. Another study investigated the effect of violent video

games on aggressiveness and found that after five minutes of playing an aggressive video game there was an increase in participants’ implicit aggressive self-concept relative to those participants who played a peaceful game (Bluemke, Friedrich, & Zumbach, 2010).

Outside the lab, studies with clinical populations have found implicit measures to be

able to detect post-treatment change in implicit cognitions. For example, Teachman and Woody (2003) found that exposure therapy reduced fear-related implicit associations toward spiders (as assessed with an IAT) and this reduction maintained during a two-month follow-

up. The authors suggested that implicit associations, thought to reflect an element of schematic processing, can change over the course of treatment which implies that schemas

can be modified by experience. Clerkin, Fisher, Sherman, and Teachman (2014) investigated the effect of a 12-week cognitive-behavioural group therapy for panic disorder in participants’ responses on a self + calm vs. self + panicked IAT. Implicit associations

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between Me + Calm strengthened over treatment and the researchers suggested that it is possible for therapy to bring about changes to automatically activated associations. Similar findings on the ability of therapeutic interventions to change dysfunctional implicit cognitions come from studies involving samples with chronic pain (Grumm, Erbe,

vonCollani, & Nestler, 2008), social anxiety disorder (Gamer, Schmukle, Luka-Krausgrill, &

Egloff, 2008; Ritter, Leichsenring, Strauss, & Stangier, 2013), generalised anxiety disorder

(Reinecke, Rinck, Becker, & Hoyer, 2013), fear of heights (Șoflău & Matu, 2016), and

suicidal ideation (Ellis, Rufino, & Green, 2016).

To the best of our knowledge and at the time of writing this paper, only one published study has investigated change in implicit attitudes after treatment in forensic samples. Polaschek et al. (2010) used explicit measures and two IATs to assess the effectiveness of an

intensive cognitive-behavioural rehabilitation programme in a sample of 30 male high-risk violent prisoners. The first IAT assessed implicit positivity toward weapons and the second

IAT assessed implicit positivity toward violence. There was a decrease in implicit positivity toward weapons post-treatment but no change was observed in the Violence IAT. The authors attributed this disparity to the fact that the Weapons IAT used pictures to represent

the categories and it was personalised, while the Violence IAT used lexical stimuli only and it

was not personalised. It has been suggested that IATs that use pictures and are personalised have more external validity (Olson & Fazio, 2004; Teachman & Woody, 2003). In addition, the Weapons IAT contributed to the prediction of post-programme dynamic risk.

Existing empirical findings, therefore, suggest that implicit attitudes are amenable to change and that implicit measures can be useful tools in detecting such change. Of special

interest are those studies demonstrating that implicit attitudes can change as a result of a real-word intervention in clinical and forensic samples (e.g., exposure therapy, CT, CBT). Although research on this domain is still in its infancy, the existing findings are promising

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and highlight the need for additional research in the area of IPV as well as aggressive and criminal behaviour in general. Further research could establish whether interventions can reliably change implicit attitudes in offenders, whether such change can be long term, and

whether it can ultimately bring about changes in behaviour (e.g., a reduction in recidivism).

Implicit measures could prove to be useful offender risk and needs assessment tools and

future research is needed to investigate whether such measures have the potential to increase

the accuracy of evaluations when used alongside standard risk assessment tools.

The use of computer-based implicit measures similar to the ones used in the current

study dominates research in automatic cognition because they are resource-effective and easy to administer. However, there are other types of laboratory based paradigms which, although more resource-demanding, resemble real life more closely; for example, the Articulated

Thoughts during Simulated Situations (Eckhardt, Barbour, & Davison, 1998) and the empathic accuracy paradigm (Clements, Holtzworth-Munroe, Schweinle, & Ickes, 2007).

Such measures may provide a better access to online cognition (i.e., what goes through the perpetrator’s mind during an aggressive interpersonal interaction), and future research on interpersonal aggression would certainly benefit from the use of such measures.

An additional important contribution of the current study is that it assessed (non-

clinical) psychological entitlement and attitudes toward general (non-intimate) aggression. These two factors have been largely neglected in IPV research despite evidence suggesting that violence toward partners has similar aetiology with other types of violence and should

not be examined in isolation (Felson & Lane, 2010). The IPV group in this study expressed significantly more approval of general aggression and higher levels of psychological

entitlement than the non-IPV group. Future research could investigate further the role of these two constructs in IPV perpetration. If empirical findings reveal a consistent link with IPV this would indicate that IPV offenders hold not only offense-specific cognitions but also

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cognitions which facilitate violent behaviour in general, and treatment interventions could be informed appropriately.

**Conclusion**

The current study was the first to assess a wide range of IPV-related offense

supportive cognitions using both implicit and explicit measures and provides important

preliminary findings contributing to the understanding of the role of automatically activated

cognitions in this aggressive behaviour. It is suggested that in some IPV perpetrators, offense

supportive cognitions may be fairly well established, thus more readily accessible, operating

at an automatic level. Interventions could help offenders gain an insight into their offense supportive implicit cognitions, understand how the latter may guide their behaviour, and work to challenge and revise them. Research is needed to explore whether interventions can

bring about long-term change in maladaptive implicit cognitions and whether such change can influence behaviour. Finally, implicit measures could be useful tools for risk and needs assessment purposes alongside already established risk assessment measures.

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References

Archer. J., & Haigh, A. M. (1997). Beliefs about aggression among male and female

prisoners. *Aggressive Behavior, 23*, 405-415. doi: 10.1002/(SICI)1098-

2337(1997)23:6<405::AID-AB1>3.0.CO;2-F

Astington, J. W., Harris, P. L., & Olson, D. R. (1988). *Developing theories of mind*.

Cambridge: Cambridge University Press.

Babcock, J. C., Green, C. E., & Robie, C. (2004). Does batterers’ treatment work? A meta-

analytic review of domestic violence treatment. *Clinical Psychology Review, 23*, 1023-

1053. doi: 10.1016/j.cpr.2002.07.001

Baldwin, M. W., Fehr, B., Keedian, E., Seidel, M., & Thomson, D. W. (1993). An exploration of the relational schemata underlying attachment styles: Self-report and lexical

decision approaches. *Personality and Social Psychology Bulletin, 19*, 746-753. doi:

10.1177/0146167293196010

Banaji, M. R., Hardin, C., & Rothman, A. J. (1993). Implicit stereotyping in person judgment. *Journal of Personality and Social Psychology*, *65*, 272-281. doi: 10.1037/0022-

3514.65.2.272

Banse, R., Schmidt, A. F., & Clarbour, J. (2010). Indirect measures of sexual interest in child

sex offenders: A multimethod approach*. Criminal Justice and Behavior, 37*, 319-335. doi:

10.1177/0093854809357598

Bargh, J. A., & Ferguson, M. J. (2000). Beyond behaviorism: On the automaticity of higher

mental processes. *Psychological Bulletin, 126*, 925-945. doi: 10.1037/0033-2909.126.6.925

Beck, A. T. (1996). Beyond belief: A theory of modes, personality, and psychopathology. In

1. M. Salkovskis (Ed.), *Frontiers of cognitive therapy* (pp. 1–25). New York: Guilford Press.

30

|  |  |
| --- | --- |
| IMPLICIT AND EXPLICIT COGNITION IN IPV PERPETRATORS | 31 |

Beck, A. T. (1999). *Prisoners of hate: The cognitive basis of anger, hostility, and violence*.

New York: HarperCollins.

Beck, A. T., Rush, A. J., Shaw, B. F., & Emery, G. (1979). *Cognitive therapy of depression*.

New York: Guilford Press.

Beech, A. R., Oliver, C., Fisher, D., & Beckett, R. C. (2005). *STEP 4: The Sex Offender*

*Treatment Programme in prison: Addressing the needs of rapists and sexual murderers.*

Retrieved from www.hmprisonservice.gov.uk/ assets/documents /100013DBStep\_4\_

SOTP\_report\_2005.pdf

Bluemke, M., Friedrich, M., & Zumbach, J. (2010). The influence of violent and nonviolent

computer games on implicit measures of aggressiveness. *Aggressive Behavior*, *36*, 1-13. doi: 10.1002/ab.20329

Butler, A. C., Chapman, J. E., Forman, E. M., & Beck, A. T. (2006). The empirical status of cognitive behavioral therapy: A review of meta-analyses. *Clinical Psychology Review, 26*,

17-31. doi:10.1016/j.cpr.2005.07.003

Campbell, A., Muncer, S., McManus, I. C., & Woodhouse, D. (1999). Instrumental and

expressive representations of aggression: One scale or two? *Aggressive Behavior, 25*, 435-

1. doi: 10.1002/(SICI)1098-2337(1999)25:6<435::AID-AB4>3.0.CO;2-Q Campbell, W. K., Bonacci, A. M., Shelton, J., Exline, J. J., & Bushman, B. J. (2004).

Psychological entitlement: Interpersonal consequences and validation of a new self-report measure. *Journal of Personality Assessment*, *83*, 29-45. doi:

1. 1207/s15327752jpa8301\_04

Cascardi M., & Vivian, D. (1995). Context for specific episodes of marital violence: Gender and severity of violence differences. *Journal of Family Violence, 10*, 265-293. doi:

1. 1007/BF02110993

31

IMPLICIT AND EXPLICIT COGNITION IN IPV PERPETRATORS 32

Clements, K., Holtzworth-Munroe, A., Schweinle, W., & Ickes, W. (2007). Empathic

accuracy of intimate partners in violent versus nonviolent relationships. *Personal*

*Relationships, 14*, 369-388. doi: 10.1111/j.1475-6811.2007.00161.x

Clerkin, E. M., Fisher, C. R., Sherman, J. W., & Teachman, B. A. (2014). Applying the

Quadruple Process model to evaluate change in implicit attitudinal responses during

therapy for panic disorder. *Behaviour Research and Therapy*, *52*, 17-25. doi:

10.1016/j.brat.2013.10.009

Collins, A. M., & Loftus, E. F. (1975). A spreading-activation theory of semantic processing.

*Psychological Review, 82*, 407-428. doi: 10.1037/0033-295X.82.6.407

Copenhaver, M. M. (2000). Testing a social-cognitive model of intimate abusiveness among substance-dependent males. *American Journal of Drug and Alcohol Abuse, 26*, 603-628.

doi: 10.1081/ADA-100101898

De Houwer, J. (2006). What are implicit measures and why are we using them. In R. W.

Wiers & A. W. Stacy (Eds.), *The handbook of implicit cognition and addiction* (pp. 11-28). Thousand Oaks, CA: Sage.

Dijksterhuis, A. (2004). I like myself but I don't know why: enhancing implicit self-esteem

by subliminal evaluative conditioning. *Journal of Personality and Social Psychology*, *86*,

345- 355. doi: 10.1037/0022-3514.86.2.345

Dixon, L., & Browne, K. (2003). The heterogeneity of spouse abuse: A review. *Aggression*

*and Violent Behavior, 8*, 107-130. doi: 10.1016/S1359-1789(02)00104-0

Drake, C. R., Ward, T., Nathan, P., & Lee, J. K. P. (2001). Challenging the cognitive distortions of child molesters: An implicit theory approach. *Journal of Sexual Aggression,*

*7*, 25-40. doi: 10.1080/13552600108416165

32

|  |  |
| --- | --- |
| IMPLICIT AND EXPLICIT COGNITION IN IPV PERPETRATORS | 33 |

Driscoll, H., Campbell, A., & Muncer, S. (2005). Confirming the structure of a 10 item Expagg scale using confirmatory factor analysis. *Current Research in Social Psychology,*

*10*(15), 222-233. Retrieved fromhttps://uiowa.edu/crisp/

Dutton, D. G., & White, K. R. (2012). Attachment insecurity and intimate partner violence.

*Aggression and Violent Behavior, 17*, 475-481. doi:10.1016/j.avb.2012.07.003

Eckhardt, C. I., Barbour, K. A., & Davison, G. C. (1998). Articulated thoughts of maritally

violent and nonviolent men during anger arousal. *Journal of Consulting and Clinical*

*Psychology, 66*, 259-269. doi: 10.1037/0022-006X.66.2.259

Eckhardt, C. I., & Crane, C. A. (2014). Male perpetrators of intimate partner violence and

implicit attitudes toward violence: Associations with treatment outcomes. *Cognitive*

*Therapy and Research*, *38*, 291-301. doi: 10.1007/s10608-013-9593-5

Eckhardt, C. I., & Dye, M. L. (2000). The cognitive characteristics of maritally violent men:

Theory and evidence. *Cognitive Therapy and Research*, *24*, 139-158. doi:

10.1023/A:1005441924292

Eckhardt, C. I., Murphy, C. M., Whitaker, D. J., Sprunger, J., Dykstra, R., & Woodard, K.

(2013). The effectiveness of intervention programs for perpetrators and victims of intimate

partner violence. *Partner abuse*, *4*, 196-231. doi: 10.1891/1946-6560.4.2.196

Eckhardt, C. I., Samper, R., Suhr, L., & Holtzworth-Munroe, A. (2012). Implicit attitudes

toward violence among male perpetrators of intimate partner violence: A preliminary investigation. *Journal of Interpersonal Violence, 27*, 471-491. doi:

10.1177/0886260511421677

Ellis, T. E., Rufino, K. A., & Green, K. L. (2016). Implicit measure of life/death orientation

predicts response of suicidal ideation to treatment in psychiatric inpatients. *Archives of* *Suicide Research*, *20*, 59-68. doi: 10.1080/13811118.2015.1004483

33

IMPLICIT AND EXPLICIT COGNITION IN IPV PERPETRATORS 34

Fazio, R. H., & Olson, M. A. (2003). Implicit measures in social cognition: Their meaning and use. *Annual Review of Psychology, 54*, 297-327. doi:

10.1146/annurev.psych.54.101601.145225

Felson, R. B., & Lane, K. J. (2010). Does violence involving women and intimate partners

have a special etiology? *Criminology, 48*, 321-338. doi: 10.1111/j.1745-9125.2010.00186.x

Fiske, S. T., & Taylor, S. E. (2013). Dual modes in social cognition. In S. T. Fiske & S. E.

Taylor (Eds.), *Social cognition: From brains to culture* (pp. 31-58). London: Sage.

Fonagy, P., Redfern, S., & Charman, T. (1997). The relationship between belief‐desire

reasoning and a projective measure of attachment security (SAT). *British Journal of*

*Developmental Psychology, 15*, 51-61. doi: 10.1111/j.2044-835X.1997.tb00724.x

Gamer, J., Schmukle, S. C., Luka-Krausgrill, U., & Egloff, B. (2008). Examining the dynamics

of the implicit and the explicit self-concept in social anxiety: Changes in the implicit association test–anxiety and the social phobia anxiety inventory following treatment. *Journal of Personality Assessment*, *90*, 476 -480. doi: 10.1080/00223890802248786

Gawronski, B., & Bodenhausen, G. V. (2006). Associative and propositional processes in

evaluation: An integrative review of implicit and explicit attitude change. *Psychological*

*Bulletin*, *132*, 692- 731. doi: 10.1037/0033-2909.132.5.692

Gawronski, B., & Bodenhausen, G. V. (2011). The associative-propositional evaluation model:

Theory, evidence, and open questions. *Advances in Experimental Social Psychology, 44*, 59-127. doi: 10.1016/B978-0-12-385522-0.00002-0

Gawronski, B., & LeBel, E. P. (2008). Understanding patterns of attitude change: When implicit measures show change, but explicit measures do not. *Journal of Experimental*

*Social Psychology*, *44*, 1355-1361. doi: 10.1016/j.jesp.2008.04.005

Gopnik, A., & Meltzoff, A. N. (1997). *Words, thoughts, and theories*. Cambridge: MIT Press.

34

|  |  |
| --- | --- |
| IMPLICIT AND EXPLICIT COGNITION IN IPV PERPETRATORS | 35 |

Graham, J. M., Liu, Y. J., & Jeziorski, J. L. (2006). The Dyadic Adjustment Scale: A reliability generalizability meta-analysis. *Journal of Marriage and Family, 68*, 701-717.

doi: 10.1111/j.1741-3737.2006.00284.x

Graham-Kevan, N., & Archer, J. (2005). Investigating three explanations of women's

relationship aggression. *Psychology of Women Quarterly*, *29*, 270-277. doi:

10.1111/j.1471-6402.2005.00221.x

Graham-Kevan, N., & Archer, J. (2009). Control tactics and partner violence in heterosexual

relationships. *Evolution & Human Behavior, 30*, 445-452. doi:

10.1016/j.evolhumbehav.2009.06.007

Grumm, M., Erbe, K., vonCollani, G., & Nestler, S. (2008). Automatic processing of pain: The change of implicit pain associations after psychotherapy. *Behaviour Research and*

*Therapy, 46*, 701-714. doi: 10.1016/j.brat.2008.02.009

Grumm, M., Hein, S., & Fingerle, M. (2011). Predicting aggressive behavior in children with

the help of measures of implicit and explicit aggression. *International Journal of* *Behavioral Development, 35*, 352-357. doi: 10.1177/0165025411405955

Hamby, S. L. (1996). The Dominance Scale: Preliminary psychometric properties. *Violence*

*and Victims, 11*, 199-212. Retrieved fromhttp://www.springerpub.com/violence-and-

victims.html

Hanson, R. K., Cadsky, O., Harris, A., & Lalonde, C. (1997). Correlates of battering among 997 men: Family history, adjustment, and attitudinal differences. *Violence and Victims,*

*12*, 191-209. Retrieved fromhttp://www.springerpub.com/violence-and-victims.htmlHenning, K., Jones, A. R., & Holdford, R. (2005). “I didn’t do it, but if I did I had a good

reason”: Minimization, denial, and attributions of blame among male and female domestic

violence offenders. *Journal of Family Violence, 20*, 131-139. doi: 10.1007/s10896-005-

3647-8

35

IMPLICIT AND EXPLICIT COGNITION IN IPV PERPETRATORS 36

Hofmann, S. G., Asnaani, A., Vonk, I. J., Sawyer, A. T., & Fang, A. (2012). The efficacy of cognitive behavioral therapy: A review of meta-analyses. *Cognitive therapy and research,*

*36*, 427-440. doi: 10.1007/s10608-012-9476-1

Hofmann, W., Gawronski, B., Gschwendner, T., Le, H., & Schmitt, M. (2005). A meta-

analysis on the correlation between the Implicit Association Test and explicit self-report

measures. *Personality and Social Psychology Bulletin, 31,* 1369-1385. doi:

10.1177/0146167205275613

Holt, S., Buckley, H., & Whelan, S. (2008). The impact of exposure to domestic violence on

children and young people: A review of the literature. *Child Abuse & Neglect, 32*, 797-

810. doi: 10.1016/j.chiabu.2008.02.004

Holtzworth-Munroe, A., & Hutchinson, G. (1993). Attributing negative intent to wife

behavior: The attributions of maritally violent versus nonviolent men. *Journal of*

*Abnormal Psychology, 102*, 206-211. doi: 10.1037/0021-843X.102.2.206

Holtzworth-Munroe, A., Meehan, J. C., Herron, K., Rehman, U., & Stuart, G. L. (2000). Testing the Holtzworth-Munroe and Stuart (1994) batterer typology. *Journal of Consulting*

*and Clinical Psychology, 68*, 1000-1019. doi: 10.1037/0022-006X.68.6.1000

Jouriles, E. N., Grych, J. H., Rosenfield, D., McDonald, R., & Dodson, M. C. (2011).

Automatic cognitions and teen dating violence. *Psychology of Violence, 1*, 302-314. doi:

10.1037/a0025157

Kamphuis, J. H., de Ruiter, C., Janssen, B., & Spiering, M. (2005). Preliminary evidence for an automatic link between sex and power among men who molest children. *Journal of* *Interpersonal Violence, 20*, 1351-1365. doi: 10.1177/0886260505278719

Keown, K., Gannon, T. A., & Ward, T. (2008). What were they thinking? An exploration of child sexual offenders’ beliefs using a lexical decision task. *Psychology, Crime & Law, 14*,

317-337. doi: 10.1080/10683160701770112

36

|  |  |
| --- | --- |
| IMPLICIT AND EXPLICIT COGNITION IN IPV PERPETRATORS | 37 |

Laranjo, J., Bernier, A., Meins, E., & Carlson, S. (2010). Early manifestations of children’s Theory of Mind: The roles of maternal mind-mindedness and infant security of

attachment. *Infancy, 15*, 300-323. doi: 10.1111/j.1532-7078.2009.00014.x

Laranjo, J., Bernier, A., Meins, E., & Carlson, S. M. (2014). The roles of maternal mind-

mindedness and infant security of attachment in predicting preschoolers’ understanding of

visual perspective taking and false belief. *Journal of Experimental Child Psychology*, *125*,

48-62. doi: 10.1016/j.jecp.2014.02.005

Nosek, B. A., & Banaji, M. R. (2001). The go/no-go association task. *Social Cognition, 19*,

161-176. doi: 10.1521/soco.19.6.625.20886

Nosek, B. A., Greenwald, A. G., & Banaji, M. R. (2007). The Implicit Association Test at age 7: A methodological and conceptual review (pp. 265-292). In J. A. Bargh (Ed.),

*Automatic processes in social thinking and behavior*. Hove, UK: Psychology Press.Olson, M. A., & Fazio, R. H. (2004). Reducing the influence of extrapersonal associations on

the Implicit Association Test: Personalizing the IAT. *Journal of Personality and Social*

*Psychology, 86*, 653–667. doi: 10.1037/0022-3514.86.5.653

Paulhus, D. L. (1984). Two-component models of socially desirable responding. *Journal of*

*Personality and Social Psychology, 46*, 598-609. doi: 10.1037/0022-3514.46.3.598

Polaschek, D. L. L., Bell, R. K., Calvert, S. W., & Takarangi, M. K. T. (2010). Cognitive-

behavioural rehabilitation of high-risk violent offenders: Investigating treatment change with explicit and implicit measures of cognition. *Applied Cognitive Psychology, 24*, 437-449. doi: 10.1002/acp.1688

Polaschek, D. L. L., Calvert, S., & Gannon, T. A. (2009). Linking violent thinking: Implicit

theory based research with violent offenders. *Journal of Interpersonal Violence, 24*, 75-96. doi: 10.1177/0886260508315781

37

IMPLICIT AND EXPLICIT COGNITION IN IPV PERPETRATORS 38

Pornari, C. D., Dixon, L., & Humphreys, G. W. (2013). Systematically identifying implicit theories in male and female intimate partner violence perpetrators. *Aggression and Violent*

*Behavior*, *18*, 496-505. doi: 10.1016/j.avb.2013.07.005

Premack, D., & Woodruff, G. (1978). Does the chimpanzee have a theory of mind?

*Behavioral and Brain Sciences, 1*, 515-526. doi:10.1017/S0140525X00076512

Próspero, M. (2008). Effects of masculinity, sex, and control on different types of intimate

partner violence perpetration. *Journal of Family Violence, 2*3, 639-645. doi:

10.1007/s10896-008-9186-3

Reinecke, A., Rinck, M., Becker, E. S., & Hoyer, J. (2013). Cognitive-behavior therapy

resolves implicit fear associations in generalized anxiety disorder. *Behaviour Research* *and Therapy*, *51*, 15-23. doi: 10.1016/j.brat.2012.10.004

Reitzel-Jaffe, D., & Wolfe, D. A. (2001). Predictors of relationship abuse among young men.

*Journal of Interpersonal Violence, 16*, 99-115. doi: 10.1177/088626001016002001

Rice, M. E., & Harris, G. T. (2005). Comparing effect sizes in follow-up studies: ROC Area,

Cohen's *d*, and *r*. *Law and Human Behavior*, *29*, 615-620.doi: 10.1007/s10979-005-6832-7

Richetin, J., Richardson, D. S., & Mason, G. D. (2010). Predictive validity of IAT

aggressiveness in the context of provocation. *Social Psychology*, *41*, 27-34. doi:

10.1027/1864-9335/a000005

Ritter, V., Leichsenring, F., Strauss, B. M., & Stangier, U. (2013). Changes in implicit and explicit self-esteem following cognitive and psychodynamic therapy in social anxiety

disorder. *Psychotherapy Research*, *23*, 547-558. doi: 10.1080/10503307.2013.802824 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

38

|  |  |
| --- | --- |
| IMPLICIT AND EXPLICIT COGNITION IN IPV PERPETRATORS | 39 |

Rothschild, R., Dimson, C., Storaasli, R., & Clapp, L. (1997). Personality profiles of veterans entering treatment for domestic violence. *Journal of Family Violence, 12*, 259-

274. doi: 10.1023/A:1022896704136

Saunders, D. G. (1992). A typology of men who batter: Three types derived from cluster

analysis. *American Journal of Orthopsychiatry, 62*, 264-275. doi: 10.1037/h0079333

Saunders, D. G., Lynch, A. B., Grayson, M., & Linz, D. (1987). The Inventory of Beliefs

About Wife Beating: The construction and initial validation of a measure of beliefs and

attitudes. *Violence and Victims*, *2*, 39-57. Retrieved from

http://www.springerpub.com/violence-and-victims.html

Sharpley, C. F., & Cross, D. G. (1982). A psychometric evaluation of the Spanier Dyadic Adjustment Scale. *Journal of Marriage and the Family, 44*, 739-747. doi: 10.2307/351594

Simmons, C. A., Lehmann, P., Cobb, N., & Fowler, C. R. (2005). Personality profiles of women and men arrested for domestic violence: An analysis of similarities and

differences. *Journal of Offender Rehabilitation*, *41*, 63-81. doi: 10.1300/J076v41n04\_03

Smith, P., & Waterman, M. (2004). Processing bias for sexual material: The Emotional

Stroop and sexual offenders. *Sexual Abuse: A Journal of Research and Treatment, 16*,

163-171. doi: 10.1177/107906320401600206

Smith, R. L., & Bradley, D. W. (1980). In defense of the Attitudes toward Women Scale: An

affirmation of validity and reliability. *Psychological Reports, 47*, 511-522. doi:

10.2466/pr0.1980.47.2.511

Snowden, R. J., Craig, R. L. & Gray, N. S. (2011). Indirect behavioural measures of cognition among sexual offenders. *Journal of Sex Research, 48*, 192-217. doi:

10.1080/00224499.2011.557750

39

IMPLICIT AND EXPLICIT COGNITION IN IPV PERPETRATORS 40

Snowden, R. J., Gray, N. S., Smith, J., Morris, M., & MacCulloch, M. J. (2004). Implicit

affective associations to violence in psychopathic murderers. *The Journal of Forensic*

*Psychiatry & Psychology, 15*, 620-641. doi: 10.1080/14789940412331313377

ẞoflău, R., & Matu, S. (2016). Explicit and implicit attitudes toward heights: relationship

with acrophobic symptoms and sensitivity to cognitive-behavioral treatment. A

preliminary report. *Romanian Journal of Applied Psychology*, *18*, 1-7. Retrieved from

http://www.rjap.psihologietm.ro/

Spanier, G. B. (1976). Measuring dyadic adjustment: New scales for assessing the quality of

marriage and similar dyads. *Journal of Marriage and the Family, 38*, 15-28. doi:

10.2307/350547

Spence, J. T., Helmreich, R., & Stapp, J. (1973). A short version of the Attitudes toward

Women Scale (AWS). *Bulletin of the Psychonomic Society, 2*, 219-220. doi:

10.3758/BF03329252

Stets, J. E., & Burke, P. J. (2005). Identity verification, control, and aggression in marriage*.*

*Social Psychology Quarterly,* 68*,* 160*-*178. doi: 10.1177/019027250506800204

Stith, S. M., & Farley, S. C. (1993). A predictive model of male spousal violence. *Journal of*

*Family Violence, 8*, 183-201. doi: 10.1007/BF00981767

Stith, S. M., Green, N. M., Smith, D. B., & Ward, D. B. (2008). Marital satisfaction and

marital discord as risk markers for intimate partner violence: A meta-analytic review.

*Journal of Family Violence, 23*, 149-160. doi: 10.1007/s10896-007-9137-4

Stith, S. M., Rosen, K. H., Middleton, K. A., Busch, A. L., Lundeberg, K., & Carlton, R. P. (2000). The intergenerational transmission of spouse abuse: A meta-analysis. *Journal of*

*Marriage and the Family, 62*, 640-654. doi: 10.1111/j.1741-3737.2000.00640.x

40

|  |  |
| --- | --- |
| IMPLICIT AND EXPLICIT COGNITION IN IPV PERPETRATORS | 41 |

Straus, M. A. (2004). Cross-cultural reliability and validity of the Revised Conflict Tactics Scales: A study of university student dating couples in 17 nations. *Cross-Cultural*

*Research, 37*, 407-432. doi: 10.1177/1069397104269543

Straus, M. A., Hamby, S., Boney-McCoy, S., & Sugarman, C. (1996). The revised conflict

tactics scale (CTS2): Development and preliminary psychometric data. *Journal of Family*

*Issues, 17*, 283-316. doi: 10.1177/019251396017003001

Symons, D. K., & Clark, S. E. (2000). A Longitudinal study of mother‐child relationships

and Theory of Mind in the preschool period. *Social Development, 9*, 3-23. doi:

10.1111/1467-9507.00108

Tabachnick, B. G., & Fidell, L. S. (2001). *Using multivariate statistics (4th ed.).* New York:

Harper Collins.

Teachman, B. A., & Woody, S. (2003). Automatic processing in spider phobia: Implicit fear associations over the course of treatment. *Journal of Abnormal Psychology, 112,* 100-109.

doi: 10.1037/0021-843X.112.1.100

The British Psychological Society. (2010). *Code of human research ethics*. Retrieved from

http://www.bps.org.uk/sites/default/files/documents/code of human research\_ethics.pdf

Vega, E. M., & O’Leary, K. D. (2007). Test–retest reliability of the revised Conflict Tactics

Scales (CTS2). *Journal of Family Violence, 22*, 703-708. doi: 10.1007/s10896-007-9118-7

Ward, T. (2000). Sexual offenders’ cognitive distortions as implicit theories. *Aggression and Violent Behavior, 5*, 491-507. doi: http://dx.doi.org/10.1016/S1359-1789(98)00036-6

Ward, T., & Keenan, T. (1999). Child molesters’ implicit theories. *Journal of Interpersonal Violence, 14*, 821-838. doi: 10.1177/088626099014008003

Wareham, J., Boots, D. P., & Chavez, J. M. (2009). A test of social learning and intergenerational transmission among batterers. *Journal of Criminal Justice, 37*, 163-173. doi: 10.1016/j.jcrimjus.2009.02.011

41

IMPLICIT AND EXPLICIT COGNITION IN IPV PERPETRATORS 42

Wilson, T. D., Lindsey, S., & Schooler, T. Y. (2000). A model of dual attitudes.

*Psychological Review, 107,* 101-126. doi: 10.1037/0033-295X.107.1.101

Yodanis, C. L., & Straus, M. A. (1996, March). *You can't live with them and you can't live* *without them: Gender hostility and its measurement.* Paper presented at the Annual

meeting of the Eastern Sociological Society, Boston, MA. Retrieved from

http://pubpages.unh.edu/~mas2/PR05%20Gender%20Hostility%20and%20Violence.pdf

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Table 1

*Descriptive Statistics of the Explicit Measures by Participant Group, One-way Analyses of Variance for the Effect of Group Status on Scores on the Explicit Measures, and Cronbach’s α Coefficients*

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | IPV group |  | Non-IPV group |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | η2 | Cohen’s |  |  |  |  |  |
| Explicit Measures | *M* | *SD* |  | *M* | *SD* | *F* | *p* | Scale range | α |  |
|  | *d* |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| BIDR | 75.00 | 23.61 | 78.90 | 9.61 | 0.46 | .012 | -0.22 | .499 | 20 | – 140 | .79 |  |
| DAS | 107.03 | 16.73 | 117.80 | 11.28 | 5.64 | .132 | -0.75 | .023 | 0 – 151 | .92 |  |
| Dominance | 68.52 | 12.66 | 54.83 | 10.07 | 14.11 | .276 | 1.20 | .001 | 32 | – 128 | .93 |  |
| CBS-R | 20.00 | 11.32 | 8.25 | 5.21 | 15.96a | .307 | 1.33 | < .001 | 0 | – 96 | .91 |  |
| PES | 28.58 | 9.62 | 21.46 | 6.63 | 7.23 | .163 | 0.86 | .011 | 9 | – 63 | .84 |  |
| AWS | 47.74 | 8.54 | 59.12 | 7.95 | 18.19 | .330 | -1.38 | < .001 | 25 | – 100 | .88 |  |
| HTW | 78.31 | 8.33 | 67.95 | 6.60 | 18.65 | .335 | 1.38 | < .001 | 31 | – 124 | .81 |  |
| IBWBa | 73.31 | 25.93 | 48.92 | 15.59 | 15.48 | .295 | 1.14 | < .001 | 31 | – 217 | .92 |  |
| Expagg- | 20.26 | 6.79 | 12.60 | 3.17 | 20.75 | .359 | 1.44 | < .001 | 8 | – 40 | .84 |  |
| instrumental |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |

*Note*. IPV group *n* = 19; Non-IPV group *n* = 20. BIDR = Balanced Inventory of Desirable Responding; DAS = Dyadic Adjustment Scale;CBS-R = Revised Controlling Behaviours Scale; PES = Psychological Entitlement Scale; AWS = Attitudes toward Women Scale; HTW = Hostility Toward Women scale; IBWB = Inventory of Beliefs about Wife Beating. A high score in the AWS indicates more egalitarian attitudes. In all the other scales high scores indicate more endorsement of the measured construct. For all *F* tests degrees of freedom = 1, 37.

* *df* = 1, 36; Non-IPV group *n* = 19.

1

Table 2

*Means and Standard Deviations of Performance on the Implicit Measures by Participant Group, One-way Analyses of Variance for the Effect of Group Status on Performance, and Cohen’s d Effect Sizes*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | IPV group |  | Non-IPV group |  |  |  |  |  |
|  |  |  |  |  |  |  | η2 | Cohen’s |  |  |
| Implicit measures | *M* | *SD* |  | *M* | *SD* | *F* | *p* |  |
|  | *d* |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| Violence GNAT | 22.68 | 48.37 | 93.28 | 48.44 | 22.55 | .379 | -1.46 | < .001 |  |
| CD-IAT | 0.70 | 0.45 | 0.41 | 0.39 | 4.88 | .117 | 0.69 | .033 |  |
| DS-IAT | 0.38 | 0.38 | 0.15 | 0.28 | 4.70 | .113 | 0.69 | .037 |  |
| Opposite sex is dangerous SJT | 12.10 | 43.91 | 51.09 | 47.21 | 15.09 | .290 | -0.85 | < .001 |  |
| General entitlement SJT | -24.48 | 62.47 | 23. 45 | 52.56 | 6.75 | .154 | -0.83 | .013 |  |
| Relationship entitlement SJT | 6.77 | 44.49 | 39. 74 | 43.17 | 14.53 | .282 | -0.75 | .001 |  |
| Normalisation of relationship | 10.80 | 37.65 | 50.21 | 20.22 | 16.82 | .313 | -1.30 | < .001 |  |
| violence SJT |  |
|  |  |  |  |  |  |  |  |  |  |

*Note*. Reaction times in milliseconds. GNAT = Go/No-go Association Task; CD-IAT = career-domestic ImplicitAssociation Test; DS-IAT = dominance-submission Implicit Association Test; SJT = Sentence Judgment Task.

2

Table 3

*Receiver Operating Characteristic Curve Analysis (ROC) of the Implicit Measures Individually and*

*Combined, and of the Explicit Measures Combined*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Implicit Measures | Correct | *AUC* | *p* | *SE* | 95% CI |
|  | Classifications (%) |  |  |  |  |
|  |  |  |  |  |  |
| CD-IAT | 59.0 | .66 | .087 | 0.09 | [0.486, 0.835] |
| DS-IAT | 64.1 | .68 | .049 | 0.09 | [0.510, 0.858] |
| Violence GNAT | 79.5 | .86 | < .001 | 0.06 | [0.741, 0.985] |
| Opposite sex is dangerous SJT | 71.8 | .77 | .005 | 0.08 | [0.607, 0.924] |
| Relationship entitlement SJT | 69.2 | .75 | .008 | 0.08 | [0.589, 0.906] |
| General entitlement SJT | 69.2 | .71 | .026 | 0.09 | [0.535, 0.880] |
| Normalisation of relationship | 74.4 | .80 | .001 | 0.07 | [0.655, 0.950] |
| violence SJT |  |  |  |  |  |
| All implicit measures | 87.2 | .95 | < .001 | 0.03 | [0.894, 1.000] |
| All explicit measures | 89.5 | .95 | < .001 | 0.04 | [0.874, 1.000] |

*Note*. CD-IAT = career-domestic Implicit Association Test; DS-IAT = dominance-submissionImplicit Association Test; GNAT = Go/No-go Association Task; SJT = Sentence Judgment Task.

3

Table 4

*Intercorrelations Between the Implicit and the Explicit Measures*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Violence CD-IAT DS-IAT | Opposite | General | Relationship | Normalisation |  |
|  | GNAT |  |  | sex is | entitlement | entitlement | of relationship |  |
|  |  |  |  | dangerous | SJT | SJT | violence SJT |  |
|  |  |  |  | SJT |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Dominance scale | -.289 | .062 | .262 | -.306††† | -.210 | -.108 | -.303 |  |
| Revised Controlling Behaviours | -.315 | . 207 | .358\* | -.162 | -.370\* | -.110 | -.138 |  |
| scale |  |  |  |  |  |  |  |  |
| Psychological Entitlement scale | -.258 | .016 | .018 | -.163 | .000 | .007 | -.291 |  |
| Attitudes toward Women scale | .424\*\* | .057 | -.180 | . 270 | .267 | .211 | .456\*\* |  |
| Hostility Toward Women scale | -.307† | .195 | .204 | -.336\* | -.336\* | -.169 | -.381\* |  |
| Inventory of Beliefs about Wife | -.467\*\* | .182 | .320\* | -.260 | -.175 | -.165 | -.530\*\*\* |  |
| Beating |  |
|  |  |  |  |  |  |  |  |
| Expagg-instrumental scale | -.314†† | .163 | .329\* | -.180 | -.236 | -.146 | -.295 |  |

*Note*. Correlations are 2-tailed. A higher AWS score indicates more egalitarian attitudes. In all other explicit measures, highscores indicate higher levels of what is measured. GNAT = Go/No-go Association Task; CD-IAT = career-domestic Implicit Association Test; DS-IAT = dominance-submission Implicit Association Test; SJT = Sentence Judgment Task. A higher IAT score indicates a stronger gender-roles stereotypical association. A higher *negative* GNAT score indicates a stronger association between violence and pleasantness. A higher *negative* score in a SJT indicates more endorsement of the attitude assessed. \* *p* < .05. \*\* *p* < .01. \*\*\* *p* = .001. † *p* = .057. †† *p* = .052. ††† *p* = .058.

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