

IMPLICIT THEORIES IN PERPETRATORS OF INTIMATE PARTNER VIOLENCE
AND ASSESSMENT OF PARTNER VIOLENCE OFFENCE SUPPORTIVE
COGNITION WITH IMPLICIT MEASURES OF SOCIAL COGNITION

By

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Abstract

This thesis proposes a number of Implicit Theories (ITs) for male and female perpetrators of intimate partner violence (IPV) and, guided by these ITs, develops implicit measures to assess IPV offence supportive cognition indirectly. Chapter 1 systematically reviews the empirical IPV literature and finds varying levels of empirical support for six ITs in men and women, namely, “Opposite sex is dangerous”, “Relationship entitlement”, “General entitlement”, “Normalisation of relationship violence”, “Normalisation of violence”, and “It’s not my fault”, and for one additional IT in men only, “I am the man”. Chapter 2 describes the development of seven implicit measures and their pilot testing. Chapter 3 explored the psychometric properties of these implicit measures and found them to be reasonably reliable and valid. Chapter 4 includes two studies which assessed a wide range of IPV offence supportive cognitions with both implicit and explicit measures in two UK samples: (a) partner violent and nonviolent university students, and (b) male batterers referred to treatment and community controls. In both studies the IPV groups demonstrated more explicit offence supportive cognition than the nonviolent groups but this was more prominent in the offender group. Only the offender group showed more offence supportive cognition than the control group at the implicit level. The implicit measures demonstrated very good validity, and the utility of these measures with this type of offenders was highlighted. Chapter 5 concludes this thesis and provides an overview and a general discussion of the main findings, limitations, practical implications, and future directions for research.

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LIST OF ABBREVIATIONS

AIV – Acceptance of Interpersonal Violence

AWS – Attitudes toward Women Scale

BIDR – Balanced Inventory of Desirable Responding

CBS-R – Revised Controlling Behaviours Scale

CD-IAT – career-domestic IAT

CTS2 – Revised Conflict Tactics Scale

DAS – Dyadic Adjustment Scale

DS-IAT – dominance-submission IAT

GNAT – Go/No-go Association Task

GNAT VP – GNAT violence-pleasantness condition

GNAT VU – GNAT violence-unpleasantness condition

IAT – Implicit Association Test

IBPB – Inventory of Beliefs about Partner Beating

IT – Implicit Theory

NBA – Normative Beliefs about Aggression scale

NPI – Narcissistic Personality Inventory

OGH – Opposite Gender Hostility scale

PES – Psychological Entitlement Scale

RT – reaction time

SJT – Sentence Judgment Task

INTRODUCTION

Intimate partner violence (IPV) is a serious social phenomenon with detrimental effects on both male and female victims (Coker, Davis, & Arias, 2002), on children who witness it (Holt, Buckley, & Whelan, 2008), and on society, with an estimated total cost to the UK society of around £16 billion per year (Walby, 2009). It is officially acknowledged that IPV can be initiated by, and directed to either gender, and the UK Government has recently made an important step towards this gender inclusive approach by funding organisations for the delivery of support services for male victims (Home Office, 2012).

A good, in depth, and evidence based understanding of the etiology of IPV is crucial in order to effectively tackle this type of violent behaviour at all levels, that is, at primary, secondary, and tertiary prevention level. Various theories have been proposed to date to explain *what causes* some people to commit violent acts against an intimate partner, and the text that follows provides a brief overview of the main theories proposed (see Jasiknski, 2001 for a more detailed discussion of all theoretical models proposed so far).

Theoretical Explanations for Intimate Partner Violence

The theories proposed for the explanation of IPV can be categorised under three broad categories: (a) micro-oriented, which explain IPV from an individual level perspective, focusing on the characteristics of the individual, (b) macro-oriented, which consider social, cultural, and contextual factors to the explanation of IPV, and (c) multidimensional, which acknowledge that IPV is better explained by a combination of individual, social, and relationship-level factors.

Micro-oriented theories.

Biological and physiological approaches. These approaches to the explanation of IPV

focus on various biological and neurological risk factors. IPV perpetration has been found to associate with attention deficit/hyperactivity disorder in childhood (e.g., Fang, Massetti, Ouyang, Grosse, & Mercy, 2010; Theriault & Holmberg, 2001) and with head injuries which can reduce impulse control, increase sensitivity to alcohol and stress within the family and, therefore, the risk for violent behaviour (e.g., Rosenbaum, 1991; Rosenbaum et al., 1994). Moreover, high testosterone levels have been found to associate with aggression and violent behaviour including IPV (Bergman & Brismar, 1994; Holtzworth-Munroe, Bates, Smutzler, & Sandin, 1997; Soler, Vinayak, & Quadagno, 2000), and low serotonin levels with violence resulting from impaired impulse control and emotional regulation (see Krakowski, 2003).

Psychopathology. This approach to the explanation of IPV suggests that IPV is committed by a minority of individuals who are mentally ill or suffer from some personality disorder (Bersani, Chen, Pendleton, & Denton, 1992; Pagelow, 1984). Research on this area has found that there are certain personality characteristics or disorders, especially borderline and antisocial, which are over represented in male batterers (e.g., Dutton & Starzomski, 1993; Else, Wonderlich, Beatty, Christie, & Staton, 1993; Hamberger & Hastings, 1991).

Social Learning Theory. According to this theory, people learn to behave aggressively and violently through observation, imitation, and modeling of other people's, especially significant others', aggressive and violent behaviour (Bandura, 1973, 1977). It suggests a causal link between exposure to and/or experience of violence in the family of origin and later IPV perpetration, known as "intergenerational transmission of violence". Children who grow up with violent role models learn that violence is an acceptable and appropriate way to solve problems and achieve goals, and are at greater risk for reproducing such behaviours later in adulthood, in their intimate or not relationships, especially when such behaviours have been positively reinforced, that is, when they have succeeded in their aim

with little or no negative consequences.

The attachment perspective. According to this perspective (Bartholomew & Horowitz, 1991; Dutton, Saunders, Starzomski, & Bartholomew, 1994; Hazan & Shaver, 1987), IPV can be explained considering adults' attachment styles, which have their origin in parent/caregiver-child attachment patterns during infancy (Ainsworth, Blehar, Waters, & Wall, 1978; Bowlby, 1969), and can influence cognitions, affect and behaviour in intimate relationships (see Dutton & White, 2012). Bartholomew and Horowitz's (1991) four-category model of adult attachment, which is based on Bowlby's work on infant attachment, is used to examine attachment in romantic relationships. Based on the dimensions of dependence and avoidance (of intimacy), and on positive and negative models of self and others, this model describes four classifications of adult attachment: a) secure (low dependence and avoidance, positive view of self and others): these individuals are comfortable with intimacy and have low interpersonal anxiety (fear of abandonment), b) preoccupied (high dependence-low avoidance, negative view of self and a positive of others): these people have comfort with intimacy, but also high interpersonal anxiety, c) dismissing (low dependence-high avoidance, positive view of self and negative of others): these individuals feel uncomfortable with intimacy and have low interpersonal anxiety, and d) fearful (high dependence and avoidance, negative view of self and others): these individuals feel uncomfortable with intimacy and have high interpersonal anxiety. Insecure attachment styles, especially preoccupied and fearful, have links with IPV perpetration in both men and women (Bookwala & Zdaniuk, 1998; Dumas, Pearson, Elgin, & McKinley, 2008; Dutton et al., 1994), as unmet attachment needs lead to increased anger, jealousy, control of the partner, and impulsive behaviour (see Dutton & White, 2012).

Attachment 'fit' (similarity) between partners has also been proposed as an

explanation to IPV (Doumas et al., 2008; Pistole, 1994). It has been suggested and empirically found that relationships in which partners have different attachment styles are more susceptible to IPV, as partners have difficulty in understanding each other's needs for intimacy and the ways these are communicated and expressed, as well as their partner's expectations of them. For example, Doumas et al. (2008) found that romantic dyads comprising of an avoidant male and an anxious/preoccupied female are at high risk for IPV perpetration and victimization. The attachment model is also used to explain the intergenerational transmission of violence through the persistence over adulthood of childhood insecure attachment styles, caused by experience of abuse in the family of origin or by the mother's own poor early parental relations (Bowlby 1988; DeLozier, 1982; Main & Hesse, 1990).

Macro-oriented theories.

Feminist perspective. This perspective holds that partner violence is a consequence of a patriarchal societal system, where men are dominant, powerful, have special privileges, and hold masculinity and patriarchal beliefs which justify and sanction their use of *control* and *power* over their female partner. Women maintain a subordinate and disadvantaged position. From this view, women are predominantly the victims and any use of violence by them is explained as self-defensive or retaliatory, triggered by the man's recurrent abusive behaviour (see Dobash & Dobash, 1980; Walker, 1984). Although the feminist perspective has most commonly influenced practice and policy to date, it has received extensive criticism for its unidimensional nature and lack of empirically driven research to support its assumptions (see Dixon, Archer, & Graham-Kevan, 2011). Additionally, there is an abundance of empirical evidence which shows that women are equally likely to use physical violence against their male partner, including instrumental violence and both minor and severe forms, that do result

in injury (e.g., Archer, 2000; Dutton, Nicholls, & Spidel, 2005; Simmons, Lehmann, & Cobb, 2008).

Family systems theory. As opposed to the feminist view of IPV, this perspective (Bowen, 1978; Straus, 1974) recognises that women can also be violent against their partner, and instead of seeking the explanation of IPV into a male dominated societal system, it focuses on problematic family structures. It views family as a dynamic system consisting of individual, yet interconnected and interdependent components (family members) which continually interact with each other. Each member's acts or behaviour, including violence, are affected by those of the other family members and, in turn, have an effect on the latter. This does not imply that the victim is responsible for the abuse, but that IPV perpetration cannot be understood in isolation from the wider family organisation (the system).

Multidimensional approach to IPV. All the above micro and macro-oriented theories have found empirical support and have contributed to the wider understanding of the causes of IPV, but each one of them explains this type of violent behaviour only partially. Therefore, none of these theories can stand on its own and explain, for example, *why not* all men who are violent in their relationships have suffered a head injury (e.g., Rosenbaum et al., 1994), have a mental disorder (e.g., Hamberger & Hastings, 1991), have witnessed or experienced abuse in the family of origin (e.g., Hamberger & Guse, 2002), or hold patriarchal attitudes (e.g., Stith, 1990). This clearly demonstrates that IPV is not a unidimensional problem and that multiple factors should be considered in order to understand and explain this type of behaviour, and this was early noted by scholars.

Dutton (1985; 1995) proposed a nested ecological theory of IPV which posits that IPV can be thoroughly understood only from a multifactorial perspective, considering factors at multiple levels, that is, at the individual, microsystem, mesosystem, exosystem, and

macrosystem level. At that time a similar model had been proposed by Carlson (1984). Likewise, McKenry, Julian, and Gavazzi (1995) proposed a biopsychosocial model of partner violence. Stith, Smith, Penn, Ward, and Tritt (2004) conducted a meta-analysis of risk factors associated with male perpetrated IPV guided by Dutton's (1995) nested ecological theory. They found that factors from all three levels (exosystem, microsystem, and ontogenic), but especially from the microsystem and ontogenic were associated with IPV, highlighting the need to study and understand IPV from a multidimensional perspective. The need for more integrative theories was further highlighted by O'Leary, Smith Slep, & O'Leary (2007) who found that partner aggression can be better explained by examining multiple factors, from various IPV theoretical frameworks, and their interactive effect.

The violence perspective (Felson, 2002; Felson & Lane, 2010; Moffitt, Krueger, Caspi, & Fagan, 2000) is another multidimensional, and at the same time gender-inclusive, approach to IPV. According to this perspective, IPV is another form of violence with similar etiology with other types of violence. Therefore, unlike what feminist scholars argue, it should not be treated as special, and its study should not be segregated from the study of general violence and aggression. The violence perspective suggests that IPV can be better explained and understood by theories of violence and crime and not by theories of sexism. It recognises multiple motives and risk factors for its perpetration, which empirical research has found to be similar to those for other violent and nonviolent crimes (e.g., negative attitudes toward women, dominance of the partner, prior records, substance use, early experiences of abuse), and to be, in the most part, common for men and women (see Argyrides, Bartholomew, & Carvalho, 2004; Felson, 2006; Felson & Lane, 2010; Hanson, Helmus, & Bourgon, 2007; Moffitt et al., 2000).

Although this thesis focuses on offence supportive attitudes and beliefs, a risk factor at

the ontogenic level, it is acknowledged here that the etiology of IPV is not unidimensional, and that it should be examined from multiple perspectives. However, this ontogenic risk factor is not completely isolated from the other etiological factor levels; people are not born with predetermined attitudes, beliefs, and schemas, but these are formed and dynamically change overtime as a result of life experiences (Fiske & Taylor, 1991). Therefore, the etiology of offence supportive cognition has itself a multidimensional basis.

Aims of the Thesis

The overall aim of this thesis is twofold. Firstly, to propose a model of Implicit Theories (ITs) for men and women who commit physical partner violence, in order to increase understanding about how seemingly unrelated, yet interconnected, individual IPV related cognitions can be mentally organised. Second, guided by these ITs, to develop a number of implicit measures in order to assess automatically activated cognition in relation to IPV perpetration and explore the utility of these measures with this type of offenders.

More specifically this thesis will:

- Propose seven ITs likely to be held by male and female IPV perpetrators, and systematically review the IPV literature to investigate whether these ITs are supported by empirical evidence.
- Develop and investigate the psychometric properties of seven implicit measures, with content guided by the proposed ITs, to be used as measures of automatic cognition in this type of offenders.
- Assess offence supportive cognition using both implicit and explicit (self-report) measures in two samples, that is, a student sample and a sample of IPV men referred to treatment, and explore the utility of these implicit measures with this type of

offenders.

- Investigate differences between IPV and nonviolent samples in implicitly and explicitly assessed cognitions.

Structure of the Thesis

Chapter 1 proposes seven Implicit Theories (ITs) likely to be held by perpetrators of physical IPV. Based on earlier research which has identified various ITs in sexual and violent offenders and has hypothesised the existence of a number of ITs in male batterers, six ITs are proposed for both male and female perpetrators: “Opposite sex is dangerous”, “Relationship entitlement”, “General entitlement”, “Normalisation of relationship violence”, “Normalisation of violence”, and “It’s not my fault”. One extra IT is suggested for male perpetrators: “I am the man”. A systematic review of the empirical IPV literature was conducted to identify the support available for each one of these seven ITs in men and women. This chapter also discusses implications for practice of an IT approach to treatment with this type of offenders.

Chapter 2 provides an overview of the theoretical background of implicit measurement, along with the main theoretical models and the mechanisms explaining the underlying functions of implicit measures. Then, it presents in detail the development of the seven implicit measures used in the studies of this thesis, designed to tap into the ITs proposed in Chapter 1: two Implicit Associations Tests (IAT), one Go/No-go Task (GNAT), and four Sentence Judgment Tasks (SJT). This chapter finishes with the pilot testing of these implicit measures.

Chapter 3 explores the psychometric properties of the seven implicit measures developed in Chapter 2 by examining their internal consistency, temporal stability, and convergence and discriminant validity. One hundred and twenty-two male and female

University students provided data for this study. The psychometric properties of the IAT and the GNAT implicit measures in general are also discussed.

Chapter 4 assesses offence supportive cognition in IPV perpetrators employing the seven implicit measures developed in Chapter 2, along with their conceptually corresponding explicit measures (i.e., self-report questionnaires). It consists of two studies: the first involves a male and female university sample, characterised by low levels of IPV, and the second involves a group of male batterers referred to IPV treatment with a history of more severe IPV and a comparison group of nonviolent community controls. Additionally, this chapter examines further the psychometric properties of the implicit measures of this thesis, and explores their convergence, criterion, and incremental validity.

Chapter 5 concludes the thesis and provides a summary and general discussion of the findings of this thesis and of the methodological limitations, discusses practical implications, and suggests directions for future research.

Ethical Considerations

The design of the research projects and all data collection and handling procedures adhered to the British Psychological Society code of ethics. Ethical approval was gained from The School of Psychology Ethics Committee at the University of Birmingham. Additional approval was gained from the organisation which allowed access to the offender sample of Study 2 in Chapter 4 (see Appendix C for formal approval letters).

STATEMENT OF AUTHORSHIP

Chapter 1 has been submitted for publication and indicates collaborative work¹. To clarify, I am the senior author and my supervisors, Louise Dixon and Glyn Humphreys, are also named as authors. Chapters 3 and 4 are manuscripts in preparation.

¹ Pornari, C. D., Dixon, L., & Humphreys, G. W. (submitted). Systematically identifying Implicit Theories in Male and Female Intimate Partner Violence Perpetrators. *Aggression and Violent Behavior*

CHAPTER 1

SYSTEMATICALLY IDENTIFYING IMPLICIT THEORIES IN MALE AND FEMALE INTIMATE PARTNER VIOLENCE PERPETRATORS

Abstract

This review systematically examines the empirical literature to determine the support available for seven proposed Implicit Theories (ITs) held by heterosexual male and female perpetrators of intimate partner violence. Based on previous literature that has hypothesised and identified ITs in IPV and other types of offenders, we suggest six potential ITs likely to be held by men and women: “Opposite sex is dangerous”, “Relationship entitlement”, “General entitlement”, “Normalisation of relationship violence”, “Normalisation of violence”, and “It’s not my fault”. We suggest one extra IT held by male perpetrators: “I am the man”. Electronic databases were searched from 1980 onwards, using predetermined relevant key words, to identify IPV research that has examined factors associated with each of the proposed seven ITs. Support was found for the existence of all seven ITs, but it differed in terms of strength, mainly due to the dearth of empirical research on specific areas or to the lack of good quality evidence, especially in female IPV. Interesting observations, implications for treatment, and future directions are discussed.

Introduction

Intimate partner violence (IPV) has proved a popular research endeavour for academics, practitioners and activists throughout the past four decades. During this time there has been much debate over the theoretical underpinnings that explain the nature and aetiology of this social problem (e.g., Dasgupta, 2002; Dixon, Archer, & Graham-Kevan, 2011; Dixon & Graham-Kevan, 2011; Dobash & Dobash, 1998, 2004; Dutton, 2006; Hamel, 2005; Straus, 2006). Considered together, sound empirical research with student, clinical and large representative community samples show there is a spectrum of IPV that can involve both men and/or women as perpetrators against opposite or same sex partners (Burke & Follingstad, 1999; Dixon et al., 2011; Dutton, Nichols, & Spidel, 2005; Straus, 2009). Furthermore, recent research has advanced the popular feminist explanation which suggests heterosexual IPV is a consequence of a patriarchal societal system (e.g., Pence & Paymar, 1993). Gender inclusive approaches to understanding IPV (see Dixon & Bowen, 2012 for a detailed discussion) have examined its aetiology in psycho-social terms. Such research has identified the important role of multiple factors at different levels of an ecological model for both sexes (e.g., Dutton, 2006; O'Leary, Smith Slep, & O'Leary, 2007; Stith, Smith, Penn, Ward, & Tritt, 2004), although male offenders have been the primary focus of this research to date. Multiple factors evident in the aetiology of IPV offenders have also been found to predominate in other types of violent offenders (Hanson, Helmus, & Bourgon, 2007), highlighting that IPV should be examined as another form of interpersonal violence and not one solely determined by societal norms and beliefs about patriarchy (Dixon et al., 2011; Dixon & Graham-Kevan, 2011).

Recently, research in other areas of violence, especially sexual aggression (e.g., Beech, Fisher, & Ward, 2005; Polaschek & Gannon, 2004), has developed theories about the organisation of offence supportive cognitions and their mental representation, within the

theoretical framework of Implicit Theories (ITs), a concept similar to a schema (Ward, 2000; Ward & Keenan, 1999). ITs are core beliefs comprising coherent, interlocking ideas and concepts that people hold about themselves, others, and the social world. They are the result of life experience and function like scientific theories as people use them to make sense of, explain, and predict the social world and interpersonal situations. Their exploration in the area of violence and aggression is important because ITs can bias the way people interpret the world and interpersonal phenomena, and give rise to individual cognitive distortions. A better understanding of the root of offenders' cognitive bias is necessary so that intervention can be more focused and effective.

Research has identified ITs in various offender populations. For example, Beech et al. (2005) and Polaschek and Gannon (2004) identified five ITs, common in sexual murderers and rapists: "Dangerous world" (a hostile and suspicious view of the world and others); "Male sex drive is uncontrollable"; "Entitlement" (the offender's desires and beliefs are paramount and those of the victim ignored or deemed less significant, therefore the offender feels entitled to sex); "Women as sex objects"; and "Women are unknowable" (view of women as rejecting, misleading, malevolent, inherently different from men). Similar ITs have been identified in child molesters (Marziano, Ward, Beech, & Pattison, 2006; Ward & Keenan, 1999) and violent offenders (Polaschek, Calvert, & Gannon, 2009). In violent offenders, "Normalisation of violence" (the consequences of violence are minimised and it is viewed as an acceptable and effective way to achieve goals) has been found to serve as a background assumption for three common ITs identified in this type of offenders.

Whilst the domain of sexual and generally violent offence research has evolved to develop and understand ITs held by perpetrators, and to promote positive effects on treatment with this populations (Drake, Ward, Nathan, & Lee, 2001; Polaschek et al., 2009), it is not

well advanced in the domain of IPV (Dempsey & Day, 2010; Gilchrist, 2009). However, Gilchrist (2009) has promoted the need to understand IPV perpetrators' cognitions to better inform intervention with this group, and suggests ITs likely to be held by male IPV perpetrators based on a narrative review of contemporary theories, treatment programmes of IPV, and attitudinal research. Although one small scale research study has found preliminary support for some of her ITs (Dempsey & Day, 2010) there remains a need to develop ITs in male *and* female offenders, using a systematic search of available evidence. Table 1 in Appendix A lists the ITs proposed by Gilchrist (2009) and Dempsey and Day (2010) and how these correspond to the ITs proposed in the present review. The ITs identified in Gilchrist's review revolve around the intimate relationship and many of them around norms of masculinity dictated by a patriarchal societal system. As much research suggests that partner violence shares common background, personality and cognitive characteristics with other violent and non violent types of crime (Argyrides, Bartholomew, & Carvalho, 2004; Date & Ronan, 2000; Felson & Lane, 2010; Hanson et al., 2007; Moffitt, Krueger, Caspi, & Fagan, 2000; Valliant, De Wit, & Bowes, 2004), it is reasonable to assume that men and women who are violent towards a partner may also hold more general distorted attitudes and beliefs, as found in other violent offenders. Therefore ITs of this nature should also be explored. Considering the above points, this review aims to provide a systematic exploration of the empirical literature to determine the level of empirical support available for seven ITs that we propose are held by heterosexual male and female IPV offenders.

Hypothesised ITs in IPV Perpetrators

We suggest there are a number of factors associated with male and female IPV perpetration that can be explained by the ITs identified in other types of violent offenders, as mentioned above. From a brief examination of the literature on IPV and other forms of

violence and aggression, we hypothesise six core ITs likely to be held by both male and female perpetrators of IPV and one by men only. Our initial thinking is justified briefly below. Table 1.1 defines each IT and Table 1.2 summarises the concepts/factors that best describe each one of the seven ITs. We then go onto provide a systematic search of available IPV evidence to determine if the empirical research available supports the existence of each IT proposed.

Male and female IPV perpetrators have been found to hold hostile and negative beliefs about the opposite gender and to attribute blame for their own violence and other negative events to their partner's personality or behaviour (e.g., Henning, Jones, & Holdford, 2005; Holtzworth-Munroe, Meehan, Herron, Rehman, & Stuart, 2000; Medeiros & Straus, 2007; Parrott & Zeichner, 2003). Hostility has been defined as "a negative attitude toward one or more people that is reflected in a decidedly unfavourable judgment of the target" (Berkowitz, 1993, p. 21). It is a cognitive general trait connoting "a devaluation of the worth and motives of others, an expectation that others are likely sources of wrongdoing, a relational view of being in opposition toward others, and a desire to inflict harm or see others harmed" (Smith, 1994, p. 26), and can motivate aggressive and revengeful behaviour (Eckhardt, Barbour, & Stuart, 1997; Spielberg, 1988). This could imply the presence of an IT similar to "Women are unknowable" found in rapists and sexual murderers (Beech et al., 2005; Polaschek & Gannon, 2004). Indeed, Gilchrist (2009) identified and coined an IT of "Women are dangerous" to reflect this premise. As the IPV literature shows this hostility to be present for both sexes, we hypothesise this IT to be present in partner abusive men and women, and label it with a gender inclusive term "*Opposite sex is dangerous*" (see Table 1.1).

Table 1.1

The Seven Implicit Theories Proposed in the Present Study

Implicit Theory	Description of the Implicit Theory
1. Opposite sex is dangerous	<p>People who hold this IT have negative emotions and beliefs about the opposite sex. For example, they may see the opposite gender as deceitful, manipulative, selfish, controlling, demanding, and immature, acting with negative intentions and selfish motivations. Consequently they tend to be suspicious and would not easily trust men or women. Aggressors would most likely attribute the cause of any conflicts or violence to their partner's flawed personality, wrong/undesired behaviour, or malevolent intentions, therefore not accepting personal responsibility of their violent acts.</p>
2. General Entitlement	<p>These people consider themselves to be superior to other people because of their personal characteristics and/or social role. They believe that they are entitled to special privileges, and that they have the right to behave as they wish and to discipline or punish others when they deem necessary. They view their own wants, needs, desires and beliefs, as of paramount importance. They would probably do anything to get what they want or what they think they deserve, and believe that the ends justify the means. They see violence as a means to gain or maintain social status and reputation, and as necessary for survival. They dislike criticism and questioning, demand other people's respect, and want to be in</p>

control of situations and others.

3. Relationship Entitlement People who hold this IT consider themselves superior to their partner and view their own needs, desires, and beliefs as more important, disregarding those held by their partner. Consequently, they expect their partner to behave according to their demands, they do not accept any criticism, questioning or denial, and perceive any reaction or opposition as disrespect. They view themselves as more competent, they want to be in control of the relationship and of their partner's life, and believe they have the right to punish their partner when he/she does not meet their demands or expectations.
4. Normalisation of relationship violence People who hold this IT believe that violence between partners is normal and an acceptable, and an effective way of solving problems and dealing with the undesired behaviour of the partner. They tend to minimise the severity of the incident and its consequences, and may think that it can actually be beneficial for its receiver. They may believe that the battered partner exaggerates about the extent of the violence, that she/he should not leave the relationship, and that the perpetrator has reasons to be excused. They may have grown up in a family where interparental violence was present, reinforcing the belief about the acceptability and utility of this behaviour.
5. Normalisation of violence Violence is viewed as acceptable, and as a justifiable and effective way of solving conflicts, achieving personal goals, controlling others and gaining respect. Men and women who hold this IT tend to minimise the importance and the

consequences of their violence and may also justify parent to child violence. They would acknowledge responsibility for the violence, but attribute the blame to the victim. Some of them may have a history of witnessing and/or experiencing violence inside their family during childhood and/or adolescence, as well as a history of associating with delinquent peers.

6. It's not my fault
Men and women who hold this IT deny personal responsibility and attribute their violence to poor self-control and external factors, such as substance abuse, anger, inability to control emotions or stress, problems at work etc. They also tend to displace responsibility by blaming the partner's behaviour or personality. Therefore, most often they would acknowledge their wrongdoing, but not responsibility. They would possibly describe a situation where they were not "themselves", and that their real self would have never been violent toward the partner.

7. I am the man
This IT refers to the stereotypical thinking regarding gender roles in society. Men who hold this IT believe that they are inherently superior to women in all aspects. They believe that there are certain traits and behaviours that are considered appropriate for men and women and expect their partner to behave accordingly and adhere to her role. Men are seen as strong, dominant, authoritative, active, aggressive, assertive, decisive and independent, while women as more dependent, passive, nurturing, emotional, and associated with domestic activities.

Table 1.2

Factors Needed to be Present in a Study to Provide Support for the Implicit Theories and Specific Search Key Words

Implicit Theory	Factors	Search key words
1. Opposite sex is dangerous	<p>a. Hostility toward the opposite gender, i.e., negative and hostile beliefs and emotions about their partner and/or the opposite gender in general</p> <p>b. Attribution of blame to the partner's character, personality, or behaviour; to his/her negative intentions and motivations</p>	<p>hostility; gender hostility; hostile/negative attitudes; attitudes toward the partner; attitudes towards women/men; hostile/negative intentions/motivation; attribution of blame; victim blame</p>
2. General Entitlement	<p>a. Beliefs of superiority and grandiosity, narcissistic personality disorder or traits</p> <p>b. Low empathy</p>	<p>entitlement; narcissism; narcissistic personality; superiority; grandiosity; empathy</p>
3. Relationship Entitlement	<p>a. Exertion of control, dominance, power over the intimate partner</p> <p>b. Reasons/motives for their violence in relation to control,</p>	<p>control; controlling behaviours; need for control; dominance; power; entitlement; reasons for violence/abuse/aggression;</p>

	coercion, punishment, retaliation etc.	attributions; motivations
	c. Perceived right to control and dominate the partner, need to control	
4. Normalisation of relationship violence	a. Attitudes approving/condoning IPV	positive/condoning attitudes; approval of violence/abuse/aggression; normative attitudes/beliefs; justifications; minimisation; excuses; interparental violence/abuse/aggression; violence/abuse/aggression between parents/ in family of origin; peers
	b. Denial, justification, minimisation of perpetrated IPV	
	c. Exposure to interparental violence during childhood	
	d. Association with IPV peers	
5. Normalisation of violence	a. Attitudes approving/condoning general physical violence	positive/condoning attitudes toward violence/aggression; approval of violence/aggression; normative attitudes; normalisation of violence/aggression; justifications; minimisation; excuses; violence/abuse/aggression in the family of origin; distal
	b. Denial, justification, minimisation of physical violence	
	c. Exposure to interparental violence during childhood	
	d. Experience of physical abuse in the family of origin	
	e. Association with delinquent/aggressive peers	

6. It's not my fault	<ul style="list-style-type: none"> a. Locus of control b. Displacement of responsibility: <ul style="list-style-type: none"> 1. Partner blame 2. Attribution of blame to other factors (e.g. anger, intoxication, stress, poor self and emotional regulation, upbringing) 	<p>correlates; delinquent/ aggressive peers</p> <p>locus of control; self-control/regulation;</p> <p>reasons for violence/abuse/aggression;</p> <p>attributions; motivations; alcohol; drugs;</p> <p>stress; anger</p>
7. I am the man	<p>Stereotypical beliefs and attitudes regarding gender roles in relationships and in society</p>	<p>traditional; stereotypical; gender/sex roles;</p> <p>beliefs/attitudes; ideology; gender stereotype</p>

Findings from studies on the personality characteristics of IPV offenders show the presence of narcissistic personality traits or narcissistic personality disorder in men and women (e.g., Beasley & Stoltenberg, 1992; Henning, Jones, & Holdford, 2003; Simmons, Lehmann, Cobb, & Fowler, 2005). Narcissism is characterised by a “pervasive pattern of grandiosity (in fantasy or behaviour), need for admiration, and lack of empathy”. Narcissists believe that they are special and unique, they expect others to admire them and recognise them as superior, they have a strong sense of *entitlement* (expectations of favourable treatment, or compliance with their expectations), they can be exploitative in order to achieve their own needs, while at the same time they *may lack empathy* and not recognise or identify with other people’s feelings and needs (American Psychiatric Association [DSM-IV], 2000). The concept of entitlement has long been recognised as a factor essential to the understanding of criminal (e.g., Walters & White, 1990) and violent behaviour (Reidy, Zeichner, Foster, & Martinez, 2008). We, therefore, suggest that an IT of “*General entitlement*” could also be present in IPV perpetrators in both sexes (see Table 1.1). This is very different to the IT of “Entitlement” proposed by Gilchrist (2009) which is explained in terms of male privileges dictated by a patriarchal society. The term “General entitlement” is in keeping with that found in other sexual and violent offenders (Beech et al., 2005; Marziano et al., 2006; Polaschek et al., 2009; Polaschek & Gannon, 2004) and differentiates from entitlement specific to the context of intimate relationships described next.

Research shows it is likely that IPV men and women hold an IT centred on relationship-specific entitlement. Empirical evidence indicates a relationship between IPV and control and dominance over the partner, and a perceived right to discipline and punish the partner in both male and female IPV perpetrators (e.g., Follingstad, Bradley, Helff, & Laughlin, 1999; Graham-Kevan & Archer, 2003; Hamberger, Lohr, & Bonge, 1994;

Hamberger, Lohr, Bonge, & Tolin, 1997; Kernsmith, 2005). Thus we propose an IT entitled “*Relationship entitlement*” (see Table 1.1). This IT taps into Gilchrist’s (2009) “Women are objects”, “Real man”, “Need for control” (within the domestic domain), and “Entitlement” (because they are ‘men’). Unlike Gilchrist (2009), we treat “Relationship entitlement” as a gender neutral concept, seeing it as more of a personality characteristic, since the IPV literature indicates that desire and need to exert control and power over the intimate partner and to punish undesired behaviour is found in both male and female perpetrators (e.g., Hamberger et al., 1997).

Findings from the IPV literature show that male and female aggressors hold attitudes condoning partner violence and tend to minimise its severity and/or consequences (e.g., Cauffman, Feldman, Jensen, & Arnett, 2000; Henning et al., 2005; Stith et al., 2004). Additionally, many male and female IPV perpetrators have a history of witnessing interparental violence (e.g., Dowd, Leisring, & Rosenbaum 2005; Henning et al., 2003; Kernsmith, 2005). According to the social learning and social cognitive theory (Bandura, 1973, 1977, 1986), and the intergenerational transmission of violence theory (Stith et al., 2000) such experiences can inform one’s beliefs about the acceptability of violence between partners (Reitzel-Jaffe & Wolfe, 2001; Riggs & O’Leary, 1996; Stith et al., 2000; Straus, 1990; Straus & Yodanis, 1996). Here, the focus is on how exposure to family violence can shape attitudes about violence, it is, however, acknowledged that experience of family violence, both in terms of witnessing and experiencing abuse, does not only lead to internalising aggressive norms and externalising behaviour, but also to a wide range of other internalising psychological and behavioural outcomes, like anxiety, depression, low self-esteem, social withdrawal, post-traumatic stress, and dissociation (Holt, Buckley, & Whelan, 2008; Kitzmann, Gaylord, Holt, & Kenny, 2003; Moylan et al., 2006; Wolfe, Scott, Wekerle,

& Pittman, 2001). These findings suggest the presence of an IT that normalises violence in the relationship. We, therefore, propose the existence of the IT “*Normalisation of relationship violence*” (see Table 1.1), which corresponds to the ITs “Violence is normal” and “Nature of harm” (minimisation and denial of the violence and its consequence) proposed for male offenders by Gilchrist (2009).

Research with violent offenders has found a link between attitudes supportive of physical aggression and its perpetration in men (Archer & Haigh, 1997a; Polaschek, Collie, & Walkey, 2004; Turner & Ireland, 2010) and women (Archer & Haigh, 1997a). Considering that IPV shares many common risk factors with other types of violent crimes (Felson & Lane, 2010; Moffitt et al., 2000), it is likely that for some IPV perpetrators their violence stems from a broader belief that violence in general is acceptable. A history of experiencing or witnessing abuse in the family of origin, and of associating with delinquent or aggressive peers has been found in many male and female IPV perpetrators (e.g., Hamberger & Guse, 2002; Magdol, Moffitt, Caspi, & Silva, 1998; Schnurr & Lohman, 2008; Silverman, & Williamson, 1997; Stith et al., 2000). As previously discussed, for some individuals, such early experiences can shape attitudes regarding the acceptability of violence (Bandura, 1973; Stith et al., 2000). It is therefore proposed that the IT “*Normalization of Violence*” (Polaschek et al., 2009) is likely to be held by partner aggressors as well (see Table 1.1). Preliminary support for the existence of this IT in IPV men was found by Dempsey and Day (2010). A “Violence is normal” IT was also suggested by Gilchrist (2009) but it was explained predominantly in terms of attitudes condoning physical aggression between partners. The “Normalization of Violence” IT proposed here refers to beliefs about physical aggression in general, not restricted to intimate relationships.

Male and female IPV perpetrators tend to externalise blame and often attribute the

cause of their violence to poor self or emotional control, or to other factors beyond their control such as stress, anger, or their partner's characteristics (e.g., Follingstad, Wright, Lloyd, & Sebastian, 1991; Hamberger et al., 1997; Henning et al., 2005; Stuart, Moore, Hellmuth, Ramsey, & Kahler, 2006). This externalisation maps onto the "Uncontrollability" IT found in sexual and violent offenders (Beech et al., 2005; Marziano et al., 2006; Polaschek et al., 2009; Polaschek & Gannon, 2004). Gilchrist (2009) proposed an "Uncontrollability" IT for male IPV perpetrators to capture their tendency to blame outside stressors, alcohol or other unknown forces for their IPV. We propose a broader IT, that we coin "*It's not my fault*", in order to capture the perpetrators' tendency to externalise accountability in general, that is they not only blame perceived uncontrollable factors, but also the victim (see Table 1.1).

Finally, based on research on the association between traditional gender role beliefs and stereotypes mainly guided by feminist scholars (see Stith et al., 2004; Sugarman & Frankel, 1996) it is possible that an IT around issues of patriarchy and appropriate male and female roles and behaviour will be present in some, male only, perpetrators, and we suggest one IT which we have coined "*I am the man*" (see Table 1.1). This IT taps, to some extent, into Gilchrist's (2009) "Women are objects", "Real man", "Need for control", and "Entitlement", as all revolve around the concept of masculinity, and beliefs about how men and women should, and are expected to behave.

Objectives of the Review

This review aims to systematically investigate the empirical literature on physical heterosexual IPV, to examine if available evidence supports the existence of the above proposed ITs in male and female perpetrators. Although it is recognised that IPV comprises more than one form of aggression, physical violence is investigated as research has

consistently examined this form, making it possible to identify and consider aggregate evidence.

Method

Search Strategy

The concepts/factors that best describe each one of the seven ITs (see Table 1.2) guided the subsequent literature search. Due to limited methodological rigour in the area of IPV research, studies of varying empirical quality were included, although the level of empirical rigour is differentiated to enable the reader to discern the quality of supporting findings for each proposed IT. Due to the limited empirical studies available for some ITs, qualitative studies were also included. An electronic literature search was performed between April 2010 and February 2011 on the following data bases: Applied Social Sciences Index and Abstracts (ASSIA), Educational Resources Information Centre (ERIC), Journals@Ovid, Medline, PsycArticles, PsycINFO, and Web of Science. Evidence was reviewed from 1980 (or each data base's start date if this was after 1980) to end of February 2011. A separate search was performed for each IT using a combination of the following key words: (partner or spouse or marital or intimate or dating or courtship or interpersonal or relationship or domestic) and (violence or abuse or aggression or beating or battering). In addition, specific key words were also used for each IT's search (see Table 1.2).

Inclusion and Exclusion Criteria

Studies were included in the review if they were published in peer-reviewed journals. As the focus of this review is perpetration of physical IPV, only studies that examined the direct link between the factors listed in Table 1.2 and physical IPV, independently from other forms of IPV (psychological, verbal, sexual), were considered. Studies were included if they measured the presence and levels of violence using a structured measure (except for studies

which involved convicted IPV offenders or perpetrators referred to IPV treatment) based on self or self *and* partner report. Studies based solely on partner reports were excluded. Studies had to include adult samples (over 17 years old), and in the case of longitudinal studies where the sample was initially assessed during childhood or adolescence, IPV should have been assessed in adulthood. Studies of same-sex couples and from non-western countries were excluded, as well as studies which used the same sample and data from a previously published study. The initial on-line search yielded over 1000 articles. The abstract and method section of these articles were examined to identify those relevant to the purpose of this review. The selected articles were examined in more detail, applying the inclusion and exclusion criteria stated above. Table 1.3 shows how many papers were identified for each IT, and of those how many met the inclusion criteria stipulated above, in total and for men and women separately.

Table 1.3

Number of Studies Identified and Retained for Inclusion in the Review

Implicit Theory	Studies identified	Met the inclusion criteria	Retained for men	Retained for women
1. Opposite sex is dangerous	38	18	17	6
2. General entitlement	32	22	19	7
3. Relationship entitlement	55	24	14	17
4. Normalisation of relationship violence	144	82	75	37
5. Normalisation of violence	126	103	90	53
6. It's not my fault	47	41	33	19
7. I am the man	36	17	17	n/a

Note. The number of the studies for men and women does not add up to the total number of the studies retained for each IT because some of those studies examined both men and women. Some of these studies provided support for more than one factor in a given IT and/or for more than one ITs.

Results

Table 2 in Appendix A lists the studies which did or did not find support for each IT, and for each factor tapping into each IT as shown in Table 1.2. The columns next to each study provide information on whether the study found support, partial support, or no support by the data, on their methodological design, and on the size and source of the sample. Studies were categorised as: (a) case-control A (CCA) when the target IPV group comprised men and/or women whose IPV status was a priori established, that is, IPV offenders, incarcerated or from IPV treatment programs, (b) case-control B (CCB) when the target IPV group was identified a posteriori based on the presence of IPV assessed with an appropriate measure (predominantly community and student samples), (c) groups comparison (GC) when IPV groups with different levels/frequency of violence were compared, (d) multivariate (M) for cross-sectional studies which employed multivariate methods of statistical analysis providing results about the unique contribution of the variable of interest to the explanation of IPV, (e) correlational (C) for cross-sectional studies which provided simple correlational statistics between IPV and the variable of interest, (f) descriptive (D; prevalence of the variable of interest within IPV samples or across IPV and non-violent samples), and (g) qualitative (Q; data from interviews). The letter 'm' next to CCA, CCB, or GC indicates that the analysis involved covariates. A study was assigned to two or more categories if it provided more than one type of data, for example, a study which compared IPV and nonviolent groups, and also compared its IPV groups with different levels of violence was assigned to the CC (A or B) *and* the GC category.

The most methodologically sound studies (of those identified) were arguably the case-control studies, which, compared to cross-sectional designs, are more able to indicate causality (Institute for Clinical Systems Improvement [ICSI], 2003; Stephenson & Babiker,

2000). Evidence from CCA/CCA-m studies is considered of higher quality (stronger) than the CCB/CCB-m because it comes from offender/in treatment samples where violence is normally more serious and frequent, and allows for more valid conclusions regarding a possible link between IPV and the variable(s) of interest. The second best empirical evidence is considered that from CCB/CCB-m studies because it comes from samples with normally lower levels of IPV where the variable of interest in relation to IPV may not be that prominent. Next we consider the GC studies as the vast majority of them include offender samples. Empirical evidence from studies correlational in nature is considered to be of weaker quality. Descriptive and qualitative data provide the least quality evidence but they have informative value because they involve men and women arrested for IPV or referred to IPV intervention programs. The quality of the evidence is therefore ranked from A–D, respectively, for the purpose of this study. Data from studies involving samples with higher levels of IPV, that is, men and women convicted for IPV or referred to IPV treatment, are considered to provide stronger evidence compared to data from student or community samples where levels of violence are normally lower. Tables 3 and 4 in Appendix A provide a summary of the number of statistical analyses, across the studies retained for each IT, which found support, partial support, or no support for each IT, along with the quality of the evidence and the sample type this evidence comes from, separately for men and women.

The text below provides a summary of the findings depicted in Table 2 in Appendix A. Results are presented separately for men and women, and for each factor tapping into each IT, following the structure of Table 1.2 in this chapter and Table 2 in Appendix A.

Opposite Sex is Dangerous

Evidence for men.

Attitudes: Opposite gender hostility, adversarial sexual beliefs, negative attitudes/emotions toward the opposite gender. One GC study (Forbes, Adams-Curtis, Pakalka, & White, 2006) found that students with high IPV levels reported significantly more hostility toward women and hostile sexism attitudes than their low level IPV peers. Three M (Bookwala, Frieze, Smith, & Ryan, 1992; Hastings, 2000; Parrott & Zeichner, 2003) and two C studies (Carr & VanDeusen, 2002; Parrott & Zeichner, 2003) found support for this IT, while one M did not (Carr & VanDeusen, 2002). It should be noted that Carr & VanDeusen's (2002) student IPV sample was small ($n = 19$) and displayed very low levels of violence.

Partner blame/attribution of responsibility: character, personality, behaviour, negative intent and motivations. Support for this factor came from two CCA (Holtzworth-Munroe & Hutchinson, 1993; Tonizzo, Howells, Day, Reidpath, & Froyland, 2000), one CCB (Copenhaver, 2000), and one C (Scott & Straus, 2007) study/ies. Further support came from two descriptive (Henning et al., 2005; Henning & Holdford, 2006) and four qualitative studies (Anderson & Umberson, 2001; Catlett, Toews, & Walilko, 2010; Cavanagh, Dobash, Dobash, & Lewis, 2001; Levitt, Swanger, & Butler, 2008) with men arrested for IPV or in IPV treatment. No support was found in one CCA-m study after controlling for marital satisfaction (Tonizzo et al., 2000), one C (Byrne & Arias, 1997) and one D study (Cascardi & Vivian, 1995). The last two studies involved community samples.

Evidence for women.

Attitudes: Opposite gender hostility, adversarial sexual beliefs, negative attitudes/emotions toward the opposite gender. Only one, M, study was identified and did not provide support. Student's adversarial sexual beliefs emerged as a *negative* predictor of IPV (Bookwala et al., 1992). A closer, however, examination of the scale used (the Adversarial Sexual Beliefs Scale; Burt, 1980) showed that seven out of the scale's nine items express

negative and adversarial beliefs about women, and only two items about men. Therefore, this finding is better interpreted as a negative association between female IPV and hostility towards their own gender.

Partner blame/attribution of responsibility: character, personality, behaviour, negative intent and motivations. This factor was supported by one CCB study (Weston, Marshall, & Coker, 2007), which also found significant differences between severely and non-severely violent women (GC), by two C (Byrne & Arias, 1997; Scott & Straus, 2007), and one D (Henning et al., 2005) studies. In one D study with a community sample only a small percentage attributed their violence to their partner's behaviour and personality, but it was reported as a reason for severe IPV twice the times it was reported for mild (Cascardi & Vivian, 1995).

General Entitlement

Evidence for men.

Narcissistic personality traits/disorder; demandingness; sense of superiority and grandiosity. Regarding narcissism, one CCA (Murphy, Meyer, & O'Leary, 1993) and one CCB study (White, Gondolf, Robertson, Goodwin, & Caraveo, 2002) found significant differences between IPV and nonviolent men. One CCA (Beasley & Stoltenberg, 1992) and one CCB study (Eckhardt, Barbour, & Davison, 1998) found partial support. In Beasley and Stoltenberg's (1992) study community batterers had significantly higher narcissism from nonviolent men when measured with the MCMI-II but not when measured with the NPI (Raskin & Hall, 1979). NPI measures healthy narcissism while the MCMI-II taps more extreme, clinical levels of narcissism. It might be the case that more extreme levels of narcissism facilitate engagement in IPV. Eckhardt et al. (1998) found differences in demandingness levels between community IPV and nonviolent men when measured with an

Articulated Thoughts in Simulated Situations paradigm ([ATSS], Davison, Robins, & Johnson, 1983), but not when measured with a questionnaire. Two GC studies found levels of demandingness (Eckhardt et al., 1998) and narcissism (Tweed & Dutton, 1998) to associate with IPV severity levels. Partial support came from a C study in which students' IPV was correlated with covert narcissism but not with Exploitativeness/entitlement (Ryan, Weikel, & Sprechini, 2008). It should be mentioned here that the internal consistency of the latter scale was low ($\alpha = .65$), and that similarly to Beasley and Stoltenberg (1992), the NPI was employed in this study.

Good support came from descriptive data which indicate the presence of narcissistic personality traits and, at a lesser extent, of narcissistic personality disorder in male IPV perpetrators. The percentages reported for elevated narcissism scores ($74 < BR < 85$) varied between 25% and 44 % (Gondolf, 1999; Henning et al., 2003; Rothschild, Dimson, Storaasli, & Clapp, 1997; White et al., 2002) and for Narcissistic Personality Disorder ($BR > 84$) was around 7% (Simmons et al., 2005; White & Gondolf, 2000). Using the $BR > 74$ cut-off, Hart, Dutton, and Newlove (1993) reported much higher frequencies. Fifty-eight percent of the court-referred and 40% of the self-referred men had a $BR > 74$. Forty-two percent and 22.5% respectively, had a $BR > 80$. Rothschild et al. (1997) and Simmons et al. (2005) additionally reported high frequency of low level narcissistic traits (narcissistic personality style; $BR > 59$) in their male samples. The Narcissistic was the most elevated subscale in Henning et al.'s (2003) and Rothschild et al.'s (1997) studies. Additionally it was the only one personality subscale in Gondolf's (1999) study, and one of the four subscales in Hart et al.'s (1993) study, with most men reaching the level of a Personality Disorder. Johnson et al. (2006) explored the distribution of domestic violence men's subtypes in convicted offenders in England. The antisocial group (47%) had a mean narcissism score of 60, and the narcissistic

group (13%) a mean score of 71. The low pathology group was very close to the antisocial ($M = 58$) and the borderline subtype reported the lowest levels ($M = 35$). White and Gondolf (2000) reported similar findings. Finally, in a Q study, 41.6% of arrested batterers expressed a general sense of superiority and viewed complaints from their partner as an insult to this (Levitt et al., 2008).

Two CCA studies (Hamberger & Hastings, 1991; Else, Wonderlich, Beatty, Christie, & Staton, 1993) and one CCA-m (Murphy et al., 1993) did not find statistically significant group differences in narcissism.

Low empathy, empathic deficits. In one CCA study convicted batterers had significantly lower empathy scores than the general population mean (Winters, Clift, & Dutton, 2004). Another CCB study examined empathic accuracy for female strangers and the female partner and found partial support (Clements, Holtzworth-Munroe, Schweinle, & Ickes, 2007). Partial support was also found by Covell and Huss (2007) who examined a 4-modal construct of empathy in a sample of men in IPV treatment; only Personal Distress was correlated with IPV, and only Personal Distress and Fantasy emerged as significant predictors among all four dimensions of empathy. Russell and Hulson (1992) did not find a correlation between empathy and IPV.

Evidence for women.

Narcissistic personality traits/disorder; demandingness; sense of superiority and grandiosity. This factor was supported by one C and two D studies. Murphy and Blumenthal (2000) found a correlation between female IPV and dominance in interpersonal (non-intimate) relations. Henning et al. (2003) found elevated narcissism scores ($BR > 74$) in 33% of their offenders sample and the Narcissistic scale was the one that most participants had elevated scores at. In Simmons et al.'s (2005) study 71.4% of the abusive women in treatment met

clinical significance for narcissistic personality style ($BR > 59$) and for 7.6% a narcissistic personality disorder was present. Additionally, women scored high in Histrionism (74.3 % with $BR \geq 60$, and 24.3 % with $BR > 84$), which shares a common characteristic with Narcissism, that is, a pervasive attention-seeking behaviour. A CCA study (Goldenson, Geffner, Foster, & Clipson, 2007) partially supported this IT. Although IPV women did not differ from nonviolent in their Narcissism scores, significantly more violent than nonviolent women reached the clinical cut-off on the Narcissistic subscale (48% and 23%, respectively). No correlation was found between IPV and narcissism in a student sample (Ryan et al., 2008).

Low empathy, empathic deficits. One CCB study examined empathic accuracy for strangers' and partner's thoughts and feelings in relation to IPV, but failed to find significant group differences (Clements et al., 2007). Similarly, empathy was not correlated with IPV in Russell and Hulson's (1992) study. Both studies included community couples.

Relationship Entitlement

Evidence for men.

Exertion of control, dominance, and power over the intimate partner. One CCA study supported this IT (Dutton, Starzomski, & Ryan, 1996), and partial support came from one CCB-m (Stets & Pirog – Good, 1990), where successful control over the partner was associated only with minor but not severe IPV in students. Further support came from one GC (Eckhardt, Samper, & Murphy, 2008), one M (Stets & Burke, 2005), and one C (Graham-Kevan & Archer, 2009) study, and partial support from a C study (Stets & Pirog – Good, 1990) in which control was correlated only with minor IPV.

In one CCA study (Date & Ronan, 2000) IPV offenders did not differ from the non-IPV men in terms of dominance and decision making power, but, unlike the CCA study above which found significant group differences and included a community control group, in this

study the IPV group was much smaller and the two control non-IPV groups comprised other incarcerated men (violent and nonviolent). No significant associations were found in a M study with students (Sharpe & Taylor, 1999).

Reasons/motives for their violence: control, coercion, punishment, retaliation, to get through. One GC study with men in IPV treatment found that the most violent group was significantly more likely to use violence as a means to control the partner than the less violent groups (Babcock, Costa, Green, & Eckhardt, 2004). Two D studies found that commonly endorsed reasons revolved around control and entitlement over the partner (Carrado, George, Loxam, Jones, & Templar, 1996; Kernsmith, 2005). Another D study with students (Follingstad et al., 1991) provided partial support as control, to ‘get attention’, and punishment for wrong behaviour were not often cited as reasons for their violence, but retaliation was cited by around one quarter of the sample.

Perceived right/entitlement to control and dominate the partner, and need to control. Only one quantitative study was identified which found a significant bivariate correlation between IPV and need to control in an offender sample, but a non-significant after social desirability was taken into account (Mauricio & Gormley, 2001). In two qualitative studies with offenders, the belief that a man has the right to control/discipline his woman (Wood, 2004) and a sense of authority and entitlement to dominate in the relationships, along with a demand for respect and acknowledgement (Catlett et al., 2010) were very common.

Evidence for women.

Exertion of control, dominance, and power over the intimate partner. Three M studies (Graham-Kevan & Archer, 2005; Sharpe & Taylor, 1999; Stets & Burke, 2005) and two C studies (Graham-Kevan & Archer, 2005; 2009) found support for this IT. One CCB-m (Stets & Pirog – Good, 1990) found partial support; minor but not severe IPV was associated

with attempts to control the partner, but not with successful control. Correlational data from the same study also partially supported this IT; both successful control and attempts to control were associated with minor only IPV.

Reasons/motives for their violence: control, coercion, punishment, retaliation, to get through. In one CCB study (Weston et al., 2007) violent community women differed significantly from the nonviolent in their motives related to punishment/retaliation and control. Additionally, in two GC studies levels of endorsement of such reasons were associated with levels of IPV (Babcock, Miller, & Siard, 2003; Weston et al., 2007). Most of the support for this factor comes from D studies where many of the reasons/motives endorsed by women revolved around entitlement, for example, to make the partner do or stop doing something, not getting the respect they deserved, to get through to him, make him listen/agree, to get back to him, to punish him for something, to control him, to get his attention (Carrado et al., 1996; Fiebert & Gonzales, 1997; Follingstad et al., 1991; Hettrich & O' Leary, 2007; Kernsmith, 2005; Stuart et al., 2006; Swan & Snow, 2003). One D study (Seamans, Rubin, & Stabb, 2007) provided partial support; although 69% of the women used violence to get their partner's attention, control was reported only by 15%. Little support came from another D study, where control/dominance was not a common reason (15%) for female IPV offenders (Hamberger, 1997).

Perceived right/entitlement to control and dominate the partner, and need to control. Only one, qualitative, study was identified for this factor. Eighty percent of court-ordered to IPV treatment women viewed themselves as the dominant partner in their relationship (Conradi, Geffner, Hamberger, & Lawson, 2009).

Normalisation of Relationship Violence

Evidence for men.

Attitudes approving/condoning IPV. Support for this IT came from two CCB (Arias & Johnson, 1989; Hanson, Cadsky, Harris, & Lalonde, 1997), two CCB-m (Sellers, Cochran, & Branch, 2005; Tontodonato & Crew, 1992), one GC (Hanson et al., 1997), four M (Archer & Graham-Kevan, 2003; Silverman & Williamson, 1997; Stith, 1990; Stith & Farley, 1993), and eight C (Archer & Graham-Kevan, 2003; Carr & VanDeusen, 2002; Riggs & O'Leary, 1996; Russell & Hulson, 1992; Silverman & Williamson; Stith, 1990; Stith & Farley, 1993; Tontodonato & Crew, 1992) studies.

Two studies provided partial support. In the first one (CCB & GC; Holtzworth-Munroe et al., 2000) attitudes toward IPV were assessed with three different measures. The results pattern was different across the three measures, but in general, the most violent group(s) differed significantly from the nonviolent which did not differ from the low-level violent. Additionally, there was a trend for higher levels of IPV acceptance to associate with higher levels of IPV perpetration. In the other study (M & C; Foo & Margolin, 1995), IPV in students was associated with approval of slapping a partner when humiliated, but not in self-defense.

Three CCB-m (Nabors & Jasinski, 2009; Schwartz & DeKeseredy, 2000; Stets & Pirog – Good, 1990), one M (Carr & VanDeusen, 2002), and three C studies (Bowen & Gilchrist, 2006; O' Hearn & Margolin, 2000; Stets & Pirog – Good, 1990) did not support this IT. However, the results in four of these studies should be interpreted with caution. Three of the five items of the measure employed by Nabors and Jasinski (2009) actually assessed rape myth acceptance, which might explain why it was not associated with physical IPV perpetration. Stets and Pirog–Good (1990) asked students whether specific violent acts would be considered as an act of aggression against men and women separately. Unlike other studies that employed a similar methodology (Arias & Johnson, 1989; Riggs & O'Leary, 1996) but

placed the aggressive acts in some context (e.g., during an argument, flirting with someone else), in this study the lack of context for the evaluation of the violent acts might have resulted in arbitrary ratings by the students. Finally, Carr and VanDeusen's (2002) and O' Hearn and Margolin's (2000) IPV samples were small ($n = 19$ and $n = 18$, respectively) and low level violent.

Denial, justification, and minimisation of perpetrated IPV. Findings from two D and four Q studies with men convicted for IPV or court-referred for treatment revealed high levels of denial and minimisation of their violence and its consequences (Catlett et al., 2010; Cavanagh et al., 2001; Henning et al., 2005; Henning & Holdford, 2006; Mullaney, 2007; Wood, 2004).

Exposure to interparental violence. This factor received good support from three CCA (Caesar, 1988; Murphy et al., 1993; von der Pahlen, Öst, Lindfors, & Lindman, 1997), two CCB (Chermack & Walton, 1999; Roberts, Gilman, Fitzmaurice, Decker, & Koenen, 2010), one CCB-m (Kalmuss, 1984), six GC (Eckhardt et al., 2008; Hanson et al., 1997; Lawson, Brossart, & Shefferman, 2010; Murrell, Christoff, & Henning, 2007; Sugarman & Hotaling, 1989; Tontodonato & Crew, 1992), four M (Carr & VanDeusen, 2002; Choice, Lamke, & Pittmann, 1995; Foo & Margolin, 1995; Silverman & Williamson, 1997), and seven C studies (Corvo & Carpenter, 2000; Foo & Margolin, 1995; Godbout, Dutton, Lussier, & Sabourin, 2009; MacEwen & Barling, 1988; Silverman & Williamson, 1997; Stets & Pirog – Good, 1990; Tontodonato & Crew, 1992). Additional descriptive data from male offender samples revealed a frequency of exposure to interparental violence ranging from 25% to 51% (Hamberger & Guse, 2002; Henning et al., 2003; Johnson et al., 2006; Langhinrichsen-Rohling, Neidig, & Thorn, 1995).

Partial support came from three CCA (Else et al., 1993; Hastings & Hamberger, 1988; Russell, Lipov, Phillips, & White, 1989), three CCB (Breslin, Riggs, O' Leary, & Arias, 1990; Hanson et al., 1997; Sugarman & Hotaling, 1989), two CCB-m (Milletich, Kelley, Doane, & Pearson, 2010; White & Smith, 2009), two M (Corvo & Carpenter, 2000; Wang, Horne, Holdford, & Henning, 2008), and four C studies (Hendy et al., 2003; Malone, Tyree, & O'Leary, 1989; Riggs & O'Leary, 1996; Wang et al., 2008). Hanson et al. (1997) and Sugarman and Hotaling (1989) found only severely, but not moderately violent batterers to differ from the nonviolent men, and Hastings and Hamberger (1988) only alcoholic, but not non-alcoholic batterers, to differ from the nonviolent group. Independently from other variables, only father-to-mother violence was associated with IPV in FO batterers, and only mother-to-father in GV batterers (Wang et al., 2008). Corvo and Carpenter (2000), and Milletich et al. (2010) found a significant relationship only with father-to-mother violence, Breslin et al. (1990) only with mother-to-father, and interparental violence was a significant predictor of students' IPV perpetrated only during the 1st year of college, but not after that (White & Smith, 2009). In terms of simple correlations, in Malone et al.'s (1989) study interparental violence was correlated with IPV only premaritally but not after 6 and 18 months. Riggs and O' Leary (1996) and Wang et al. (2008) found a correlation only with father-to-mother violence, and Hendy et al. (2003) only with mother-to-father. Although Else et al. (1993) did not find statistically significant group differences, twice as many batterers (48%) as non-batterers (24%) had witnessed interparental violence, and similar findings were reported by Russell et al. (1989).

This factor was not supported by two CCB (Holtzworth-Munroe et al., 2000; Lundeberg, Stith, Penn, & Ward, 2004) four CCB-m (Gover, Kaukinen, & Fox, 2008; Nabors & Jasinski, 2009; Stets & Pirog – Good , 1990; Tontodonato & Crew, 1992), one GC

(Holtzworth-Munroe et al., 2000), 11 M (Alexander, Moore, & Alexander, 1991; Baker & Stith, 2008; Burke, Stets, & Pirog-Good, 1988; Follette & Alexander, 1992; Hendy et al., 2003; Langhinrichsen-Rohling et al., 1995; Merrill, Hervig, & Milner, 1996; Stith & Farley, 1993; Taft, Schumm, Marshall, Panuzio, & Holtzworth-Munroe, 2008; Wareham, Boots, & Chavez, 2009; Williamson & Silverman, 2001), and five C studies (Baker & Stith, 2008; Carr & VanDeusen, 2002; Stith & Farley, 1993; Taft et al., 2008; Williamson & Silverman, 2001).

Association with peers who provide informational support for IPV and/or perpetrate IPV. Two CCB-m (Schwartz & DeKeseredy, 2000; Sellers et al., 2005), one M (Williamson & Silverman, 2001) and two C studies (Silverman & Williamson, 1997; Williamson & Silverman, 2001) supported this IT. One M provides partial support; in a path analysis IPV was directly associated with having friends who provide guidance/advice that would influence one to assault a partner, but not with having friends who are themselves abusive in their relationships (Silverman & Williamson, 1997).

Evidence for women.

Attitudes approving/condoning IPV. Support for this IT in women came from one CCB (Arias & Johnson, 1989) and three C studies (Foo & Margolin, 1995; Riggs & O'Leary, 1996; Russel & Hulson, 1992). One M (Foo & Margolin, 1995) and one C (Archer & Graham-Kevan, 2003) study found partial support. Independently from other factors, IPV was associated with approval of slapping a partner when humiliated, but not in self-defense (Foo & Margolin, 1995), and although instrumental beliefs about partner violence did not correlate with IPV, they did correlate with infliction of injury to a partner (Archer & Graham-Kevan, 2003).

Three CCB-m (Nabors & Jasinski, 2009; Stets & Pirog-Good, 1990; Tontodonato & Crew, 1992), one M (Archer & Graham-Kevan, 2003), and two C studies (Stets & Pirog –

Good, 1990; Tontodonato & Crew, 1992) did not provide support. In Nabors and Jasinski's (2009) study, the lack of association can be explained by the scale used, as the items assessed only acceptance of male-to-female and not of female-to-male violence. As mentioned above, under the evidence for men, Stets & Pirog – Good (1990) did not place the aggressive acts which students were asked to evaluate in some context, something which may resulted in arbitrary ratings by the students.

Denial, justification, and minimisation of perpetrated IPV. Henning et al. (2005) reported high levels of denial and minimisation of the violent incident and its consequences in their sample of female offenders. In a sample of university students, 38% minimised their violence by endorsing the belief that it would not hurt their partner. For 13% of the women, female violence towards a partner was acceptable because 'women have the right to do it too', for 19% because men are not supposed to hit women so there is no fear of retaliation, and for 24% because men can protect themselves (Fiebert & Gonzales, 1997).

Exposure to interparental violence. One CCB (Breslin et al., 1990), one CCB-m (Kalmuss, 1984), one GC (Tontodonato & Crew, 1992), and six C studies (Baker & Stith, 2008; Godbout et al., 2009; Hendy et al., 2003; MacEwen & Barling, 1988; Malone et al., 1989; Tontodonato & Crew) found a significant association between IPV and previous exposure to violence between parents. Six studies that provided descriptive data showed a high frequency of exposure to interparental violence in female offenders ranging from 27.4% to 70% (Conradi et al., 2009; Hamberger & Guse, 2002; Henning et al., 2003; Seamans et al., 2007), in IPV women in anger management treatment (43.7%; Dowd et al., 2005), and in military women referred for IPV treatment (40%; Langhinrichsen-Rohling et al., 1995).

This factor was partially supported by one CCB study (Lewis, Travea, & Fremouw, 2002) which found only the bi-directional violent but not the perpetrator-only women, to

differ from the nonviolent group, and only with regard to father-to-mother violence.

Additional partial support came from one CCB-m (Milletich et al., 2010), one M (Hendy et al., 2003), and one C (Riggs & O'Leary, 1996) studies, which found female IPV to be associated only with mother-to-father violence exposure. Similarly, a GC study found that women with higher IPV levels differed from women with lower levels on mother-to-father only violence (Babcock et al., 2003).

No support for this factor was found by four CCB-m studies (Gover et al., 2008; Nabors & Jasinski, 2009; Stets & Pirog-Good, 1990; Tontodonato & Crew, 1992), seven M (Alexander et al., 1991; Baker & Stith, 2008; Burke et al., 1988; Follette & Alexander, 1992; Foo & Margolin, 1995; Langhinrichsen-Rohling et al., 1995; Merrill et al., 1996), and three C studies (Foo & Margolin, 1995; Murphy & Blumenthal, 2000; Stets & Pirog-Good, 1990).

Normalisation of Violence

Evidence for men.

Denial, justification, minimisation of physical violence. Only one, qualitative, study was identified, and provides support for this factor. In Dempsey and Day's (2010) sample of eight IPV men in treatment, all men tended to normalise and justify the use of violence viewing it as a result of their upbringing in violent homes or of socialising with violent peers.

Exposure to interparental violence. See subsection Exposure to interparental violence of "Normalisation of relationship violence" above.

Experience of physical abuse in the family of origin. Support for the association between physical abuse by parents and later IPV perpetration came from four CCA (Caesar, 1988; Dutton et al., 1996; Else et al., 1993; Murphy et al., 1993), one CCA-m (Barnett, Martinez, & Bluestein, 1995), three CCB (Barnett & Hamberger, 1992; Chermack & Walton, 1999; Hanson et al., 1997), four CCB-m (Gover et al., 2008; Kalmuss, 1984; Nabors &

Jasinski, 2009; Rapoza & Baker, 2008), two GC (Eckhardt et al., 2008; Murrell et al., 2007), four M (Burke et al., 1988; Corvo & Carpenter, 2000; O' Hearn & Margolin, 2000; Wareham et al., 2009), and three C studies (Corvo & Carpenter, 2000; O' Hearn & Margolin, 2000; Wang et al., 2008). Four D studies with IPV offenders provided frequencies of childhood victimisation. Hamberger and Guse (2002) reported a 22%, Langhinrichsen-Rohling et al. (1995) a 29%, Johnson et al. (2006) a 35%, and in Henning et al.'s (2003) study 88% had experienced mild physical abuse, and 30.4% severe abuse.

Partial support was found by one CCA study (Hastings & Hamberger, 1988), two CCB (Holtzworth-Munroe et al., 2000; Sugarman & Hotaling, 1989), one GC (Holtzworth-Munroe et al., 2000), four M (Alexander et al., 1991; Hendy et al., 2003; Langhinrichsen-Rohling et al., 1995; Wang et al., 2008), and three C studies (Hendy et al., 2003; MacEwen & Barling, 1988; Malone et al., 1989). Only alcoholic batterers, but not non-alcoholic, differed from the nonviolent group in Hastings and Hamberger's (1988) study. In Holtzworth-Munroe et al.'s (2000) study all four community IPV groups had experienced more paternal abuse than the nonviolent men, but only the most violent men differed significantly from the control groups. Violent men also reported more abuse by their mother but only the low level antisocial differed from the controls. Sugarman and Hotaling (1989) found that only their minor violent group, and not the severely violent, differed only from the verbally-only abusive, but not from the nonviolent (neither verbal nor physical violence). Wang et al. (2008) found an association between physical abuse in childhood and IPV only in the more severely abusive batterers. Langhinrichsen-Rohling et al. (1995) and Hendy et al. (2003) found IPV to associate with abuse from the mother but not from the father, while in another study only paternal abuse was uniquely associated with IPV (Alexander et al., 1991). In a community sample, physical abuse by parents was correlated with IPV only at 6 months after marriage,

but not premaritally or 18 months after marriage (MacEwen & Barling, 1988; Malone et al., 1989), and only abuse by mother was correlated with students' IPV in Hendy et al.'s (2003) study.

Seventeen studies did not support this factor: four CCB-m (Milletich et al., 2010; Stets & Pirog – Good, 1990; Tontodonato & Crew, 1992; White & Smith, 2009), two GC (Saunders, 1992; Sugarman & Hotaling, 1989), five M (Carr & VanDeusen, 2002; Follette & Alexander, 1992; Foo & Margolin, 1995; Merrill et al., 1996; Taft et al., 2008), and six C studies (Carr & VanDeusen, 2002; Foo & Margolin, 1995; Riggs & O'Leary, 1996; Stets & Pirog – Good, 1990; Taft et al., 2008; Tontodonato & Crew, 1992).

Association with delinquent/aggressive peers. Only one study was identified (both CCB & GC) and partially supported this factor (Holtzworth-Munroe, et al., 2000). In four groups of community batterers with different levels of IPV, only those with the highest IPV levels reported significantly more association with delinquent peers than the nonviolent groups. Similarly, there was not a clear association between levels of peer association and IPV as only the most violent group differed from the least violent.

Evidence for women.

Exposure to interparental violence. See subsection Exposure to interparental violence of “Normalisation of relationship violence” above.

Experience of physical abuse in the family of origin. Four CCB-m studies (Gover et al., 2008; Kalmuss, 1984; Milletich et al., 2010; Nabors & Jasinski, 2009), one M (Merrill et al., 1996), and six C studies (Edwards, Desai, Gidycz, & VanWynsberghe, 2009; Foo & Margolin, 1995; Hendy et al., 2003; Malone et al., 1989; Murphy & Blumenthal, 2000; Tontodonato & Crew, 1992) supported the link between physical abuse in childhood and IPV perpetration. Descriptive data from non-student female IPV perpetrators revealed a moderate

to high frequency of history of parental physical abuse, with percentages ranging from 26% to 81.5% (Conradi et al., 2009; Dowd et al., 2005; Hamberger & Guse, 2002; Henning et al., 2003; Langhinrichsen-Rohling et al., 1995; Seamans et al., 2007; Swan & Snow, 2003).

Partial support came from one CCB-m (Rapoza & Baker, 2008) and one M study (Follette & Alexander, 1992) which found an association only with abuse by father but not by mother. In one C study (MacEwen & Barling, 1988) abuse by parents was correlated with IPV only at 6 months after marriage but not premaritally or at 18 months after marriage.

No association between IPV physical abuse in the family of origin was found by three CCB-m (Edwards et al., 2009; Stets & Pirog – Good, 1990; Tontodonato & Crew, 1992), one GC (Babcock et al., 2003), five M (Alexander et al., 1991; Burke et al., 1988; Foo & Margolin, 1995; Hendy et al., 2003; Langhinrichsen-Rohling et al., 1995), and two C studies (Riggs & O'Leary, 1996; Stets & Pirog – Good, 1990).

It's not my Fault

Evidence for men.

Locus of control. This factor found support from two CCB (Barnett & Hamberger, 1992; Neidig, 1986) and one CCB-m (Prince & Arias, 1994) studies which found that compared to nonviolent men, batterers reported significantly less self – control, more external LOC, and lower perceived internal control, respectively. Further support came from two M studies (Gallagher & Parrott, 2010; Sharpe & Taylor, 1999) which found a link between IPV and high external control and low internal control, respectively. A CCA study partially supports this factor (Bowen, Gilchrist, & Beech, 2008); the offender group differed from the nonviolent only in one of the three subscales of a multi-dimensional LOC scale, the 'Chance' subscale. One CCB-m (Ogle & Clements, 2007) and two C studies (Bowen & Gilchrist, 2006; Gallagher & Parrott, 2010) did not find a significant relationship.

Displacement of responsibility.

Partner blame. This factor received support from the studies under *Partner blame/attribution of responsibility* of “Opposite sex dangerous” and additionally from two D studies (Cantos, Neidig, & O’Leary, 1993; Dutton, 1986), which found high frequency of partner blaming in IPV men in treatment.

Attribution of blame to other factors. Support for this factor came from nine D and two Q studies. Anger expression/poor anger control was one of the most common and consistent reasons for their violence that men provided across studies, with frequencies ranging from 10% to 37.5% (Cascardi & Vivian, 1995; Follingstad et al., 1991; Henning et al., 2005; Kernsmith, 2005; Makepeace, 1986). Intoxication is also commonly reported as a reason, but less than anger (11.3% to 35%; Carrado et al., 1996; Henning et al., 2005; Levitt et al., 2008). Other reasons involve various situational factors (Dutton, 1986), stress (Kernsmith, 2005), jealousy (Follingstad et al., 1991; Henning et al., 2005), being emotionally unstable (Henning et al., 2005) and loss of control (Coleman, 1980). Further qualitative studies have found that some men tend to blame various external factors for their violence (Cavanagh et al., 2001; Wood, 2004).

Evidence for women.

Locus of control. Only one, M, study was identified, which did not find an association between IPV and low internal control in students (Sharpe & Taylor, 1999).

Displacement of responsibility.

Partner blame. This factor received support from the studies under *Partner blame/attribution of responsibility* of “Opposite sex is dangerous” and additionally from one GC study (Babcock et al., 2003) which found that women involved in more IPV tended to attribute more blame to the partner than women with lower levels of IPV.

Attribution of blame to other factors. One CCB (Weston et al., 2007) and two GC studies (Babcock et al., 2003; Weston et al., 2007) provided support. Weston et al. (2007) found that both severely and non-severely IPV women made significantly more external attributions than the nonviolent women, and the severely violent more than the non-severely violent. Likewise, women with higher IPV levels tended to blame lack of control more than the lower level violent (Babcock et al., 2003).

Findings from D data showed that, similarly to men, anger/poor anger control was the most often cited and most consistent across studies reason for their violence (20% to 57.6%) (Babcock et al., 2003; Cascardi & Vivian, 1995; Follingstad et al., 1991; Henning et al., 2005; Hettrich & O' Leary, 2007; Kernsmith, 2005; Makepeace, 1986; Seamans et al., 2007; Stuart et al., 2006). Other reasons indicating a tendency to externalise include intoxication (Carrado et al., 1996; Henning et al., 2005; Hettrich & O' Leary, 2007; Stuart et al., 2006), stress (Kernsmith, 2005; Stuart et al., 2006), jealousy and being emotionally unstable (Follingstad et al., 1991; Henning et al., 2005), poor emotional and self-control (Seamans et al., 2007; Stuart et al., 2006), pent up tension and negative feelings (Hamberger, 1997).

I am the Man

Gender role stereotype. Support for this IT was found by one CCA (Hulbert, Whittaker, & Munoz, 1991), one CCB (Ryan, 1995; study 2), one GC (Saunders, 1992), two M (Fitzpatrick, Salgado, Suvak, King, & King 2004; Stith & Farley, 1993), and two C studies (Moore et al., 2010; Stith & Farley, 1993). Partial support came from one CCB-m study, which found IPV to associate with the belief that the man should be the head of the house, but not with approval of slapping a partner under situations non-consistent with the gender-role stereotype (Schwartz & DeKeseredy, 2000).

Two CCB-m (Nabors & Jasinski, 2009; Ryan, 1995), five M (Alexander et al., 1991;

Bookwala et al., 1992; Hastings, 2000; Jenkins & Aubé, 2002; Stith, 1990), and two C studies (Catlett et al., 2010; Stith, 1990) did not support this IT.

In qualitative research with male batterers, the presence of traditional gender role attitudes was more consistent. One quarter of the sample in Coleman's (1980) study reported that their partner did not adhere to her female roles and duties. In another study, for 10 out of the 12 batterers a perceived threat to their masculinity was one of the reasons for their violence (Levitt et al., 2008). The most prominent theme in men's account in Wood's (2004) study was: *She disrespected me as a man*, cited by all, and included beliefs about appropriate male – female roles and behaviours.

Discussion

Summary of Results

In men, “Opposite sex is dangerous”, “Normalisation of relationship violence”, “Normalisation of violence”, and “It's not my fault” had the most positive results from high quality empirical evidence (CCA/CCB), providing good support for their existence. “Relationship entitlement” was also well supported, though from less methodologically rigorous studies, that is, not case-control studies. Moderate support was found for “General entitlement” and “I am the man” mainly because quantitative data were mixed, although descriptive and qualitative data coming from offender samples provided more consistent support. Another reason in the case of “General entitlement” was the dearth of research on the association between empathy and IPV.

In women, only “Relationship entitlement” was well supported, though predominantly by student/community samples', as very few (descriptive only) studies included offender samples. “Normalisation of relationship violence” and “Normalisation of violence” had a larger number of case-control studies compared to the other ITs, but, in general, the results

were mixed, and no studies were identified for some of their factors. Similarly, moderate support was found for “Opposite sex is dangerous” because the majority of the data were of medium quality and because for some factors research was scarce or non-existent. Weak support was found for “General entitlement” due to the dearth of empirical research.

Below follows a more detailed discussion of the results, along with some interesting observations that emerged.

“Opposite sex is dangerous” was well supported in men, both in terms of hostile and negative attitudes and in terms of partner blame. This IT was fairly well supported in women, but only with regards to partner blame. Only one study was identified which assessed attitudes in women (and did not find support) but the scale employed was not appropriate for use with a female sample.

There was good support for the existence of “Relationship entitlement” in both men and women. Quantitative data showed a positive link between IPV and the use of controlling and domineering behaviours inside the relationship. In men this data came from both offender and student/community samples, while in women only from the latter. Descriptive and qualitative data from both types of samples indicated an association between IPV and the perpetrator’s perceived right to control and dominate the partner, and additionally showed that commonly endorsed reasons, given by IPV men and women for their violence, revolve around coercion, control and entitlement over the partner.

“General entitlement” was moderately supported in men. Quantitative data which, although came mainly from offender samples, was mixed and inconclusive. Although batterers were found to score consistently higher in Narcissism than nonviolent men this difference was not always statistically significant. However, descriptive data from offender samples showed a moderate frequency of presence of narcissistic personality traits and a

lower frequency of narcissistic personality disorder, which in some cases was the most elevated personality disorder of several tested. Although such studies do not allow us to conclude that batterers differ from non abusive men, they suggest, that some exhibit narcissistic personality traits which in some cases reach the clinical levels of a personality disorder. Research on the role of empathy is scarce and, therefore, inconclusive but this does not mean that there is no relationship with IPV perpetration. In women, the very small number of empirical studies, especially in relation to empathy, do not allow any conclusions to be drawn about the existence of this IT, but the available data provide some preliminary evidence worthy of further empirical investigation.

“Normalisation of relationship violence” found good support in men, including a plethora of good quality evidence. The majority of the quantitative studies reviewed revealed a positive link between IPV and influence from IPV peers who perpetrate or provide informational support for IPV, and showed that IPV men tend to hold more condoning attitudes toward partner violence and to justify or approve its use under specific circumstances. Evidence for the above comes almost exclusively from student and community samples. Descriptive and qualitative data, however, provide support for this IT in offender samples as well, where a high frequency of justifications, denial, and minimisation of their violence was observed. Regarding the factor of interparental violence, although it received or not support by approximately the same number of studies, it found support by studies of high quality which involved mainly offenders or men in treatment. On the other hand, the findings from lower quality evidence, which were mixed, came predominantly from student/community samples. Additionally, GC studies found only severely (and not the moderately) abusive men to differ from the nonviolent in the amount of interparental violence witnessed (Hanson et al., 1997; Sugarman & Hotaling, 1989), and higher levels of violence

were associated with more severe violence between parents (e.g., Eckhardt et al., 2008; Lawson et al., 2010). Therefore, it could be concluded that interparental violence is a fairly consistent factor in the explanation of severe IPV, and to a lesser extent in lower levels of IPV. In women, this IT found moderate support. Less evidence was provided from studies which explored the association between IPV and attitudes condoning IPV, as they were fewer in number than studies of men of lower mean quality, and from student/community samples only, however, they found support for this factor. Descriptive data added support to this IT as offenders and students were found to engage in high and moderate levels of denial and minimisation of their violence, respectively. Regarding exposure to interparental violence, the quantitative findings came predominantly from student and community samples, and were mixed and inconclusive. Moreover, almost all the multivariate studies did *not* provide support for this factor, while most of the correlational studies did. From the above, it can be inferred that, although there is an association between IPV and history of interparental violence this factors is not among the most significant to the explanation of lower levels of violence. It might be that it facilitates more severe IPV, and the finding that significantly more of the students who had witnessed interparental violence reported IPV, compared to students who had not (Tontodonato & Crew, 1992), along with the studies with female offenders which provided frequency data of observation of violence between parents, support such an assumption.

“Normalisation of violence” in men was well supported but only by studies which examined the distal correlates of partner violence, namely exposure to interparental violence, physical abuse by parents, and association with aggressive/delinquent peers, because research on attitudes and justifications/minimisation is almost non-existent. An abundance of good quality evidence provides support for the existence of this IT in men. Evidence for exposure

to interparental violence was discussed in the previous paragraph. Strong support was found for childhood physical abuse, where, compared to the studies which did not provide support, those studies which did where more in number, and most of them of high quality.

Additionally, half of them involved offenders or men in treatment, while all but one of the studies which do not support this factor involved students and community samples. Similarly to interparental violence, it seems that abuse by parents is a factor consistent in the explanation of higher levels of IPV and less consistent in explaining lower IPV levels.

Although, there was only one study included in this review which examined association with aggressive/delinquent peers it revealed an association only with high levels of IPV. In women, “Normalisation of violence” received moderate support and only from evidence about exposure to interparental violence and childhood abuse, as no studies were included in this review for the other three factors of this IT. Observation of interparental violence was discussed in the previous paragraph, and regarding childhood abuse, the same pattern with exposure to interparental violence was observed, suggesting that, similarly to interparental violence, childhood abuse may facilitate perpetration of more severe or frequent IPV.

“It’s not my fault” was well supported in men by good quality quantitative and additional non-quantitative data, especially in terms of low self-control and external LOC orientation, and partner blame. Quantitative data was, however, almost exclusively from student/community samples, while partner blame found good additional support from descriptive and qualitative data from offender samples. Displacement of responsibility to other factors (outside the self and the partner) was supported only by descriptive and qualitative data. In women this IT was moderately supported by displacement of responsibility (to the partner and other factors), by both quantitative (student/community) and descriptive (mainly offender) data. Regarding locus of control only one study was identified

therefore, it is not possible to make any conclusions.

“I am the man” found moderate support. The findings from the quantitative studies reviewed were mixed and inconclusive as the number of studies which did and did not provide support for this IT was approximately the same, and the studies were of equal quality. However, a closer examination reveals that more than half of the studies which found an association between gender-role stereotype and IPV perpetration included offender samples or men in IPV treatment, while all but one of the studies which did not find a significant association involved student and community samples. Qualitative research with incarcerated IPV offenders and men in IPV treatment provide more consistent support for the relationship between gender-role stereotype and IPV. Therefore, a strong gender-role stereotype is associated with IPV in men from these selected samples and it may be assumed that this IT is associated with more severe levels of IPV. Such an assumption is supported by Saunders’s (1992) study where higher levels of endorsement of this stereotype were associated with IPV severity levels in a sample of male batterers entering an IPV intervention programme.

It is clear from this review that research on female IPV is limited compared to the amount of research on male perpetrators (see Table 1.3). Especially, the lack of case-control studies included in this review with female offender samples was striking ($n = 1$; for men $n = 15$). Additionally, the majority of the studies with women come from student/community samples (73% vs. 53.5% for men) and very little research has focused on offenders or women referred to treatment (25.4% vs. 46.5% for men), where the levels of violence are normally higher, and therefore allow for more valid conclusions. Additionally, the vast majority of the studies with female student/community samples examined both genders and not women exclusively, while half of the studies with male student/community samples focused only on men. All the above indicate that female IPV is still not being given the same attention and

priority as male IPV is, despite a plethora of research evidence about the bi-directionality of partner violence (see Dixon & Bowen, 2012).

Despite this lack of research, the studies reviewed show evidence of female perpetration for reasons other than self-defense (e.g., relationship entitlement). Furthermore, results showing that gender role stereotype is not consistently linked to male perpetration and is predominantly evidenced in select samples, does not support the position of a gendered approach to understanding IPV, which views patriarchal attitudes as central to the explanation of male to female IPV. Further exploration of the aetiology of female IPV is therefore warranted to inform practice with this group.

It was also evident that observation of interparental violence and experience of physical abuse in the family of origin in both men and women were consistently associated with more severe and frequent perpetration of IPV. This suggests that such negative early life experiences may put potential perpetrators at risk for severe violence against partners and should always be given the appropriate attention during risk assessments. Indeed, interparental violence and childhood victimisation are included among the static risk factors of the Spousal Assault Risk Assessment Guide (SARA; Kropp, Hart, Webster, & Eaves, 1995) which is the most widely used IPV risk assessment instrument, but not in other actuarial IPV risk assessment tools, for example, the Domestic Violence Screening Instrument (DVSI; Williams & Houghton, 2004), the Ontario Domestic Assault Risk Assessment (ODARA; Hilton et al., 2004), and The Domestic Violence Risk Appraisal Guide (DVRAG; Hilton, Harris, Rice, Houghton, & Eke, 2008).

Implications for Practice

It is not expected that all IPV perpetrators will hold all the ITs described in this paper, or endorse them at the same strength. Differential developmental pathways and early and later

learning life experiences play an important role in their development and content (Ward, 2000). Additionally, these ITs are not mutually exclusive and some of them may partly overlap. For example, for some male perpetrators, the belief that they are superior to their partner and should be in control may stem from patriarchal and stereotypical gender roles beliefs. In this case it is expected that “Relationship entitlement” and “I am the man” will co-exist. For others, including female perpetrators, the same belief may be part of a general sense of entitlement and superiority. In this case “Relationship entitlement” and “General entitlement” will overlap.

This can be better understood considering the heterogeneity that exists among IPV perpetrators and the typologies which have been proposed for male (Dixon & Browne, 2003; Johnson et al., 2006) and female batterers (Babcock et al., 2003; Monson & Langhinrichsen-Rohling, 2002). Table 1.4 presents the ITs likely to be present in different male and female batterer types based on the characteristics of each type. Although various typologies for male batterers have been proposed (see Dixon & Browne, 2003), the Holtzworth-Munroe et al. (2000) and the Johnson et al. (2006) typologies were considered, mainly because they examined IPV correlates which are relevant to the factors reviewed here. Typologies on female batterers are significantly less well developed, and only two were identified, with some of the perpetrators’ characteristics they examined tapping into the ITs proposed in this review. Monson and Langhinrichsen-Rohling (2002) assessed female perpetrators (students) but they reported results only for the whole sample and not separately for men and women. Babcock et al.’s (2003) typology was, therefore, considered and it was based on a female offender sample. We suggest that the level of endorsement of each IT will depend on the level that each characteristic is present in the different subtypes (i.e., low, moderate, high). Such understanding of differentiation between types has implications for accurate assessment and

intervention with IPV perpetrators (Dixon & Graham-Kevan, 2011).

Table 1.4

Implicit Theories Likely to be Held by Different Subtypes of Male and Female Batterers

Batterer Subtypes	Batterers' Characteristics	Implicit Theories
Male Batterers		
Holtzworth-Munroe et al. (2000)		
FO	IPV acceptance (M)	Normalisation of relationship violence
LLA	Hostility toward women (M)	Opposite sex is dangerous
	MCMI-III Antisociality (M/H)	General entitlement
	Substance abuse (M)	It's not my fault
	Childhood abuse and association with deviant peers (M)	Normalisation of violence
BD	IPV acceptance (M)	Normalisation of relationship violence
	Hostility toward women (M)	Opposite sex is dangerous
	MCMI-III Antisociality (M/H)	General entitlement
	Substance abuse (M)	It's not my fault
GVA	Childhood abuse and association with deviant peers (M)	Normalisation of violence
	IPV acceptance (H)	Normalisation of relationship violence
	Hostility toward women (H)	Opposite sex is dangerous
	MCMI-III Antisociality (H)	General entitlement
	General violence, involvement in criminal activity, abuse by father, and association with deviant peers (H)	Normalisation of violence
	Substance abuse (H)	It's not my fault
	IPV acceptance (H)	Normalisation of

	Hostility toward women (H)	relationship violence Opposite sex is dangerous
Johnson et al. (2006)		
Low pathology	MCCI-III Narcissism (M) Macho attitudes (M)	General entitlement I am the man, Relationship entitlement
Narcissistic	MCCI-III Narcissism (H) and Antisocial score (M) MCCI-III Paranoid score (M) Alcohol dependence (M) Sex roles stereotyping (M)	General entitlement Opposite sex is dangerous It's not my fault I am the man, Relationship entitlement
	Witnessed domestic violence (57%)	Normalisation of relationship violence
Borderline	MCCI-III Antisocial score (M) MCCI-III Paranoid score (M) , Hostility toward women (H) and Perspective taking (L) Sex roles stereotyping (M) Anger/anger regulation deficits, Alcohol dependence, and External locus of control (H)	General entitlement Opposite sex is dangerous I am the man It's not my fault
	Exposure to domestic violence (58%)	Normalisation of violence & relationship violence
	Childhood physical abuse (50%)	Normalisation of violence
Antisocial	MCCI-III Antisocial score (H) and MCCI-III Narcissism (M) MCCI-III Paranoid score (M), Hostility toward women (H) and Perspective	General entitlement Opposite sex is dangerous

taking (L)		
History of violent/criminal behaviour (H)		Normalisation of violence
IPV acceptance (H) and Witnessed domestic violence (51%)		Normalisation of relationship violence
Anger/anger regulation deficits and Alcohol dependence (H)		It's not my fault
Sex roles stereotyping and Hypermasculinity (H)		I am the man
Female batterers		

Babcock et al.
(2003)

PO (M) & GV (H)	Witnessed domestic violence	Normalisation of relationship violence
	Childhood abuse	Normalisation of violence & relationship violence
	Reasons for violence related to loss of control, frustration, jealousy	It's not my fault
	Violence to control the partner	Relationship entitlement
GV only	Violence against non-intimates (H)	Normalisation of violence

Note. Only IPV related characteristics/factors which are present at a moderate and high level are included in this table. FO = family only; LLA = low - level antisocial; BD = borderline – dysphoric; GVA = generally violent – antisocial; PO = partner-only; GV = generally violent. MCMI-III = Millon Clinical Multiaxial Inventory-III. M = moderate level; H = high level.

An IT approach to IPV treatment can provide a framework where individual, yet interconnected, distorted cognitions can be organised in a structured and consistent way, similarly to the schema-focused therapy approach (Young, 1990; Young, Klosko, & Weishaar, 2003). The aim would be to bring these ITs to the surface and work on their modification or substitution with other more functional and adaptive ITs. At the moment, a

schema-based approach is incorporated into the treatment programme for sexual offenders in the UK Prison and Probation Service with some proven effectiveness (Beech & Fisher, 2004; Beech, Oliver, Fisher, & Beckett, 2005). An IT based treatment intervention for rapists is delivered in Victoria, Australia (Eccleston & Owen, 2007) and suggestions have been made for the implication of an IT approach to the treatment of child molesters (Drake et al., 2001). In 2006 the New Zealand Department of Corrections launched a pilot intervention program for rapists, The Adult Sex Offender Treatment Program (ASOTP), which among others included a schema-based approach to offenders' rape related beliefs (Reid, Wilson, & Boer, 2011).

At present, IPV intervention programmes that focus on the identification, understanding and change/substitution of cognitive distortions, do this in a largely unstructured way by tackling individual and unconnected cognitions verbally expressed by the offenders (RRPG, 2010). So far, the findings about the effectiveness of IPV intervention programmes (Babcock, Green, & Robie, 2004) show that there is clearly room for improvement. We suggest that a data driven IT approach which also takes into account the heterogeneity that exists among male and female batterers could prove more effective in both the assessment and treatment of male and female offenders and could lead to long-term change.

Conclusion

This review provides good evidence for the existence of "Relationship entitlement" in both male and female perpetrators. Good evidence was found for "Opposite sex is dangerous", "Normalisation of relationship violence", "Normalisation of violence", and "It's not my fault" in men and moderate evidence in women. "I am the man" and "General entitlement" were moderately supported in men, while the latter was weakly supported in

women and more research is needed before reaching further conclusions about its existence in female IPV perpetrators.

In general all ITs were less strongly supported in women, not because the majority of the evidence rejected their existence, but because of the limited research on female IPV. However, it is important to note that we do not suggest those ITs proposed here provide an exhaustive list of ITs. More themes may be identified by examining the actual accounts generated by the offenders themselves, highlighting the need for future qualitative research to confirm the existence of the ITs proposed here in addition to looking for evidence for additional ITs in both male and female perpetrators. Simply, this review warrants support for the empirical investigation of the proposed ITs in an IPV population, as we suggest that an IT empirically driven approach to IPV intervention has the potential to improve the effectiveness of current treatment programs.

CHAPTER 2

IMPLICIT MEASURES: THEORETICAL BACKGROUND AND THE DEVELOPMENT AND PILOT TESTING OF THE IMPLICIT MEASURES USED IN THE STUDIES OF THIS THESIS

Chapter rationale

The purpose of this chapter is to provide an overview of the theoretical background in relation to implicit measurement and to describe in detail the development of the implicit measures used in the studies of this thesis, designed to tap into six of the seven Implicit Theories proposed in Chapter 1 of this thesis. The chapter begins with a description of what implicit measures are and what is measured by them. It then provides an overview of the main theoretical models proposed to date to explain the underlying functions of implicit measures, and of the mechanisms underlying the implicit measures used in this thesis. It continues with a summary of the use of implicit measures in forensic psychology research. Finally, a detailed description of the development of the implicit measures used in this thesis is provided, followed by their pilot testing.

1. What are Implicit Measures?

Over the last two decades social psychology has seen a significant advancement in the assessment of beliefs, attitudes, and stereotypes. Traditionally, the measurement of cognitive content (attitudes and beliefs stored in long-term memory) was limited to self-report questionnaires, inherently assuming that attitudes and beliefs operate under awareness and conscious control, and that people are always willing to report them accurately and directly. However, this assumption was challenged by early experimental research which 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 (Banaji & Greenwald, 1995; Banaji, Hardin, & Rothman, 1993; Bargh, Chaiken, Gvender, & Pratto, 1992; Bargh & Ferguson, 2000; Devine, 1989; Fazio, Sanbonmatsu, Powell, & Kardes, 1986; Gilbert & Hixon, 1991; Perdue & Gurtman, 1990). This prompted the development of alternative measurement methods in social-cognitive research, namely implicit measures, in order to assess people's attitudes and beliefs indirectly. In most cases these are reaction-time (RT) based tasks which aim to assess the strength of association between concepts stored in long-term memory (Wittenbrink & Schwarz, 2007).

Such measurement procedures do not require participants to directly and explicitly report an attitude or belief. Instead, cognitive content is assessed *indirectly* through the examination of participants' performance on a task on which the construct of interest is expected to have an effect (De Houwer, 2006). Implicit measures "avoid requiring introspective access, decrease the mental control available to produce the response, reduce the role of conscious intention, and reduce the role of self-reflective, deliberative processes" (Nosek, Greenwald, & Banaji, 2007, p. 267). The lack of self-assessment by the participants and the nature of such experimental paradigms make implicit measures less susceptible to socially desirable

responding and control of the outcome, compared to questionnaires and interviews (De Houwer, 2006). This is one of the main reasons why such measurement procedures initially attracted much attention, since self-presentation has always been an issue in psychology research, especially when the topic under investigation is of a sensitive nature (Nosek, 2005; Rosenberg, 1969). This, however, does not imply that implicit measures provide access to the purely 'true' attitude because performance on such measures can be affected by various factors other than self-presentation (see Sections 2 and 4 in this chapter).

Various implicit measurement techniques have been employed by social psychology research to date. The most widely used are the Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998), the Evaluative Priming Task (Fazio, Jackson, Dunton, & Williams, 1995), and the Semantic Priming Task (Wittenbrink, Judd, & Park, 1997). Examples of other implicit measurement procedures are the Go/No-go Association Task (GNAT; Nosek & Banaji, 2001), the Extrinsic Affective Simon Task (De Houwer, 2003a), the Word-fragment Completion Task (e.g., Dovidio, Kawakami, Johnson, Johnson, & Howard, 1997; Hetts, Sakuma, & Pelham, 1999), the Name-Letter Preference Task (e.g., Jones, Pelham, Mirenberg, & Hetts, 2002; Pelham, Mirenberg, & Jones, 2002), the Affect Misattribution Procedure (Payne, Cheng, Govorun, & Stewart, 2005), the Linguistic Intergroup Bias (Maass, Salvi, Arcuri, & Semin, 1989; von Hippel, Sekaquaptewa, & Vargas, 1997), and the Single-Target IAT (Karpinski & Steinman, 2006).

Physiological responses and brain activation have also been used as indicators of attitudes. For example, fMRI has been employed as an implicit measurement approach to the assessment of racial bias (Beer et al., 2008; Cunningham et al., 2004). Event-related brain potentials have been also used in the study of racial bias (Ito, Thompson, & Cacioppo, 2004), and for the measurement of implicit evaluation of stimuli as positive or negative (Crites,

Cacioppo, Gardner, & Berston, 1995). Facial electromyography has been employed as a measure of ingroup bias (Ensari et al., 2004; Vanman, Paul, Ito, & Miller, 1997), and startle eyeblink modification has been applied to the study of attitudes towards homosexuals (Mahaffey, Bryan, & Hutchison, 2005) and racial attitudes (Amodio, Harmon-Jones, & Devine, 2003). Shields and Harriman (1984) used heart rate as a measure for the assessment of attitudes towards homosexuals, while Marinelli and Kelz (1973) used it for the assessment of attitudes towards physically disabled people. Cardiovascular changes which signal a state of threat have been used for the examination of people's responses during interactions with ethnic groups and other stigmatised individuals (Blascovich, Mendes, Hunter, Lickel, & Kowai-Bell, 2001; Mendes, Blascovich, Lickel, & Hunter, 2002).

2. What do they Measure?

The term *implicit* has its origins in cognitive psychology and is linked to the construct of implicit memory. Implicit memory is defined as the influence of past experience on a task without explicit memory from the participant of that experience, or without conscious awareness of its influence on the task (Roediger, 1990; Schacter, 1987). Experimental procedures based on priming are an example of the effect of implicit memory, where exposure to a stimulus influences performance on a subsequent task. Applying this meaning of the term implicit to the area of attitudes implies that implicit measures provide access to attitudes and beliefs which people are not aware of. However, it is not possible to guarantee that people are unaware or unconscious of their attitudes and there is no evidence to justify such an assumption (De Houwer, 2006; Fazio & Olson, 2003). Since the actual aim of such experimental procedures is to assess cognitive content *indirectly*, that is, without conscious introspection and self-assessment, De Houwer (2006) suggested that the term *indirect measures* would be more appropriate. In this thesis the term implicit measures is used in order

to refer to indirect measurement procedures, because this term is most commonly used in this area of research.

Although implicit measures are less susceptible to faking and strategic control of the outcome (De Houwer, 2006) they are not always an unbiased measure of stable and *true* attitudes. Performance on implicit tasks can be affected by various factors including contextual factors, extrapersonal knowledge, focus of attention, social motives (e.g., less implicit negativity toward a person from a certain ethnic group when the experimenter is of the same group), and the characteristics of the test category members (Blair, 2002; Han, Czellar, Olson, & Fazio, 2010). Therefore, while such an assumption could be made when assessing simple attitudes, like preference of flowers over insects, in the case of more complex and socially sensitive attitudes (e.g. stereotypes) the assumption that implicit measures provide access to the subjectively true and valid attitude should be made with caution.

Implicit measures may not provide a window to the unconscious, but they can be considered the “laboratory equivalents of the automatic influence of attitudes and cognitions on real-life behaviour” (De Houwer, 2006, p. 25). Since in everyday life, people most often do not have the opportunity and/or the motivation to engage in effortful and deliberate introspection and processing of their attitudes when encountering an attitude object (Fazio & Olson, 2003), behaviour is largely guided by automatically activated pre-existing attitudes, that is, schemas (Fiske & Taylor, 1991) or ITs (Ward, 2000). Likewise, performance on implicit measures reflects the automatic influence of cognitive content on behaviour (the implicit task), where the conditions are not ideal for deliberative processing (e.g., RT tasks, subliminal priming). Due to this functional property shared by implicit measures and real life behaviour, that is, the automatic influence of attitudes on behaviour when conditions do not

allow introspection and deliberative processing, implicit measures are successful in predicting behaviour which is spontaneous, difficult to control, or in situations when people are not aware of the effect of their attitudes on a specific behavioural outcome (Fazio & Olson, 2003).

3. Theoretical Models

Despite the explosion of research activity in the use of implicit measures for the assessment of cognitive content, until recently this research had been largely atheoretical. The introduction of implicit measures in social psychological research was mainly empirically and not theoretically driven (Fazio & Olson, 2003). This prompted some scholars to assign a theoretical framework to this new but fast growing field. The following are the most prominent theoretical attitude models which account for the underlying functions of implicit measures and for the discrepancy between implicit and explicit attitudes.

3. 1. The MODE model (Fazio, 1990; Fazio & Olson, 2003; Olson & Fazio, 2009)

This model describes attitudes as object-evaluation links stored in long term memory. It describes two processes through which attitudes can guide behaviour. The first is a spontaneous process where attitudes are automatically activated from memory upon encounter with an attitude object, without any active introspection or consideration of these attitudes by the individual, and without necessary awareness of their influence. The automatically activated attitudes influence how the individual perceives and interprets the object in the immediate situation, and this, in turn, determines the behavioural response toward that object. This is especially evident with strong and more accessible attitudes. In this case, individuals tend to attend to qualities of the object which are congruent with their attitudes and to interpret ambiguous object-related qualities or information in an attitude-consistent manner. This biased information processing procedure can result in erroneous inferences and inappropriate behavioural responses. The second process through which attitudes guide

behaviour is a more deliberative one, and involves active introspection and reflection upon one's attitudes, and an effortful and cost-benefit analysis of a specific behavioural response and its alternatives, before the enactment of the chosen behaviour.

MODE stands for Motivation and Opportunity as Determinants of the attitude-behaviour link and the concepts of motivation and opportunity are central to this model. In order for an individual to engage in a deliberative attitude-behaviour process he/she must be *motivated*. Example of motives are the accuracy motive (Freund, Kruglanski, & Shpitzajzen, 1985; Kunda, 1990) and the motive of positive self evaluation (Sedikides & Strube, 1997). However, the presence of a motive alone is not enough. The person must also have the *opportunity* to do so (e.g., availability of time and cognitive resources).

The MODE model is a single attitude model as it does not distinguish between implicit and explicit attitudes, but between implicitly and explicitly measured attitudes. In other words, it suggests that there is only one attitude construct which can be assessed with either implicit or explicit methods. When an attitude is measured explicitly and motivation and opportunity are low, then a correlation is expected between explicit and implicit measures. When motivation and opportunity are high and the person engages in effortful and deliberative processing of his/her attitude, then the explicit measure reflects a modification of the cognitive association stored in memory (only when these two differ), and a divergence between implicit and explicit measures is expected.

3.2. The Dual Attitudes Model (Wilson, Lindsey, & Schooler, 2000)

According to this model there are two types of attitudes stored in people's memory toward the same attitude object: an implicit and an explicit attitude. These two attitudes, which constitute separate mental representations and stem from different mental processes, are not necessarily the same, they are relatively independent, and guide behaviour in different

ways. Implicit attitudes are activated automatically and mainly guide implicit, uncontrollable, and spontaneous behavioural responses (e.g., non-verbal behaviours, performance on implicit measures), while explicit attitudes are the product of deliberative and effortful retrieval from memory, and influence behaviour based on reflection (e.g., response to questionnaires). However, responses on explicit measures are influenced by implicit attitudes when the retrieval of the explicit attitude from memory is not possible (i.e., the person is not motivated or able to do so). Unlike explicit attitudes which can change relatively easily, implicit attitudes are considered more stable, difficult to change, and change slowly. Therefore, even though one may have changed his/her explicit attitude toward an attitude object, the implicit attitude might still exist in memory and influence behaviour when effortful retrieval of the explicit attitude from memory is not possible.

3.3. The Associative Propositional Evaluation Model ([APE], Gawronski & Bodenhausen, 2006)

The APE model distinguishes between associative and propositional processes. Implicit attitudes are considered the outcome of associative processes, while explicit attitudes, the outcome of propositional processes. Implicit attitudes reflect associative affective responses (evaluations) which are automatically activated upon encounter with an attitude object; mental associations in memory between an attitude object and its evaluation. These are not necessarily endorsed by the individual. For example flowers may be linked to spring (positive association) or to allergic reactions (negative association). Explicit attitudes are considered the product of more deliberative and reflective processes which transform such associative evaluations into propositions (e.g., I hate flowers) and test their subjective validity (e.g., whether these propositions are true, accurate, or logically consistent). This validation process is based on momentarily considered information, and is therefore largely context

dependent. If this information is *inconsistent* with the initial automatically activated association, then a dissociation between implicit and explicit attitudes will be observed. If the automatic association is consistent with all momentarily considered information implicit and explicit attitudes will converge.

3.4. The Meta-Cognitive Model (Petty & Briñol, 2006; Petty, Briñol, & DeMarree, 2007)

According to this model, attitudes are object-evaluation associations stored in memory. Evaluations can be both positive and negative and associations can vary in terms of strength. Contextual features can modify the retrieved evaluation and determine whether a positive or negative evaluation about the attitude object is activated first. The latter is also determined by other factors that affect memory, such as the number of previous positive and negative experiences one has had with the attitude object. This model introduces the *meta-cognitive tags*. If new information about the attitude object challenges the validity of, or the degree of confidence in an old attitude, then this old attitude is assigned a negation tag (e.g. true-false, valid-invalid, confidence-doubt etc.). These evaluation-tag associative links are also stored in memory. However, because the evaluation-tag link is weaker than the object-evaluation link, an amount of effortful, deliberative process is required in order for the tag to be retrieved from memory. If effortful retrieval from memory is not possible, then the original, untagged, object-evaluation association will be activated. Accessibility to the tag is one of the reasons accounting for the discrepancy between implicit and explicit measures when an attitude object has both a positive and a negative evaluation. Unless the validity tag of an automatically activated attitude is highly accessible, the implicit measure will capture only the attitude, without its tag, and it will, therefore, reflect only the automatically activated attitude. On the other hand, explicit measures which involve deliberative cognitive processes, will capture the attitude *with* its validity tag. Implicit and explicit measures should converge

when an attitude object is associated with only positive or negative evaluations and these are tagged as valid. They should also converge when an attitude object has both a positive and a negative evaluation but (i) both are tagged as valid, or (ii) the one is tagged as invalid but the person does not engage in effortful process in order to retrieve this tag from memory. Finally, when an attitude is qualified by new information, the strength of the new object-evaluation association compared to the strength of the old object-evaluation association will determine the outcome of the implicit measure, which will reflect the stronger association of the two.

4. Underlying Mechanisms of the Implicit Measures

It is evident from all the above theories that it is generally assumed that implicit measures assess automatically activated mental associations. However, there are various underlying mechanisms specific to the measurement procedure (the task), which mediate the effect that such automatically activated associations have on task performance, and it has been argued that “implicit measures provide only an indirect proxy for mental associations” (Gawronski, Deutsch, LeBel, & Peters, 2008, p. 218). Although, to date, there is not agreement on which these mechanisms are, the following have been proposed and tested. Only the mechanisms in relation to the implicit measures employed in this thesis are described here, namely the IAT the GNAT, and the Sentence Judgment Task (SJT).

All three implicit tasks are described in detail in Section 6 of this chapter. In brief, the IAT is a RT double categorisation task, which assesses the strength of association between concepts in memory (Greenwald et al., 1998). It requires a target category (e.g., flowers vs. insects) and an attribute category (e.g., pleasant vs. unpleasant). In the two critical test blocks the two categories are combined. In the compatible test block participants categorise words or picture as either ‘flower or pleasant’ by pressing one key, or as ‘insect or unpleasant’ by pressing another key. In the incompatible test block the two combined categories are inverted

and stimuli are categorised as ‘flowers or unpleasant’ and as ‘insect or pleasant’. Since for the majority of people flowers have a more positive evaluation than insects, participants are expected to perform better and faster in the compatible condition. The IAT effect is the difference in mean RT between the incompatible and the compatible block.

The GNAT (Nosek & Banaji, 2001) is very similar to the IAT. The main difference is that the GNAT is a single categorisation task because it does not require a contrast target category. There is one single target category (e.g., flowers) and one attribute category (e.g., pleasant vs. unpleasant). Insect stimuli function as distractors. In the compatible test block participants respond, by pressing a key, only to flower or pleasant stimuli and do nothing when presented with insect or unpleasant stimuli. In the incompatible block a response is expected only to flower and unpleasant stimuli. Similarly to the IAT, participants are expected to perform better in the compatible condition, and the GNAT effect is the difference in mean RT between the incompatible and the compatible block.

The SJT is a variation of the classical lexical decision task, but context sentences are used as primes. For this task a number of context sentences were created in order to conceptually capture the ITs “Opposite sex is dangerous”, “Relationship entitlement”, “General entitlement”, and “Normalisation of relationship violence”. In each test trial a sentence stem is initially presented with its last word missing, and in the next computer screen a target word is presented. Participants have to judge if this word is a meaningful completion of the sentence or not, and press the one or the other key. The meaningful word completions can complete the sentence in a way consistent or inconsistent with the given IT. Participants are expected to respond faster to meaningful target words which complete the sentence in a way consistent with their own attitudes/beliefs.

4.1. The Mechanisms behind the IAT and the GNAT

The following models have been used to explain the IAT, but they can also be applied to the GNAT as the latter is also a categorisation task very similar to the IAT.

4.1.1. Response Interference Model (Gawronski et al., 2008). A stimulus can elicit two response tendencies which can have a synergistic or antagonistic effect. Take, for example, an IAT designed to assess implicit preference for flowers over insects. The target category is flowers and insects and the attribute category is pleasant and unpleasant words. In the combined blocks, the target stimuli will elicit two response tendencies, the one based on the *category* it belongs to (flower vs. insect) and the other one based on the *valence* participants attribute to it (pleasant vs. unpleasant). In the compatible IAT block, where flowers share the same response key with pleasant words, and insects share the same response key with unpleasant words, both response tendencies will result in correct responses (synergistic effect). However, in the incompatible block where flowers share the same response key with unpleasant words and insects with pleasant words, only category-based response tendencies, and not evaluation-based response tendencies, will result to correct responses (antagonistic effect).

4.1.2. Differential Task Switching Model (Mierke & Klauer, 2001; 2003). This model attributes the IAT effect to the costs on the performance caused by switching between task sets. A task set is defined as a complex of cognitive settings required for performance on a given task, including

“.....which attribute of the stimulus to attend to, which response mode and value to get ready, what classification of the relevant stimulus attribute to perform, how to map those classes to response values, with what degree of caution to set one’s criterion for response etc.” (Monsell, Yeung, & Azuma, 2000, p. 252).

Switching between tasks involves executive control processes, requires time, and consequently results in performance costs. This performance cost affects the two IAT conditions asymmetrically because it mainly affects the incompatible condition. For example, in the compatible condition of a flower-insect IAT, categorisation of stimuli of both the target (flowers vs. insects) and the attribute category (pleasant vs unpleasant) can be based only on attribute related information, that is only on the valence of the stimuli. Therefore, there is little need for the participant to switch task, that is, to categorise flowers and insects based on category related information. However, in the incompatible condition, in order for target and attribute stimuli to be categorised correctly, task switching is necessary. In this case flowers and insects must be categorised based on category related information, and the attribute words based on valence related information. This requires cognitive control, which leads to performance costs, and explains the IAT effect.

4.1.3. Figure-ground Asymmetries Model (Rothermund & Wentura, 2001).

According to this model the IAT effect is caused by differences in salience between the task categories, which produce salience asymmetries within the targets and the attributes. It is based on the assumption that the two categories of the target (e.g., flowers-insects) and of the attribute (e.g., pleasant-unpleasant) differ in terms of salience. The salient categories are the *figures* and the non-silent categories are the *background*. Participants will perform better and respond faster if the two salient categories and the two non-silent categories share the same response key respectively, while in the case where a silent category shares the same response key with a non-silent category, performance will be worse because the facilitative effect of salience disappears. Figure-ground asymmetries can have various causes such as differences in the linguistic properties or in the perceptual qualities of the category labels, and differences in the valence or familiarity of the stimuli. Regarding the latter, stimuli with negative valence

and stimuli which are unfamiliar or less familiar than other, tend to stand out and attract attention.

4.1.4. The Random Walk Model (Brendl, Markman, & Messner, 2001). This model suggests that an IAT response will be executed when the information accumulated about the properties of the stimulus presented in regard to the response, reaches the response threshold. For example, in the compatible flower-insect condition, the presentation of a pleasant word will initiate a process of evidence extraction that this is a pleasant word, and the response will be executed (press the key that corresponds to pleasant) when the response threshold is reached. The IAT effect is a function of the rate of accumulation of relevant information for a given stimulus, and it affects only the target category items and the incompatible test condition. For example, in the compatible condition of a flower-insect IAT the presentation of a flower word will lead to the extraction of valence-based and identity-based information which pushes toward the same response threshold (i.e., flower-pleasant). On the other hand, in the incompatible block, the valence-based information accumulated by the presentation of an insect stimulus, pushes toward the *unpleasant*-flower response threshold (i.e., the wrong response) and only the identity-based information pushes toward the *insect*-pleasant response threshold (i.e., the correct response). Therefore, performance in the incompatible condition is slower because more information needs to be accumulated about the target stimuli before the correct response threshold is reached. Compared to the other three models described above, the Random Walk model is the one least well supported by empirical evidence (De Houwer, Teige-Mocigemba, Spruyt, & Moors, 2009).

4.2. The Mechanism behind the SJT

Prior research shows that words are processed more quickly when they follow a sentence to which they are a likely ending, compare to when they form an unlikely ending (e.g.,

Fischler & Bloom, 1979; Forster, 1981; Schuberth & Eimas, 1977). This is known as *the sentence context effect*. For example, after reading the incomplete sentence *In the long grass the horses were quietly...* participants will be faster to recognise the target word *grazing*, than the word *flying* (Forster, 1981). Furthermore, this facilitation effect is evident when the target word is the most expected completion of the sentence and not just a plausible completion. For example, for the sentence *He thought he wasn't earning enough.....*, the word *money* is a more predictable completion than the word *respect*, although they are both appropriate (Fischler & Bloom, 1979; 1985; Forster, 1981). From this, it is expected that the sentence content will facilitate recognition of those target words which complete the sentences in a way congruent with an individual's attitudes and beliefs.

5. Implicit Measures in Forensic Psychology Research

The use of implicit measures in forensic psychology research is relatively new. Implicit measurement procedures have been mostly employed for the investigation of offence supportive cognition in child sexual offenders (Banse, Schmidt, & Clarbourn, 2010; Brown, Gray, & Snowden, 2009; Gannon, Rose, & Williams, 2009; Gray, Brown, MacCulloch, Smith, & Snowden, 2005; Kamphuis, de Ruiter, Janssen, & Spiering, 2005; Keown, Gannon, & Ward, 2008a; 2008b; Nunes, Firestones, & Baldwin, 2007), and other sexual offenders (Dawson, Barnes-Holmes, Gresswell, Hart, & Gore, 2009; Michailides, Devilly, & Ward, 2004; Smith & Waterman, 2004; Snowden, Craig, & Gray, 2011). Other types of offenders include psychopathic murderers (Gray, MacCulloch, Smith, Morris, & Snowden, 2003; Snowden, Gray, Smith, Morris, & MacCulloch, 2004), and high-risk violent offenders (Polaschek, Bell, Calvert, & Takarangi, 2010). Implicit measures have also been employed as a predictive measure of aggression in children (Grumm, Hein, & Fingerle, 2011), for the investigation of the influence of violent computer games on implicit aggressive self-concept

(Bluemke, Friedrich, & Zumbach, 2010), for the exploration of the relationship between tendencies for sexual harassment and aggression and the automatic association of the concepts of power and sex (Bargh, Raymond, Pryor, & Strack, 1995), and for the examination of implicit risk-taking attitudes in incarcerated offenders (Bittner, Becker, & Neumann, 2010).

5. 1. Implicit Measures in IPV Research

Only three studies have been identified at the time of writing this thesis, which employed implicit measures to the study of IPV related cognition. Robertson and Murachver (2007) examined implicit and explicit IPV cognitions in a New Zealand sample of 39 male and female incarcerated offenders and 133 men and women from the community. The incarcerated sample had a history of various offences and was not specifically selected on the basis of an IPV index offence. Likewise, the community sample was not purely nonviolent, but had significantly lower levels of IPV perpetration than the incarcerated sample. Five IATs were employed. The first two assessed gender stereotype in terms of gender-role beliefs (career vs domestic) and gender-role traits (dominant vs submissive). The third assessed attitudes toward violence by pairing violent and nonviolent words with good and bad words. The last two assessed attitudes towards men and women; the one paired male and female with positive and negative words, and the other one paired male and female with pleasant and unpleasant words. The two groups differed only in their implicit attitudes toward violence. Jouriles, Grych, Rosenfield, McDonald, and Dodson (2011) administered a word-completion task for the assessment of aggression in a US sample of antisocial teens remanded to the juvenile court system and found a positive association between their level of aggression in automatic cognitions and perpetration of dating violence. Eckhardt, Samper, Suhr, and Holtzworth-Munroe (2012) employed three IATs to assess negative attitudes toward women, positive attitudes toward violence, and the association between gender and violence in a US

sample of 50 IPV men in batterer intervention treatment and 40 community controls. The two groups did not differ in their explicit or implicit attitudes toward women. However, the IPV men held stronger implicit positive attitudes toward violence ($d = .45$) and showed a stronger association between women and violence ($d = .51$) than the nonviolent group.

Two studies did not directly assess IPV perpetrators but examined implicit attitudes related to IPV. The first study involved a university student population in the US and employed a modified version of the IAT to investigate gender differences in implicit attitudes towards victims of (male perpetrated only) IPV (Jackson, 2010). Both men and women had a more favourable implicit attitude towards the female victim, but this was significantly stronger in women. The second study explored the implicit perception of couple violence with regard to the gender paradigm in a Spanish community sample. It was found that both men and women held an implicit stereotypical view of the man as violent and the woman as peaceful/nonviolent, and this was stronger in women (Cantera & Gamero, 2007).

It is evident that the use of implicit measures in the study of IPV is still in its infancy and none of the studies described above were based on a UK sample. This thesis provides a first step into this direction and employs seven implicit measures in order to assess IPV offence supportive cognition in two UK samples: male and female students, and partner violent men referred to treatment (Studies 1 and 2 in Chapter 4).

6. The Implicit measures of this thesis

The content of the implicit measures in this thesis was guided by six of the seven ITs proposed in Chapter 1: I am the man, Normalisation of violence, Opposite sex is dangerous, Relationship entitlement, General entitlement, and Normalisation of relationship violence. In order to have some variety in implicit measurement techniques, three different types of implicit measures were employed: (a) two IATs for the assessment of gender-role stereotypes (I am the

man IT), one GNAT for the assessment of implicit positivity toward violence (Normalisation of violence IT), and four SJTs for the assessment of Opposite sex is dangerous, Relationship entitlement, General entitlement, and Normalisation of relationship violence ITs. Each task, their development, and pilot testing are described in detail below. Of course, it is acknowledged that none of these implicit measures on their own can fully tap into their corresponding IT since ITs are complex and wide cognitive constructs. However, the design and content of the SJTs allowed for more conceptual Implicit Theory-implicit measure similarity compared to the IATs and the Go/No-go Association Task. As mentioned above, one of the aims of this thesis was to employ a variety of implicit measures and not only SJTs. And since such measures require time, effort, and attention to complete, it was not feasible to employ an IAT or a GNAT (or any other type of measure) for every single factor of each IT (as described in Table 1.2 of Chapter 1), because this would result in a very lengthy testing session (for the studies in Chapters 3 and 4) and would make participants tired and most likely frustrated. This is the reason why an implicit measure tapping into the IT “It’s not my fault” was not designed, but there are plans to test this in future research.

6. 1. The Implicit Association Test

The IAT (Greenwald et al., 1998) is a widely used measure for the indirect assessment of attitudes and stereotypes, including gender stereotypes (e.g., Robertson & Murachver, 2007; Rudman, Greenwald, & McGhee, 2001; Rudman & Kilianski, 2000). It measures the strength of association between concepts in memory (Greenwald et al.; Greenwald & Nosek, 2001; Nosek, Greenwald, et al., 2007). It requires the presence of two target concepts (e.g., flowers-insects) and an attribute concept (e.g., pleasant-unpleasant). It is a dual categorisation task where, for the critical blocks, participants have to assign the words that appear in the middle of the computer screen to one of the two paired concepts, the labels of which appear

on the two upper corners of the screen. Responses are made by pressing the key that corresponds to each pair. The IAT is based on the assumption that if two concepts are closely associated, participants will respond faster and make fewer errors when the concepts share the same response key. The ease with which a person associates two given concepts (e.g., Flowers + Pleasant and Insects + Unpleasant versus Insects + Pleasant and Flowers + Unpleasant) indicates a stronger automatic association between them.

Two different IATs were designed for the assessment of gender stereotype, using Inquisit (Version 3.0.2.0, 2008) software. The first examines the association between gender (male-female) and the concepts of career-domestic (CD-IAT) and the second, the association between gender and the concepts of dominance-submission (DS-IAT). For each IAT, four word lists were created, each one comprising six words (see Tables 2.1 and 2.2). Male and female names were selected from the list of the most popular boys' and girls' names in England and Wales in 2007 (National Statistics, 2007). For the words belonging to the categories of career, domestic, dominance, and submission, an initial pool of items was created using a Dictionary-Thesaurus. These words were categorised by eight independent raters, in order to ensure that each one belonged to only one category, and they were also rated according to how representative they were of that category. There was 100% agreement on the categorisation, and the words which were rated higher in terms of representativeness were finally selected (six words for each category). In order to obtain a valid IAT effect it is important to use words which are good exemplars of the category of interest and do not confound with any other of the categories. On the other hand, the magnitude and reliability of the IAT effect does not increase with a longer list of stimulus items (Lane, Banaji, Nosek, & Greenwald, 2007; Nosek, Greenwald, & Banaji, 2005).

Table 2.1

Word Lists in the Career-Domestic Implicit Association Test

Male names	Female names	Career	Domestic
Jack	Jessica	Business	Family
Thomas	Emily	Manager	Kitchen
Harry	Sophie	Office	Wedding
William	Rebecca	Promotion	Children
George	Lucy	Salary	Home
David	Emma	Status	Household

Table 2.2

Word Lists in the Dominance-Submission Implicit Association Test

Male names	Female names	Dominance	Submission
Oliver	Grace	Superior	Obeys
James	Megan	Power	Inferior
Henry	Isabel	Control	Surrender
Charlie	Katie	Rule	Docile
Edward	Alice	Command	Comply
Michael	Charlotte	Order	Conform

6.1.1 Procedure of the IAT. Each IAT consists of seven blocks (see Table 2.3). The first two blocks are practice blocks to familiarise participants with the task and the stimuli. In the first block participants classify names as Female or Male. In the second block they classify words as members of either of the two attribute categories. Blocks 3-4 are the first critical ones, where the two concepts are paired and share the same response key. Block 5 reverses block 2, and blocks 6-7 are the second critical ones, where the previous pairs are reversed. The order of the blocks is counterbalanced across participants. Half are administered

blocks 2-4 first (stereotype compatible), and for the other half, blocks 5-7 are administered first (stereotype incompatible). On-screen instructions are presented and speed and accuracy are also emphasised. Participants have to press 'K' with their right-hand index finger if the target word belongs to the category (in the single categorisation blocks) or either of the categories (in the dual categorisation blocks) shown on the upper right corner of the computer screen, or 'D' with their left-hand index finger if the target word is a member of the category(ies) shown on the upper left corner of the screen. The target word remains on the screen until a response is given. In case of an error, a red X is presented and participants must correct their response in order to move on to the next trial.

The labels of the two categories are presented in the upper left and right corners of the computer screen. The labels of the target category and the word stimuli of this category are in green capital letters. The labels of the attribute category and the word stimuli of this category are in blue lower case letters. All words are in 34 point Arial font and the colour of the background is white.

6.1.2. Scoring of the IAT. The IAT effect is computed using the improved scoring algorithm (*D* measure) proposed by Greenwald, Nosek, and Banaji (2003) which is now the standard method for its computation. As opposed to the previous scoring method which used the data only from the two test blocks (B4 & B7), the improved scoring algorithm uses data from the pairing practice blocks as well (B3 & B6). Initially, trials with response latency greater than 10,000 ms are deleted, as well as subjects for whom more than 10% of the trials have RTs less than 300 ms. Error trials are included in the analysis by using the RT until the correct response is given. Then, for each participant, the mean RT in B4 is subtracted from the mean RT in B7, and the mean RT in B3 is subtracted from the mean RT in B6. Each difference is then divided by the individual respondent's pooled standard deviation

of RTs in B4 & B7 (test blocks) and B3 & B6 (practice blocks), respectively. The average of these two scores is the IAT effect. Higher numbers indicate stronger cognitive association between two concepts, that is, in this study, a stronger association (i) between men and career and between women and home, and (ii) between men and dominance and between women and submission, rather than the opposite.

Table 2.3

Blocks Sequence of the Career-Domestic Implicit Association Test

Block	No. of trials	Items assigned to Left response key	Items assigned to Right response key
B1 practice	20	Female names	Male names
B2 practice	20	Domestic words	Career words
B3 1 st pairing practice	24	Female names + Domestic words	Male names + Career words
B4 1 st pairing	40	Female names + Domestic words	Male names + Career words
B5 reversed B2	30	Career words	Domestic words
B6 2 nd pairing practice	24	Female names + Career words	Male names + Domestic words
B7 2 nd pairing	40	Female names + Career words	Male names + Domestic words

Note. The same applies to the Dominance-Submission Implicit Association Test.

6.2. The Go/No-go Association Task

For the assessment of implicit positivity toward violence, one GNAT task was designed using E-Prime 1.1 software. The GNAT (Nosek & Banaji, 2001) is similar to the IAT in that it assesses the strength of association between a target category and an attribute, but different from it in that the GNAT allows the examination of automatic cognitive association between a *single* target category (e.g., violence) and an attribute (e.g., pleasant – unpleasant). The GNAT is useful when one is interested in assessing the strength of association between a single target and an attribute without the involvement of a contrasting object. During the critical blocks, target and distractor items are presented briefly one at a time in the middle of the computer screen, and participants are required to press the spacebar ('Go' response) if the word belongs to either of the two categories (e.g., violent or pleasant), 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.

Four lists of word stimuli were used: 10 violent, 10 nonviolent, 10 pleasant, and 10 unpleasant (see Table 2.4). The selected words were chosen from an initial pool of words which were rated by 23 independent raters on their pleasantness-unpleasantness and whether they had a violent or nonviolent connotation. Words for which there was an interrater agreement of 80% and over and were rated high on each dimension, were finally selected. The nonviolent words initially chosen, were later substituted by different ones after the pilot study described below (Section 7 in this chapter) indicated that some were confused as 'pleasant'. The final word lists did not differ in terms of frequency or length (Table 1 in Appendix B). As the nonviolent words serve as noise throughout the task, the nonviolent word list was not matched for frequency and length to the other three lists. The N-Watch program was used in order to obtain the lexical statistics (Davis, 2005).

Table 2.4

Word Lists in the Violence Go/No-go Association Task

Violent	Nonviolent	Pleasant	Unpleasant
Shoot	Explain	Glad	Yucky
Attack	Identify	Cheerful	Horrible
Stab	Insert	Fantastic	Agony
Push	Estimate	Sweet	Terrible
Hit	Open	Excellent	Failure
Choke	Walk	Sun	Ugly
Kick	Advertise	Happy	Dirty
Punch	Write	Joy	Evil
Beat	Transfer	Pleasure	Nasty
Fight	Distribute	Smile	Bad

6.2.1. Procedure of the GNAT. The GNAT begins with on-screen instructions which provide details about the task and instructions. Both speed and accuracy are highlighted. A screen with instructions is presented before the beginning of each block in order to prepare participants for the following categorisation condition (e.g., *in the next block you will classify words as being either violent or pleasant*). After the first two 1,000 ms blocks (B3 & B4) they read another screen preparing them for the 750 ms blocks (B5 & B6) by informing them that *the task will get a little bit harder as the words will disappear faster from the screen*.

The task comprises two conditions (violent words + pleasant words [VP], violent words + unpleasant words [VU]), each one consisting of two blocks, one with a response window of 1,000 ms and one with a response window of 750 ms, to ensure automaticity of responses without increasing the number of errors (Nosek & Banaji, 2001). Each block contains equal number of words from each one of the four categories (violent, nonviolent, pleasant, and unpleasant). Words are selected randomly and without replacement by E-Prime

software. There is a 250 ms interstimulus interval, during which participants receive feedback. If the response is correct, a green 'O' appears in the middle of the screen replacing the target word, or a red 'X' if the response is incorrect or the participant does not respond within the specified time limit. In incorrect trials participants also hear a beep tone from the computer speakers. This allows the experimenter to monitor their performance in order to stop and re-administer the experiment in case of excessive errors. The labels of the categories are presented in the upper left and right corners of the computer screen in white capital letters in 20 point Courier New font. The target words are presented in the centre of the screen in cyan lower case letters and have the same size and font as the categories words. The colour of the background is black.

The task begins with two practice blocks to familiarise participants with the procedure (see Table 2.5). In the first block participants have to discriminate between violent and nonviolent words, and press the spacebar ('Go' response) only if the word that appears in the middle of the screen is a violent one. In the second block participants have to discriminate between pleasant and unpleasant words by responding only to the pleasant ones. The practice blocks have a 1,000 ms response window and consist of 20 trials, half of which are targets and half are distractors. After the practice blocks follows the GNAT, consisting of four test blocks, two for each condition (VP, VU) and for each response window (1,000 ms, 750 ms). Each test block comprises 16 practice and 40 critical items. On-screen instructions are presented before each block, and participants are instructed to respond (press the spacebar) only to those target words which belong to either of the two categories whose labels appear on the upper right and left corners of the computer screen, and do nothing when they see words which are not members of these two categories. Speed and accuracy are also emphasised.

Table 2.5

Blocks Sequence of the Violence Go/No-go Association Task

Block	No. of trials	'Go' response	'No-go' response
B1 practice 1,000 ms	20	Violent words	Nonviolent words
B2 practice 1,000 ms	20	Pleasant words	Unpleasant words
B3 1 st test block 1,000 ms	16 + 40	Violent OR Pleasant words	Nonviolent OR Unpleasant words
B4 2 nd test block 1,000 ms	16 + 40	Violent OR Unpleasant words	Nonviolent OR Pleasant words
B5 3 rd test block 750 ms	16 + 40	Violent OR Pleasant words	Nonviolent OR Unpleasant words
B6 4 th test block 750 ms	16 + 40	Violent OR Unpleasant words	Nonviolent OR Pleasant words

6.2.2. Scoring of the GNAT. Only correct responses to trials that require a 'Go' response (target identification) are included in the analysis. The RTs in the two blocks (1,000 ms, 750 ms) for each condition (VP, VU) are averaged in order to obtain each participant's mean RT for each condition. A difference score is then computed for each participant, by subtracting the mean RT in the VU condition from the mean RT in the VP condition (VP – VU). Positive scores indicate faster responses in the VU condition and negative scores indicate faster responses in the VP condition. A higher positive difference score indicates more negative association between violence and pleasantness, while a higher negative score a more positive association between violence and pleasantness. An alternative scoring method is the sensitivity index d' from the Signal Detection Theory (Green & Swets, 1966). A greater d' value indicates a better ability to discriminate targets from distractors. This means that if

one has a greater d' in the VP condition than the VU condition, he/she is better able to discriminate violent and pleasant words among the distractors (nonviolent - unpleasant), indicating a stronger association between the two concepts. However, the use of response latency is considered a more reliable measure of performance and is preferred over sensitivity d' (Nosek & Banaji, 2001). For this reason GNAT results in the studies that follow in this thesis will be analysed based only on response latencies.

6.3. The Sentence Judgment Tasks

Four SJs with context sentences as primes were designed to tap into the ITs of Opposite sex is dangerous, Relationship entitlement, General entitlement, and Normalisation of relationship violence, using E-Prime 1.1 software.

The task designed here is based on Baldwin, Fehr, Keedian, Seidel, and Thomson's (1993) similar task which they used to investigate people's expectations about others, according to their attachment style. They found that participants with a secure attachment style were faster to identify positive outcome words, while participants with insecure attachment style, responded faster to negative outcome words. Keown et al. (2008a) also applied this task to investigate child sexual offenders' cognitive distortions. They found, however, that child sexual offenders did not differ from controls. The SJs of this thesis differ slightly from the tasks used in the two above studies and this is explained later in this section.

In the present task, two of each sentence's possible endings are both plausible, but if the participant holds the specific IT, then one of them is more expected, and response should be faster. The third word is an inappropriate ending of the sentence in terms of meaning and serves as noise. Participants are instructed to decide if the word that follows the sentence stem completes it in a way that makes sense or not. The choice of a real but inappropriate word rather than a non-word (as in a lexical decision task) was used in order to make sure that

participants actually read the sentence and do not just respond to the lexical identity of the target word.

6.3.1. Generation of sentences and target words. For each one of the four ITs an initial large pool of sentences was created, after a review of the literature on the cognitive correlates of IPV and an analysis of the content of items included in standard questionnaires used in IPV research which assess relevant cognitions and offence-supportive beliefs. In order to ensure that the sentences created do, indeed, reflect the concept they were supposed to assess, a pilot study was conducted. Twenty-two undergraduate and postgraduate psychology students from the University of Birmingham (16 female and 6 male) were given a booklet containing a description of each IT, 161 sentences, and rating instructions. The sentences were given complete, with an IT-consistent word. Participants were instructed to indicate which IT each sentence described best and could be an exemplar of it. If participants thought that a sentence belonged to more than one ITs, they were instructed to indicate that, and then order the relevant ITs from the most to the least closely related. A sentence was assigned to one IT if there was an agreement between at least 70% of the raters. There was agreement in the categorisation of 129 (80%) sentences. Of the remaining 32 sentences, 11 were very problematic and were discarded. The remaining 21 sentences were rephrased or altered and were given to six other raters who agreed on the categorisation. Finally, 120 sentence stems were chosen, 30 for each SJT (see Tables 2 to 5 in Appendix B).

Three word completions were assigned to each sentence stem. Two of these words were appropriate completions in terms of meaning: one IT-consistent and one IT-inconsistent (see Tables 2 to 5 in Appendix B for the sentence stems and their completions, and Tables 6 to 29 in Appendix B and for the words' lexical characteristics for each version of the task). A dictionary-thesaurus was used to identify the sentence completions and a large number of

words and their synonyms were selected in order for each sentence to have alternative endings (still IT-consistent or IT-inconsistent). This was necessary because in the last phase of the design the words in each condition (IT-consistent and IT-inconsistent) should not differ in terms of frequency and length, and therefore alternative endings with different lexical characteristics should be available. The third word ended the sentence in a way that did not make sense (inappropriate word), and random *real* words were selected for this list. A real but inappropriate word, rather than a nonword (as in a lexical decision task) was used in order to make sure that participants actually read the sentence and did not just respond to the lexical identity of the word. This is one of the differences between this task and the task in Baldwin et al.'s (1993) and Keown et al.'s (2008a) study, and therefore participants have to decide if the word that followed the sentence stem completed it in a way that made sense or not, instead of responding to its lexical identity. For this reason this task was named SJT.

The four SJTs are administered as one task. The task has three different versions and participants are randomly assigned to each one. There are three versions of the test for male participants and three for female participants. The same ITs are assessed in the male and female versions. Male and female versions have the same sentence stems, with two exceptions: they differ in one sentence stem in the Normalisation of relationship violence IT, and in six sentence stems in the Opposite sex is dangerous IT, for which the literature indicates that there are some hostile attitudes and beliefs associated only with men or women (Yodanis & Straus, 1996). The endings of the sentence stems is counterbalanced across the three versions (for example, for the first sentence stem, version 1 has an IT-consistent word ending, version 2 has an IT-inconsistent ending, and version 3 has an inappropriate ending).

Within each SJT version the two word lists (IT-consistent and IT-inconsistent) do not differ in terms of frequency and length (see Table 30 in Appendix B). This also applies to the

word lists of the IT-consistent (see Table 31 in Appendix B) and IT-inconsistent (see Table 32 in Appendix B) conditions across the three versions of each SJT. In order to achieve this, for some sentence stems across the male and female versions, different but similar in meaning words had to be used. For example the sentence in the IT-consistent condition of the Normalisation of relationship violence SJT *The idea that violence in the relationship is sometimes acceptable, is...* has the word *absurd* in the male version and the word *crazy* in the female version. Additionally, 13 sentence stems instead of having one IT-consistent, one IT-inconsistent, and one inappropriate word completion across the three different versions of each SJT, they took, for example, an IT-consistent ending in the two versions and an inappropriate ending in the third version, or an IT-consistent in one of the versions and an IT-inconsistent in the other two versions etc. This was necessary in order to keep consistency in the mean frequency and length of the target words across the three different versions of each SJT. These sentences can be seen in Tables 2 to 5 in Appendix B, where next to their word completions it is indicated whether they were used as IT-consistent, IT-inconsistent, or inappropriate endings, more than once or not at all. RTs to inappropriate words are not of interest, and therefore, these words were not matched to the other two word lists. Lexical statistics were obtained with the N-Watch program (Davis, 2005).

6.3.2. Procedure of the SJTs. The four SJTs are administered as one task. Before the beginning of the task, participants read on-screen instructions which explain in detail what they are required to do. Additionally, they are informed that they might read material which they might find distasteful, and they are instructed not to be distracted by this, as their task is not to judge the content and appropriateness of the sentences, but to decide on whether the target word is a meaningful ending to the sentence stem. Speed and accuracy are also highlighted.

The task begins with six practice trials, with target words that fit or do not fit the prior sentence stems. These sentences are irrelevant to any of the ITs. In the main task the sentences are presented randomly and with no replacement by E-Prime software. Each sentence stem is presented only once. Participants read each sentence stem at their own pace and press the space bar when done. A fixation cross is then presented in the middle of the screen for 1,000 ms, superimposed by the target word which remains on the screen for 1,000 ms or until a response is given. A 1,000 ms sentence-word interval was chosen in order to maximise the sentence effect on the words, and this is another difference with Keown et al.'s (2008a) study where the target word was presented immediately after the sentence stem. Participants receive visual feedback (1,000 ms; 'correct', 'incorrect' or 'please respond faster'), and additionally, they hear a beep sound for every wrong or late response. Both the sentence stem and the target words are presented in the middle of the computer screen in white lower case letters (except for the first letter of the first word of the sentence stems), in 18 point Courier New font. The colour of the background is black.

The instructions request participants to read each sentence carefully at their own pace, press the spacebar with their left hand when they finish, and then decide if the word that appears in the middle of the screen, after the presentation of the sentence stem, is a word that completes the sentence in a way that makes sense or not by pressing 'K' with the right-hand index finger if the target word makes sense, and 'L' with the right-hand middle finger if it does not. It is also emphasised that both speed and accuracy are important.

6.3.3. Scoring of the SJT. Only the correct responses' RTs are considered in statistical analyses. Similarly to the GNAT, a difference score is computed for each participant, for each one of the four SJTs. Each participant's mean RT in the IT-inconsistent condition is subtracted from the mean RT in the IT-consistent condition. Positive scores

indicate faster responses in the IT-*inconsistent* condition (non offence supportive cognition) and negative scores indicate faster responses in the IT-consistent condition (offence supportive cognition). This task is based on the assumption that the sentence content will facilitate recognition of those target words which complete the sentences in a way congruent with the individuals' attitudes and beliefs.

7. Pilot Study

The aim of the pilot study was to ensure that the implicit tasks described above were easily understood and not too easy or difficult to perform (floor-ceiling effect), as well as to identify any design flaws or problems with the word stimuli and sentence stems. An additional aim was to see if there would be an effect. It was expected that participants would perform better and faster in the stereotypical pairing condition of the IAT, not because they necessarily hold a traditional gender-role stereotype, but because such an association may also reflect extrapersonal cultural knowledge (Uhlmann, Poehlman, & Nosek, 2012). Likewise, since for most people violence is considered a negative experience, it was expected that students would be faster and more accurate in the VU condition of the GNAT compared to the VP, and in the IT-*inconsistent* condition of the Normalisation of relationship violence SJT. No specific expectations were made regarding Opposite sex is dangerous, Relationship entitlement, and General entitlement as these are beliefs and attitudes largely dependent on personality and life experiences.

Method

Participants

Participants for this pilot study were identified through friends and colleagues at the University of Birmingham. Ten university students (7 female and 3 male) took part and they were all native English speakers. Their mean age was 19.6 years ($SD = 1.17$ years).

Procedure

Upon arrival to the testing room participants read and signed an informed consent form providing a description of the study, and explaining issues of anonymity and confidentiality, their right to withdraw at any time and have their data deleted, along with avenues of support in case of any discomfort caused by the study (see Appendix C.1). They were seated in front of a computer, approximately 60 cm away from the screen. The computer tasks were administered on a computer with an Intel core i5-2500 CPU@ 3.3 GHz processor and a 15" monitor with 1024 x 768 resolution. Inquisit software (version 3.0.2.0; Inquisit, 2008) was used for the administration of the two IATs, and E-prime 1.1. software (Psychology Software Tools, Pittsburgh, PA) for the administration of the GNAT and the SJTs. Before the beginning of each task participants read detailed on-screen instructions and had the opportunity to ask questions. The session lasted for approximately 1 hour including small breaks. The implicit measures were administered in the following order: CD-IAT, GNAT, SJTs, and DS-IAT. In the end participants were orally debriefed and thanked (see Appendix C.2).

Results

The Implicit Association Tests

There were no problems with either of the IATs. None of the participants had more than 10% of their RTs below 300 ms or more than 10% of their RTs greater than 10,000 ms. As expected, participants were faster in making the stereotypical associations compared to the non-stereotypical, which indicates that both IATs measure what they were designed for. In the CD-IAT the mean RT in the stereotypical block was $M = 672.51$ ms ($SD = 127.17$) and in the counter-stereotypical it was $M = 858.12$ ms ($SD = 98.62$). The difference was significant, $t(9) = -6.33$, $p < .001$. In the DS-IAT the mean RT in the stereotypical block was $M = 723.45$ ms

($SD = 137.99$) and in the counter-stereotypical it was $M = 850.85$ ms ($SD = 122.13$). This difference was also significant, $t(9) = -5.77, p < .001$.

The Go/No-go Association Task

As expected participants were significantly faster in the VU ($M = 507.99$ ms, $SD = 53.06$) compared to the VP condition ($M = 545.25$ ms, $SD = 39.34$), $t(9) = 3.83, p = .004$. However, a high percentage of errors was observed in the two VP blocks (22.5% in the 1,000 ms block, and 24.8% in the 750 ms block), but not in the VU blocks (1,000 ms = 9.5%, 750 ms = 11.8%). Participants were asked why they thought they made so many mistakes in the VP condition. As expected, they all replied that it was difficult to associate violence with pleasantness, but they also said that they occasionally confused the nonviolent words (the distractors), which required a 'No-go' response, with pleasant words (targets) which required a 'Go' response, and therefore pressed the spacebar. Indeed, the nonviolent verbs originally selected had a pleasant connotation (e.g. comfort, support, care) and were, therefore, substituted by neutral verbs like identify, insert, and transfer (see Table 2.4). This amended GNAT was administered to eight postgraduate psychology students. This time the error rate in the VP condition was significantly lower (around 15%) and remained close to 10% for the VU condition.

The Sentence Judgment Tasks

In the Normalisation of relationship violence SJT, participants were significantly faster in the IT-inconsistent condition (not endorsement of the IT; $M = 536.75$ ms, $SD = 40.72$) compared to the IT-consistent ($M = 614.75$ ms, $SD = 58.20$), $t(9) = 5.46, p < .001$. Similarly, they were faster in the IT-inconsistent condition of the Relationship entitlement SJT ($M = 560.90$ ms, $SD = 50.28$) than in the IT-consistent ($M = 613.18$ ms, $SD = 70.61$) and this difference was marginally significant ($t(9) = 2.03, p = .073$). An opposite pattern emerged

for General entitlement so that responses were faster in the IT-consistent condition ($M = 567.54$ ms, $SD = 62.83$) compared to the IT-inconsistent ($M = 604.98$ ms, $SD = 48.50$) and this difference approached significance ($t(9) = -2.23$, $p = .052$). No difference between the two conditions was found for Opposite sex is dangerous ($t(9) = 1.24$, $p = .247$), although participants were faster in the IT-inconsistent ($M = 553.36$ ms, $SD = 67.65$) than the IT-consistent condition ($M = 576.48$ ms, $SD = 48.57$). An examination of individual mean RTs in the latter SJT revealed that half of the participants responded in an IT-consistent way and half in an IT-inconsistent, which explains the lack of significant difference in mean RTs.

Across the whole task error rates were within acceptable limits (11% - 14% in the IT-consistent condition, and 4% - 6% in the IT-inconsistent condition) and participants made more mistakes in the IT-consistent than the IT-inconsistent condition (except for the General Entitlement SJT), which shows that it was harder for them to respond to the target words when these completed the sentence stem in a way congruent with the ITs assessed. In terms of RTs, participants were faster in the IT-inconsistent condition in all the SJTs (with the exception of the General Entitlement SJT where the opposite was observed), although this difference was not always significant in this small sample. There were no problems detected.

Discussion

In general, all computer tasks seemed to work well and no problems were identified. The only exception was the GNAT's nonviolent words (distractors), which had a pleasant connotation and were confused with pleasant words. This resulted in participants occasionally producing a 'Go' response instead of the correct 'No-go' response. These words were, therefore, substituted by other, neutral words, and a re-administration of the GNAT indicated that this issue was resolved. There was not a floor or ceiling effect in either of the tasks, evident in error rates and RTs. Additionally, participants themselves found the tasks to be of

moderate difficulty. A secondary aim of the pilot study was to examine if there would be an effect in the implicit measures (i.e., significant difference in mean RTs between the consistent/congruent and inconsistent/incongruent conditions in each task). It was hypothesised that performance would be faster in the stereotype-congruent condition of the IATs, in the VU condition of the GNAT, and in the IT-inconsistent condition of the Normalisation of relationship violence SJT, and this was confirmed. No specific hypotheses were made in relation to the direction of the difference in mean RTs in the other three SJTs since such beliefs and attitudes usually depend on individual differences and different life experiences. A significant difference between the IT-consistent and IT-inconsistent condition was found for the General entitlement SJT, but not for the Opposite sex is dangerous and the Relationship entitlement SJTs, although in the latter the results approached significance. The reason for this lack of statistical significance was because some participants expressed an IT-consistent way of thinking while others an IT-inconsistent, and not because individual mean RTs were similar between the two test conditions (which would indicate that the tasks were not able to produce any effect). Therefore, these implicit measures were used in the studies that follow in this thesis.

CHAPTER 3
EXPLORING THE PSYCHOMETRIC PROPERTIES OF THE IMPLICIT
MEASURES OF THIS THESIS

Chapter Rationale

The aim of this chapter is to explore the psychometric properties of the seven implicit measures described in Chapter 2 which are used in the main studies of this thesis (Chapter 4). Despite an explosion in the use of implicit measures in psychology research, testing their reliability and validity has not been a common practice to date, especially in the area of violence research, and has focused mainly on the Implicit Association Test (IAT). The implicit measures of this thesis, along with conceptually corresponding explicit self-report measures and three additional methodologically, but not conceptually, corresponding implicit measures were administered to a sample of 122 male and female university students. Their internal consistency, test-retest reliability, and convergence and discriminant validity were examined. This is the first empirical test of the properties of a Sentence Judgment Task (SJT) (or similar). In addition, this is the first time implicit-explicit associations have been examined whilst taking into account the confounding effect of social desirability on responses on the explicit measures.

Introduction

During the past decade social psychology research has shown a great interest in the use of implicit reaction-time measures as an alternative to traditional methods of assessment, like questionnaires and interviews. A plethora of studies to date have employed implicit measures in a wide range of domains such as attitudes (e.g., Arcuri, Castelli, Galdi, Zogmaister, & Amadori, 2008; Banse, Seise, & Zerbes, 2001; Huijding, de Jong, Wiers, & Verkooijen, 2005; Karpinski & Hilton, 2001), beliefs (e.g., Eyssel & Bohner, 2007; Jajodia & Earleywine, 2003; Scarabis, Florack, & Gosejohann, 2006), stereotypes (e.g., Banaji & Hardin, 1996; Rudman & Glick, 2001; Sekaquaptewa, Espinoza, Thompson, Vargas, & von Hippel, 2003; Steffens & Jelenec, 2011), self-esteem (e.g., Bosson, Swann, & Pennebaker, 2000; Greenwald & Farnham, 2000; Gregg & Sedikides, 2010), relationships (e.g., Czopp, Monteith, Zimmerman, & Lynam, 2004; Zayas & Shoda 2005), fears (Teachman, 2007; Teachman & Woody, 2003), anxiety (e.g., Egloff & Schmukle, 2002), and offence supportive cognition (e.g., Banse, Schmidt, & Clabour, 2010; Gray, MacCulloch, Smith, Morris, & Snowden, 2003; Keown, Gannon, & Ward, 2008a; Polaschek, Bell, Calvert, & Takarangi, 2010; Smith & Waterman, 2004).

Although many studies have employed implicit measures to date, a very small proportion of them have examined their psychometric properties. The IAT is the only implicit measure whose psychometric properties have been systematically investigated, mainly because it is currently the most popular implicit measure. As a consequence, it has been relatively common for researchers to examine its reliability and validity. Regarding the Go/No-go Association Task (GNAT) the number of studies investigating its psychometric properties is significantly smaller. Tasks similar to the Sentence Judgment Task (SJT) used in this thesis have not been commonly used to date as an implicit measure of attitudes and the

psychometric properties of a task like this are explored here for the first time. The text that follows provides a short discussion about the qualities of a good assessment tool and continues with an overview of the research on the psychometric properties of the IAT and the GNAT.

What makes a good measure?

In psychometric testing a good quality measure must be reliable and valid. A measure is reliable if it yields consistent results under consistent conditions and valid when it measures what it is intended to measure (Kline, 1993). Two types of reliability are usually assessed: test-retest reliability and internal consistency. The first is computed by correlating the scores on a test taken on two different occasions and Pearson's correlation coefficients should ideally be above .80. Internal consistency can be assessed either by estimating the Cronbach's alpha coefficient, with an $\alpha > .80$ indicating a good level of reliability, or by computing the correlation between two different halves of the same test (split-half reliability) where, similarly to the Cronbach's alpha coefficient, the correlation coefficient should be above .80. For all the above, values between .70 and .80 are considered acceptable, but they should not be below .70 (Kline, 1993).

In terms of validity, there are various methods to allow concluding whether a test is valid or not (Kline, 1993). A measure should demonstrate content validity, that is, its content should cover all the important aspects of the construct/domain of interest. A test is said to have concurrent validity if it correlates with another, administered at the same time, (valid) test of the same or other closely related construct (convergence validity). Given that this criterion test is valid itself, correlations should be above .75. In addition, a test should not correlate with measures assessing constructs with which it should not be related (discriminant validity). Predictive validity is established when a test is able to predict a criterion measure,

for example, performance on a test or future behaviour. Similar to convergence validity, the correlation coefficient between the test and the criterion measure is computed, but in the case of predictive validity the criterion measure is collected at a later time. A measure should also be able to distinguish between groups which are expected to differ in the construct assessed (known-groups validity). Incremental validity is another type of validity especially useful in selection procedures. A test is said to have incremental validity if it can add to the predictive validity of an existing measure, in other words if it explains or predicts a criterion measure (e.g. group membership, a behaviour, or performance on a test) beyond other predictors (Kline, 1993).

The establishment of the psychometric properties of any measure used in data collection processes is important and necessary in order to ensure that the measure is free of bias and that any conclusions drawn from research findings are valid. The same should apply to implicit measures and researchers have started, although not systematically, to examine and report the reliability and validity of the implicit measures they employ in their research. However, in the text that follows it will become evident that the above numerical conventional standards which determine whether a test is reliable or valid most often are not met in the case of implicit measures (Bosson et al., 2000; Olson & Fazio, 2003).

The Psychometric Properties of the IAT

A recent meta-analysis showed that, compared to other response time measures, the IAT has shown very good internal consistency (Cronbach's alpha or split-half), with a mean value of .79, and adequate test-retest reliability with a mean $r = .51$ (Hofmann, Gawronski, Gschwendner, Le, & Schmitt, 2005) and a median $r = .56$ (Nosek, Greenwald, & Banaji, 2007). A meta-analysis of 122 studies (184 independent samples; Greenwald, Poehlman, Uhlmann, & Banaji, 2009) revealed a moderate average (across nine different criterion

measure domains) predictive validity of the IAT ($r = .27$). The average predictive validity of the explicit measures was $r = .36$. It was of interest that in socially sensitive topics the predictive validity of the explicit measures was reduced, while this did not apply to the IAT. Also, the IAT had greater predictive validity than self-report measures in the criterion domain of interracial and other intergroup behaviour, but only in these two domains. Finally, both the IAT and explicit measures had mutual incremental predictive validity, that is, each measure explained variance not accounted by the other, indicating that the IAT was not redundant but had a unique contribution to the explanation of the criterion variable beyond that accounted for by the explicit measures.

The convergence validity of implicit measures is usually explored through examination of their correlation with explicit measures which assess the same construct. Regarding the IAT, Hofmann, Gawronski, et al.'s (2005) meta-analysis of 126 studies revealed an overall moderate disattenuated correlation $r = .24$ (uncorrected $r = .19$). As already discussed in Chapter 2, implicit-explicit associations are moderated by various psychological and methodological factors (e.g., characteristics of the topic, characteristics of the self-report and the implicit measures), and Hofmann, Gawronski, et al.'s meta-analysis showed that. For example, studies on consumer attitudes demonstrated the highest implicit-explicit correlations ($r = .34$), and studies on socially sensitive topics, like self-esteem and stereotypes, showed the lowest ($r = .13$). Likewise, it was observed that the strength of implicit-explicit correlations was associated with levels of conceptual correspondence between the two measures, and correlations were stronger when the explicit measure was an adjective rating measure ($r = .29$) and were lower for scales (aggregate measures of several items; $r = .18$). One interesting finding of this meta-analysis was that implicit-explicit correlations were higher when the explicit judgment was characterised by a high level of

spontaneity, a finding which supports the assumption that implicit measures assess automatically activated cognitive associations.

The two IATs employed in the present study aimed to assess gender-role stereotype and in order to obtain a clearer view of the implicit-explicit correlations in this area, previous studies which employed the same or similar IATs were identified. The results are mixed. Nosek, Smyth, et al. (2007) reported outcomes from the on-line administration of a Gender-IAT (career vs. family) through the Project Implicit website (<https://implicit.harvard.edu/implicit/>). They found a modest but positive implicit-explicit correlation of $r = .16$ ($n = 83,084$). Rudman, Greenwald, and McGhee (2001) found significant correlations between a gender-potency IAT (potent vs. weak) and explicit measures, across three studies, ranging from .13 to .33. They also employed a gender-warmth IAT (warm vs. cold) and a gender-stereotype IAT (powerful vs. warm attributes), but the first was correlated with the explicit measures in the opposite direction and no significant associations emerged for the second. Quadflieg et al. (2009) found a moderate significant association ($r = -.43$) between their Gender IAT (power vs. weak) and a self-report questionnaire assessing gender-role stereotype. In Rudman and Kilianski's (2000) study, a Gender- Authority IAT and an Agentic-Communal IAT were associated only with one of the two explicit measures employed. White and White (2006) found a correlation only for one of the three Gender-Occupations IATs. Other studies using a Strong-Weak IAT (Knutson, Mah, Manly, & Grafman, 2007), Agentic-Communal IATs (Dasgupta & Asgari, 2004; Rudman & Glick, 2001), and a Career-Domestic IAT (Rudman & Kilianski, 2000) failed to find significant implicit-explicit associations.

The Psychometric Properties of the GNAT

Compared to the IAT, significantly fewer studies have examined the psychometric

properties of the GNAT. Internal consistency for GNAT measures (split-half r) has been found to range from .20 to .90, with most studies reporting split-half correlations above .50 (Boldero, Rawlings, & Haslam, 2007; Buhlmann, Teachman, & Kathmann, 2011; Devos & Ma, 2008; Gregg & Sedikides, 2010; Nosek & Banaji, 2001; Rudolph, Schröder-Abé, Schütz, Gregg, & Sedikides, 2008; Schoenleber & Berenbaum, 2010; Steffens & Jelenec, 2011; Teachman, 2007; Zogmaister, Arcuri, Castelli, & Smith, 2008). Rudolf et al. (2008) and Gregg and Sedikides (2010) found adequate test-retest reliability for a self-esteem GNAT ($r = .51$; one week interval). The disattenuated test-retest correlation reported by Gregg and Sedikides (2010) was .68. The GNAT has shown to be a valid measure across studies exploring various constructs like intimate relationships instability (Lee, Rogge, & Reis, 2010), importance of attractiveness (Buhlmann, et al., 2011), fear of spiders (Teachman, 2007), romantic partner preference for physical attractiveness (Eastwick, Eagly, Finkel, & Johnson, 2011), and Math-Language gender stereotype (Steffens & Jelenec, 2011).

With regards to GNAT's convergence with explicit measures the majority of the studies have failed to find significant associations (e.g., Boucher, Peng, Shi, & Wang, 2009; Devos & Ma, 2008; Eastwick et al., 2011; Nosek & Banaji, 2001; Rudolph et al., 2008; Smith, Stewart, Myers, & Latu, 2008; Spence & Townsend, 2006; Valiente et al., 2011). Boldero et al. (2007) found significant correlations after controlling for systematic method variance. In general, correlations with explicit measures tend to be low to moderate (e.g., Boldero et al., 2007; Buhlmann et al., 2011), although, in his study on spider fear, Teachman (2007) found moderate to high effect sizes. In two other studies, although the GNAT was not correlated with its conceptually related explicit concept, it correlated with another, meaningful, criterion variable (Gregg & Sedikides, 2010; Schoenleber & Berenbaum, 2010).

Chapter Objectives

The aim of the study in this chapter is to examine the psychometric properties of the seven implicit measures described in Chapter 2. These measures were designed to assess offence supportive cognition in men and women who perpetrate IPV and tap onto the six of the seven Implicit Theories (ITs) proposed in Chapter 1: I am the man, Opposite sex is dangerous, General entitlement, Relationship entitlement, Normalisation of relationship violence, and Normalisation of violence. Specifically, the following will be investigated:

1. Their internal consistency and temporal stability (test-retest). In line with previous research it is expected that the IATs will show reasonable internal consistency and temporal stability. The same is expected for the GNAT regarding its internal consistency but with regard to its test-retest reliability no predictions can be made as similar available data from previous research are scarce. No specific hypotheses are made for the SJTs as it is the first time that the psychometric properties of a measure like this are explored.
2. Their discriminant validity. It is expected that the implicit measures will show discriminant validity evidenced by the lack of significant correlations with their methodologically but not conceptually corresponding implicit tasks, specifically designed for this purpose.
3. Their convergence validity. Regarding convergence among the implicit measures, it is predicted that the two gender-role IATs will converge. Given that *different types* of implicit measures which assess the *same* construct often do not converge or correlate very modestly (Bosson et al., 2000; De Houwer, 2003b; Sherman, Rose, Koch, Presson, & Chassin, 2003) it is not expected that many (or any at all) significant associations among the implicit measures of this thesis, which assess different

constructs, will emerge (except for the association between the two IATs). In terms of implicit-explicit associations, these are expected to be significant but weak, given that previous research has shown that implicit-explicit correlations are low in socially sensitive topics, when the explicit measure is a questionnaire, and when the latter is characterised by low level of spontaneity in responding, like the explicit measures of this thesis are (Hofmann, Gawronski, et al., 2005).

Method

Participants

The sample comprised 122 undergraduate and postgraduate students, 36 men and 86 women (M age = 19.74, SD = 2.16), attending psychology courses at the University of Birmingham. They were all of British nationality and native English speakers. In terms of ethnic background, 72.1% (n = 88) reported white and 15.6% (n = 19) did not provide this information.

Measures

Implicit measures.

The Implicit Association Tests. Participants were administered the Career-Domestic IAT (CD-IAT) and the Dominance-Submission IAT (DS-IAT) described in detail in Section 6 of Chapter 2 of this thesis. A third IAT was designed to establish the discriminant validity of these two IATs. To maintain consistency with the main IATs of this thesis, this additional IAT also assessed stereotype, and more specifically stereotypical attitudes toward obese people. The target categories were Fat people-Thin people and the attribute categories were Lazy-Motivated (Teachman & Brownell, 2001; Wang, Brownell, & Wadden, 2004). The word stimuli for the Fat-Thin IAT are presented in Table 1 in Appendix D. Everything else regarding the word stimuli selection procedure, the task's structure and its blocks sequence

was the same as in the main two IATs of this thesis. A higher positive IAT effect indicates a stronger stereotypical cognitive association, while a higher negative score indicates a stronger counter stereotypical association.

The Go/No-go Association Task. The Violence GNAT was administered (see Section 6 of Chapter 2), along with an additional Smoking GNAT for the examination of the discriminant validity of the Violence GNAT. Since the Violence GNAT is an affective evaluation of the concept of violence, an affective Smoking GNAT was designed. Four word lists were used in this task: 10 smoking, 10 pleasant, 10 unpleasant, and 10 cooking (distractors) words, following the same procedure as in the Violence GNAT (the word stimuli for the Smoking GNAT and their lexical characteristics are presented in Tables 2 and 3 in Appendix D). Everything else was the same as in the Violence GNAT. A higher positive GNAT difference score indicates a stronger cognitive association between violence (or smoking) and unpleasantness, while a higher negative difference score indicates a stronger cognitive association between violence (or smoking) and pleasantness.

The Sentence Judgement Tasks. Participants were administered the four main SJTs of this thesis, described in Section 6 of Chapter 2. For the establishment of their discriminant validity one additional SJT was designed assessing interpersonal expectancies related to underlying attachment styles, similar to the one developed by Baldwin, Fehr, Keedian, Seidel, and Thomson (1993). The same procedure used previously was followed for the selection of the final sentence stems and their completions. Everything else remained the same as in the main SJTs of this thesis. The interpersonal expectancies SJT comprised 20 context sentences within the domains of closeness, trust, and dependency. Ten of the context sentences had a positive outcome word ending and 10 had a negative outcome ending (this SJT did not include sentences with inappropriate endings). Only one version for this SJT was

administered to all participants (see Tables 4 and 5 in Appendix D for sentence stems, word completions, and lexical characteristics of the latter). All five SJTs were administered as one task with the sentence stems randomly presented by E-prime software. Positive scores indicate faster responses in the IT-*inconsistent* condition (non-offence supportive cognition/expectation of positive outcomes) and negative scores indicate faster responses in the IT-*consistent* condition (offence supportive cognition/expectation of negative outcomes).

Explicit measures. The following, conceptually corresponding to the implicit measures, self-report questionnaires were administered. All questionnaires can be found in Appendix E.

Conceptually corresponding to the CD-IAT and the DS-IAT explicit measure.

Attitudes toward Women Scale (AWS; Spence, Helmreich, & Stapp, 1973). This is a 25-item scale assessing traditional/conservative attitudes about gender roles in society. Participants respond on a 4-point Likert scale from 0 = *strongly agree* to 3 = *strongly disagree*. A high score indicates more egalitarian attitudes. Example items are: “Swearing and obscenity are more repulsive in the speech of a woman than of a man”, “Women should assume their rightful placed in business and all the professions along with men”, and “The intellectual leadership of a community should be largely in the hands of men”. The scale has shown very good internal consistency with alpha coefficients ranging from .81 to .90 (Daugherty & Dambrot, 1986; Smith & Bradley, 1980; Stanley, Boots, & Johnson, 1975; Yoder, Rice, Adams, Priest, & Prince, 1982) and very good construct and criterion validity (see Smith & Bradley, 1980; Spence et al., 1973).

Conceptually corresponding to the GNAT explicit measures.

The Normative Beliefs about Aggression (NBA; Huesmann & Guerra, 1997). This scale comprises 20 items measuring approval of aggression under varying conditions of

provocation and under unspecified conditions. The scale includes an 8-item 'General Beliefs' subscale which assesses approval of physical (4 items) and verbal (4 items) general aggression without provocation. This subscale has shown very good internal consistency in a sample of undergraduate university students ($\alpha = .89$, Huesmann, personal communication, January 23, 2012) and in elementary school students ($\alpha = .80$, Huesmann & Guerra, 1997). Sufficient validity for this measure has been found in school children (Huesmann & Guerra, 1997) but there is no similar published data from adult samples. Only the physical aggression items were included in this study. Example items are: "It is generally wrong to get into physical fights with others" and "In general it is OK to take your anger out on others by using physical force". Responses are given on a 4-point Likert scale ranging from 1 = *strongly disagree* to 4 = *strongly agree*, and higher scores indicate more approval of physical aggression.

The Revised 16-item Expagg Scale (Campbell, Muncer, McManus, & Woodhouse, 1999). This scale assesses people's instrumental (8 items) and expressive (8 items) beliefs about their own physical aggression. Only the instrumental beliefs subscale was used. Participants rate their level of agreement with each statement on a 5-point Likert scale from 1 = *strongly disagree* to 5 = *strongly agree* with higher scores indicating more instrumental beliefs. Example items are: "I feel that physical aggression is necessary to get through to some people" and "If I hit someone and hurt them, I feel as if they were asking for it". The internal consistency of the instrumental subscale reported by the authors was .80 (Campbell et al., 1999). From an on-line administration of this scale to approximately 1,000 respondents of all ages, Driscoll, Campbell, and Muncer (2005) found an alpha coefficient of .83. It has also shown good convergence validity with other physical aggression scales (e.g., Archer & High, 1997a; Archer & High, 1997b), but findings on its construct validity have been inconsistent

(see Forrest, Shevlin, Eatough, Gregson, & Davies, 2002). In an adapted to IPV version of the Expagg, the instrumental beliefs subscale was found to predict self-reported IPV in a sample of male and female IPV perpetrators (Archer & Graham-Kevan, 2003).

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

The Gender Hostility Scales (Yodanis & Straus, 1996). This is a 62-item scale assessing hostility toward men (31 items) and women (31 items) and comprises items about negative emotions and beliefs about the two genders. Responses are given on a 4-point Likert scale ranging from 1 = *strongly disagree* to 4 = *strongly agree*. Example items are: “Women are more dishonest than men”, “Women/men treat men/women badly”, “There are days when I don't like women/men”, “Men/women are too competitive”, and “I am sometimes suspicious of women/men”. Both subscales have shown very good reliability (.88 for hostility to men and .92 for hostility to women) and construct validity (Yodanis & Straus, 1996). For the purpose of this thesis, responses of female participants reporting on their attitudes toward men, and responses of male participants reporting on their attitudes toward women were merged into one common variable named *Opposite Gender Hostility (OGH)*. Higher scores indicate more hostility.

Conceptually corresponding to the General entitlement SJT explicit measures.

Psychological Entitlement Scale (PES; Campbell, Bonacci, Shelton, Exline, & Bushman 2004). This scale comprises nine items assessing beliefs that one deserves and is entitled to more, compared to others, for example, “I honestly feel I'm just more deserving than others”, “I feel entitled to more of everything”, and “I demand the best because I'm worth it”. Responses are given on a 7-point Likert scale ranging from 1 = *strongly disagree* to 7 = *strongly agree*. High scores indicate more entitlement. Campbell et al. (2004) demonstrated, across nine studies, that the scale has good internal consistency (alphas ranging from .80 to

.90), good temporal stability (1-month test-retest $r = .72$, 2-month test-retest $r = .70$) and that it is a valid measure of psychological entitlement.

Entitlement Subscale from the Narcissistic Personality Inventory (NPI; Raskin & Terry, 1988). The NPI is a 40-item inventory assessing normal levels of narcissism in nonclinical populations. The items were generated based on the Diagnostic and Statistical Manual of Mental Disorders (3rd ed.; DSM–III; American Psychiatric Association, 1980) criteria for Narcissistic Personality Disorder and have the form of forced-choice dyads. NPI comprises seven components: authority, exhibitionism, superiority, entitlement, exploitativeness, self-sufficiency, and vanity, and only the 6-item entitlement subscale was used in this study. Example items (in dyads) are: “I insist upon getting the respect that is due me/ I usually get the respect I deserve” and “I wish somebody would someday write my biography/I don’t like people to pry into my life”. The whole scale has shown very good reliability (Guttman lambda [equivalent of the Cronbach’s alpha coefficient] = .83) and validity. The entitlement subscale has demonstrated below moderate internal consistency around .50 and moderate test-retest reliability over a 14-week period, $r = .57$ (del Rosario & White, 2005; Raskin & Terry, 1988). High scores indicate more entitlement.

Conceptually corresponding to the Relationship entitlement SJT explicit measures.

The Revised Controlling Behaviours Scale (CBS-R; Graham-Kevan & Archer, 2005). This is a 24-item scale measuring the use of controlling behaviours between partners. It comprises five subscales: economic abuse, coercion and threats, intimidation, emotional abuse, and isolation. Participants report the frequency with which they have used each act of control toward their partner within the last year, ranging from 0 = *never* to 4 = *very frequently*, and whether each control act ever happened before the last 12 months. Example items are: “Controlled the others money”, “Showed the other up in public”, “Tried to restrict

time the other spent with family or friends”, and “Checked up on the others movements”. Higher scores indicate greater use of control. The scale has shown to be a reliable measure (alphas ranging from .87 to .90) and valid for use with IPV samples (Graham-Kevan & Archer, 2003; 2005; 2009).

The Dominance Scale (Hamby, 1996). This 32-item questionnaire measures three types of power and control in relationships: authority, restrictiveness, and disparagement. Responses are given on a 4-point Likert Scale from 1 = *strongly disagree* to 4 = *strongly agree* with higher scores indicating more domineering behaviour. Example items are: “I often tell my partner how to do something”, “I sometimes think my partner is unattractive”, “I insist on knowing where my partner is at all times”, and “I have a right to be involved with anything my partner does”. The scale has demonstrated good internal consistency with subscales’ alphas ranging from .73 to .82 in a university student sample, and from .92 to .95 in a female support group sample (Hamby, 1996). High scores indicate more dominance in the relationship.

Conceptually corresponding to the Normalisation of relationship violence SJT explicit measures.

Acceptance of Interpersonal Violence (AIV; Burt, 1980). This is a 6-item questionnaire assessing primarily violence and force against women (5 out of the 6 items). Responses are given on a 7-point scale ranging from 1 = *strongly disagree* to 7 = *strongly agree* and higher scores indicate more acceptance. Example items are: “People today should not use ‘an eye for an eye and a tooth for a tooth’ as a rule for living”, “Sometimes the only way a man can get a cold woman turned on is to use force”, and “A man is never justified in hitting his wife”. For the purpose of this thesis the wording of the five items which refer to female directed violence was altered in order to reflect violence between partners in general. For example, the item “A

man is never justified in hitting his wife” was reworded to “One is never justified in hitting his/her partner”. The scale has shown moderate internal consistency, around $\alpha = .59$ (Burt, 1980; Ogle, Noel, & Maisto, 2009), but very good predictive validity (Malamuth, Heavey, & Lintz, 1993; Malamuth, Lintz, Heavey, Barnes, & Acker, 1995).

The Inventory of Beliefs about Wife Beating (Saunders, Lynch, Grayson, & Linz, 1987). This scale consists of 31 items which measure attitudes and beliefs about violence towards wives. It comprises five subscales: wife beating is justified (WJ), wives gain from beatings (WG), help should be given (HG), offender should be punished (OP), and offender is responsible (OR). Example items are: “There is no excuse for a man beating his wife”, “Women feel pain and no pleasure when beat-up by their husbands”, “Women should be protected by law if their husbands beat them”, and “Causes of wife-beating are the fault of the husband”. For the purpose of this thesis a slightly modified version of this scale was given to male participants after replacing the words ‘wife’ and ‘husband’ with the words ‘partner’ and ‘man’ or ‘women’, as appropriate. For example, the item “Wives try to get beaten by their husbands in order to get sympathy from others” was reworded to “Women try to get beaten by their partners in order to get sympathy from others”. For female participants, the same items were adapted in order to assess attitudes about women-to-men IPV. Each statement is scored on a 7-point Likert scale from 1 = *strongly agree* to 7 = *strongly disagree*. All items were scored so that higher scores indicate greater endorsement and approval of the use of violence toward the opposite gender partner. Male and female data were merged in order to create one variable for all participants named Inventory of Beliefs about Partner Beating (IBPB). Saunders et al. (1987) reported good construct validity and acceptable reliability for two of the five subscales, WJ ($\alpha = .86$), and WG ($\alpha = .77$), but low internal consistency in the other three (α range from .61 to .67). A longer subscale, however, comprising the three subscales

WJ, WG, and HG was found to account of 79.8% of the variance and had an alpha of .89. The total score was used in the studies of this thesis.

Social Desirability. Participants were administered the 20-item impression management subscale of the Balanced Inventory of Desirable Responding (BIDR; Paulhus, 1984), which is a 40-item instrument for the assessment of socially desirable response bias. The continuous scoring method was employed so that higher scores indicate more impression management (deliberate self-presentation). Responses are given on a scale from 1 = *not true* to 7 = *very true*. Example items are: “I never cover up my mistakes”, “I don't gossip about other people's business”, and “I have never dropped litter on the street”. The impression management subscale has demonstrated good internal consistency ($\alpha = .75$ to $.86$), acceptable test-retest reliability over a five week period ($r = .65$), and concurrent validity (Paulhus, 1988).

Procedure

Initially the study received ethical approval from the University of Birmingham's Ethics Committee. Participants were recruited through the University's Research Participation Scheme (RPS) in exchange for research credits. Upon arrival to the testing room participants read and signed an informed consent form providing a description of the study, explaining issues of anonymity and confidentiality, their right to withdraw at any time and have their data deleted, and avenues of support in case of any discomfort caused by the study (see C.3 to C.5 in Appendix C for Ethics approval, RPS on-screen study information before participants' sign-up, and informed consent form, respectively). All 122 participants were administered the main implicit computer tasks and the self-report questionnaires. Fifty-five of the participants were given the three additional implicit measures (Fat-Thin IAT, Smoking GNAT, and Interpersonal Expectancies SJT) and provided data for the assessment of the discriminant

validity of the main implicit measures of this thesis. Of those 55 participants, 52 attended a re-test session, scheduled to take place 7 days after the first session, and were re-administered the main implicit measures for the establishment of their temporal stability.

Those participants who attended only one session were given only the main computer tasks and completed the questionnaires immediately after that. The whole procedure lasted for approximately 2 hours including small breaks. The implicit measures were administered in the following order: CD-IAT, Violence GNAT, SJTs, and DS-IAT. Participants who provided data for the discriminant and test-retest reliability attended two sessions. During the first session they were given the main implicit measures along with the three additional implicit measures for the establishment of the discriminant validity of the first, in the following order: CD-IAT, Violence GNAT, SJTs, DS-IAT, Smoking GNAT, and Fat-Thin IAT. This part lasted approximately 70 mins. During the second session participants were administered only the main implicit measures and completed the questionnaires. The duration of this session was about 90 mins. Before the beginning of each task, participants read detailed on-screen instructions, which also emphasised speed and accuracy, and had the opportunity to ask questions if something was not clear. Administration procedures, technical characteristics of the computer used, and software information were the same as in the pilot study of Chapter 2. The study was anonymous and participants were asked to create their own personal ID comprising letters and numbers. Additionally, they were given an envelope to seal the questionnaires in upon completion and put them in a sealed ballot-like box. In the end, participants were thanked and orally debriefed (see C.6 in Appendix C for debriefing text).

Data Preparation and Scoring

Following Greenwald, Nosek, and Banaji's (2003) exclusion criteria for the IAT, no participants were excluded in the current study, that is, there were no participants with more

than 10% of their RTs below 300 ms or more than 10% of their RTs greater than 10,000 ms in any of the three IATs. In the GNATs, response latencies below 250 ms were deleted, since they are likely to represent unintentional fast responses (there were only eight RTs below 250 ms in the Violence GNAT and 1 RT in the Smoking GNAT). Individual participants' error rates were examined in order to identify participants with more than 40% errors in either condition – Violence-Pleasantness (VP) or Violence-Unpleasantness (VU), Smoking-Pleasantness (SP) or Smoking-Unpleasantness (SU) – or with more than 30% in the whole task (Buhmann et al., 2011; Teachman, 2007). Under this criterion none of the participants were excluded. The same procedure was followed for the SJTs. There were only four RTs below 250 ms. Participants with more than 25% or errors in a SJT (not considering responses to distractor word stimuli [inappropriate word completions]) were excluded from this SJT's analysis. This resulted in five participants being excluded from the Normalisation of relationship violence SJT analysis, five from the Relationship entitlement SJT analysis, one from the Opposite sex is dangerous SJT, and two from the General entitlement SJT analysis.

Details on the scoring procedures of the implicit measures are described in Section 6 of Chapter 2 of this thesis. Briefly, a stronger positive IAT effect (higher *D* score) indicates a stereotypical association, that is, in this study, a stronger cognitive association between (a) men-career and women-home, (b) men-dominance and women-submission, and (c) fat people-laziness and thin people-motivation, rather than the opposite. A higher positive GNAT difference score indicates a stronger association between violence or smoking and *unpleasantness*, while a higher negative difference score indicates a stronger association between violence or smoking and pleasantness. Likewise, a higher positive difference score in the SJTs indicates stronger IT-*inconsistent* thinking while a higher negative score indicates stronger IT-consistent thinking.

The explicit measures were tested for assumptions of parametric testing. Only the CBS-R was slightly skewed due to a few extreme values which were winsorised to the scale's maximum cut-off value (2 *SD* above the mean). The AIV, the NPI-entitlement, and the NBA-physical had low internal consistency (see Table 3.2) and were excluded from all statistical analyses.

Results

Internal Consistency

Split-half reliabilities were estimated for the two gender-role IATs and for the Violence GNAT. Individual difference scores were computed separately for two subsets of each IAT. Each subset comprised the same number of targets and attributes. For the GNAT the data file was separated into odd and even numbered trials. The first half comprised the odd numbered trials of the VP and VU conditions (across 1,000 ms and 750 ms blocks) and the second half, the even numbered trials. A difference mean RT score was then computed for each participant for each half. The Spearman-Brown split-half reliability coefficient (Spearman-Brown prophecy coefficient) was also computed. This coefficient estimates the reliability of a full scale based on split-half reliability measures. For two halves of equal length the formula is: $\text{reliability} = 2 * r_{\text{half-split}} / 1 + r_{\text{half-split}}$. Results are presented in Table 3.1.

Regarding the SJTs, the fact that there were three different versions for each one, with word completions of the same sentence stem counterbalanced across versions (see section 6 of Chapter 2), did not allow computing their internal consistency using the split-half method. Although such an analysis was possible, it would not have been meaningful because it would provide split-half estimates for each version of each SJT and not an estimate for each SJT as a whole. Therefore, two alternative methods were employed. In the first one, the mean total

sample RT to each sentence's IT-consistent ending and IT-inconsistent ending were initially computed. The 30 sentences of each SJT were divided into three splits (sentences 1-10, 11-20, and 21-30). Separate one-way ANOVAs were then conducted for each SJT in order to compare the means in the IT-consistent condition and in the IT-inconsistent condition between the three splits. There were no significant differences between the three splits in either the IT-consistent or the IT-inconsistent condition for all the SJTs, indicating a good level of internal consistency. Analyses with different splits also gave non significant differences. Additionally, an item analysis was performed to each SJT. To aid understanding, this procedure is described for the General entitlement SJT but the same applied to the other three SJTs. Initially, each participant's mean RT in the IT-consistent and mean RT in the IT-inconsistent condition of the General entitlement SJT were computed. Then the bivariate correlation between the mean RT in each consistent sentence's word completion (across participants) and the mean RT in the IT-consistent condition (across participants) was computed. The same was done for the IT-inconsistent condition and RTs to each inconsistent sentence's word completions. These analyses showed that in each SJT some sentences were not correlated with the general mean in either the IT-consistent or IT-inconsistent condition or both. These sentences were discarded (from both conditions if they did not correlate well in one condition only), resulting in the removal of five sentences from the Normalisation of relationship violence SJT, seven sentences from the Relationship entitlement SJT and the General entitlement SJT, respectively, six sentences from the Opposite sex is dangerous (for men), and 10 sentences from the Opposite sex is dangerous (for women).

Test-retest Reliability

For each implicit measure, the Pearson's correlation coefficient (and disattenuated correlation) between Time 1 and Time 2 administration was calculated. Additionally, for the

GNAT and the SJTs, the test-retest correlation for each condition separately was also calculated. The test-retest correlation coefficient for the SJTs was computed after the removal of those sentences which did not show good consistency. Because this procedure resulted in some of the three versions across each SJT being left with a small number of sentences, only participants with correct responses in at least six (out of 10) consistent *and* six inconsistent sentences in Time 1 *and* Time 2 in a given SJT were included in the statistical analysis of this SJT. After this, a correlation coefficient between Time 1 and Time 2 was computed. Results are presented in Table 3.1.

Discriminant Validity

Fifty-five participants provided data for the establishment of the discriminant validity of the implicit measures. The Fat-Thin IAT did not correlate with either the CD-IAT ($r = .23$, $p = .10$) or the DS-IAT ($r = -.21$, $p = .13$), and neither did the Violence GNAT with the Smoking GNAT ($r = .22$, $p = .11$). For the SJTs, similarly to the test-retest analysis, only data from participants who had correct RTs in at least six consistent *and* six inconsistent sentences in each of the main SJT were considered. The Interpersonal expectancies SJT was not correlated with any of the main SJTs: for the General entitlement SJT $r = .08$, $p = .66$, $n = 32$; for the Normalisation of relationship violence SJT $r = .09$, $p = .54$, $n = 50$; for the Relationship entitlement SJT $r = .20$, $p = .20$, $n = 45$; and for the Opposite sex is dangerous SJT $r = -.14$, $p = .39$, $n = 41$. Using the whole set of sentences (before the item analysis sentence exclusion) these correlations were also non-significant: for the General entitlement SJT $r = -.06$, $p = .67$; for the Normalisation of relationship violence SJT $r = .09$, $p = .51$; for the Relationship entitlement SJT $r = .25$, $p = .07$; and for the Opposite sex is dangerous SJT $r = -.02$, $p = .90$.

Table 3.1

Split-half and Test-retest Reliabilities of the Implicit Association Tests (IATs) and the Violence Go/No-go Association Task (GNAT), and Test-retest Reliabilities of the Sentence Judgment Tasks (SJTs)

Implicit Measures	Split-half <i>r</i>	Spearman- Brown <i>r</i>	Test- retest <i>r</i>	Disattenuated Test-retest <i>r</i>	Test- retest <i>n</i>
CD-IAT	.75 ^{***}	.86	.41 ^{**}	.55	52
DS-IAT	.57 ^{***}	.73	.34 ^{**}	.60	52
Violence GNAT	.60 ^{***}	.75	.39 ^{**}	.65	52
Violence GNAT VP	.70 ^{***}	.82	.43 ^{**}	.61	52
Violence GNAT VU	.86 ^{***}	.92	.64 ^{***}	.74	52
Opposite sex is dangerous SJT					
Difference score			.28 ^a		40
IT-consistent			.55 ^{***}		40
IT-inconsistent			.31 [*]		48
Relationship entitlement SJT					
Difference score			.06		45
IT-consistent			.55 ^{***}		48
IT-inconsistent			.35 [*]		49
General entitlement SJT					
Difference score			.32 ^b		30
IT-consistent			.62 ^{***}		36
IT-inconsistent			.25 ^c		45
Normalisation of relationship violence SJT					
Difference score			.30 [*]		47
IT-consistent			.54 ^{***}		52
IT-inconsistent			.33 [*]		52

Note. CD-IAT = career-domestic IAT; DS-IAT = dominance-submission IAT; VP = violence-pleasantness condition; VU = violence-unpleasantness condition; IT = implicit theory. For split-half analysis N = 122. Disattenuated test-retest correlations were not computed for the SJTs

(Table 3.1 continues)

(Table 3.1 continued)

because the equation requires reliability coefficients which are not available for the SJTs.

^a $p = .083$. ^b $p = .091$. ^c $p = .096$.

* significant at $p = .05$. ** significant at $p = .01$. *** significant at $p = .001$.

Convergence Validity

Implicit-implicit correlations. Gender was partialled out in all analyses. The partial correlation between the two IATs was $r = .29$, $p < .001$, $n = 114$ (bivariate $r = .23$, $p = .013$). However, it is well known that the correlation between two tests is limited when one or both tests contain some random measurement error, that is, when they are not perfectly reliable. In the case of behavioural sciences this is almost always true, and even more in the case of RT tasks. In order to correct for this attenuation and estimate the ‘true’ relationship between the two IATs, the following formula of the disattenuated partial correlation was applied (Bohrnstedt, 2010, p. 355; Pedhazur, 1997) where $r_{12.3}^*$ is the disattenuated correlation between the two variables controlling for a third variable, r_{11} , r_{22} , and r_{33} are the reliabilities of the variables, and r_{12} , r_{23} , and r_{13} are the observed correlations between the variables.

$$r_{12.3}^* = \frac{r_{33}r_{12} - r_{13}r_{23}}{\sqrt{r_{11}r_{33} - r_{13}^2} \sqrt{r_{22}r_{33} - r_{23}^2}}$$

This correction formula estimates what the maximum possible correlation could be between two variables, given both were measured without error. The disattenuated partial correlation between the two IATs was .46. Since this formula is based on internal consistency estimates of the measures, it was not possible to apply it to the correlations with and among the SJTs, for which their internal consistency was not computed with the split-half method. No other significant correlations were found.

Implicit-explicit correlations. The number of participants who provided data for each analysis varies as some participants did not complete all the questionnaires or had been excluded after the item analysis of the SJTs because they did not meet the minimum of six correct RTs in the IT-consistent *and* IT-inconsistent condition. Descriptive statistics and Cronbach's α coefficients of the explicit measures are presented in Table 3.2.

Table 3.2

Descriptive Statistics and Cronbach's Alpha Coefficients of the Explicit Measures

Measures	<i>n</i>	<i>M</i>	<i>SD</i>	Scale Range	α
BIDR	117	75.30	16.01	20-140	.75
The Dominance Scale	114	61.47	10.47	32-128	.89
CBS-R	86	10.93	7.84	0-96	.84
NPI-entitlement	117	1.43	1.27	0-6	.41
PES	117	26.67	8.54	9-63	.84
AWS	114	56.20	8.19	25-100	.84
Hostility toward men	114	73.73	9.14	31-124	.87
Hostility toward women	114	72.91	9.04	31-124	.85
AIV	117	13.71	4.15	6-42	.58
IBPB	116	58.54	17.97	31-217	.88
Expagg-instrumental	114	16.79	5.73	8-40	.75
NBA-physical	116	5.42	2.05	4-16	.59

Note. BIDR = Balanced Inventory of Desirable Responding; CBS-R = Revised Controlling Behaviours Scale; NPI = Narcissistic Personality Inventory; PES = Psychological Entitlement Scale; AWS = Attitudes toward Women Scale; IBPB = Inventory of Beliefs about Partner Beating; NBA = Normative Beliefs about Aggression scale. A higher score in the AWS indicates more egalitarian attitudes. In all the other scales high scores indicate more endorsement of the construct.

All explicit measures were examined for their correlation with social desirability and where such a correlation emerged semi-partial implicit-explicit correlations were computed. The aim was to identify purer implicit-explicit relationships, but significant bivariate correlations, when found, are also reported. Gender was also entered as a covariate. Only the significant results are reported. Since implicit-explicit correlations are usually weak or non-significant when the explicit measure is a scale and when it requires participants to introspect about their attitudes (Hofmann, Gawronski, et al., 2005), like the explicit measures in this study are, marginally significant correlations ($p < .10$) are also mentioned. All correlations are 1-tailed.

The Implicit Association Tests. Explicit stereotypical gender-role attitudes were assessed with the AWS. Both IATs correlated with gender therefore partial correlations were computed. Only one significant partial correlation emerged, between the AWS and the CD-IAT ($r = .16, p = .044, n = 110$) which was in the opposite direction, so that more liberal explicit attitudes about gender roles were associated with a stronger implicit stereotypical association (bivariate $r = .22, p = .009$). The correlation between the DS-IAT and the Dominance scale was also explored but it was not significant.

The Violence Go/No-go Association Task. Explicit attitudes towards physical aggression were assessed with the Expagg-instrumental. The correlation with the IBPB, which measures attitudes condoning IPV, was also explored. None of the scales was correlated with the GNAT either bivariate or after controlling for social desirability.

The Sentence Judgment Tasks. Correlations between the SJTs and the explicit measures were computed after the removal of the sentences which did not show good consistency and including only those participants who had correct responses in at least six sentences in the IT-consistent *and* six sentences in the IT-inconsistent condition.

Opposite sex is dangerous. Explicit hostile attitudes were assessed with the OGH Scale. Controlling for social desirability, this SJT did not correlate with hostility toward the opposite gender. The bivariate correlation, however, was significant ($r = -.18, p = .05, n = 83$) indicating implicit-explicit agreement.

Normalisation of relationship violence. The scale used for the assessment of explicit attitudes toward the use of violence against an intimate partner was the IBPB. The correlation with the Expagg-instrumental was also explored. No significant correlations were found.

Relationship entitlement. The explicit measures employed for the assessment of entitlement in the relationship were the CBS-R and the Dominance Scale. None of the two scales was correlated with this SJT ($n = 101$) either bivariate or after partialling out social desirability. The correlations with the PES, the AWS, and the OGH were also explored. Only one bivariate significant correlation emerged, with OGH ($r = -.19, p = .022, n = 108$), which remained significant after social desirability was controlled for ($sr = -.21, p = .026$). Stronger implicit agreement with relationship entitlement was associated with more hostility toward the opposite gender.

General entitlement. The explicit measure employed for the assessment of general entitlement was the PES. The bivariate correlation was ($r = -.24, p = .032, n = 61$), and the semi-partial correlation, controlling for gender, was $sr = -.26, p = .039 (n = 61)$. These findings indicate implicit-explicit agreement.

Discussion

The purpose of this study was to investigate the psychometric properties of the implicit measures used in the main studies of this thesis designed to assess offence supportive cognition in relation to IPV tapping into the implicit theories proposed in Chapter 1. Their internal consistency, temporal stability, and discriminant and convergence validity were

examined.

Internal Consistency

Both IATs showed good internal consistency. The CD-IAT had a split-half reliability of $r = .75$, which is very close to the mean internal consistency value (.79) for the IAT in general (Hofmann, Gawronski, et al., 2005), and in the middle range of the internal consistency reported by Gawronski, Ehrenberg, Banse, Zukova, and Klauer (2003) for their Career-Household IAT ($\alpha = .80$), and by Nosek, Smyth, et al. (2007) for their Career-Family IAT ($\alpha = .63$). The DS-IAT was less consistent compared to the CD-IAT ($r = .57$). No previous study could be identified which employed the same or a similar to this IAT providing at the same time reliability estimates, but the internal consistency of the DS-IAT is still acceptable and higher than other RT implicit measures (Bosson et al, 2000; Fazio & Olson, 2003; Olson & Fazio, 2003).

The GNAT's split-half reliability, computed from the difference scores, was .60, which according to conventional standards would be considered moderate, but similar to the DS-IAT, it is acceptable for RT measures (Bosson et al, 2000; Fazio & Olson, 2003; Olson & Fazio, 2003). This effect size is in the high range of those reported by other studies which used a GNAT task (see introduction in this chapter). The internal consistencies of the VP and the VU conditions were also explored separately, and they were found to be high in both cases (.70 and .86, respectively). No previous studies were identified having used a Violence GNAT so it was not possible to make comparisons. Therefore, and to the best of my knowledge, this is the first time a Violence GNAT is employed.

Regarding the SJTs, the fact that there were three different versions with the same sentence stems, but with their completions counterbalanced across the three versions, two different methods were employed for the assessment of these tasks' internal consistency, as

described in the Methods section. When comparing the mean RTs in the IT-consistent and the mean RTs in the IT-inconsistent conditions, for each SJT, across three splits, the results did not show significant differences indicating a level of internal consistency for this task.

However, an item analysis for each SJT indicated that some sentences did not correlate well with the general mean in the IT-consistent and/or IT-inconsistent condition, and therefore, these sentences were discarded.

Temporal Stability

Test-retest reliabilities for the two IATs were significant but lower to the mean value of .51 and the median value of .56 reported by Hofmann, Gawronski, et al. (2005) and by Nosek, Greenwald, et al. (2007), respectively. After correcting, however, for measurement error, the disattenuated test-retest correlations significantly improved indicating a reasonable temporal stability for these two RT measures. Similarly, the GNAT showed a significant but low test-retest reliability, which increased considerably after correcting for attenuation and was higher than both IATs. When considering the mean RTs in the VP and VU condition separately instead of the GNAT difference score, the effect sizes were larger. Regarding the SJTs and the difference scores, only the Normalisation of relationship violence SJT had a significant test-retest correlation, albeit low. No significant test-retest correlations were found in the other three SJTs, although two of them were marginally significant ($p < .10$) and all three coefficients were in the expected direction. Test-retest analyses performed on the mean RTs in the IT-consistent and IT-inconsistent conditions separately, instead of the difference scores, showed that in all cases, with the exception of the IT-inconsistent condition of the General entitlement SJT, correlations were significant with effect sizes ranging from .54 to .62 for the IT-consistent, and from .25 to .35 for the IT-inconsistent condition. Therefore, a similar pattern emerged between the GNAT and the SJTs, in that higher effect sizes emerged

when analysing participant's mean RTs in the two test conditions separately, compared to their difference score. Similarly, the split-half reliabilities of the VP and VU conditions of the GNAT were higher than the one based on the difference score.

The above findings provide support for the first hypothesis and suggest two things; first, that given the low (compared to conventional standards) internal consistency of RT measures, correcting for measurement error reveals improved disattenuated relationships and better temporal stability. Before, therefore, concluding that a given implicit measure is not reliable, analysis should correct for this attenuation. Second, the examination of the two test conditions separately when exploring the internal consistency and test-retest reliability of such measures would be useful and informative, as it would allow for a more confident decision to be made on whether they are reliable or not. However, it should be noted here that the test-retest reliability of the implicit measures was low compared to what should be expected based on the conventional standards for psychometric testing. This raises some concern regarding the use of such RT measures in clinical practice if one wants to use them as indicators for treatment change. This is further discussed in the General Discussion section of this thesis.

Discriminant and Convergence Validity

Support was found for the second hypothesis of this study; all implicit measures showed good discriminant validity as they did not correlate with their methodologically same but conceptually different implicit measures.

Regarding correlations among the implicit measures, as expected, the two IATs were correlated in the predicted direction. This finding is an indication of convergence validity of the two measures, and the moderate strength of their association is meaningful. The tests were designed to assess two different expressions of gender-role stereotype: the CD-IAT reflects the societal position of men and women, where the workplace is the primary area of men and

the housework and childcare are the primary functions of the woman; the DS-IAT taps into personality characteristics, with men being stereotypically expected to be powerful, assertive, and to make all the important decisions, while women to be more docile and conforming. A high correlation would imply that these two different attitudes about gender roles co-exist, so that people who believe that women should be more concerned with the house and family also see women as submissive. However, this is not necessarily true. Moreover, a high correlation would mean that the two IATs are identical and, hence, one would be redundant. As aforementioned, they were both designed to assess gender stereotype but at the same time two different aspects of it, and the strength of their correlation supports this.

As hypothesised, no other significant intercorrelations emerged. This is not surprising considering that *different types* of implicit measures assessing even the *same* construct rarely converge, and when they do they correlate very modestly with each other (Bosson et al., 2000; De Houwer, 2003b; Sherman et al., 2003). Except for the two IATs, all the implicit measures of this thesis assess theoretically related but not same constructs.

The relationship between the implicit measures and their conceptually same explicit measures was explored, and in some cases the association with theoretically based conceptually related explicit measures. The CD-IAT was correlated with the AWS in the opposite, however, direction. A stronger implicit gender-role stereotypical association was associated with more liberal explicit attitudes about gender roles and explicit attitudes were not affected by socially desirable responding. It might be the case that the IAT effect was influenced by extra personal knowledge. Participants in this study may honestly endorse liberal attitudes about gender roles in today's society, given also that they are young and educated, but their automatic responses in the IAT may reflect knowledge of societal stereotypical views about the position and roles of men and women (Gawronski, Peters, &

LeBel, 2008; Olson & Fazio, 2004). However, whether the IAT effect reflects personal or extra personal attitudes should not be the primary concern in the study of the automatic effect of attitudes on behaviour, since what is of interest is the automatically activated attitudes themselves and the way they can affect behaviour, and not where they stem from (Gawronski et al., 2008; Nosek & Hansen, 2008). This will be explored in more depth in the two studies of Chapter 4, where such automatically activated attitudes are examined in relation to IPV perpetration and additional explanations for a lack of implicit-explicit agreement are discussed.

The DS-IAT, the Violence GNAT and the Normalisation of relationship violence SJT did not converge with the explicit measures. The General entitlement SJT showed convergence validity, as it was correlated with its corresponding explicit measure showing good, albeit moderate, implicit-explicit agreement. Implicit-explicit agreement was observed for the Opposite sex is dangerous SJT, but not after social desirability was taken into account. The Relationship entitlement SJT, although not correlated with its corresponding explicit measures, it was correlated with explicit opposite gender hostility.

In general, very few significant implicit-explicit associations emerged, indicating low convergence validity of the implicit measures. Previous research, however, has shown that correlations between implicit and explicit measures are not always significant, and are low when the latter are scales, when the topic under investigation is more personal and sensitive (e.g., stereotypes, self-esteem vs. consumer attitudes), and when responses in the explicit measure are characterised by low level of spontaneity (Hofmann, Gawronski et al., 2005). There are numerous reasons why implicit and explicit measures do not converge, including characteristics of the measurement procedure, of the stimuli, of the context, of the attitude itself etc. (discussed in Chapter 2), and therefore, the present findings should not come as a

surprise or be regarded as an indication of low quality and weakness of the implicit measures of this thesis. A more detailed discussion on these issues is made in Chapter 4 which explores further their psychometric properties in a sample of IPV men referred to treatment. Additionally, as discussed later in Chapter 4, what is of interest in applied areas of psychology is whether such indirect measurement procedures have useful practical implications; for example, if they can be used as indicators of dysfunctional *automatically activated* cognitions or as tools for the assessment of change and treatment effectiveness, and risk of recidivism.

Conclusion

To summarise, the findings of this study suggest that the implicit measures of this thesis are reasonably reliable and showed good discriminant validity. Although convergence with their conceptually corresponding and conceptually related explicit measures was weak, this finding is not at odds with previous research on the association between implicit and self-report measures. Further evidence of their psychometric properties is sought in the next chapter where these implicit measures are administered to a male IPV offender sample. Their convergence validity is again examined along with their criterion and incremental (over the explicit measures) validity.

CHAPTER 4

THE ASSESSMENT OF IPV OFFENCE SUPPORTIVE COGNITION WITH IMPLICIT AND EXPLICIT MEASURES IN A STUDENT AND AN OFFENDER SAMPLE

Chapter rationale

The first aim of this study is to assess IPV offence supportive cognition, using both implicit and explicit measures, in a low level and a high level IPV sample, and explore the utility of the implicit measures designed for this thesis. This chapter presents two studies. Study 1 was conducted with a male and female university student sample and included a group of students with a history of self reported IPV perpetration and a group of students who did not report previous IPV involvement. This IPV sample was characterised by low IPV levels. Study 2 included a group of men with high levels of IPV perpetration referred to an IPV community-based intervention programme and a group of nonviolent community controls. Both studies examine differences between the IPV and the nonviolent groups in IPV related cognition using the implicit measures of Chapter 2 and conceptually corresponding self-report questionnaires. An additional aim of these studies was to build on Chapter 3 and examine further the psychometric properties of the implicit measures of this thesis by exploring their convergence, criterion, and incremental validity with the samples tested in this chapter.

Introduction

As discussed in Chapter 2 of this thesis, the use of implicit measures in the study of crime-related cognition is relatively new and has been predominantly investigated in the area of sexual offending. The findings so far are promising, with the majority of studies having found that implicit measures can distinguish offender from non-offender samples, and between offender samples with different types of criminal behaviour (Banse, Schmidt, & Clabour, 2010; Dawson, Barnes-Holmes, Gresswell, Hart, & Gore, 2009; Gray, Brown, MacCulloch, Smith, & Snowden, 2005; Gray, MacCulloch, Smith, Morris, & Snowden, 2003; Kamphuis, de Ruiter, Janssen, & Spiering, 2005; Michailides, Devilly, & Ward, 2004; Smith, & Waterman, 2004). Banse et al. (2010) also found implicit measures to show very good criterion validity and to have the same discriminatory power with explicit measures ($AUC = .88$).

Only three studies have been identified at the time of writing this thesis which examined implicit cognition in relation to IPV and none of these studies involved UK samples. Robertson and Murachver (2007) administered five Implicit Association Tests (IAT) to a mixed male and female incarcerated sample and a mixed community group, to assess implicit gender-role stereotype, attitudes toward violence, and attitudes towards men and women in relation to IPV perpetration. They found group differences only in implicit attitudes toward violence. However, their offender sample was not selected a priori on the basis of an IPV index offence but had a history of various other offences, and the control community group was not violence-free but had perpetrated significantly lower levels of IPV compared to the offender group. Additionally, a different pattern in the results could have emerged if they had analysed implicit gender-role stereotype separately for men and women, as the direction of the association between female IPV and traditional gender-role attitudes is not very clear to date; some studies have found a link with more traditional gender role attitudes (Bookwala, Frieze,

Smith, & Ryan, 1992), other studies have found an association with more liberal attitudes (Alexander, Moore, & Alexander, 1991; McKinney, 1986) and other studies have not found an association at all (Fitzpatrick, Salgado, Suvak, King, & King, 2004; Mihalic & Elliot, 1997).

Jouriles, Grych, Rosenfield, McDonald, and Dodson (2011) found levels of aggression in automatic cognitions to associate positively with levels of dating violence in male and female antisocial teens remanded to the juvenile court system (14-17 years old), even after controlling for their explicit attitudes about partner violence, and to predict changes in partner violence in a 3-month follow-up period. They administered a word-completion task, where participants were presented with word fragments and had to fill in the missing letters as fast as they could in order to create real words. Multiple real words could be formed from each word fragment including words with aggressive connotation. Although this study did not assess implicit IPV-specific cognition, it shows how aggressive automatic cognitions are linked to, and can predict perpetration of dating violence. Their findings are consistent with previous research on aggression which has found that automatic cognitive processes can have an effect on aggressive perceptions, judgments, and behaviour (Anderson & Bushman, 2002; Todorov & Bargh, 2002).

Eckhardt, Samper, Suhr, and Holtzworth-Munroe's (2012) study was the first to examine implicit cognition in an IPV selected sample and make comparisons with nonviolent controls. They employed three IATs to assess attitudes toward women, attitudes toward violence, and the cognitive association between women and violence in a group of IPV men enrolled in a treatment programme and a group of community controls. Although the two groups did not differ in their explicit attitudes about gender-roles and IPV approval, or in their implicit attitudes toward women (good vs. bad), IPV men showed more implicit positivity toward violence and a stronger implicit association between women and violence. This is the

first piece of evidence showing differences between IPV and non-IPV men in offence supportive cognition measured implicitly. The authors did not administer a social desirability scale, and therefore it is not possible to conclude whether the lack of group differences in the explicit measures was due to the IPV men presenting themselves in a socially desirable way, or due to the positive effects of the treatment programme.

Despite their differences, all four theoretical attitude models, described in Chapter 2, recognise two processes through which attitudes are formed and guide behaviour. The first is an automatic process where cognitive associations in relation to an attitude object, stored in long term memory, are automatically activated upon encounter with the attitude object. This happens largely outside conscious control and when situational or motivational factors do not allow an effortful processing and evaluation of these attitudes. The second process is deliberative and effortful in nature and involves active introspection, reflection, evaluation and validation of one's attitudes. Attitudes measured with implicit measurement procedures are considered the product of automatic cognitive processes while attitudes assessed explicitly, through self-report questionnaires and interviews, are considered the products of deliberative cognitive processes. As mentioned previously, aggression research has examined the effect that such automatic cognitive processes have on people's perceptions and judgments about others and about interpersonal situations, and ultimately on behaviour, especially behaviour associated with emotional arousal (Anderson & Bushman, 2002; Berkowitz, 2008; Berkowitz & Buck, 1967; Dodge & Crick, 1990; Toderov & Bargh, 2002). Acts of physical violence against intimate partners very often occur under intense anger, frustration, stress, jealousy, and intoxication, and loss of control is a reason commonly cited among batterers (e.g., Cascardi & Vivian, 1995; Coleman, 1980; Henning, Jones, & Holdford, 2005; Makepeace, 1986). Therefore, the assessment of IPV related cognition with implicit measures would allow access

to such automatically activated attitudes, which under situations of effortful introspection and evaluation would most likely not result in violent behaviour. It is not implied here that IPV is always an impulsive act of violence instigated only by automatically activated distorted cognitions which are in disagreement with those explicitly expressed. It is logical to assume that some batterers approve their offence supportive cognitions; for example, some may honestly believe that it is ok to hit a partner or that all women are deceitful etc. However, it is also logical to expect that not all perpetrators would be willing to openly admit that they hold these attitudes, and would most likely try to present themselves more favorably. In this case, implicit measures can provide a better access to attitudes and beliefs not confounded by social desirability.

Given the promising findings from earlier research on the area of sexual offending and the positive preliminary findings by Eckhardt et al. (2012) in an male IPV sample, the studies in this chapter aim to build on this research and examine, for the first time, a wide range of IPV offence supportive cognitions in relation to the Implicit Theories (ITs) proposed for IPV perpetrators in Chapter 1, using both implicit measures and their conceptually corresponding explicit measures in two UK samples. The content of the implicit measures used in these studies was guided by six of the seven ITs (excluding the IT “It’s not my fault”). As discussed in Chapter 2, it is acknowledged that none of the implicit measures of this thesis can fully tap into their corresponding IT (however the SJT more than the IATs and the GNAT), as ITs are complex and wide constructs (and the inclusion of more implicit measures would result in a very lengthy testing session), yet the two current studies provide a first step on the way to exploring these ITs implicitly.

There are two main confounding variables which should be taken into account in IPV research when analysing responses in self-report measures, that is, social desirable responding

and relationship satisfaction. The need to control for social desirability is self-explanatory, especially in sensitive topics like IPV. Sugarman and Hotaling's (1997) meta-analysis revealed a low to moderate relationship between self-reported IPV and social desirability for both men and women. Additionally, research has consistently found an association between relationship satisfaction and attitudes about intimate relationships and intimate partners (Eckhardt & Dye, 2000). Therefore, in order to ensure that the cognitions examined in both studies of this chapter are uniquely associated with IPV perpetration and that group differences are not obscured by these two factors, and in order to obtain purer implicit-explicit associations, social desirability and relationship satisfaction are assessed and controlled for in statistical analyses.

Aim of the Chapter and Research Questions

The aim of this chapter is twofold: first, to assess IPV offence supportive cognition, using both implicit and explicit measures, in a low level and a high level IPV sample, in order to explore the utility of the implicit measures designed for this thesis, and to build on Chapter 3 and examine further the psychometric properties of the implicit measures of this thesis. More specifically, the following research questions will be investigated:

- RQ1. What is the rate and frequency of IPV perpetration and of observation and experience of family violence in the two samples of these studies? Do the IPV and nonviolent groups differ with regard to observation and experience of physical violence in the family of origin?
- RQ2. Are there differences in IPV offence supportive cognition, assessed with implicit measures, between IPV and nonviolent students, and between IPV men referred to treatment and nonviolent controls?
- RQ3. Are there differences in IPV offence supportive cognition, assessed with explicit

self-report measures, between IPV and nonviolent students, and between IPV men referred to treatment and nonviolent controls?

RQ4. Are there differences in explicit offence supportive cognition after controlling for social desirability and relationship quality/satisfaction?

RQ5. Do the implicit measures of this thesis converge with the explicit measures? Is there any level of convergence among the implicit measures (convergence validity)?

RQ6. Will the implicit measures of this thesis demonstrate criterion and incremental (above the explicit measures) validity?

Study 1

Method

Participants. The initial sample comprised 103 undergraduate and postgraduate students attending psychology courses at the University of Birmingham. Fifteen participants did not provide any data regarding IPV within the last 12 months and were excluded. Therefore the final sample comprised 88 students, 23 men and 65 women (M age = 19.57 years, SD = 2.02 years). They were all of British nationality and native English speakers. In terms of ethnic background, the majority ($n = 76$, 86.4%) were white-British. A requirement of this study was that participants were heterosexual and involved in an intimate relationship of at least one month duration at the time of their participation, or that they had been involved in a relationship within the past 12 months which had lasted for at least one month. This sample comprises part (72%) of the sample which provided data for the examination of the psychometric properties of the implicit measures (Chapter 3).

Measures.

Demographic and relationship status questionnaire. Participants recorded their gender, age, ethnic background, level of studies, sexual orientation, relationship status, duration of current or, if single at the time of the study, of most recent relationship and partner's gender (see Appendix E for demographic and relationship status questionnaire).

Implicit measures. The implicit measures used in this study are described in detail in Section 6 of Chapter 2 of this thesis. In brief, participants were administered two IATs for the assessment of gender-role stereotype ("I am the man" IT), the first examining the association between gender and the concepts of Career-Domestic (CD-IAT), and the second, the association between gender and the concepts of Dominance-Submission (DS-IAT). A Go/No-go Association Task (GNAT) was administered for the assessment of implicit positivity toward violence, examining the association between violence and pleasantness/unpleasantness ("Normalisation of violence" IT). Finally, four SJTs, administered as one task, assessed the ITs: "Opposite sex is dangerous", "General entitlement", "Relationship entitlement", and "Normalisation of violence in the relationship".

Explicit measures. Participants were administered the 10 self-report questionnaires described in detail in the Methods section of Chapter 3: the Gender Hostility Scales (GH; Yodanis & Straus, 1996) for the assessment of opposite gender hostility (OGH); the Psychological Entitlement Scale (PES; Campbell, Bonacci, Shelton, Exline, & Bushman 2004) and the Entitlement Subscale from the Narcissistic Personality Inventory (NPI; Raskin & Terry, 1988) for the assessment of general entitlement; the Revised Controlling Behaviours Scale (CBS-R; Graham-Kevan & Archer, 2005) and The Dominance Scale (Hamby, 1996) for the assessment of relationship entitlement; the adapted for this study Acceptance of Interpersonal Violence scale (AIV; Burt, 1980) and the Inventory of Beliefs about Partner

Beating (IBPB), a variation of the Inventory of Beliefs about Wife Beating (Saunders, Lynch, Grayson, & Linz, 1987) for the assessment of attitudes condoning IPV; the items assessing physical aggression from the Normative Beliefs about Aggression scale (Huesmann & Guerra, 1997) and the Expagg-instrumental subscale (Campbell, Muncer, McManus, & Woodhouse, 1999) for the assessment of attitudes toward physical aggression in general; and the Attitudes toward Women Scale (AWS; Spence, Helmreich, & Stapp, 1973) for the assessment of gender-role stereotype.

For the assessment of frequency and severity of IPV perpetration a slightly modified version of the Revised Conflict Tactics Scale (CTS2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996) was administered. The CTS is the most widely used measure for relationship violence. It comprises five subscales: negotiation, psychological aggression, physical assault, sexual coercion, and injury. Only the 12 physical aggression items were used in this study (5 for minor and 7 for severe violence). Participants were asked to report the frequency with which they had engaged in each violent act against their partner within the last 12 months (0 = *never* to 4 = *very frequently*), and whether each act had happened at some point before the past 12 months (yes/no). Example items are: “I twisted my partners arm or hair”, “I pushed or shoved my partner”, “I punched or hit my partner with something that could hurt”, and “I slammed my partner against a wall”. Students were assigned to the IPV group if they reported at least one violent incident against an intimate partner within the last year ($n = 28$), and to the nonviolent group if they had never been violent toward a partner ($n = 60$). Straus et al. (1996) report a range of internal consistency of the CTS2 subscales between .79 to .95 and the scale has shown good construct validity (Straus, 2004) and test-retest reliability in a male batterer sample (Vega & O’Leary, 2007).

Violence in the family of origin was assessed with two items. One item asked about

observation of interparental physical violence: ‘As a child or adolescent, have you ever seen your parents being physically violent toward each other?’, and one item asked about experience of physical abuse by parents: ‘As a child or adolescent, have your parents ever been physically violent towards you?’ If participants responded ‘Yes’ to either item, they 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’.

Two control variables were included: social desirability and relationship satisfaction. The first was assessed with the impression management subscale of the Balanced Inventory of Desirable Responding (BIDR; Paulhus, 1984) described in the Methods section of Chapter 3. The second was assessed with the Dyadic Adjustment Scale (DAS; Spanier, 1976). The DAS is a widely used measure of relationship quality and satisfaction. The scale has 32 items and higher scores indicate more positive dyadic adjustment. It comprises items which ask respondents how often they agree or disagree with their partner on various matters like demonstration of affection, friends, sex relations, and making major decisions. It also assesses the frequency with which certain behaviours or activities happen, for example, how often the two partners quarrel, kiss, get on each other’s nerves, laugh together, and discuss or have considered divorce. Finally, respondents rate their overall level of relationship happiness and how they feel about the future of their relationship. One item was changed, from “Do you ever regret that you married (or lived together)?” to “Do you ever regret that you are in this relationship?”, as the majority of the students were not expected to be married or cohabiting with a partner. A score of 107 is the cut-off for distinguishing distressed from non-distressed partners (Crane, Allgood, Larson, & Griffin, 1990). The scale has shown good reliability and validity (Sharpley & Cross, 1982; Spanier & Thompson, 1982). A meta-analysis of 91 studies

reported a mean reliability score of .915 (Graham, Liu, & Jeziorski, 2006). All questionnaires are can be found in Appendix E.

Procedure

Initially the study received ethical approval from the University of Birmingham's Ethics Committee. Participants were recruited through the University's on-line Research Participation Scheme (RPS) in exchange for research credits. Upon arrival to the testing room participants read and signed an informed consent form providing a description of the study, explaining issues of anonymity and confidentiality, their right to withdraw and avenues of support in case of any discomfort caused by the study. The same study information had been presented to them on the RPS screen before signing up for the study (see C.3, C.7, and C.8 in Appendix C for ethical approval letter, RPS on-screen study information before participants' sign-up, and informed consent form, respectively). Participants were first administered the implicit measures in the following order: CD-IAT, GNAT, SJTs, and DS-IAT. Administration procedures, technical characteristics of the equipment, and information about the software used are described in the Methods section of Chapter 2 of this thesis. After completing the implicit measures, participants were given the questionnaires and an envelope to seal them in upon completion. They completed the questionnaires in privacy and in the end they put the envelope in a sealed ballot-like box. The whole procedure lasted for approximately 2 hours. Fifty-two of the participants also took part in the study for the assessment of the psychometric properties of the implicit measures (Chapter 3) and attended a re-test session. These participants were administered the questionnaires during the re-test session. At the end of the study students were thanked and orally debriefed (see C.9 in Appendix C for debriefing text). The study was anonymous and participants were asked to create their own personal ID comprising letters and numbers which they used for both the computer tasks and the questionnaires.

Data Preparation and Scoring

Detailed data preparation and scoring procedures are described in Section 6 of Chapter 2, and in the Results section of Chapter 3 of this thesis. Briefly, a larger IAT effect indicates a stronger stereotypical association between (a) men-career and women-home, and between (b) men-dominance, and women-submission, rather than the opposite. A higher positive GNAT score indicates a stronger cognitive association between violence and unpleasantness, while a higher negative score indicates a stronger association between violence and pleasantness. Regarding the SJTs, difference scores were computed after the removal of those sentences that did not show good internal consistency (see Analysis for internal consistency in the Results section of Chapter 3). As explained in Chapter 3, this procedure resulted in some of the three versions across each SJT being left with a small number of sentences. Therefore, only participants who had correct RTs in at least six IT-consistent *and* six IT-inconsistent sentences in each SJT version they were administered were included in the statistical analyses of the present study. A higher positive SJT difference score indicates stronger IT-*inconsistent* thinking style (non offence supportive) and a higher negative score indicates a stronger IT-*consistent* thinking style (offence supportive). Although reaction time (RT) data are most often skewed (Bargh & Chartrand, 2000; Miller, 1991), in this study there were no problems with the distribution normality of the mean RTs. This was most likely due to the short response window in all the implicit measures which did not allow for unusually slow responses, and, second, due to the monitoring of the frequency of wrong responses (through the beep tone by the computer speakers every time the participant made a mistake or was not fast enough), which encouraged participants to complete the tasks responsibly.

Explicit measures were also checked for violations of parametric testing. The NBA-physical and the NPI-entitlement scales were skewed, because most of the students expressed

little agreement with their items. Transformation corrected the distribution of NPI-entitlement but NBA-physical had to be dichotomised as nearly half of the participants did not endorse any items.

Results

Sample Descriptives

In terms of relationship status, 33% ($n = 29$) of the students reported being single, 14.8% ($n = 13$) were dating, 45.5% ($n = 40$) were in a stable relationship, and 6.8% ($n = 6$) were cohabiting with their partner. The mean relationship duration of those participants who were in a relationship at the time of the study was 21.13 months ($SD = 16.87$) and the mean relationship duration of those participants who were single at the time of their participation but had been involved in a relationship within the past 12 months was 18.28 months ($SD = 11.00$). Length of relationship has been found to associate with conflict styles in IPV university students (Stith, Jester, & Bird, 1992) and IPV perpetration in university students (Straus, 2008) but it was not correlated with IPV perpetration in this sample.

RQ1. Prevalence of IPV and Family Violence

Of the 88 students, 31.8% ($n = 28$; 30.43% of the men and 32.30% of the women) reported at least one act of physical aggression against a partner within the last year, and 20.5% reported at least two acts. The mean CTS2 score for the whole sample was 3.36 ($SD = 3.35$), for men it was 2.28 ($SD = 0.95$), and for women it was 3.71 ($SD = 3.78$) (min = 0, max = 48). Although women reported more IPV perpetration than men, this difference was not statistically significant. Severe violence was infrequent in this sample, reported by 10.5% ($n = 9$) of the sample. Of the students who had been violent towards their partner within the last year, 23.1% reported at least one violent act against the same or a different partner for the time before this timeframe.

Violence in the family of origin was uncommon and eight students did not provide this information. Observation of interparental violence was reported by 10% of the students (16% of the IPV and 8.9% of the nonviolent group, non-significant difference), and 14.4% had experienced physical abuse (16% of the IPV and 14.3% of the nonviolent). None of the two family violence variables was associated with IPV perpetration.

RQ2. Examination of differences between IPV and nonviolent students in offence supportive cognition assessed with the implicit measures

IAT effects and difference scores in the other implicit measures, as well as mean RTs in each task's condition were entered in separate 1-way ANOVAs with participant group as the between-groups variable. Results are presented in Table 4.1 (see also Figures 4.1 and 4.2).

The Implicit Association Tests. IAT effects were analysed separately for men and women because, as aforementioned in the introduction of this chapter, the direction of the association between female IPV and traditional gender-role attitudes is still not very clear. The male IPV sample was small ($n = 7$) and, therefore, the nonparametric Mann–Whitney U test was employed to make comparisons with the nonviolent male students. No significant group differences were found in either women or men. It was observed that the IPV group was faster in general in the whole task. Therefore, group differences in the two test conditions (stereotypical-counter-stereotypical) are not very informative.

The Go/No-go Association Task. The two groups did not differ in either the GNAT difference score or their mean RTs in the VP and VU condition. Although in the whole sample students were significantly faster in the VU ($M = 504.59$ ms, $SD = 42.11$) than the VP condition ($M = 576.30$ ms, $SD = 43.98$), $t(87) = 16.14$, $p < .001$, no statistically significant differences emerged when comparing the IPV with the nonviolent group. An examination of the two groups' mean RTs showed that, similarly to the IATs, the IPV group was faster in

general in the whole task.

The Sentence Judgment Tasks. No significant group differences were found in the SJTs. However, with the exception of Relationship entitlement, all difference scores were in the expected direction, that is, the IPV group showed stronger IT-consistent thinking than the nonviolent students.

Table 4.1

*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*

Implicit measures	IPV group			Nonviolent group			<i>F</i>	<i>df</i>	η^2	Cohen's <i>d</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>					
GNAT – ds	76.59	38.55	28	69.43	43.17	60	0.56	1, 86	.006	0.17	.456
GNAT VP	577.49	51.41	28	575.74	40.51	60	0.03	1, 86	.000	0.04	.864
GNAT VU	500.89	42.15	28	506.32	42.34	60	0.31	1, 86	.004	-0.13	.577
CD-IAT (M) ^a	0.29	0.35	7	0.24	0.51	15	<i>U</i> = 51, <i>Z</i> = -0.11			0.11	.916
CD-IAT (F)	0.49	0.30	21	0.53	0.31	44	0.18	1, 63	.003	-0.13	.671
CD-IAT - stereotypical (M) ^a	606.62	115.85	7	721.23	139.39	15	<i>U</i> = 28, <i>Z</i> = -1.73			-0.89	.084
CD-IAT - counter stereotypical (M) ^a	675.43	137.39	7	792.73	184.52	15	<i>U</i> = 30, <i>Z</i> = -1.59			-0.72	.113
CD-IAT - stereotypical (F)	630.84	85.57	21	641.72	91.09	44	0.21	1, 63	.003	-0.12	.648
CD-IAT – counter stereotypical (F)	762.02	107.84	21	805.41	159.42	44	1.27	1, 63	.020	-0.32	.264
DS-IAT (M) ^a	0.12	0.25	7	0.29	0.26	16	<i>U</i> = 33, <i>Z</i> = -1.54			-0.67	.124
DS-IAT (F)	0.21	0.24	21	0.15	0.28	44	0.70	1, 63	.011	0.23	.405
DS-IAT – stereotypical (M) ^a	707.54	159.25	7	774.24	169.12	16	<i>U</i> = 44, <i>Z</i> = -.80			-0.41	.423
DS-IAT – counter stereotypical (M) ^a	737.62	164.67	7	857.53	157.57	16	<i>U</i> = 28, <i>Z</i> = -1.87			-0.74	.061
DS-IAT – stereotypical (F)	713.22	114.82	21	745.48	139.17	44	0.85	1, 63	.013	-0.25	.360
DS-IAT – counter stereotypical (F)	782.94	131.12	21	801.49	192.55	44	0.16	1, 63	.003	-0.11	.692

Implicit measures	IPV group			Nonviolent group			<i>F</i>	<i>df</i>	η^2	Cohen's <i>d</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>					
Opposite sex is dangerous SJT – ds	7.46	63.06	20	31.19	64.29	44	1.90	1, 62	.030	-0.37	.174
Opposite sex is dangerous SJT – con.	569.24	66.38	20	588.02	84.46	44	0.77	1, 62	.012	-0.25	.384
Opposite sex is dangerous SJT – inc.	561.78	58.24	20	556.82	71.67	44	0.07	1, 62	.001	0.08	.787
General entitlement SJT – ds	-24.62	50.82	17	-5.33	47.95	29	1.66	1, 44	.036	-0.39	.204
General entitlement SJT – con.	536.24	77.66	17	544.26	64.80	29	0.14	1, 44	.003	-0.11	.709
General entitlement SJT – inc.	560.87	72.59	17	549.59	58.30	29	0.33	1, 44	.008	0.17	.566
Relationship entitlement SJT – ds	8.00	72.19	23	0.41	72.05	50	0.18	1, 71	.002	0.10	.677
Relationship entitlement SJT – con.	568.99	66.27	23	559.83	64.17	50	0.31	1, 71	.004	0.14	.577
Relationship entitlement SJT – inc.	560.99	44.99	23	559.42	67.87	50	0.01	1, 71	.000	0.03	.920
Normalisation of relationship violence SJT – ds	-6.85	64.35	24	15.25	68.04	56	1.83	1, 78	.023	-0.33	.180
Normalisation of relationship violence SJT – con.	574.37	69.55	24	589.95	73.39	56	0.78	1, 78	.010	-0.22	.380
Normalisation of relationship violence SJT – inc.	581.22	69.45	24	574.70	61.48	56	0.17	1, 78	.002	0.10	.677

Note. Reaction times in milliseconds. GNAT = Go/No-go Association Task; VP = violence-pleasantness condition; VU = violence-unpleasantness condition; CD-IAT = career-domestic Implicit Association Test; DS-IAT = dominance-submission Implicit Association Test; SJT = Sentence Judgment Task. M = male; F = female. ds = difference score; con = IT-consistent condition; inc = IT-inconsistent condition.

^a the Mann-Whitney *U* test was employed because of the small size of the male IPV group.

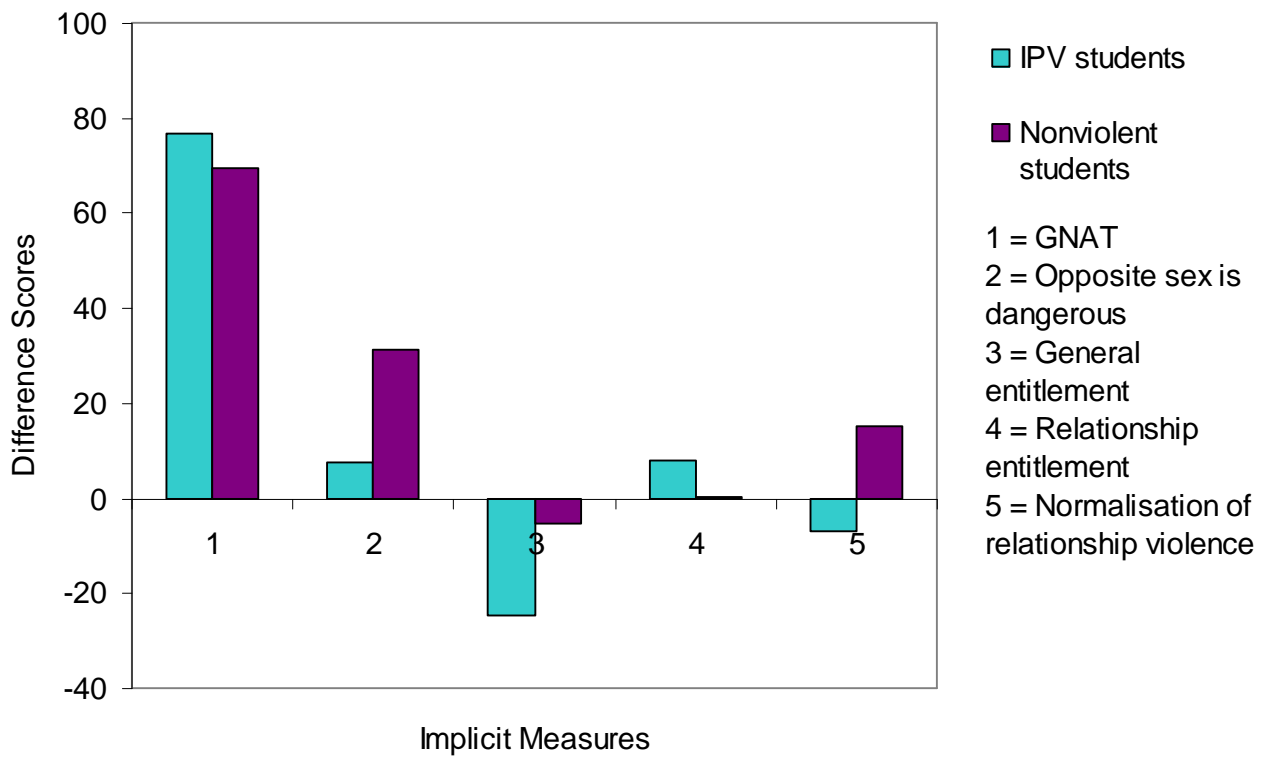


Figure 4.1. GNAT and SJTs difference scores by participant group.

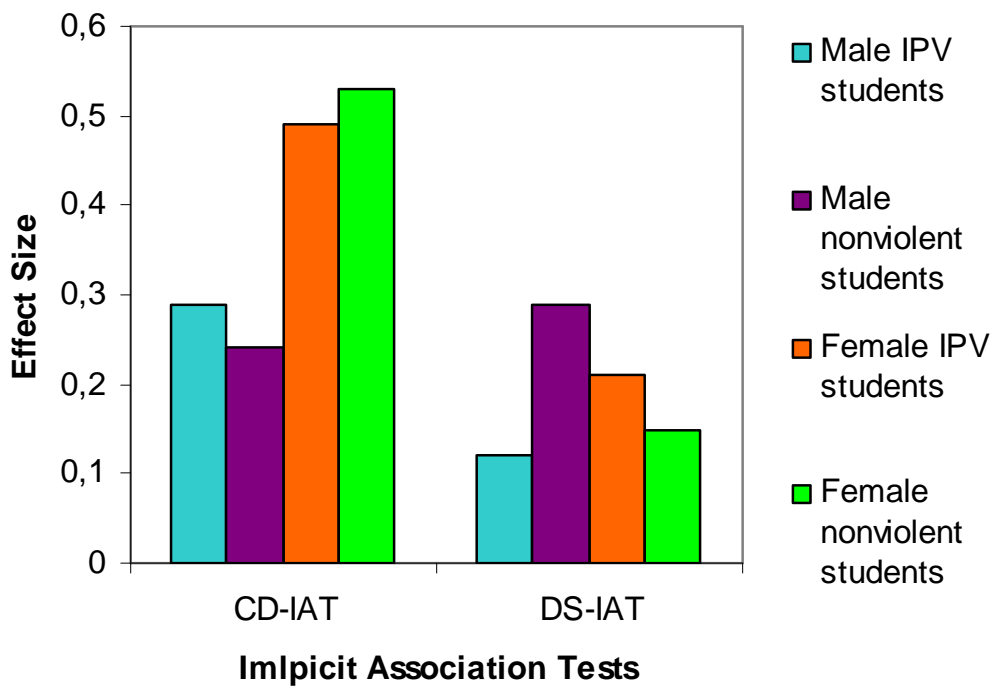


Figure 4.2. IAT effects by participant group and gender.

RQs 3 & 4. Examination of differences between IPV and nonviolent students in offence supportive cognition assessed with the explicit measures

Mean scores in the explicit measures and group differences statistics are presented in Table 4.2, along with the scales' Cronbach's α coefficients. The AIV, the NPI-entitlement, and the NBA-physical showed very weak internal consistency (.58, .43, and .58, respectively) and were excluded from further analyses. Exclusion of these scales was not a problem, because the other three scales which assessed the same constructs (IBPB, PES, and Expagg-instrumental) had good internal consistency and were used in all statistical analyses.

A series of separate ANOVAs were conducted to investigate group differences, and ANCOVAs with gender as a covariate were employed when a variable was associated with it. The latter applied to the BIDR, the PES, the IBPB, and the Expagg-instrumental; women scored higher in social desirability ($t(33.36) = -2.74, p = .010$, Cohen's $d = -0.94$) but men expressed more entitlement ($t(95) = 3.20, p = .002$, Cohen's $d = 0.66$), more instrumental beliefs about physical aggression ($t(92) = 3.79, p < .001$, Cohen's $d = 0.79$), and more IPV approval ($t(94) = 2.58, p = .011$, Cohen's $d = 0.53$).

Gender-role attitudes (AWS) were analysed separately for men and women. Similar to the ANOVA analysis with the IATs above, the male IPV sample was small ($n = 6$) and the nonparametric Mann-Whitney U test was employed for comparisons with the nonviolent male students. According to Cohen (1988), η^2 effect sizes of 0.01, 0.059, and 0.138 indicate a small, a medium, and a large effect, respectively.

A MANCOVA with the BIDR, the DAS, and gender as covariates revealed a significant main effect of group membership $F(7,69) = 2.98, p = .009$, explaining 23% of the total variance ($\eta_p^2 = .23$, Obs. Power = .91). Box's M test was not significant and the assumption of homogeneity of covariance matrices was met. Group differences were also explored by entering the explicit measures along with the three covariates in separate

ANCOVAs. Significant group differences were found only in the CBS-R ($F(1, 80) = 17.79, p < .001, \eta_p^2 = .18$, and, and in AWS for women only ($F(1, 60) = 7.75, p = .007, \eta_p^2 = .11$).

Levene's tests for equality of error variances were not significant. The IPV students reported more relationship control than their nonviolent peers and the IPV women had more liberal gender-role attitudes than the nonviolent.

Table 4.2

Means and Standard Deviations of Scores on the Explicit Measures by Participant Group, One-way Analyses of Variance for the Effect of Group Status on Scores on the Explicit Measures, Cohen's d Effect Sizes, and Explicit Measures' Range and Cronbach's α Coefficients

Explicit Measures	IPV group			Nonviolent group			F	df	η^2	Cohen's d	p	Scale range	α
	M	SD	n	M	SD	n							
BIDR	68.68	16.54	28	77.56	13.97	59	8.16	1, 84	.089 ^a	-0.58	.005	20 - 140	.76
DAS	106.52	17.06	27	114.50	14.85	60	4.90	1, 85	.055	-0.50	.030	0 - 151	.91
Dominance	67.18	9.69	28	58.83	10.08	60	13.40	1, 86	.135	0.84	< .001	32 - 128	.90
CBS-R	16.86	8.05	27	8.36	6.06	58	29.17	1, 83	.260	1.19	< .001	0 - 96	.84
PES	27.26	8.97	27	26.33	8.86	60	0.38	1, 84	.005 ^a	0.10	.539	9 - 63	.85
AWS (M) ^b	48.00	4.56	6	49.93	5.69	15	$U = 36, Z = -.70$			-0.37	.482	25 - 100	.84
AWS (F)	61.24	6.39	21	57.23	7.75	44	4.23	1, 63	.063	0.56	.044	25 - 100	.84
OGH	75.93	7.17	27	71.93	9.14	57	3.98	1, 82	.046	0.49	.049	31 - 124	.86
IBPB	60.04	22.46	27	57.77	16.03	59	0.43	1, 83	.005 ^a	0.12	.513	31 - 217	.87
Expagg- instrumental	18.44	5.17	27	15.58	5.65	57	7.13	1, 81	.081 ^a	0.53	.009	8 - 40	.76

(Table 4.2 continues)

(Table 4.2 continued)

Note. 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; OGH = Opposite gender hostility; IBPB = Inventory of Beliefs about Partner Beating. A higher score in the AWS indicates more egalitarian attitudes. In all the other scales high scores indicate more endorsement of the construct. M = male; F = female. Cronbach's α for AWS was computed on the whole sample.

^a η_p^2 effect size for ANCOVA with gender as a covariate. ^b the Mann-Whitney U test was employed because of the small size of the male IPV group.

RQ5. Convergence Validity of the Implicit Measures

Convergence among the implicit measures. One-tailed correlations were computed between the implicit measures. A priori hypotheses about the direction of the associations of the constructs were based on the IPV literature and the correlations between the explicit measures found in this study (see Table 1 in Appendix F). This did not apply to the following associations for which, although some significant intercorrelations were found in the explicit measures, there is no sufficient or strong empirical evidence to support an a priori expectation about the direction of the association (see Chapter 1 review), and 2-tailed correlations were computed for: (a) the association between the GNAT and the other implicit measures, and (b) the association between the General entitlement SJT and other implicit measures. One-tailed correlations are indicated with daggers.

The two IATs were weakly correlated ($r = .17, p = .045^\dagger, n = 97$). A positive correlation emerged between the Relationship entitlement SJT and the GNAT ($r = .26, p = .016, n = 83$); a stronger implicit relationship entitlement was associated with more implicit positivity toward violence. All other intercorrelations were not significant.

Analysis of the IATs by gender revealed that, in men only, the CD-IAT was correlated with the GNAT ($r = -.45, p = .028, n = 24$) and the Normalisation of relationship violence SJT ($r = -.51, p = .011^\dagger, n = 20$), so that a stronger gender-role stereotypical association was associated with a stronger positivity toward violence and more approval of IPV. No other significant results were found.

Convergence between the implicit and the explicit measures. Bivariate correlations between the implicit and their conceptually corresponding explicit measures were computed, as well as with additional explicit measures with which meaningful associations, based on the literature and the correlations among the explicit measures found in this study (see Table 1 in

Appendix F), would be expected. In the case of gender-role attitudes (IATs and AWS) separate analyses were performed for men and women. Bivariate correlations were computed, as well as semipartial correlations when a scale was correlated with social desirability and/or gender. As explained in Chapter 3 of this thesis, implicit-explicit correlations are usually weak. Here, confounding variables are also taken into consideration and for this reason marginally significant results ($p < .10$) are also reported, not for interpretation but for their informative value. Participants who provided IPV data only for the period before the last 12 months were also included in this analysis. Correlations were all 1-tailed.

Implicit Association Tests. No significant correlations were found between the IATs and any of the explicit measures in men. In women the CD-IAT was correlated with OGH ($sr = -.25, p = .036, n = 70$) so that a less strong implicit gender role stereotype was associated with more hostility toward men. A marginally significant zero-order correlation was found between the DS-IAT and the CBS-R ($r = .17, p = .089, n = 64$) in the expected direction, but not after social desirability was partialled out.

The Go/No-go Association Task. No significant associations were found.

The Sentence Judgment Tasks.

Opposite sex is dangerous. There was a significant bivariate correlation with the OGH scale ($r = -.21, p = .040, n = 70$), indicating implicit-explicit agreement, but after controlling for social desirability it became non-significant. A correlation in the expected direction with Dominance approached significance ($r = -.19, p = .058, n = 71$) but not after controlling for social desirability.

General entitlement. No correlation was found with explicit entitlement. This SJT was, however, bivariately correlated with Dominance ($r = -.29, p = .019, n = 50$), OGH ($r = -.25, p = .043, n = 48$), IBPB ($r = .37, p = .004, n = 50$), and marginally with CBS-R ($r = -.23, p =$

.066, $n = 45$). More implicit general entitlement was associated with more dominance in the relationship, more explicit hostility toward the opposite gender, and the same relationship trend was observed for relationship control, but with less explicit approval of IPV. Controlling for the BIDR, the semipartial correlations with Dominance and OGH, were not significant, while, controlling for gender, the correlation with IBPB remained significant ($sr = .35, p = .014$).

Relationship entitlement. This SJT did not correlate with the explicit measures of relationship control and dominance. There was a zero-order correlation with OGH ($r = -.21, p = .030, n = 79$) which remained significant after controlling for BIDR ($sr = -.26, p = .018$); implicit approval of relationship entitlement was associated with explicit hostile attitudes toward the opposite gender.

Normalisation of relationship violence. No significant correlations were found.

RQ6. Criterion and Incremental Validity of the Implicit Measures

The implicit measures did not show good concurrent criterion validity. ANOVAs did not show any group differences (see Table 4.1). Their criterion validity was further examined by estimating their ability to correctly classify the IPV and nonviolent students. For this reason ROC analyses were performed and the area under the curve (*AUC*) was calculated for each implicit measure and for all implicit measures together. The same analysis was also performed for all explicit measures together in order to make comparison with the implicit measures combined. The resulting probability estimates from binary logistic regressions were used in ROC analyses. An *AUC* of 1.00 indicates excellent discriminatory power of the measure, and an *AUC* of .05 indicates that the measure predicts the criterion at chance level.

None of the implicit measures, individually, was able to classify participants (none of the *AUCs* were significantly different from .05). When implicit measures were combined the ROC curve dipped below the chance diagonal indicating that implicit measures did not have

any predictive validity in the expected direction. An examination of the classification table of a logistic regression where all implicit measures were entered simultaneously revealed that although 93% of the nonviolent students were correctly classified, only 11% of the IPV students were. For the explicit measures combined (only those for which significant group differences were found) the *AUC* was .86 (*SE* = .04, *p* < .001) indicating very good discriminatory power of the explicit measures.

Summary of Findings

RQ1. Around one third of the male and one third of the female students reported perpetration of IPV. Although men and women did not statistically differ in the amount of IPV perpetrated, women reported slightly more. The prevalence of IPV in this university student sample (31.8%) is similar to that found for the UK by the International Dating Violence study (35.8%; Chan, Straus, Brownridge, Tiwari, & Leung, 2008). In general, the student sample of this study was very low-level violent. Observation of interparental violence and experience of childhood abuse were also infrequent (Nabors & Jasinski, 2009) and were not associated with IPV perpetration. However, nearly twice the number of IPV students had been exposed to interparental violence compared to nonviolent students. The frequency for physical abuse by parents was almost the same.

RQ2. The IPV and nonviolent students did not statistically differ in any of the implicit measures, it is of interest, however, to examine the trend in their responses. It was observed that IPV students showed more implicit hostility toward the opposite gender, general entitlement, and approval of relationship violence compared to their nonviolent peers. On the contrary, they showed weaker implicit positivity toward violence and less implicit approval of relationship entitlement than nonviolent students. Male IPV students showed a stronger implicit career-men association, but a weaker dominance-men association compared to the

nonviolent male students. IPV women demonstrated a more liberal association in the CD-IAT, but a stronger dominance-men association, which is partially consistent with earlier research which has found a positive link between female IPV and liberal gender-role attitudes (Alexander et al., 1991; McKinney, 1986).

RQs 3 & 4. In the explicit measures, and consistent with previous research, the IPV students reported less relationship satisfaction (Schumacher, Slep, & Heyman, 2001; Stith, Green, Smith, & Ward, 2008), more relationship dominance and control (Follingstad, Bradley, Helff, & Laughlin, 1999; Graham-Kevan & Archer, 2005; Rouse, 1990), more hostility toward the opposite gender (Bookwala et al., 1992; Carr & VanDeusen, 2002; Forbes, Adams-Curtis, Pakalka, & White 2006), and more instrumental beliefs about physical aggression (Próspero, 2008). IPV women expressed more liberal gender-role attitudes (Alexander et al. 1991; McKinney, 1986), but no differences were found in men (Alexander et al., 1991; Nabors & Jasinski, 2009). Unlike previous research which has found an association between attitudes condoning IPV and physical IPV perpetration in students (e.g., Arias & Johnson, 1989; Fincham, Cui, Braithwaite, & Pasley, 2008; Riggs & O'Leary, 1996; Silverman & Williamson, 1997) the IPV students of the current study did not endorse more approval of partner violence than their nonviolent peers. This finding, however, is not a surprising one, as there are other studies which have not found an association either (e.g., Fiebert & Gonzales, 1997; Fitzpatrick et al., 2004; Schwartz & DeKeseredy, 2000; Stets & Pirog-Good, 1990). Research on entitlement and student IPV is scarce, and the lack of group difference found here is consistent with Ryan, Weikel, and Sprechini's (2008) study which failed to find an association between exploitativeness/entitlement and physical IPV in male and female students. Relationship dominance and controlling behaviours emerged as the strongest variables to discriminate violent from nonviolent students. However, after social desirability and relationship

satisfaction were taken into account, almost all the above group differences disappeared and the IPV students differed from the nonviolent only in relationship control, and, women only, in gender-role attitudes.

RQ5. A very small number of implicit-implicit correlations were found. With regard to implicit-explicit associations, although (with one only exception) the implicit measures did not correlate with their conceptually corresponding questionnaires, a number of meaningful bivariate correlations with other explicit measures were observed. However, when social desirability was taken into account almost all these correlations ceased to be statistically significant.

RQ6. Finally, unlike the explicit measures which demonstrated very good predictive validity, the implicit measures did not show good criterion validity and did not have any discriminatory power in this student sample.

All the above findings are discussed further in the General Discussion of this chapter along with the findings of Study 2.

Study 2

Method

Participants. The initial sample comprised 24 male IPV offenders and 28 community controls. Five men were excluded from the IPV group; three because they could not complete the computer tasks (they had difficulty following the instructions, made excessive errors and were not fast enough) and two because they did not admit to perpetration of physical IPV in the CTS2. Eight men from the control group were also excluded because they reported at least one violent incident in the CTS2. The final sample consisted of 39 men, 19 IPV offenders and 20 community nonviolent controls. The offender group was recruited from a community based

organisation which delivers an IPV intervention programme in Birmingham and Northampton, and were predominantly court referred or referred from solicitors and counselors. These participants were tested after their initial intake assessment and before the beginning of their treatment. The community control group was a non-university sample recruited from Birmingham area. This was a convenience sample and snowball sampling was also employed. All participants were heterosexual, of British nationality and native English speakers.

Measures.

Implicit Measures. Participants were administered the same IATs and the GNAT with the students in Study 1, with one small alteration in the GNAT. The response window was increased to 1,500 ms in all blocks. This was deemed necessary because it was expected that the educational level of the offender group would be lower than the University students', and that they would not have had any previous experience with computer-based RT tasks. The majority of the students in this study had such previous experience as it is compulsory for students at the University of Birmingham to participate in other students' studies in exchange for research credit, and they were, in general, familiar with similar tasks. Additionally, it was expected that reading speed differences would exist between students and offenders mainly because of students' everyday involvement in academic work. Before, however, applying this change, the Study 1 version of the GNAT was administered to the first two participants recruited for the offender sample of the present study. Both participants had great difficulty completing the task, especially in the 750 ms blocks, and made excessive errors. They both found it too fast and they felt frustrated. These two participants were excluded from the final sample. The 1,500 ms version seemed to work fine and error rates were within acceptable limits (around 10%). In order, however, to encourage fast responses, after the first two test blocks the offender group read the same computer screen which students read when moving

onto the 750 ms blocks. This screen informed them that the task would get a bit faster and that words would disappear faster from the screen. The 1,500 ms GNAT was also administered to the control group in order for the results to be comparable.

A second difference in Study 2 was that all participants were administered only one version of the SJTs and this was the same for all. Based on the results from the item analysis performed on the SJTs (see internal consistency analysis in the Results section of Chapter 3 in this thesis) the best 10 IT-consistent and the best 10 IT- inconsistent sentences for each SJT were chosen in order to create one SJT for each IT. These sentences were those which best correlated with the general mean in the IT-consistent and IT-inconsistent conditions, respectively (see Tables 2 to 6 in Appendix F for the sentence stems, word completions, and the latter's lexical characteristics). Sentences which did not correlate well with the general means were used for the inappropriate ending condition of the SJTs. In order to ensure that the lexical characteristics of completion words in the IT-consistent and IT-inconsistent condition of each SJT did not differ, and that every word appeared only once throughout the task (the four SJTs were administered as one task in one go), it was necessary to substitute some of the word completions with other words of the same or very similar meaning. This applied to a very small number of sentences. For example, the sentences in the student version *I usually make all the important decisions because my partner does not have enough time*, *If a man is deprived of sex, forcing a woman to have sex is sick*, and *Those who don't share my opinion are silly*, were changed to *I usually make all the important decisions because my partner is busy*, *If a man is deprived of sex forcing a woman to have sex is terrible*, and *Those who don't share my opinion are foolish*, respectively. Similarly to the GNAT, a 1,500 ms response window was used.

Reading speed task. To explore potential differences in reading speed between the

offender and the control group, a computerised word pronunciation task was administered at the end of each testing session using E-Prime software. Eighty-two words, taken from the word completions of the SJTs, were presented one by one and without replacement in the middle of the screen. Participants were instructed to read aloud each word at normal pace, in the same way they would read something in everyday life. They were told that the aim of this task was not to assess their ability to read fast, but to record their personal reading pace, so there was no need for them to try and pronounce the words as fast as they could. The researcher pressed the left mouse button immediately upon the pronunciation of each word by the participant, and the software recorded the time (in milliseconds) elapsed from the presentation of the word. A fixation cross of 500 ms duration was presented before the presentation of each word.

Explicit Measures. Participants were administered the same questionnaires as in Study 1. In addition, they reported their annual income and years of education in the demographic and relationship status questionnaire (see Appendix E).

Procedure

The study received ethical approval from the University of Birmingham's Ethics Committee. For the recruitment of the offender group, permission was sought and obtained by the Manager of the IPV community-based organisation. Informed consent letters were given to all potential participants by the programme Manager and an appointment was arranged with those who agreed to participate in the study (see C. 10 to C.13 in Appendix C for ethical approval letter, the organisation's permission letter, informed consent form, and debriefing text). The testing sessions took place at the organisation's offices in Northampton and in Birmingham. Participants who lived in Birmingham were given the choice to come to the University of Birmingham for their session. Before the beginning of each session participants were informed again about the nature and the procedures of the study and had their questions

answered. It was especially highlighted to them that the study was not related in any way to the organisation, that their decision to participate or not would not affect the services provided to them or their relations with the organisation and the staff, that the study was strictly anonymous and that no one would have access to the anonymous data except for me and my supervisors at the University. They were also reminded about their right to withdraw at any time and have their data deleted without any consequences. After that they signed the consent form. The administration procedures and instructions given were the same as in Study 1. The only difference was that the computer tasks were administered from my personal laptop: an ASUS X59GL with an Intel Core™2 Duo CPU T5800 @ 2.00 GHz processor and a 15.4" monitor with a 1280 x 800 resolution. Each participant was paid £10 in the form of a gift card from a big supermarket (TESCO or Sainsbury's). Participants who chose to come to the University of Birmingham for the testing session were also given £5 for travel expenses. These participants were tested in the same room as the students in Study1. The duration of each session was 2.5-3 hours.

Participants for the nonviolent control group were identified initially through friends and colleagues. The latter were asked to give out the study's information sheet (see C.12 in Appendix C) to friends and/or family members for whom they were positive that they were not or had not ever been physically violent towards a partner. They were asked to approach only people they knew very well and could guarantee that they were not IPV violent. A number of participants were recruited this way and additional participants were recruited with snowball sampling. Participants who wished to participate contacted me through e-mail or telephone and an appointment was made. These participants were administered the CTS2 to ensure that they did not have a history of IPV. The testing session took part either at their homes or at the University of Birmingham. Participants were given a £10 supermarket gift card and £5 for

travel expenses if they chose to come to the University. Everything else regarding the testing procedures was same to the student and the offender group. Each participant in both groups created his own personal ID comprising letters and numbers and each session lasted approximately 2.5-3 hours.

Data Preparation and Scoring

The same procedures as in Study 1 were followed. The two groups did not differ in mean reading speed and, therefore, this was not included as a covariate in the statistical analyses. Data were checked for violations of parametric testing. There were few outliers in the DS-IAT, the GNAT, and the Relationship entitlement SJTs difference scores only in the control group. These values were winsorised to the min or max cut-off point (2 *SD* above or below the mean). There was no need to exclude these participants because an examination of their RTs did not indicate that they responded differently in a systematic way.

In the explicit measures, outliers were initially identified and these scores were winsorised accordingly to each scale's maximum or minimum cut-off value (2 *SDs* above or below the mean). In the IPV group winsorising was applied to the CBS-R, the DAS, and the IBPB. In the control group winsorising was applied to the IBPB and the NBA-physical. The distributions of the IBPB in both groups and of the NBA-physical were not corrected and these variables were log-transformed. Transformation corrected the distribution of the IBPB, but not of the NBA-physical which still departed from normality. An examination of participants' responses in the NBA-physical indicated that only three men from the control group endorsed items and the remaining 17 did not endorse any. Dichotomisation of the variable would not produce valid results and, therefore, this scale was dropped from all statistical analyses. Log-transformation was also applied to the CBS-R in both groups.

Results

Sample Descriptives

The descriptive characteristics of the two groups are presented in Table 4.3. There were no significant demographic differences. Only educational level approached significance as more participants in the control group had attended university at graduate and postgraduate level. It was not possible to apply the χ^2 test to examine group differences in ethnic composition and relationship status because in both cases more than 20% of the cells had expected count less than 5. However, an examination of the percentages in each group indicates that the two groups were very similar. In terms of income, two participants in the offender group were unemployed and three declined to give an answer. The mean relationship duration of those participants in the offender group who were in a relationship at the time of the study was 85 months ($SD = 73.25$), and the mean relationship duration of those participants who were single at the time of their participation but had been involved in a relationship within the past 12 months, was 90 months ($SD = 88.79$).

RQ1. Prevalence of IPV and Family Violence

The IPV group had a mean CTS2 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 of violence was “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. In terms of family violence, significantly more IPV than nonviolent men had witnessed interparental violence during childhood and twice as many had been the receivers of physical violence from parents.

Table 4.3

Descriptive Characteristics of Participants by Group

Characteristics	Offender group		Control Group		<i>t</i> (<i>df</i>)	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Age (years)	38.17	8.19	37.05	7.57	0.44 (36)	.665
Years of education	12.47	2.27	13.90	2.12	- 1.98 (35)	.056
Annual income (£)	17,440	11,543	24,200	7,344	- 2.11 (34)	.042
Ethnic background (%)						
White	73.7		70			
Asian-Pakistani	10.5		15			
Asian-Indian	5.3		10			
Black-Caribbean	5.3		–			
White/Black Caribbean	5.3		–			
Black-African	–		5			
Relationship status (%)						
Married	31.6		30			
Cohabiting	26.3		25			
Stable relationship	15.8		15			
Divorced	15.8		10			
Dating	5.3		15			
Single	5.3		–			
Married (separated)	–		5			
Witnessed interparental violence (%)	44.4		10		5.80 ^a	.027 ^b
Frequency witnessed (%)						
1-3 times ever	37.5		100			
1-3 times/year	12.5		–			
1-3 times/month	50		–			
1-3 times/week	–		–			
Received family violence (%)	44.4		20		2.62 ^a	.106

Frequency received		
1-3 times ever	25	75
1-3 times/year	62.5	25
1-3 times/month	–	–
1-3 times/week	12.5	–

Note. The mean income in the offender group was computed after the exclusion of one participant with very high income compared to the rest of the group. Percentages in Frequency witnessed and in Frequency received are percentages of those participants who had witnessed and had received parental physical violence, respectively.

^a χ^2 test with 1 *df.* ^b Fisher's exact test.

RQ2. Examination of differences between IPV and nonviolent men in offence supportive cognition assessed with the implicit measures

Results are presented in Table 4.4, and in Figures 4.3 and 4.4

Implicit Association Tests. The violent group exhibited more gender-role stereotypical thinking compared to the control group, evident in a stronger effect in both IATs. Although the two groups did not differ in the stereotypical condition of the CD-IAT, they did differ in the counter stereotypical condition, with the IPV group showing difficulty in associating women with career and men with domestic activities. In the DS-IAT the control group was faster than the violent group in both conditions, but considerably more in the counter stereotypical condition, where, similarly to the CD-IAT, the violent group could not easily associate women with dominance and men with submission.

The Go/No-go Association Task. The two groups differed significantly in the GNAT difference score. Both groups had a positive difference score, indicating faster responses in the VU condition, but the difference score of the violent group was smaller, showing a stronger association between violence and pleasantness compared to the nonviolent group.

The Sentence Judgment Tasks. Significant group differences were found in all four SJTs, with the IPV men showing a stronger IT-consistent association compared to the nonviolent group. Similarly to the GNAT, the two groups did not statistically differ in their mean RT between the IT-consistent and IT-inconsistent condition of the SJTs, although there was a pattern in the expected direction, with the IPV group being faster in the IT-consistent condition.

Table 4.4

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

Implicit measures	Offender group		Control group		<i>F</i>	η^2	Cohen's <i>d</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
Reading Speed	1,059.42	177.60	1,004.77	55.66	1.64	.044	0.41	.209
GNAT – ds	22.68	48.37	93.28	48.44	22.55	.379	-1.46	< .001
GNAT VP	691.99	104.96	703.28	108.94	0.11	.003	-0.10	.744
GNAT VU	669.30	108.60	610.00	118.82	2.64	.067	0.52	.113
CD-IAT	0.70	0.45	0.41	0.39	4.88	.117	0.69	.033
CD-IAT – stereotypical	766.02	241.47	635.95	196.44	3.42	.085	0.59	.072
CD-IAT – counter stereotypical	1,062.24	267.20	736.47	142.82	22.87	.382	1.52	< .001
DS-IAT	0.38	0.38	0.15	0.28	4.70	.113	0.69	.037
DS-IAT – stereotypical	865.66	229.96	670.59	160.57	9.51	.205	0.98	.004
DS-IAT – counter stereotypical	1,029.92	301.48	706.68	147.11	18.40	.332	1.36	< .001
Opposite sex is dangerous – ds	12.10	43.91	51.09	47.21	15.09	.290	-0.85	< .001
Opposite sex is dangerous – con.	774.09	88.85	792.04	75.91	0.46	.012	-0.22	.501
Opposite sex is dangerous – inc.	761.98	94.64	740.95	68.32	0.64	.017	0.25	.429
General entitlement – ds	-24.48	62.47	23.45	52.56	6.75	.154	-0.83	.013

Implicit measures	Offender group		Control group		<i>F</i>	η^2	Cohen's <i>d</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
General entitlement – con.	732.89	69.88	771.28	60.93	3.35	.083	-0.59	.075
General entitlement – inc.	757.36	95.75	747.83	72.80	0.12	.003	0.11	.727
Relationship entitlement – ds	6.77	44.49	39.74	43.17	14.53	.282	-0.75	.001
Relationship entitlement – con.	750.92	81.54	780.26	74.87	1.37	.036	-0.37	.249
Relationship entitlement – inc.	744.15	91.03	740.53	83.08	0.02	.000	0.04	.897
Normalisation of relationship violence – ds	10.80	37.65	50.21	20.22	16.82	.313	-1.30	< .001
Normalisation of relationship violence – con.	769.34	62.31	809.57	82.28	2.94	.074	-0.55	.095
Normalisation of relationship violence – inc.	758.54	79.00	759.37	83.73	0.00	.000	-0.01	.975

Note. Reaction times in milliseconds. GNAT = Go/No-go Association Task; VP = violence-pleasantness condition; VU = violence-unpleasantness condition; CD-IAT = career-domestic Implicit Association Test; DS-IAT = dominance-submission Implicit Association Test; SJT = Sentence Judgment Task. M = male; F = female. ds = difference score; con = IT-consistent condition; inc = IT-inconsistent condition.

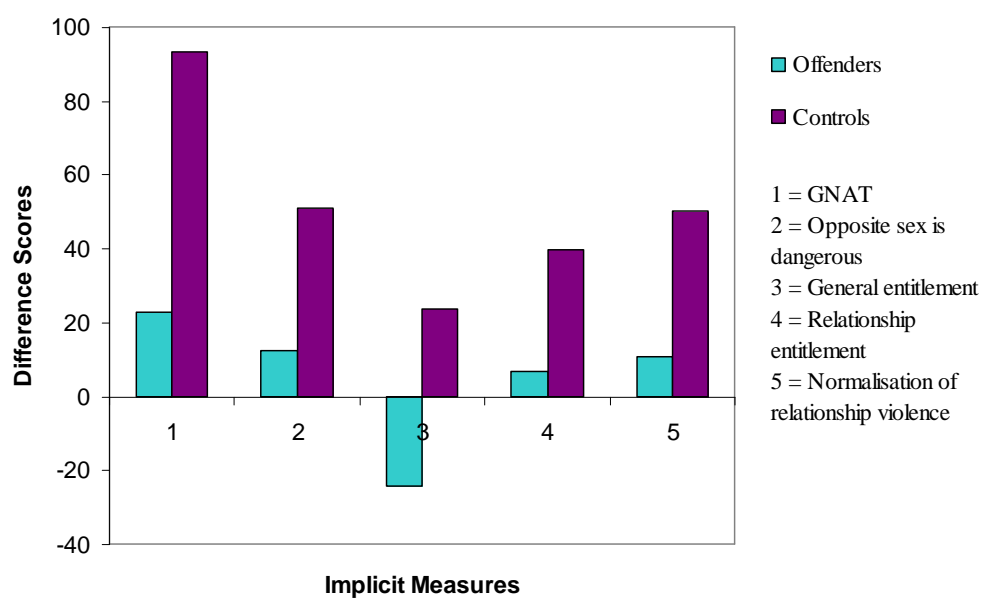


Figure 4.3. GNAT and SJTs difference scores by participant group.

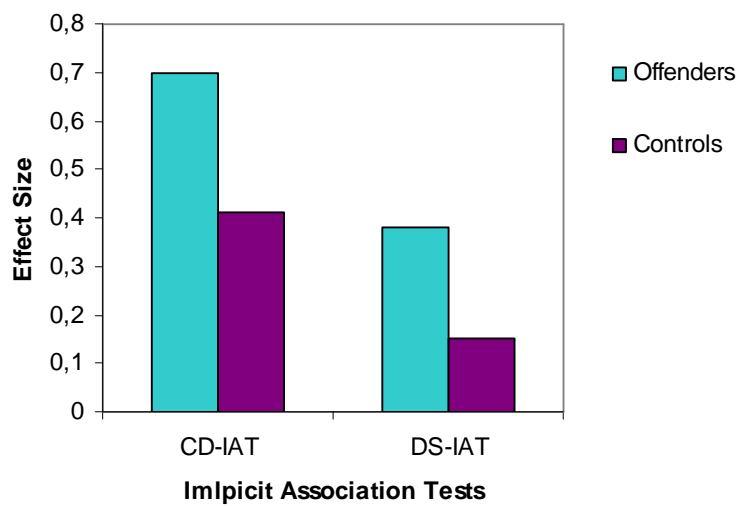


Figure 4.4. IAT effects by participant group.

RQs 3 & 4. Examination of differences between IPV and nonviolent men in offence supportive cognition assessed with the explicit measures

Descriptive statistics of the explicit measures, group differences and Cronbach's α coefficients are presented in Table 4.5. Similar to Study 1, the AIV and the NPI-entitlement scales showed poor internal consistency ($\alpha = .47$ and $.50$, respectively) and they were not included in the statistical analyses.

A MANCOVA was also performed controlling for the BIDR and the DAS. Box's M test was significant ($p = .006$), but given that this test is highly sensitive to departures from multivariate normality it is suggested that unless the significance of the test is $< .001$ and the sample sizes are unequal, then 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 $F(7, 28) = 4.38, p = .002, \eta_p^2 = .52$ (Obs. Power = .97). Post-hoc analysis revealed significant group differences in all variables: PES $F(1, 35) = 6.44, p = .016, \eta_p^2 = .16$; AWS $F(1, 35) = 11.05, p = .002, \eta_p^2 = .24$; Dominance $F(1, 35) = 6.68, p = .014, \eta_p^2 = .16$; CBS-R $F(1, 35) = 9.58, p = .004, \eta_p^2 = .22$; OGH $F(1, 35) = 10.81, p = .002, \eta_p^2 = .24$; IBPB $F(1, 35) = 10.42, p = .003, \eta_p^2 = .23$. Levene's test for equality of error variances was significant for Expagg-instrumental and the Welch test was used to investigate group differences in this variable, which is not sensitive to equality of the variances. The test was significant (Welch (1, 25.20) = 20.05, $p < .001, \eta_p^2 = .36$).

Table 4.5

Means and Standard Deviations of Scores on the Explicit Measures by Participant Group, One-way Analyses of Variance for the Effect of Group Status on Scores on the Explicit Measures, Cohen's d Effect Sizes, and Explicit Measures' Range and Cronbach's α Coefficients

Explicit Measures	Offender group		Control group		F	η^2	Cohen's d	p	Scale range	α
	M	SD	M	SD						
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 ^a	20.00	11.32	8.25	5.21	15.96 ^b	.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
OGH	78.31	8.33	67.95	6.60	18.65	.335	1.38	< .001	31 – 124	.81
IBPB ^a	73.31	25.93	48.92	15.59	15.48	.295	1.14	< .001	31 – 217	.92
Expagg- instrum.	20.26	6.79	12.60	3.17	20.75	.359	1.44	< .001	8 – 40	.84

Note. Offender group $n = 19$; Control 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; OGH = Opposite gender hostility; IBPB = Inventory of Beliefs about Partner Beating. For ease of interpretation, means and SD s of the log transformed variables were computed on the scores before transformation. 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.

^a Log-transformed variable. ^b $df = 1, 36$; control group $n = 19$

RQ5. Convergence Validity of the Implicit Measures

Convergence among the implicit measures. Initially, correlations among the implicit measures were computed for the whole sample. Many significant correlations emerged with medium and large effect sizes (.30 to .68). However, as discussed in Chapter 3, previous research has found that correlations among implicit measures are usually weak or nonexistent and even different types of implicit measures which assess the *same* construct often do not converge or correlate very modestly (Bosson, Swann, & Pennebaker, 2000; De Houwer, 2003; Sherman, Rose, Koch, Presson, & Chassin, 2003), making the current findings seem largely inconsistent. It was suspected that they were a result of the characteristics of the sample. The total sample comprised men of two extremes: men with high IPV levels and men with no history of IPV. Therefore, the large number of highly significant correlations was most likely an artifact of this. It would be inaccurate to consider these correlations as evidence for the convergence validity of the implicit measures, and therefore separate correlational analyses were performed for the two groups (see Table 4.6).

Table 4.6

Intercorrelations Among the Implicit Measures

Implicit Measures	1	2	3	4	5	6	7
1. CD-IAT	–	.36 ^a					
2. DS-IAT		–		-.33 ^b	-.44 ^c		-.33 ^d
3. GNAT			–				
4. Opposite sex is dangerous SJT				–		.74 ^{†††}	.52 [†]
5. General entitlement SJT	.46 [*]				–	.42 ^e	
6. Relationship entitlement SJT						–	
7. Normalisation of relationship violence SJT							–

Note. CD-IAT = career-domestic Implicit Association Test; DS-IAT = dominance-submission Implicit Association Test; GNAT = Go/No-go Association Task; SJT = Sentence Judgment Task. Correlations for the IPV group are above the diagonal. Correlations for the nonviolent group are below the diagonal. Only significant and marginally significant correlations are presented. For the IATs a higher score indicates more implicit gender-role stereotype.

^a $p = .064$, 1-tailed. ^b $p = .086$, 1-tailed. ^c $p = .058$, 2-tailed. ^d $p = .085$, 1-tailed. ^e $p = .073$, 2-tailed.

^{†*} significant at $p = .05$. ^{††**} significant at $p = .01$. ^{†††***} significant at $p = .001$.

Convergence between the implicit and the explicit measures. Correlations between the implicit measures and their conceptually corresponding explicit measures were computed. Additional correlations were computed between the implicit measures and other than their conceptually corresponding explicit measures, with which meaningful associations would be expected based on the IPV literature and the correlations found among the explicit measures in this study (see Table 7 in Appendix F). Similarly to the previous analysis, the two groups were analysed separately. The association between the scales and social desirability was explored for each group separately. Only the IBPB was correlated with the BIDR and only in the control group. All correlations are 1-tailed.

The Implicit Association Tests. In the IPV group, only the CD-IAT was correlated with AWS ($r = .46, p = .024$), and in the control group only the DS-IAT was correlated with CBS-R ($r = .47, p = .021$).

The Go/No-go Association Task. No significant correlations were found.

The Sentence Judgment Tasks.

Opposite sex is dangerous. In the IPV group this SJT correlated marginally with its corresponding explicit measure, the OGH ($r = -.36, p = .063$), but other significant associations were found with the AWS ($r = .46, p = .024$) and the IBPB ($r = -.73, p < .001$). In the control group, correlations were found with the AWS ($r = -.38, p = .047$) and the IBPB ($r = .55, p = .006$). Unexpectedly, they were both in the opposite direction. The correlation with the IBPB remained significant after controlling for social desirability ($sr = .52, p = .020$).

General Entitlement. Nothing significant was found.

Relationship Entitlement. This SJT was not correlated with its corresponding scales, the CBS-R and the Dominance scale, in either group. It was correlated with the IBPB in both the IPV ($r = -.53, p = .009$) and the control group ($r = .59, p = .003$), and additionally with the

OGH in the control group ($r = .39, p = .045$). The two correlations in the control group were, however, in the opposite as expected direction.

Normalisation of relationship violence. Only one significant association emerged, with the IBPB ($r = -.39, p = .048$), in the IPV group only.

RQ6. Criterion and Incremental Validity of the Implicit Measures

All the implicit measures demonstrated good concurrent validity with group membership as the criterion. ANOVA tests showed that the two groups differed significantly in all implicit measures (Table 4.4). ROC analyses were also performed for each implicit measure separately and for all of them together. A ROC analysis was also performed for all explicit measures together (Table 4.7). The GNAT, and the Opposite sex is dangerous, the Relationship entitlement and the Normalisation of relationship violence SJTs showed very good criterion validity. Moderate criterion validity was observed for the General entitlement SJT and the DS-IAT, while the CD-IAT did not have any discriminatory power. However, the combination of all implicit measures showed excellent discriminatory power, equal to that of the explicit measures combined.

Separate hierarchical logistic regressions, with group membership as the dependent variable, were performed for each implicit measure in order to examine if the latter could add to the criterion prediction above and beyond their corresponding explicit measures (Tables 4.8 to 4.13). All implicit measures demonstrated incremental validity, except for the DS-IAT. Additionally, in all analyses, except for the DS-IAT, the Relationship entitlement SJT, and the Normalisation of relationship violence SJT, implicit and explicit measures demonstrated mutual incremental validity in predicting group status; that is, implicit and explicit measures each accounted for criterion variance not accounted by the other.

Table 4.7

Receiver Operating Characteristic Curve Analysis (ROC) of the Implicit Measures Individually and Combined, and of the Explicit Measures Combined

Implicit Measures	Correct Classifications (%)	<i>AUC</i>	<i>p</i>	<i>SE</i>
CD-IAT	59	.66	.087	0.09
DS-IAT	64	.69	.043	0.09
GNAT	80	.86	< .001	0.06
Opposite gender is dangerous SJT	74	.80	.001	0.07
Relationship entitlement SJT	72	.79	.002	0.07
General entitlement SJT	69	.71	.026	0.09
Normalisation of relationship violence SJT	74	.80	.001	0.07
All implicit measures	87	.95	< .001	0.03
All explicit measures	90	.96	< .001	0.03

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

Table 4.8

Summary of Hierarchical Logistic Regression Analysis Testing the Incremental Validity of the Implicit Association Tests (IAT) with Group Status as the Criterion

Step	Predictor variable	<i>B</i>	<i>SE</i>	Wald statistic	<i>OR</i>	Nagelkerke R^2
CD-IAT						
1	AWS	0.18	0.06	8.79	1.19**	0.44***
2	AWS	0.27	0.09	8.83	1.31**	0.64***
	CD-IAT	3.57	1.38	6.64	35.50**	
DS-IAT						
1	AWS	0.18	0.06	8.79	1.19**	0.44***
2	AWS	0.18	0.07	7.56	1.20***	0.50
	DS-IAT	1.85	1.17	2.73	6.91	

Note. AWS = Attitudes toward Women Scale; CD-IAT = career-domestic IAT; DS-IAT = dominance-submission IAT. The model with the CD-IAT was significant $\chi^2(2, N = 39) = 25.71, p < .001$. The model with the DS-IAT was significant $\chi^2(2, N = 39) = 18.48, p < .001$. Because higher scores in the AWS indicate more liberal attitudes while the opposite applies to the IAT score, for ease of interpretation the AWS scores were reversed.

* significant at $p = .05$. ** significant at $p = .01$. *** significant at $p = .001$.

Table 4.9

Summary of Hierarchical Logistic Regression Analysis Testing the Incremental Validity of the Go/No-go Association Task (GNAT) with Group Status as the Criterion

Step	Predictor variable	<i>B</i>	<i>SE</i>	Wald statistic	<i>OR</i>	Nagelkerke <i>R</i> ²
1	Expagg-instrumental	0.29	0.09	9.26	1.33**	0.47***
2	Expagg-instrumental	0.35	0.13	7.11	1.42**	0.75***
	GNAT	0.06	0.02	5.73	1.06*	

Note. The model was significant $\chi^2(2, N = 39) = 32.36, p < .001$. Because a higher GNAT difference score indicates a stronger implicit violence-pleasantness association while a higher score in the Expagg-instrumental indicates more approval of physical aggression, for ease of interpretation the GNAT score was reversed.

* significant at $p = .05$. ** significant at $p = .01$. *** significant at $p = .001$.

Table 4.10

Summary of Hierarchical Logistic Regression Analysis Testing the Incremental Validity of the Opposite Gender is Dangerous Sentence Judgment Task (SJT) with Group Status as the Criterion

Step	Predictor variable	<i>B</i>	<i>SE</i>	Wald statistic	<i>OR</i>	Nagelkerke <i>R</i> ²
1	OGH	0.18	0.06	9.73	1.19**	0.43***
2	OGH	0.15	0.06	5.82	1.16**	0.57*
	Opposite sex is dangerous SJT	0.04	0.02	4.35	1.04*	

Note. OGH = Opposite gender hostility. The model was significant $\chi^2(2, N = 39) = 21.63, p < .001$. Because a higher SJT difference score indicates less implicit hostility while a higher score in the OGH indicates more explicit hostility, for ease of interpretation the SJT score was reversed.

* significant at $p = .05$. ** significant at $p = .01$. *** significant at $p = .001$.

Table 4.11

Summary of Hierarchical Logistic Regression Analysis Testing the Incremental Validity of the Relationship Entitlement Sentence Judgment Task (SJT) with Group Status as the Criterion

Step	Predictor variable	<i>B</i>	<i>SE</i>	Wald statistic	<i>OR</i>	Nagelkerke R^2
1	CBS-R	0.15	0.07	4.36	1.16*	0.49***
	Dominance Scale	0.05	0.05	1.15	1.05	
2	CBS-R	0.16	0.08	3.45	1.17	0.68***
	Dominance Scale	0.06	0.06	1.19	1.07	
	Relationship entitlement SJT	0.04	0.02	5.33	1.05*	

Note. CBS-R = Revised Controlling Behaviours Scale. The model was significant $\chi^2(3, N = 39) = 27.97$. Because a higher SJT difference score indicates less implicit relationship entitlement, while a higher score in the CBS-R and the Dominance Scale indicates more relationship control and dominance, respectively, for ease of interpretation the SJT score was reversed.

* significant at $p = .05$. ** significant at $p = .01$. *** significant at $p = .001$.

Table 4.12

Summary of Hierarchical Logistic Regression Analysis Testing the Incremental Validity of the Normalisation of Relationship Violence Sentence Judgment Task (SJT) with Group Status as the Criterion

Step	Predictor variable	<i>B</i>	<i>SE</i>	Wald statistic	<i>OR</i>	Nagelkerke R^2
1	IBPB	0.06	0.02	7.60	1.06**	0.34***
2	IBPB	0.04	0.03	2.91	1.04	0.48*
	Normalisation of relationship violence SJT	0.03	0.02	4.35	1.03*	

Note. IBPB = Inventory of Beliefs about Partner Beating. The model was significant $\chi^2(2, N = 39) = 17.31$. Because a higher SJT difference score indicates less implicit approval of relationship violence, while a higher score in the IBWB indicates more explicit approval, for ease of interpretation the SJT score was reversed.

* significant at $p = .05$. ** significant at $p = .01$. *** significant at $p = .001$.

Table 4.13

Summary of Hierarchical Logistic Regression Analysis Testing the Incremental Validity of the General Entitlement Sentence Judgment Task (SJT) with Group Status as the Criterion

Step	Predictor variable	<i>B</i>	<i>SE</i>	Wald statistic	<i>OR</i>	Nagelkerke R^2
1	PES	0.11	0.05	5.41	1.11*	0.22***
2	PES	0.15	0.06	5.79	1.16*	0.42**
	General entitlement SJT	0.02	0.01	6.29	1.02*	

Note. The model was significant $\chi^2(2, N = 39) = 14.98, p = .001$. Because a higher SJT difference score indicates less implicit entitlement, while a higher score in the PES indicates more explicit entitlement, for ease of interpretation the SJT score was reversed.

* significant at $p = .05$. ** significant at $p = .01$. *** significant at $p = .001$.

Summary of Findings

RQ1. All men in this sample had engaged in frequent IPV, including also severe acts of physical violence, although none reported extreme levels of violence. Consistent with previous research (e.g., Caesar, 1988; Else, Wonderlich, Beatty, Christie, & Staton 1993; Johnson et al., 2006) observation of interparental violence and childhood abuse was common in the offender group, experienced by around half of the men, and much more frequent compared to the nonviolent group, especially in the case of interparental violence. In addition, the frequency of interparental violence and childhood abuse in the offender sample was considerably higher than in the IPV students of Study 1. The frequency reported by the latter was closer to the frequency reported by the nonviolent controls of Study 2. This finding supports previous research which has found a positive link between levels of IPV perpetration and levels of observation of physical aggression between parents (e.g., Eckhardt, Samper, & Murphy, 2008; Hanson, Cadsky, Harris, & Lalonde, 1997; Sugarman & Hotaling, 1989) and amount of physical abuse in the family of origin (e.g., Eckhardt et al., 2008; Holtzworth-Munroe, Meehan, Herron, Rehman, & Stuart 2000).

RQ2. The offender group differed significantly from the nonviolent group in all implicit measures, showing more offence supportive cognition, and especially more hostility toward women, positivity toward physical aggression, and approval of relationship violence. The least strong differences were observed in implicit gender-role stereotype. The findings regarding the last two implicit measures are in agreement with Stith, Smith, Penn, Ward, and Tritt's (2004) meta-analysis, which found that traditional sex-role ideology was a moderate risk factor for physical IPV while approval of IPV was a strong risk factor.

RQs 3 & 4. Likewise, the offender sample differed from the nonviolent men in all explicit measures even after controlling for social desirability and/or relationship satisfaction,

and large effect sizes emerged. Consistent with previous research the IPV men in this study had less relationship satisfaction (Schumacher et al., 2001; Stith et al., 2008), they were domineering and controlling in their relationship (e.g., Dutton, Starzomski, & Ryan, 1996; Stets & Burke, 2005), held a stereotypical view of gender-roles (e.g., Saunders, 1992; Stith & Farley, 1993) and hostile attitudes about women (e.g., Copenhaver, 2000; Holtzworth-Munroe & Hutchinson, 1993; Holtzworth-Munroe et al., 2000), they were more approving of couple violence (e.g., Hanson et al., 1997; Holtzworth-Munroe et al., 2000; Russel & Hulson, 1992; Stith, 1990), and had a sense of entitlement (Henning, Jones, & Holdford, 2003; Rothschild, Dimson, Storaasli, & Clapp, 1997; Simmons, Lehmann, Cobb, & Fowler, 2005). It was discussed in Chapter 1 that IPV research has not yet examined IPV perpetrator's attitudes toward general, non-partner directed physical aggression. It was found here that instrumental beliefs about physical aggression was a strong differentiating variable between offenders and controls, and this factor warrants further investigation by future research.

RQ5. Similarly to Study 1, a very small number of statistically significant implicit-implicit correlations emerged. In the IPV group, however, a few were marginally significant ($p < .10$). In addition, like in Study 1, the majority of the implicit measures did not correlate with their conceptually corresponding explicit measures, but a number of meaningful associations emerged with other explicit measures, which, unlike Study 1, were not confounded by social desirability.

RQ6. Although in Study 1 the criterion validity of the implicit measures was very poor, in this study they demonstrated very good criterion validity, both concurrent and incremental. First, significant group differences between the IPV and control groups emerged in all seven implicit measures. Second, ROC analyses further demonstrated their discriminatory power. Considered separately, four of the implicit measures demonstrated very

good criterion validity and two measures showed moderate criterion validity. Only the CD-IAT did not have any discriminatory power. When combined altogether, they showed excellent discriminatory power, equal to that demonstrated by the explicit measures combined. The same was found by Banse et al. (2010) in their study of sexual interest in child sexual offenders. Their two implicit measures combined showed very good discriminatory power and could discriminate offenders from controls as well as the explicit measure. Additionally, all the implicit measure of this thesis, except for the DS-IAT, showed incremental validity, that is, they accounted for criterion (group status) variance beyond that accounted for by their conceptually corresponding explicit measures.

General Discussion

The two studies in this Chapter aimed to explore offence supportive cognition in relation to IPV perpetration using both implicit and self-report measures and to examine further the psychometric properties of the implicit measures of this thesis.

RQ2. The IPV students did not differ from their nonviolent peers in any of the implicit measures, but the offender group in Study 2 differed from the nonviolent controls in all, suggesting that they hold automatic cognitions which facilitate IPV perpetration. Since previous similar research in the area of IPV is almost non-existent, and no study to date has explored differences in IPV cognitions assessed with implicit measures in groups with different levels of violence, only hypotheses can be made about the above findings. As already discussed in Chapter 2 of this thesis and in the introduction of the present chapter, implicit measures are assumed to assess attitudes, that is, cognitive associations between representations of concepts in long term memory, which are automatically activated. According to the spreading activation memory model (Collins & Loftus, 1975) concepts

which are more frequently associated through previous learning and personal experience form stronger connections and are activated together faster and more consistently. Likewise, the IT approach to sexual offending suggests that, unlike situational offenders, preferential offenders, who have an extensive history of offending, have developed more extensive, cohesive, and well-integrated offence supportive ITs. Through repeated use, these ITs produce cognitive distortions and guide information processing (in an IT consistent manner) rapidly and largely automatically and unconsciously (Ward, 2000). In other words, offence supportive thinking becomes a cognitive habit. Both the above theoretical explanations can be applied here. The offender sample in Study 2 was older than the student sample and had a longer history of IPV perpetration and of considerably more severe levels. Therefore, it is likely that these men held stable and readily accessible offence supportive mental associations which had an effect on their performance resulting in stronger effects in the implicit measures compared to the nonviolent group. The IPV students in Study 1 were young with low levels of infrequent and mainly situational violence; they do not (yet, and may never have) have an extensive history of offending, they are not career offenders. Because they have not engaged in repeated and severe IPV, they may not have developed well-integrated and coherent offence-supportive networks of cognitions in order to explain and justify their behaviour, functioning at an automatic level.

Research on batterer's typologies has shown that IPV differs qualitatively in different populations. For example, Johnson (see Graham-Kevan & Archer, 2003; Johnson, 1995) describes two different types of relationship aggression. The first is intimate terrorism (IT) and is characterised by frequent and severe, escalated aggression motivated by the desire to control the partner, it is perpetrated mainly by men and found in selected samples (i.e., convicted IPV offenders, women's shelters, ER admissions). The second is common couple

violence (CCV) and is characterised by less frequent, low-level, situational violence, not primarily motivated by power and control, it is normally reciprocal and found in non-selected samples (i.e., students, community surveys). A review on the heterogeneity of spouse abuse also shows that IPV in selected samples is different from IPV in non-selected samples (e.g., more frequent, severe, and can generalise to non-intimates), and also that the perpetrators differ, in that, selected samples are characterised by more personality and psychological problems, including thinking styles and offence supportive attitudes (see Dixon & Browne, 2003). It could be that the presence of deep level well established cognitive networks which facilitate IPV functioning at the automatic level, is another qualitative differentiating factor between selected and non-selected IPV samples. The findings of this chapter provide preliminary support for such an assumption.

Of course, the possibility that the student study did not produce any group differences in the implicit measures because of the small IPV sample size cannot be ruled out. Taking into consideration the low IPV levels of the students, more significant group differences would have possibly been detected if a larger IPV sample was involved.

RQs 3 & 4. Regarding explicitly assessed attitudes, more and much stronger group differences were observed in Study 2 compared to Study 1, and, as opposed to the student sample, in the offender sample these group differences remained significant even after social desirability and/or relationship satisfaction were controlled for (see also correlation Tables 1 and 7 in Appendix F). These findings echo what was found for implicit measures (discussed in the previous section), similarly suggesting that offence supportive cognitions may be well established in perpetrators with a longer history of more severe and frequent IPV, so that they have a unique association with IPV perpetration not confounded by social desirability and relationship satisfaction. This assumption is in agreement with one of the observations made

in Chapter 1 after reviewing the cognitive risk factors for IPV. It was observed that some IPV risk factors were consistently associated with higher IPV levels (predominantly offender samples) and less consistently with lower levels of violence (predominantly student samples).

It was evident from the review in Chapter 1 that high-level, as opposed to low-level situational, IPV perpetrators very often come from problematic families where violence occurred, and this was also found in the studies in Chapter 4. In addition, research on attachment has shown that many such perpetrators have experienced poor and inconsistent parenting, including violence and neglect, which did not allow them to develop a secure attachment style in adult romantic relationships, resulting in a distorted view of intimate relationships and partners (Bartholomew & Horowitz, 1991; Dutton & White, 2012). These individuals had to develop theories from an early age (see Ward & Keenan, 1999 for a discussion on how implicit theories emerge) in order to explain and predict their parents' behavior. Therefore, cognitive distortions like 'women are untrustworthy', 'it is ok to hit my partner to make him/her shut up', 'the man has the right to control the woman', or 'it's ok to aggress against others to get what I want' may have been part of such high-level offenders' thinking style since childhood, explaining why offence supportive attitudes of the offender sample in Study 2 revealed a unique association with IPV without being confounded by relationship satisfaction or social desirability, as opposed to the student group.

RQ5. The implicit measures did not correlate well with each other in either of the two studies. Three things should be taken into account before concluding that the implicit measures of this thesis demonstrated weak convergence validity. First, each measure assessed a *different* construct, with the exception of the two IATs for gender-role stereotype (which correlated with each other only in Study 1 of this chapter, but also in the study of Chapter 3), and previous research generally suggests that *different* types of implicit measures which even

assess the *same* construct do not usually converge or correlate very modestly (Bosson et al., 2000; De Houwer, 2003; Sherman et al., 2003). Second, and with regard to the student sample, as aforementioned when discussing the findings from group differences in the implicit measures, in perpetrators with low level and infrequent IPV such cognitions may not be that well established and may not have become automated to allow implicit measures to detect significant associations. The larger number of (mainly marginally) significant correlations found in the higher level IPV group of Study 2 provides some support for such an assumption. Third, many of the associations found in the IPV sample of Study 2 had moderate, not negligible, effect sizes which were marginally significant. This clearly indicates that with a larger sample these correlations would have reached significance. It was of interest that two out of the six possible intercorrelations among the SJTs in the offender group were significant and one more was marginally significant, all in the expected direction. This is an interesting finding because it demonstrates some convergence between *different* but theoretically related constructs assessed with the *same* type of implicit measures. These implicit-implicit associations were also found in the explicit measures (as explicit-explicit associations). Of the remaining three non-significant SJTs intercorrelations, the one was also non-significant in the explicit measures (between general entitlement and IPV approval), while the other two were significant when assessed explicitly. To the best of my knowledge, this is the first study finding this type of convergence among implicit measures, supported in the largest part by observed relationships between explicit measures. Similarly to the findings in Chapter 3, the size of the correlations found here was larger than what would be expected for implicit measures, and especially for implicit measures which assess different constructs (Bosson et al., 2000; De Houwer, 2003; Sherman et al., 2003).

Implicit measures converged better with the explicit than with the implicit measures. Although very few implicit measures were correlated with their conceptually corresponding self-report measures, numerous other meaningful implicit-explicit associations were found in both studies. These findings are not very different from the findings of Chapter 3, where very few implicit-explicit associations also emerged, and they are consistent with previous research which has shown weak or no convergence between implicit and explicit measures when the explicit measure is a scale (aggregate measures of several items) and the topic under investigation is socially sensitive (Hofmann, Gawronski, Gschwendner, Le, & Schmitt, 2005). It is not suggested that these are the only factors explaining this implicit-explicit inconsistency. There are numerous other reasons why implicit and explicit measures do not always converge. Hofmann, Gschwendner, Nosek, and Schmitt (2005) conducted a comprehensive review of the evidence of variables that moderate implicit-explicit consistency. They identified many different variables, for example, the strength of representation in memory, the perceived distinctness of the attitude from the norm, the amount of spontaneity involved when making explicit judgments, the social adjustment motive, contextual information, reliability of the measure, and method-specific variability.

Two unexpected findings were observed. In the control group of Study 2, four correlations were in the opposite than expected direction; more implicit gender hostility was associated with more explicit liberal gender-role attitudes and less approval of IPV, and more implicit endorsement of relationship entitlement was associated with less explicit approval of IPV and hostility toward women. It is important that these associations were not confounded by socially desirable responding. According to the Dual Attitudes Model (Wilson, Lindsey, & Schooler, 2000; see Chapter 2), implicit attitudes are relatively difficult to change and change slowly, even if someone has genuinely changed his/her explicit attitudes toward an attitude

object. The above findings may reflect a case like this, where, although this group genuinely did not explicitly approve IPV, did not have hostile attitudes toward women, and held liberal gender-role attitudes, traces of earlier cognitive associations about these constructs had an affect on their performance on the implicit measures which inhibit effortful introspection and retrieval from memory. The Meta-Cognitive Model (Petty, Briñol, & DeMarree, 2007; see Chapter 2) can also be applied to the explanation of this implicit-explicit divergence. When the validity of an attitude is challenged a negation tag is assigned to it and the later stored with the attitude in memory. When there is deliberative and effortful cognitive processing of an attitude, like in explicit measures, the attitude will be activated *with* its validity tag, reflecting the new, changed, attitude. When effortful processing is not possible, like in the case of implicit measures, the original, *untagged*, attitude will be activated. These opposite correlations could also be a consequence of cognitive dissonance. According to the cognitive dissonance theory (Festinger, 1957) people experience a feeling of uneasiness and discomfort when they hold two contradicting attitudes or there is a discrepancy between their attitudes and their behavior. In order to reduce this discomfort, people have to change either their behaviour or their attitude in order to have attitude-behaviour consistency. The cognitive dissonance theory has been used as a framework to explain implicit-explicit consistency. As the process of dissonance reduction though attitude change is a deliberative and propositional cognitive process, cognitive dissonance has an effect only on the explicit and not on the implicit measure (Hofmann, Gschwendner, et al., 2005; Gawronski & Strack, 2004). In other words, change is expected only in explicit judgments and not in implicit evaluations, as the latter are considered the outcome of associative processes (see The Associative Propositional Evaluation Model, Gawronski & Bodenhausen, 2006). It is, therefore, likely that implicit-explicit inconsistent judgments, like the ones observed here, reflect such a process of

cognitive change in order for attitudes to match behaviour (in this case, non-violent behaviour).

RQ6. Whether implicit measures converge with other implicit or explicit measures, or not, is not, and should not, be the primary concern when it comes to applied areas of psychology. In other words, the clinician would be mainly interested in whether such tools have practical implications and can be used in clinical practice. The results from Study 2 provide important first support for this. The implicit measures of this thesis demonstrated very good ability to distinguish between the violent and the nonviolent group. They showed very good criterion validity, strong discriminatory power equal to that of the explicit measures, and almost all explained criterion variance above that accounted for by their corresponding explicit measure(s). These findings suggest that the use of both implicit *and* explicit measures in the assessment of IPV offence supportive cognition could increase confidence in any decisions made about treatment targets and any conclusions drawn about treatment success and risk of recidivism.

Limitations

A number of limitations should be taken into account when interpreting the results of these studies. The use of convenience samples in both studies, their relatively small sample size, and their voluntary nature, does not allow for any generalisations to be made. With the student sample there was great difficulty in identifying and collecting a larger IPV group. Ethical restrictions set by the University Ethics Committee did not permit an a priori scanning of potential participants for IPV perpetration in order to identify and select the desired number of violent and nonviolent students. Although the aim of Study 1 was to include a male and a female IPV student group and examine men and women separately, this was not possible as participation response rate of male students was low, as was IPV frequency in the male

sample. Due to problems with getting access to an incarcerated offender sample and serious time restrictions it was not possible to recruit a larger number of IPV men for Study 2. However, the offender sample in this study was not significantly smaller compared to previously published research of similar nature with forensic populations (Robertson & Murachver, 2007; see Snowden, Craig, & Gray, 2011 for a review of studies on sexual violence which have employed implicit measurement techniques). Despite the small number of participants, medium and large effect sizes still emerged.

In students, the voluntary nature of the study may have resulted in sample representation bias. One of the requirements set by the University's ethics committee was that information about the nature of the study was available to all potential participants, on-screen through the RPS, before deciding to sign-up for the study. Students knew that this study would involve questions about partner violence, their attitudes toward violence etc. Therefore, the possibility that students with higher IPV levels were underrepresented in this sample because they did not wish to take part in a study like this cannot be ruled out. A representation bias in the offender sample of Study 2 is less likely to have affected the study's findings, as all potential participants had the same, a priori know status, that is, they were IPV perpetrators.

Moreover, the cross-sectional design of both studies cannot establish causality, and, therefore, it is not possible to infer whether these cognitions are antecedents of IPV perpetration or whether they emerge after involvement in this type of violent behaviour. Only longitudinal studies with large and representative samples can investigate this.

In addition, it could have been advantageous to administer an IQ and an attention test to the sample in Study 2, as deficits in these areas can have an effect on RT measures, but the testing session was already lengthy, so in order to avoid causing participants more tiredness

and potential frustration only the directly relevant to this study measures were administered. To compensate for that and for the lack of available information about possible learning disabilities, a reading speed task was administered in which the offender group performed equally well with the control group. Additionally, with the exception of five participants who were eventually excluded, none of the men in the offender group had any significant difficulties when completing the implicit measures, evident also in their RTs and error rates which were similar to those of the control group.

Implications of Findings and Future Directions

Regarding treatment and more specifically assessment of change and treatment effectiveness, the use of implicit measures, along with self-report measures, could provide a more accurate estimation and evaluation of cognitive change. When offenders know that the successful completion of an intervention programme will have a positive effect on his/her sentence or conditions of probation, they may be more likely to deliberately fake responses in self-report questionnaires and/or interviews in order to present themselves more favourably and to give the impression that they have genuinely changed. The incorporation of implicit measures to the assessment of cognitive change could, therefore, increase confidence that the intervention has been successful.

As suggested in Chapter 1, intervention programmes should target deep-level, core cognitions (i.e., ITs, schemas). Such cognitions support and perpetuate IPV perpetration through the automatic activation of individual distorted and maladaptive attitudes and beliefs, when external circumstances or personal characteristics do not allow engagement in deliberative and effortful processing of one's own attitudes and beliefs (Ward, 2000). Since attitudes assessed with implicit measures are considered the product of automatic activation processes, implicit measures could help identify changes in such deep-level, more general and

core cognitions. There is some evidence from earlier studies which support the usefulness of implicit measures in detecting treatment change. The IAT has been employed to assess treatment effectiveness in phobias (Teachman & Woody, 2003) and cognitions about pain in chronic pain patients (Grumm, Erbe, vonCollani, & Nestler, 2008), and in both cases changes in the IAT effect were found after clinical treatment. Polaschek, Bell, Calvert, and Takarangi (2010) used two IATs to assess cognitive change after treatment in a sample of high-risk violent offenders. They found change consistent with treatment in one of the two IATs, which was also associated with risk for future violence. The authors attribute the lack of significant findings in the second IAT to the superior design characteristics of the first IAT, characteristics which have been found to increase an IAT's external validity. These findings are promising and suggest that well designed implicit measures could prove to be valuable assessment tools for clinicians and treatment providers. Such tools are also cost-effective, easy to comprehend and administer, and can be implemented into any setting with access to a computer.

Ultimately, the aim of every treatment intervention is to reduce offenders' risk of reoffending, and future research is needed to investigate whether such implicit measures have the potential to contribute to a more accurate estimation of that risk in IPV perpetrators.

Difficulties in obtaining access to an offender sample and time restrictions did not permit a finer investigation of IPV implicit and explicit cognition by considering batterer subtypes. Future research should examine the usefulness of these implicit measures taking into consideration the heterogeneity that exists among batterers (see Dixon & Browne, 2003). The initial aim of Study 2 was to recruit both a male and a female offender sample. This, however, turned out to be a very difficult endeavour, first, due to serious difficulties in getting access to prison population, and second, because the number of (the already small number of)

women from the same organisation who volunteered to take part in this study was too small ($n = 4$). Future research should replicate and extend this study involving a female IPV offender sample, and explore similarities and differences in IPV cognition between male and female IPV perpetrators. The findings from such research will shed some additional light on the gender-inclusive vs. feminist conceptualisation of intimate partner violence (see Dixon, Archer & Graham-Kevan, 2011).

Additionally, although significant group differences were found in all implicit measures between the offender and the nonviolent groups of Study 2, and the majority of the implicit measures showed very good discriminatory power, the inclusion of a second control group of a different type of offenders would allow the investigation of the ability of these measures to differentiate between types of offenders with, for the most part, different cognitive characteristics (e.g. child sexual offenders; Ward & Keenan, 1999), or to establish similarities with types of offenders which share many common characteristics with IPV perpetrators (e.g. other violent offenders) (Felson & Lane, 2010; Polaschek, Calvert, & Gannon, 2009; Valliant, De Wit, & Bowes, 2004). Findings from such research will provide further evidence for the specificity and sensitivity of these implicit measures.

Finally, the implicit measures of this thesis were designed to tap into the ITs proposed in Chapter 1. The studies of this chapter were a first step into the exploration of these ITs using implicit measures. The findings from the student sample do not support the existence of these ITs, but as discussed above, it might be that in low level and infrequent partner violence offence supportive cognitions may not be that well established. On the contrary, Study 2 provides strong preliminary support for their existence in male IPV perpetrators characterised by a longer history of more severe violence. Arguably, the design and content of the SJTs allowed for more conceptual convergence with their corresponding ITs compared to the IATs

and the GNAT. Future research should extend these findings with larger and more representative samples, including female samples, and using a variety of implicit measures.

Conclusion

The studies of this Chapter were the first to assess a wide range of offence supportive cognitions using both implicit and explicit measures in two UK samples, one with high and one with low levels of IPV, and significantly contribute to the understanding of the role of automatically activated cognitions in this violent behaviour. It was observed that in low levels of violence implicit measures did not perform well, but the findings from high-level IPV perpetrators support the ability of such measures to detect distorted cognitions and to distinguish between violent and nonviolent individuals at a group level. The implicit measures of this thesis were found to be reliable and valid and could prove to be useful and valuable assessment tools in clinical practice and intervention with this type of offenders.

CHAPTER 5

GENERAL DISCUSSION

This thesis focused on physical aggression between intimate heterosexual partners and its main aim was twofold. First, it aimed to build on previous research which has identified various Implicit Theories (ITs) in other types of offenders, by proposing a number of ITs for male and female IPV perpetrators, and to systematically review the IPV literature to investigate whether empirical evidence provides support for these ITs. The second aim was to develop a number of reliable and valid implicit reaction-time (RT) measures, with content tapping into the proposed ITs, in order to assess IPV offence supportive cognition implicitly in two samples, that is, university students and male batterers referred to treatment, in order to examine differences in automatic (assessed implicitly) and deliberative (assessed explicitly) cognition between IPV and nonviolent groups, and additionally explore the utility of these implicit measures with this type of offenders.

Summary of Findings

Chapter 1 systematically reviewed the IPV empirical literature, to determine the support available for seven ITs proposed for perpetrators of partner violence. Based on earlier research with other type of offenders and on preliminary hypotheses and findings about ITs in male batterers, six ITs were proposed for both sexes: “Opposite sex is dangerous”, “Relationship entitlement”, “General entitlement”, “Normalisation of relationship violence”, “Normalisation of violence”, and “It’s not my fault”, and one additional IT for male perpetrators: “I am the man”. Support was found for the existence of all seven ITs, but it differed in terms of strength between ITs and between men and women; in women, all ITs found less strong support compared to men, mainly due to limited research on female IPV.

“Relationship entitlement” was well supported in both male and female perpetrators.

“Opposite sex is dangerous”, “Normalisation of relationship violence”, “Normalisation of violence”, and “It’s not my fault” found good support in men and moderate in women. “I am the man” and “General entitlement” were moderately supported in men. Due to the dearth of empirical research the latter was weakly supported in women and needs further investigation. It became evident from this review that female IPV is still not given the same (or similar) attention to male perpetrated IPV, and that there are important under-researched areas where future research should focus. It was suggested that an IT approach to IPV intervention, which also takes into consideration the heterogeneity among male and female IPV perpetrators, has the potential to improve current levels of assessment and treatment effectiveness, and to inform existing and future intervention programmes and practices.

Chapter 2 provided an overview of the theoretical background with regard to implicit measurement, and described in detail the development of the seven implicit measures used in the studies of this thesis and their pilot testing. These implicit measures were designed to tap into the six of the seven ITs proposed in Chapter 1. Two IATs were designed for the assessment of gender-role stereotype (“I am the man”), one GNAT assessing implicit positivity toward physical violence (“Normalisation of violence”), and four SJTs tapped into the ITs: “Opposite sex is dangerous”, “Normalisation of relationship violence”, “Relationship entitlement”, and “General entitlement”. The pilot testing did not indicate any problems with the implicit measures, except for the GNAT, in which one of the word lists had to be substituted.

Chapter 3 investigated the psychometric properties of the seven implicit measures developed for this thesis, and more specifically, their internal consistency, test-retest reliability, and convergence and discriminant validity. The IATs and the GNAT showed

reasonable reliability (split-half), within the range normally found for RT implicit measures. The way the SJTs were designed did not allow using the split-half method and their internal consistency was investigated with two different ways. First, the mean RTs in the IT-consistent and the mean RTs in the IT-inconsistent conditions, for each SJT, across three splits were compared, and no significant differences were found indicating internal consistency. An item analysis, however, showed that some sentences in each SJT were problematic and these were discarded. Temporal stability was low, and although it increased after correcting for attenuation, it still did not satisfy the conventional standards for questionnaire measures. All measures demonstrated good discriminant validity. Convergence among the implicit measures and between the implicit and the explicit measures was weak, but both these findings were expected and are in agreement with previous empirical research.

Chapter 4 included the two main studies of this thesis which assessed IPV offence supportive cognition using the implicit measures of this thesis and conceptually corresponding explicit measures in two UK samples: (a) a male and female university student sample comprising a group of low level violent students and a group of students never previously involved in IPV (Study 1), and (b) a male offender sample referred to IPV treatment, recruited from a community based intervention program, and a group of nonviolent community controls (Study 2). Both studies examined differences between the IPV and the nonviolent groups and the utility of the implicit measures with this type of violence. The offender sample, demonstrated more offence supportive cognition than the nonviolent men both at the implicit and explicit level, and in the latter case group differences were not confounded by social desirability or relationship satisfaction. On the other hand, IPV students did not differ from their nonviolent peers in their implicit attitudes, and the majority of the group differences found in their explicit attitudes, which were weaker compared to those

found between the offender and the control sample of Study 2, disappeared when social desirability and relationship satisfaction were taken into account. These findings suggest that in individuals with a longer history of more severe and frequent IPV, related offence supportive cognitions may have become fairly well established and more readily accessible compared to individuals involved predominantly in minor and infrequent partner violence. This chapter additionally built on Chapter 3 and explored further the psychometric properties of the implicit measures. Study 2 demonstrated that the implicit measures are valid tools and useful with this type of offenders. They showed very good criterion validity, excellent discriminatory power, equal to that of the explicit measures, and contributed to the explanation of IPV beyond what was accounted for by the explicit measures. It was suggested that the use of reliable and valid implicit *and* explicit measures in clinical practice with IPV perpetrators can increase confidence regarding cognitive assessment and change, and consequently confidence about treatment effectiveness and risk for future violence.

Limitations

There some practical and methodological limitations which need to be acknowledged mainly in relation to the two research studies of this thesis, discussed in more detail in Chapter 4. First, the sample size of both IPV groups was relatively small which may have obscured other significant findings. Both samples were, however, within the acceptable sample size range in the area of IPV research, as many previous published studies involved a similar number of IPV participants (e.g., Arias & Johnson, 1989; Carr & VanDeusen, 2002; Else, Wonderlich, Beatty, Christie, & Staton, 1993; Hastings, 2000; Holtzworth-Munroe & Hutchinson, 1993; Lundeberg, Stith, Penn, & Ward, 2004; Murphy, Meyer, & O'Leary, 1993; Sharpe & Taylor, 1999). The results from this thesis are, therefore, promising and could be repeated with larger samples. Additionally, the voluntary nature of the study inevitably entails

the risk of sample representation bias, especially in the student sample. Therefore the findings cannot be generalised as they come from non-representative samples, yet they offer a significant first step into the understanding of automatic offence supportive cognition in this type of offenders. Moreover, it was not possible to administer an IQ test or a test to assess attention deficits in the offender sample, as the testing session was already lengthy and the addition of more measures which require focused attention would have caused further fatigue and tiredness to the participants. Indeed, some of the participants reported that “this was a long study”. This is also the reason why more implicit measures were not administered, in order to more fully tap into the ITs proposed in Chapter 1, and why an implicit measure for “It’s not my fault” was not designed. Additionally, although every effort was taken to ensure a noise and distraction-free environment, this was not always possible, especially in Study 2 of Chapter 4, where many of the testing sessions took place at the organisation’s offices or at (control) participants’ homes. However, this was not to an extent that would cause concern about the results.

It was found in Chapter 3 that the temporal stability of the implicit measures was not satisfactory according to conventional standards for questionnaire measures. This finding, however, is not inconsistent with previous research with the IAT and priming tasks (see Egloff, Schwerdtfeger, & Schmukle, 2005; Hofmann, Gawronski, Gschwendner, Le, & Schmitt, 2005). The reason for this instability is not yet fully examined and understood, and various assumptions have been made. For example it has been suggested that the effect of memory and response style which leads to higher stability estimates in questionnaires, does not apply in the case of implicit measures. Temporal contextual factors may also have an effect on performance in implicit measures (e.g., recent negative/positive interaction with a member of a specific ethnic group may have an effect on a IAT assessing attitudes toward this

group), or perhaps participants may change their test-taking strategy in the re-test session (e.g., try to respond faster or slower) after thinking about the purpose of the task (Egloff et al., 2005). There is clearly the need for future research to address the issue of low temporal stability and find ways to overcome it. Until then, the use of RT implicit tasks alone as therapeutic change measures and any inferences drawn regarding treatment effectiveness (e.g., Grumm et al., 2008; Polaschek et al., 2010; Teachman & Woody, 2003) should be made with caution.

Implications of Findings and Future Directions for Research

The findings about the effectiveness of current standard IPV intervention programmes on post-treatment recidivism (Babcock, Green, & Robie, 2004) show that this is small, and the available research shows that IPV offenders show little change in attitudes and personality after treatment (Gondolf, 2000, Hamberger & Hastings, 1988). It is, therefore, evident that there is room for improvement. An IT approach to IPV treatment could prove useful by providing a framework which would allow the clinician and the offender identify and tackle deep level and core offence supportive cognitions in a more structured and systematic way, rather than addressing individual, surface level cognitions. Unless treatment focuses on deep level cognitions, from which every individual cognitive distortion emanates, change will not be fully successful. Challenging situation or victim-specific individual distorted beliefs and assumptions does not guarantee that an IPV perpetrator will not be violent in the future, when involved with a different partner or when he/she finds him/herself in a different situation and context. A schema-based approach to the treatment of sexual offenders in the UK Prison and Probation Service has demonstrated some proven effectiveness (Beech & Fisher, 2004; Beech, Oliver, Fisher, & Beckett, 2005). Polaschek, Calvert, and Gannon (2009) used their ITs for violent offenders in a UK rehabilitation programme and found them to be clinically

credible, easily learned by the prisoners, and to simplify the identification and challenging of offenders' offence-supportive cognitions. Intervention programmes for batterers have not yet considered a schema-based approach. At present, there are three accredited IPV intervention programmes in the UK, delivered by the Prison and Probation Service either in community (IDAP, CDVP) or in custody (HRP). In all three, part of the work focuses on the identification, understanding and change/substitution of cognitive distortions, but this is largely done in an unstructured way by tackling individual and unconnected cognitions verbally expressed by the offenders (RRPG, 2010). It is, therefore, suggested that a data driven IT approach, which also takes into account the heterogeneity that exists among batterers, has the potential to significantly improve treatment delivery and effectiveness for both male and female IPV perpetrators.

It is not suggested that this is an exhaustive list of the ITs held by IPV perpetrators. A qualitative preliminary investigation by Dempsey and Day (2010) of male batterers' accounts revealed that this type of offenders may hold additional ITs. In addition, research has found that people tend to trivialise female violence, and it has been suggested that gender norms in the form of chivalry may facilitate female IPV through beliefs and assumptions such as that men will not hit back because they are not supposed to hit women (Archer, 2000; Felson, 2002, 2006). Therefore, it is likely that an "I am the woman" IT will be present in some female IPV perpetrators. This IT was not suggested here because of lack of empirical data which would satisfy the inclusion criteria of the review, and needs further investigation. However, some preliminary empirical support comes from Study 1 in Chapter 4 of this thesis which found that female students who had been involved in IPV had more liberal explicit gender-role attitudes. Although it was possible to devise (some) ITs based on the empirical IPV literature, the above indicate that, in the case of IPV, this approach is not sufficient on its

own. There are two main reasons for this, evident from the review in Chapter 1. The first is that IPV research has not yet systematically examined risk factors associated with general violence and aggression, despite evidence which suggests that violence toward intimates has similar etiology with other types of violence and should not be examined in isolation (see Felson & Lane, 2010; Hanson, Helmus, & Bourgon, 2007; Moffitt, Krueger, Caspi, & Fagan, 2000; Valliant, De Wit, & Bowes, 2004); it was observed, in Chapter 1, that research on attitudes toward general (non-intimate) violence/aggression was almost nonexistent and the same applied to psychological entitlement, empathy, and locus of control. While research has identified non offence-specific ITs in sexual and violent offenders which suggests that offenders may hold cognitions which facilitate violence in general (e.g., Dangerous world, Uncontrollability) (Beech, Fisher, & Ward, 2005; Marziano, Ward, Beech, & Pattison, 2006; Polaschek, Calvert, & Gannon, 2009) the lack of empirical research examining the direct link of these factors and IPV does not allow similar ITs to be reconstructed using the IPV literature. The second reason, in relation to female IPV, is that, compared to male IPV, it is still under-researched and data come predominantly from student/community samples. This is why the ITs of this thesis were less strongly supported in women. There is, therefore, the need for future research, both quantitative and qualitative (interviews), to confirm the existence of the seven ITs proposed here, and to look for evidence for additional ITs, examining also factors associated with general violence and crime. The need for more focused research on female IPV with offender samples is also highlighted.

Chapter 4 demonstrated the utility of the implicit measures of this thesis with IPV offenders. IPV men had significantly more implicit offence supportive cognitive associations than the nonviolent men, and the implicit measures contributed to the explanation of IPV beyond their conceptually corresponding explicit measures, indicating that both automatic and

deliberative cognitive processes play a role to the explanation of IPV. Additionally, the implicit measures combined showed excellent discriminatory power, equal to the explicit measures. It is suggested that a combination of implicit and explicit measures for the assessment of offence supportive cognition in IPV perpetrators, assessing automatic and deliberative cognition, respectively, can increase the clinician's confidence when identifying treatment needs and when reaching conclusions about whether attitude change has been achieved. Another merit of such measures is that they can, to a good extent, protect from social desirable responding. Taking into consideration that some offenders may deliberately fake responses in self-report questionnaires and interviews in order to mislead the clinician that they have changed, the use of such measures could allow for a more accurate and unbiased assessment. Future research should also examine whether implicit measures are successful in predicting recidivism. If the results are positive, then such measures could be incorporated in current risk assessment tools and increase their validity (Sartin, Hansen, & Huss, 2006).

As it was not possible to recruit a female offender sample, future research is needed in order to explore the utility of these measures with violent women too. It was evident in Chapter 1 that male and female perpetrators share common cognitive risk factors. It would be interesting for future research to explore whether the same applies to attitudes at an implicit, more automatic level. The findings from Chapter 4 demonstrated that the implicit measures of this thesis were able to distinguish between IPV and nonviolent men (at a group level), but further evidence is needed to establish their specificity and sensitivity, by comparing IPV offenders to other type of offenders with whom they are expected to share or not share similar attitudes and beliefs. Finally, these implicit measures were designed to tap into the six of the seven ITs proposed in this thesis. The SJTs arguably offer more conceptual overlap with their

corresponding ITs than the IATs and the GNAT, but one of this thesis's objectives was to use a variety of implicit measures and not just the SJT, knowing beforehand that the IATs and the GNAT would only partially tap into their corresponding ITs. As ITs are wide and complex cognitive constructs, there is the need for future research to develop additional implicit measures, same or similar to the SJTs of this thesis, for the assessment of "I am the man" and "Normalisation of violence", which were assessed with the IAT and the GNAT, respectively. Although the use of RT implicit measures, like the ones used in this thesis, dominates research in automatic cognition because they are resource-effective and easy to administer, there are other types of laboratory based procedures which, although more resource-demanding, resemble more the real life, for example, the Articulated Thoughts during Simulated Situations (see Eckhardt, Barbour, & Davison, 1998) and the empathic accuracy paradigm (see Clements, Holtzworth-Munroe, Schweinle, & Ickes, 2007). Given their higher ecological validity, such measures provide a better access to online cognition, or in other words, what goes through the offender's mind during an aggressive interpersonal interaction, and future IPV research will certainly benefit from the use of this type of measures.

"It's not my fault" was deliberately not empirically assessed in the studies of this thesis because the testing session was already too lengthy and demanding in terms of attentional resources. Therefore, this IT also needs to be implicitly explored. One of the factors considered when conceptualising this IT was the tendency of some IPV perpetrators to attribute their violence to their inability to control their negative emotions (e.g., anger, jealousy, hostile feelings). It is therefore, likely that an affect-related IT surrounding ideas and perceptions about experienced feelings and emotions, is also present in IPV perpetrators. Negative affect is recognised as an important route to aggression, interacting with cognition and arousal (see Berkowitz, 1990 for the Cognitive Neoassociation Model for aggression and

Anderson & Bushman, 2002 for the General Aggression Model), and preliminary empirical research has found that inability to regulate negative emotions is a risk factor for IPV in men (McNulty & Hellmuth, 2008). The exploration of how IPV perpetrators experience and interpret their negative emotions and feelings during interactions with their partner could form part of intervention programmes with this type of offenders. Perpetrators would be taught how to recognise, interpret, and reflect upon their currently experienced emotions and understand how acting on their feelings can result in aggressive behaviour. Then the therapist would train them on how to exercise self-control in order to reduce negative affect and to act based on a thoughtful and rational appraisal of the immediate situation and not on impulsivity. The present thesis devised ITs from a cognitive perspective, but it is suggested that the presence of an emotional IT in IPV perpetrators is worth exploring.

As aforementioned, attitudes toward general physical aggression and psychological entitlement (factors identified for violent behaviour) have not been properly investigated in relation to IPV. These factors were examined in this thesis (Chapter 4) and it was found that IPV men differed significantly from the nonviolent men, especially in their attitudes condoning physical aggression. Future research should investigate further the role of these two constructs. If empirical findings reveal a consistent link with IPV then interventions should be informed appropriately. Additionally, if such a link is established this would indicate that IPV offenders hold not only offence-specific cognitions, but also cognitions which facilitate violent behaviour in general, and they could, therefore, benefit from similar intervention programmes available for violent offenders.

Conclusion

Based on previous research with other types of offenders and preliminary hypotheses and findings about ITs held by male batterers, this thesis proposed six ITs likely to be held by

men and women who physically aggress against their intimate partner, and one extra IT for men only. A systematic review of the empirical IPV literature found varying quality and levels of support for each IT and for each sex, and promotes the need for future qualitative research to further explore the existence of these ITs by analysing the actual offenders' accounts. It is suggested that an IT approach to IPV intervention could prove more effective and lead to long-term change. The findings from Chapter 4 showed that IPV perpetrators hold significantly more offence supportive cognition than nonviolent individuals at the implicit level, but this applied only to frequent and high levels of violence. This suggests that attitudes and beliefs which facilitate and maintain this violent behaviour may become fairly well established and start to operate at an automatic level as violence gets more frequent and severe. Finally, the findings demonstrated the utility of the implicit measures of this thesis with this type of offenders, suggesting that the use of both implicit *and* self-report measures for offenders' assessment could prove more effective and accurate than the use of self-report measures alone.

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APPENDIX A

Chapter 1 tables

Table 1

Comparison of the Implicit Theories for Male IPV Perpetrators Identified by this Review and Previous Works by Gilchrist (2009) and Dempsey & Day (2010)

Present Review	Gilchrist (2009)	Dempsey & Day (2010)
1. Opposite sex is dangerous	Women are dangerous; Grievance/Revenge	Women are unknowable; Fear of abandonment; Trust no one
2. General entitlement	_____	I am always right
3. Relationship entitlement	Entitlement; Women are objects; Need for control	I am always right; Create a better life; Fear of abandonment
4. Normalisation of relationship violence	Violence is normal; Nature of harm	Violence is normal; I'm a good person
5. Normalisation of violence	Nature of harm	Violence is normal
6. It's not my fault	Women are dangerous; Uncontrollability; Sex drive is uncontrollable; Grievance/Revenge	Emotional volatility; Drugs and alcohol abuse; Fear of abandonment; Depression/ hopelessness
7. I am the man	Entitlement; Real man; Women are objects	The male is the provider and protector, Create a better life

Table 2

Summary of Reviewed IPV Research

Study	Support for men	Support for women	Method	Sample characteristics and % of IPV
1. Opposite sex is dangerous				
a. Attitudes: Opposite gender hostility, adversarial sexual beliefs, negative attitudes toward the opposite gender				
Forbes et al. (2006)	Y	–	GC	Students ($N = 137$). IPV % not reported
Hastings (2000)	Y	–	M	Mixed (students, military, community; $N = 149$). 17% IPV
Bookwala et al. (1992)	Y	N *	M	Students (78 male, 227 female). 55% IPV in men, 58% IPV in women
Parrott & Zeichner (2003)	Y	–	M & C	Students ($N = 375$). 60.2% IPV
Carr & VanDeusen, (2002)	N *	–	M	Students ($N = 99$). IPV $n = 19$
	Y*	–	C	
b. Partner blame/attribution of responsibility: character, personality, behaviour, negative intent and motivations				
Holtzworth – Munroe & Hutchinson (1993)	Y	–	CCA	Men from a DV programme ($N = 22$), predominantly court-referred
Tonizzo et al. (2000)	Y	–	CCA	Men in a DV Programme ($N = 19$)
	N	–	CCA-m	
Copenhaver (2000)	Y	–	CCB	17 MVD, 21 NVD, and 19 NVND military veterans, inpatients of a substance abuse treatment program
Weston et al. (2007)	–	Y	CCB	244 NV, 73 using threats only, 188 NSV, and 74 SV women from the
		Y	& GC	community

Study	Support for men	Support for women	Method	Sample characteristics and % of IPV
1. Opposite sex is dangerous				
b. Partner blame/attribution of responsibility: character, personality, behaviour, negative intent and motivations				
Byrne & Arias (1997)	N	Y	C	Married community couples ($N = 66$). 25% IPV in men and 30% IPV in women
Scott & Straus (2007)	Y	Y	C	Students (62 male, 77 female). 22% IPV in men and 43% IPV in women
Henning et al. (2005)	Y	Y	D	Convicted IPV offenders (1276 men, 159 women)
Henning & Holdford (2006)	Y	–	D	IPV offenders in probation ($N = 2.824$)
Cascardi & Vivian (1995)	N	N	D	Couples in marital therapy ($N = 62$)
Anderson & Umberson (2001)	Y	–	Q	Men in an educational DV programme ($N = 33$)
Catlett et al. (2010)	Y	–	Q	Men court-referred to a DV programme ($N = 34$)
Cavanagh et al. (2001)	Y	–	Q	Men court-referred to a DV programme ($N = 122$)
Levitt et al. (2008)	Y	–	Q	Men arrested for IPV ($N = 12$)
2. General Entitlement				
a. Narcissistic personality traits/disorder; demandingness; sense of superiority				
Beasley & Stoltenberg (1992)	P	–	CCA	IPV men from a community based support group ($N = 35$)
Hamberger & Hastings (1991)	N	–	CCA	IPV men court or self-referred to a violence abatement program ($n = 99$) and from the community ($n = 28$)
Murphy et al. (1993)	Y	–	CCA	Men from a DV program ($N = 24$), predominantly self-referred
	N		CCA-m	

Study	Support for men	Support for women	Method	Sample characteristics and % of IPV
2. General Entitlement				
a. Narcissistic personality traits/disorder; demandingness; sense of superiority				
Else et al. (1993)	N	–	CCA	Men from a DV program ($N = 18$)
Goldenson et al. (2007)	–	P	CCA	Female offenders court-mandated to a DV program ($N = 33$)
White et al. (2002)	Y	–	CCB & D	Incarcerated self-identified batterers ($n = 38$) and other inmates ($n = 77$)
Eckhardt et al. (1998)	P Y	–	CCB & GC	Community men ($N = 88$). 31 MV, 23 NVD, and 34 NVND
Tweed & Dutton (1998)	Y	–	GC	Men referred to DV treatment ($N = 79$)
Ryan et al. (2008)	P	N	C	Student couples ($N = 63$). IPV % not reported
Murphy & Blumenthal (2000)	–	Y	C	Students ($N = 207$). 36% IPV
Henning et al. (2003)	Y	Y	D	Men ($n = 1158$) and women ($n = 112$) convicted for IPV
Simmons et al. (2005)	Y	Y	D	Men ($n = 78$) and women ($n = 78$) court-referred to a DV program
Rothschild et al. (1997)	Y	–	D	Male veterans entering a DV program, court-ordered ($N = 183$)
Gondolf (1999)	Y	–	D	Men from a DV program ($N = 840$), mainly court-ordered
White & Gondolf (2000)	Y	–	D	Men from DV programs, predominantly court-ordered ($N = 100$)
Hart et al. (1993)	Y	–	D	Court and self-referred to DV programs ($N = 85$)
Johnson et al. (2006)	Y	–	D	Court-ordered to a DV program ($N = 230$)
Levitt et al. (2008)	Y	–	Q	Arrested for IPV ($N = 12$)

Study	Support for men	Support for women	Method	Sample characteristics and % of IPV
2. General Entitlement				
b. Low empathy; empathic accuracy				
Winters et al. (2004)	Y	–	CCA	Men convicted for IPV in treatment (<i>N</i> = 44)
Clements et al. (2007)	P	N	CCB	IPV community couples (<i>N</i> = 71). 38 MV, 14 NVD, 19 NVND
Covell & Huss (2007)	P	–	M & C	Self and court-referred to a DV program (<i>N</i> = 104)
Russell & Hulson (1992)	N	N	C	Community couples (<i>N</i> = 53). 25% IPV in men and 25.0% IPV in women
3. Relationship Entitlement				
a. Controlling, domineering, and isolating behaviours in the relationship				
Dutton et al. (1996)	Y	–	CCA	Men court and self-referred to a family violence program (<i>N</i> = 140)
Date & Ronan (2000)	N	–	CCA	Incarcerated IPV offenders (<i>N</i> = 20)
Stets & Pirog – Good (1990)	P	P	CCB-m	Students (335 male, 448 female). IPV % not reported
	P	P	& C	
Eckhardt et al. (2008)	Y	–	GC	IPV offenders (<i>N</i> = 190)
Stets & Burke (2005)	Y	Y	M	Husbands (<i>n</i> = 200) and wives (<i>n</i> = 202) from the community. IPV % not reported
Sharpe & Taylor (1999)	N	Y	M	Students (110 male, 225 female). 20.9% IPV in the men and 31.1% IPV in women
Graham-Kevan & Archer (2005)	–	Y	M & C	University students and staff (<i>N</i> = 1026). 35% IPV

Study	Support for men	Support for women	Method	Sample characteristics and % of IPV
3. Relationship Entitlement				
a. Controlling, domineering, and isolating behaviours in the relationship				
Graham-Kevan & Archer (2009)	Y	Y	C	University students and staff (399 male, 951 female). IPV % of not reported
b. Reasons/motives for their violence: control, coercion, punishment, retaliation, 'to get through'				
Weston et al. (2007)	–	Y	CCB & GC	Severely IPV violent ($n = 74$) and non-severely IPV violent ($n = 188$) community women
Babcock et al. (2003)	–	Y	GC	Women referred to IPV treatment ($N = 52$)
Babcock et al. (2004)	Y	–	GC	Men from DV programs, predominantly court-ordered ($N = 162$)
Carrado et al. (1996)	Y	Y	D	IPV men ($n = 85$) and women ($n = 106$) from a commercial survey on consumer and social attitudes
Kernsmith (2005)	Y	Y	D	Men ($n = 66$) and women ($n = 59$) in batterer intervention counselling, predominantly court-mandated
Follingstad et al. (1991)	P	Y	D	Students (207 male, 288 female). 12% IPV in men and 20% IPV in women
Fiebert & Gonzales (1997)	–	Y	D	Students ($N = 978$). 29% IPV
Hettrich & O'Leary (2007)	–	P	D	Female IPV students ($N = 127$)
Stuart et al. (2006)	–	Y	D	Women court-referred to batterer intervention programmes ($N = 87$)
Swan & Snow (2003)	–	Y	D	Women arrested for IPV the year prior to the study ($N = 95$)

Study	Support for men	Support for women	Method	Sample characteristics and % of IPV
3. Relationship Entitlement				
b. Reasons/motives for their violence: control, coercion, punishment, retaliation, 'to get through'				
Seamans et al. (2007)	–	P	D	Women in DV counselling, court-referred or referred by Child Protective Services (<i>N</i> = 13)
Hamberger (1997)	–	N	D	Women arrested for IPV (<i>N</i> = 52)
c. Perceived right/entitlement, and need to control and dominate the partner				
Mauricio & Gormley (2001)	N Y	–	M C	Men court-referred to DV programs (<i>N</i> = 60)
Wood (2004)	Y	–	Q	Incarcerated self-identified batterers (<i>N</i> = 22)
Catlett et al. (2010)	Y	–	Q	Court-ordered to a DV program (<i>N</i> = 34)
Conradi et al. (2009)	–	Y	Q	Court-order to a DV program (<i>N</i> = 10)
4. Normalisation of relationship violence				
a. Attitudes approving/condoning IPV				
Arias & Johnson (1989)	Y	Y	CCB	103 male and 99 female students. 15% and 10%, respectively, had been violent in a current relationship.
Hanson et al. (1997)	Y Y	–	CCB & GC	IPV men from a forensic out-patient clinic and a community based employment centre (<i>N</i> = 813)
Holtzworth-Munroe et al. (2000)	P P	–	CCB & GC	37 FO, 34 LLA, 15 BD, and 16 GVA IPV community men.

Study	Support for men	Support for women	Method	Sample characteristics and % of IPV
4. Normalisation of relationship violence				
a. Attitudes approving/condoning IPV				
Sellers et al. (2005)	Y	–	CCB-m	Students ($N = 1103$). IPV % not reported
Schwartz & DeKeseredy (2000)	N	–	CCB-m	From a national representative sample survey of community college and university students ($N = 1307$). IPV % not reported
Nabors & Jasinski (2009)	N*	N*	CCB-m	Students (851 male, 1,580 female). 26% IPV in the total sample
Stets & Pirog – Good (1990)	N*	N*	CCB-m	Students (335 male, 448 female). IPV % not reported
	N*	N*	& C	
Tontodonato & Crew (1992)	Y	N	CCB-m	Students (348 male, 499 female). IPV % not reported
	Y	N	& C	
Archer & Graham-Kevan (2003)	Y	N	M	Mixed IPV sample: male and female students ($n = 40$), prisoners ($n = 46$), and shelter women ($n = 29$)
	Y	P	C	
Stith (1990)	Y	–	M & C	Married law enforcement officers ($N = 72$). IPV % not reported
Stith & Farley (1993)	Y	–	M & C	Men in DV and alcohol treatment ($N = 91$)
Foo & Margolin (1995)	P	P	M	Students (111 male, 179 female). 24.3% IPV in men and 38.5% IPV in women
	P	Y	C	
Silverman & Williamson (1997)	Y	–	M & C	Students ($N = 193$). 21.2% IPV
Carr & VanDeusen (2002)	N*	–	M	Students ($N = 99$). IPV $n = 19$
	Y*	–	C	

Study	Support for men	Support for women	Method	Sample characteristics and % of IPV
4. Normalisation of relationship violence				
a. Attitudes approving/condoning IPV				
Russel & Hulson (1992)	Y	Y	C	53 Community couples. IPV men = 25% IPV; IPV women = 25.0%
Riggs & O'Leary (1996)	Y	Y	C	Students (125 male, 250 female). 30% IPV in men and 33.6% IPV in women reported physical IPV
Bowen & Gilchrist (2006)	N	–	C	IPV offenders commencing treatment (<i>N</i> = 120)
O' Hearn & Margolin (2000)	N*	–	C	Community (<i>N</i> = 47). 38% IPV
b. Denial, justification, and minimisation of IPV				
Henning et al. (2005)	Y	Y	D	Men (<i>n</i> = 1267) and women (<i>n</i> = 159) convicted of IPV
Henning & Holdford (2006)	Y	–	D	Male probationers convicted of IPV (<i>N</i> = 2824)
Fiebert & Gonzales (1997)	–	Y	D	Students (<i>N</i> = 978). 29% IPV
Mullaney (2007)	Y	–	Q	Men from community based DV programs (<i>N</i> = 14)
Wood (2004)	Y	–	Q	Incarcerated self-identified batterers (<i>N</i> = 22)
Catlett et al. (2010)	Y	–	Q	Court-referred to a DV program (<i>N</i> = 34)
Cavanagh et al. (2001)	Y	–	Q	Court-referred to DV programs (<i>N</i> = 122)
c. Exposure to interparental violence				
Caesar (1988)	Y	–	CCA	IPV men, predominantly self-referred to therapy (<i>N</i> = 26)
Hastings & Hamberger (1988)	P	–	CCA	Alcoholic (<i>n</i> = 29) non-alcoholic (<i>n</i> = 35) batterers court or self referred to treatment

Study	Support for men	Support for women	Method	Sample characteristics and % of IPV
4. Normalisation of relationship violence				
c. Exposure to interparental violence				
Else et al. (1993)	P	–	CCA	Batterers starting a community based DV program ($N = 21$)
Russell et al. (1989)	P	–	CCA	IPV ($N = 32$) men from a violence counselling program. Referred from a Family Service
von der Pahlen et al. (1997)	Y		CCA	Men arrested for IPV ($N = 19$)
Murphy et al. (1993)	Y	–	CCA	IPV men from a DV program, predominantly self-referred ($N = 24$)
Lundeberg et al. (2004)	N	–	CCB	Students (38 IPV, 33 nonviolent)
Chermack & Walton (1999)	Y	–	CCB	Students ($N = 197$). Around 38% IPV
Roberts et al. (2010)	Y	–	CCB	Men from the 2004–2005 wave of the National Epidemiologic Survey on Alcohol and Related Conditions ($N = 14,564$). 39% IPV
Breslin et al. (1990)	P	Y	CCB	Male ($n = 125$) and female ($n = 280$) students. 23% IPV in men and 39% IPV in women
Lewis et al. (2002)	–	P	CCB	Students classified as NV ($n = 31$), Bi-directional violence ($n = 49$), Perpetrator-only ($n = 21$), and victim-only ($n = 22$)
Hanson et al. (1997)	P	–	CCB	IPV men from a forensic out-patient clinic and a community based
	Y	–	& GC	employment centre ($N = 813$)
Holtzworth-Munroe, Meehan et al. (2000)	N	–	CCB	37 FO, 34 LLA, 15 BD, and 16 GVA IPV community men.
	N	–	& GC	

Study	Support for men	Support for women	Method	Sample characteristics and % of IPV
4. Normalisation of relationship violence				
c. Exposure to interparental violence				
Sugarman & Hotaling (1989)	P	–	CCB	Nationally representative men from the 1975 National Family Violence
	Y	–	& GC	Survey categorised as NV ($n = 153$), VV($n = 369$), MV ($n = 62$) and SV ($n = 24$)
Gover et al. (2008)	N	N	CCB-m	Students ($N = 2,541$). 29% IPV
Stets & Pirog – Good (1990)	N	N	CCB-m	Male ($n = 335$) and female college students ($n = 448$). IPV % not
	Y	N	C	reported
Nabors & Jasinski (2009)	N	N	CCB-m	Male ($n = 851$) and female ($n = 1580$) students. 26% IPV in the total sample
Kalmuss (1984)	Y	Y	CCB-m	A nationally representative sample of women ($n = 1183$) and men ($n = 960$). 3.8% IPV in men and 4.6% IPV in women
Milletich et al. (2010)	P	P	CCB-m	Male ($n = 183$) and female ($n = 475$) university students. 16.1% IPV in men and 40.3% IPV in women
White & Smith (2009)	P	–	CCB-m	Male students, 833 in the 1 st wave of data collection, 639 in the 2 nd , 446 in the 3 rd . 26.5% IPV
Tontodonato & Crew (1992)	N	N	CCB-m	Female ($n = 499$) and male ($n = 348$) students. IPV % not reported
	Y	Y	GC	
	Y	Y	C	

Study	Support for men	Support for women	Method	Sample characteristics and % of IPV
4. Normalisation of relationship violence				
c. Exposure to interparental violence				
Murrell et al. (2007)	Y	–	GC	Court-ordered for assessment at a domestic violence centre ($N = 1099$)
Eckhardt et al. (2008)	Y	–	GC	Men convicted for IPV ($N = 190$)
Lawson et al. (2010)	Y	–	GC	Batterers on probation ($N = 95$)
Babcock et al. (2003)	–	P	GC	Women referred to IPV treatment ($N = 52$) classified as partner only (PO) and generally violent (GV)
Choice et al. (1995)	Y	–	M	Men from the 1985 National Family Violence Survey ($N = 1836$). IPV % not reported
Alexander et al. (1991)	N	N	M	Male ($n = 152$) and female ($n = 228$) students. IPV % not clear
Burke et al. (1988)	N	N	M	Male ($n = 207$) and female ($n = 298$) students. 14% IPV in men and 18% IPV in women
Follette & Alexander (1992)	N	N	M	University couples ($N = 100$). IPV % not reported
Wareham et al. (2009)	N	–	M	Men from DV programs ($N = 195$)
Merrill et al. (1996)	N	N	M	Male ($n = 662$) and female ($n = 882$) Navy basic trainees. IPV % not reported
Foo & Margolin (1995)	Y	N	M & C	Male ($n = 111$) and female ($n = 179$) students. 24.3% IPV in men and 38.5% IPV in women
Stith & Farley (1993)	N	–	M & C	Men in DV and alcohol treatment ($N = 91$)

Study	Support for men	Support for women	Method	Sample characteristics and % of IPV
4. Normalisation of relationship violence				
c. Exposure to interparental violence				
Silverman & Williamson (1997)	Y	–	M & C	Students ($N = 193$). 21.2% IPV
Carr & VanDeusen (2002)	Y* N*	–	M C	Students ($N = 99$). IPV $n = 19$
Baker & Stith (2008)	N N	N Y	M C	Male ($n = 118$) and female ($n = 321$) students. 31.8% IPV in men and 41.4% IPV in women,
Wang et al. (2008)	P	–	M & C	Batterers court-referred for IPV treatment ($N = 450$)
Corvo & Carpenter (2000)	P Y	–	M C	Men seeking or referred for IPV treatment ($N = 74$)
Hendy et al. (2003)	N P	P Y	M C	Male ($n = 164$) and female ($n = 444$) students. 16% IPV in men, 26% IPV in women
Langhinrichsen-Rohling et al. (1995)	N 37%	N 40%	M D	Military couples referred for IPV treatment ($N = 199$)
Taft et al. (2008)	N	–	M & C	IPV community men ($N = 102$)
Williamson & Silverman (2001)	N	–	M & C	Students ($N = 172$). 19.2 % IPV

Study	Support for men	Support for women	Method	Sample characteristics and % of IPV
4. Normalisation of relationship violence				
c. Exposure to interparental violence				
Godbout et al. (2009)	Y	Y	C	Men ($n = 315$) and women ($n = 329$) selected through random-digit telephone dialling and media advertisements. 23% IPV in men and 31% IPV in women
MacEwen & Barling (1988)	Y	Y	C	Community couples ($N = 275$). IPV % not reported
Malone et al. (1989)	P	Y	C	Community couples ($N = 328$). IPV around 35%
Riggs & O'Leary (1996)	P	P	C	Male ($n = 125$) and female ($n = 250$) students. 30% IPV in men and 33.6% IPV in women reported physical IPV
Murphy & Blumenthal (2000)	–	N	C	College students ($N = 207$). 36% IPV
Johnson et al. (2006)	51%	–	D	Court-ordered to a DV program ($N = 230$)
Hamberger & Guse (2002)	38%	52%	D	Men ($n = 87$) and women ($n = 23$), court-ordered to a DV program
Henning et al. (2003)	26.5% mild 14% severe	27.4% mild 20.6% severe	D	Men ($n = 2,254$) and women ($n = 281$) convicted for IPV
Conradi et al. (2009)	–	70%	D	Court-ordered to a DV program ($N = 10$) classified as dominant aggressors

Study	Support for men	Support for women	Method	Sample characteristics and % of IPV
4. Normalisation of relationship violence				
c. Exposure to interparental violence				
Seamans et al. (2007)	–	54%	D	Women in DV counselling, court-ordered or referred by Child Protective Services ($N = 13$)
Dowd et al. (2005)	–	43.7%	D	IPV women ($N = 107$) referred to an anger management program
d. Association with peers who provide informational support for IPV and/or perpetrate IPV				
Sellers et al. (2005)	Y	–	CCB-m	Students ($N = 1103$). IPV % not reported
Schwartz & DeKeseredy (2000)	Y	–	CCB-m	From a national representative sample survey of community college and university students ($N = 1307$). IPV % not reported
Williamson & Silverman (2001)	Y	–	M & C	Students ($N = 172$). 19.2 % IPV
Silverman & Williamson (1997)	P Y	–	M C	Students ($N = 193$). 21.2% IPV
5. Normalisation of violence				
a. Attitudes condoning physical aggression				
No studies				
b. Denial, justification or minimisation of violence				
Dempsey & Day (2010)	Y	–	Q	IPV men ($n = 8$) from a DV program, self and court-referred

Study	Support for men	Support for women	Method	Sample characteristics and % of IPV
5. Normalisation of violence				
c. Exposure to interparental violence (see 4.c)				
d. History of childhood physical abuse in the family of origin				
Barnett et al. (1995)	Y	–	CCA-m	IPV men ($N = 90$) from agencies treating court-mandated batterers
Caesar (1988)	Y	–	CCA	IPV men ($N = 26$) predominantly self-referred to treatment
Dutton et al. (1996)	Y	–	CCA	Men court and self-referred to a family violence treatment program ($N = 140$)
Hastings & Hamberger (1988)	P	–	CCA	Alcoholic ($n = 29$) non-alcoholic ($n = 35$) batterers court or self referred for treatment
Else et al. (1993)	Y	–	CCA	Men from a community based DV program ($N = 21$)
Murphy et al. (1993)	Y	–	CCA	Men from a DV program ($N = 24$), predominantly self-referred
Chermack & Walton (1999)	Y	–	CCB	Students ($N = 197$). Around 38% IPV
Barnett & Hamberger (1992)	Y	–	CCB	IPV men ($N = 87$) from treatment programs and the community
Hanson et al. (1997)	Y	–	CCB	184 NV, 517 MV, and 296 SV men from a forensic out-patient clinic and
	N	–	& GC	a community based employment centre ($N = 813$)
Holtzworth-Munroe, Meehan et al. (2000)	P	–	CCB	37 FO, 34 LLA, 15 BD, and 16 GVA IPV men. Control groups: 23
	P	–	& GC	NVD, and 39 NVND community men.
Sugarman & Hotaling (1989)	P	–	CCB	Men from the 1975 National Family Violence Survey categorised as NV
	N	–	& GC	($n = 153$), VV($n = 369$), MV ($n = 62$) and SV ($n = 24$)

Study	Support for men	Support for women	Method	Sample characteristics and % of IPV
5. Normalisation of violence				
d. History of childhood physical abuse in the family of origin				
Rapoza & Baker (2008)	Y	P	CCB-m	University couples ($N = 171$), 44% IPV
Nabors & Jasinski (2009)	Y	Y	CCB-m	Male ($n = 851$) and female ($n = 1580$) students. 26% IPV
Kalmuss (1984)	Y	Y	CCB-m	A nationally representative sample of women ($n = 1183$) and men ($n = 960$). 3.8% IPV in men and 4.6% IPV in women
White & Smith (2009)	N	–	CCB-m	Male students, 833 in the 1 st wave of data collection, 639 in the 2 nd , 446 in the 3 rd . 26.5% IPV
Milletich et al. (2010)	N	Y	CCB-m	Male ($n = 183$) and female ($n = 475$) university students. 16.1% IPV in men and 40.3% IPV in women
Gover et al. (2008)	Y	Y	CCB-m	Students ($N = 2,541$). 29% IPV
Edwards et al. (2009)	–	N*	CCB-m	Students ($N = 374$). 5% moderate IPV and 7% severe IPV
	–	Y	& C	
Tontodonato & Crew (1992)	N	N	CCB-m	Female ($n = 499$) and male ($n = 348$) students. IPV % not reported
	N	Y	& C	
Stets & Pirog – Good (1990)	N	N	CCB-m	Male ($n = 335$) and female ($n = 448$) college students. IPV % not reported
			& C	
Murrell et al. (2007)	Y	–	GC	Court-ordered for assessment at a domestic violence centre ($N = 1099$)
Eckhardt et al. (2008)	Y	–	GC	Men convicted for IPV ($N = 190$)

Study	Support for men	Support for women	Method	Sample characteristics and % of IPV
5. Normalisation of violence				
d. History of childhood physical abuse in the family of origin				
Saunders (1992)	N	–	GC	Men entering a DV program ($N = 165$)
Babcock et al. (2003)	–	N	GC	Women referred to IPV treatment ($N = 52$) classified as PO or GV
Burke et al. (1988)	Y	N	M	Male ($n = 207$) and female ($n = 298$) students. 14% IPV in men and 18% IPV in women
Wareham et al. (2009)	Y	–	M	Men from DV programs ($N = 195$)
Alexander et al. (1991)	P	N	M	Male ($n = 152$) and female ($n = 228$) students. IPV % not clear
Follette & Alexander (1992)	N	P	M	University couples ($N = 100$). IPV % not reported
Merrill et al. (1996)	N	Y	M	Male ($n = 662$) and female ($n = 882$) Navy basic trainees. IPV % not reported
O' Hearn & Margolin (2000)	Y	–	M & C	Men from the community ($N = 47$). 38% IPV
Corvo & Carpenter (2000)	Y	–	M & C	Men seeking or referred for IPV treatment ($N = 74$)
Taft et al. (2008)	N	–	M & C	IPV community men ($N = 102$)
Carr & VanDeusen (2002)	N*	–	M & C	Students ($N = 99$). IPV $n = 19$
Wang et al. (2008)	P	–	M	Batterers court-referred for IPV treatment ($N = 450$)
	Y	–	C	
Hendy et al. (2003)	P	N	M	Male ($n = 164$) and female ($n = 444$) students. 16% IPV in men, 26%
	P	Y	C	IPV in women

Study	Support for men	Support for women	Method	Sample characteristics and % of IPV
5. Normalisation of violence				
d. History of childhood physical abuse in the family of origin				
Foo & Margolin (1995)	N	N	M	Male ($n = 111$) and female ($n = 179$) students. 24.3% IPV in men and
	N	Y	C	38.5% IPV in women
Langhinrichsen-Rohling et al. (1995)	P	N	M	Military couples referred for IPV treatment ($N = 199$)
	29%	24%	D	
MacEwen & Barling (1988)	P	P	C	Community couples ($N = 275$). IPV % not reported
Malone et al. (1989)	P	Y	C	Community couples ($N = 328$). IPV around 35%
Riggs & O'Leary (1996)	N	N	C	Male ($n = 125$) and female ($n = 250$) students. 30% IPV in men and 33.6% IPV in women
Murphy & Blumenthal (2000)	–	Y	C	College students ($N = 207$). 36% IPV
Hamberger & Guse (2002)	22%	26%	D	Men ($n = 87$) and women ($n = 23$), court-ordered to a DV program
Johnson et al. (2006)	35%	–	D	Court-ordered to a DV program ($N = 230$)
Henning et al. (2003)	88%	81% mild	D	Men ($n = 2,254$) and women ($n = 281$) convicted for IPV
	mild	35% severe		
	30%			
	severe			
Conradi et al. (2009)	–	60%	D	Court-ordered to a DV program ($N = 10$) classified as dominant aggressors

Study	Support for men	Support for women	Method	Sample characteristics and % of IPV
5. Normalisation of violence				
d. History of childhood physical abuse in the family of origin				
Dowd et al. (2005)	–	52%	D	IPV women ($N = 107$) referred to an anger management program
Seamans et al. (2007)	–	38% by father; 54% by mother	D	Women in DV counselling, court-ordered or referred by Child Protective Services ($N = 13$)
Swan & Snow (2003)	–	35%	D	Women arrested for IPV the year prior to the study ($N = 95$)
e. Association with delinquent or aggressive peers				
Holtzworth-Munroe et al. (2000)	P P	– –	CCB & GC	37 FO, 34 LLA, 15 BD, and 16 GVA IPV men. Control groups: 23 NVD, and 39 NVND community men.
6. It's not my fault				
a. Locus of control				
Bowen et al. (2008)	P	–	CCA	IPV offenders at pre-treatment stage ($N = 120$)
Barnett & Hamberger (1992)	Y	–	CCB	IPV men ($N = 87$) from treatment programs and the community
Neidig (1986)	Y	–	CCB	IPV military men ($N = 42$)
Prince & Arias (1994)	Y	–	CCB-m	25 IPV men (6 court-referred to treatment and 19 community volunteers)
Ogle & Clements (2007)	N	–	CCB-m	IPV men ($N = 43$) from anger-management groups
Sharpe & Taylor (1999)	Y	N	M	Male ($n = 110$) and female ($n = 225$) university students. 20.9% IPV in men and 31.1% IPV in women

Study	Support for men	Support for women	Method	Sample characteristics and % of IPV
				6. It's not my fault
				a. Locus of control
Gallagher & Parrott (2010)	Y	–	M	Drinking men ($N = 151$). 61.6% IPV
	N	–	C	
Bowen & Gilchrist (2006)	N	–	C	IPV offenders assessed before commencing treatment ($N = 120$)
				b. Displacement of responsibility
				b. 1. Partner blame
				(see also Partner blame/ attribution of responsibility under Opposite sex is dangerous in this table)
Babcock et al. (2003)	–	Y	GC	Women referred to IPV treatment ($N = 52$)
Cantos et al. (1993)	Y	–	D	Couples mandated by the military police to a DV program ($N = 139$)
Dutton (1986)	Y	–	D	Self and court-referred men to a DV program ($N = 75$)
				b.2. Other factors (e.g., anger, stress, intoxication, poor self and emotional regulation, upbringing)
Weston et al. (2007)	–	Y	CCB &	SV ($n = 74$) and NSV ($n = 188$) community women
		Y	GC	
Babcock et al. (2003)	–	Y	GC	Women referred to IPV treatment ($N = 52$)
Cascardi & Vivian (1995)	√	√	D	Couples in marital therapy ($N = 62$)
Follingstad et al. (1991)	√	√	D	Male ($n = 207$) and female ($n = 288$) college students. 12% IPV in men and 20% IPV in women
Henning et al. (2005)	√	√	D	Convicted IPV offenders (1276 men, 159 women)

Study	Support for men	Support for women	Method	Sample characteristics and % of IPV
6. It's not my fault				
b. Displacement of responsibility				
b.2. Other factors (e.g., anger, stress, intoxication, poor self and emotional regulation, upbringing)				
Kernsmith (2005)	√	√	D	Men ($n = 66$) and women ($n = 59$) in batterer intervention counselling, the majority court-mandated
Makepeace (1986)	√	√	D	Male and female students ($N = 2,338$). 127 men and 264 women reported IPV
Carrado et al. (1996)	√	√	D	IPV men ($n = 85$) and women (106) from a commercial survey on consumer and social attitudes
Hettrich & O'Leary (2007)	–	√	D	Female IPV university students ($N = 127$)
Seamans et al. (2007)	–	√	D	Women in DV counselling, court-ordered or referred by Child Protective Services ($N = 13$)
Stuart et al. (2006)	–	√	D	Women court-referred to batterer intervention programmes ($N = 87$)
Hamberger (1997)	–	√	D	Women arrested for IPV ($N = 52$)
Levitt et al. (2008)	√	–	D	Men arrested for IPV ($N = 12$)
Dutton (1986)	√	–	D	Self and court-referred men to a DV program ($N = 75$)
Coleman (1980)	√	–	D	Men in psychotherapy for IPV ($N = 33$)
Cavanagh et al. (2001)	√	–	Q	Men court referred to a DV programme ($N = 122$)
Wood (2004)	√	–	Q	Incarcerated self-identified IPV men ($N = 22$)

Study	Support for men	Support for women	Method	Sample characteristics and % of IPV
7. I am the Man				
Gender role stereotype				
Hulbert et al. (1991)	Y	–	CCA	IPV soldiers in DV treatment ($N = 30$)
Ryan (1995), Study 2	Y	–	CCB &	Students ($N = 227$). 29% IPV
	N	–	CCB-m	
Schwartz & DeKeseredy (2000)	P	–	CCB-m	National representative sample survey of community college and university students ($N = 1307$). IPV % not reported
Nabors & Jasinski (2009)	N	–	CCB-m	Students (851 male, 1,580 female). 26% IPV in the total sample
Saunders (1992)	Y	–	GC	Men entering a DV program ($N = 165$)
Fitzpatrick et al. (2004)	Y	–	M	Students ($N = 75$). IPV % not reported
Alexander et al. (1991)	N	–	M	Students ($N = 152$). IPV % not clear
Hastings (2000)	N	–	M	Mixed: students, military, and community ($N = 149$). 17% IPV
Jenkins & Aubé (2002)	N	–	M	Student couples ($N = 85$). 34.1% IPV in men and 27.1% IPV in women
Bookwala et al. (1992)	N	–	M	Students ($N = 78$). 55% IPV
Stith (1990)	N	–	M & C	Married law enforcement officers ($N = 72$). IPV % not reported
Stith & Farley (1993)	Y	–	M & C	Men in DV and alcohol treatment ($N = 91$)
Moore et al. (2010)	Y	–	C	Court-referred to DV programs ($N = 339$)
Catlett et al. (2010)	N	–	C	Court-referred to a DV program ($N = 154$)
Coleman (1980)	Y	–	Q	Men in psychotherapy for IPV ($N = 33$)

Study	Support for men	Support for women	Method	Sample characteristics and % of IPV
			7. I am the Man	
			Gender role stereotype	
Levitt et al. (2008)	Y	–	Q	Men arrested for IPV (<i>N</i> = 12)
Wood (2004)	Y	–	Q	Incarcerated self-identified batterers (<i>N</i> = 22)

Note. Y = yes; N = no; P = partial. CCA = case-control A; CCA-m = case-control A multivariate; CCB = case-control B; CCB-m = case-control B multivariate; GC = groups comparison. M = multivariate; C = correlational; D = descriptive; Q = qualitative. MV = martially violent; MVD = martially violent distressed; NVD = nonviolent distressed; NVND = nonviolent non-distressed; NV = nonviolent; MV = moderately violent; SV = severely violent; VV = verbally violent; NSV = non-severely violent. FO = family-only; LLA = low-level antisocial; BD = borderline-dysphoric; GVA = generally violent-antisocial; PO = partner-only; GV = generally violent. DV = domestic violence. The dashes indicate that the study did not include men or women. The * symbol next to a Y or N indicates a methodological problem for that study, discussed in the results section of this review. The √ symbol indicates that multiple factors were examined.

Table 3

Summary Table of the Reviewed Research for Men, with Number of Statistical Analyses Across the Studies Retained for Each Implicit Theory which Found Full, Partial, or no Support for each IT, Quality of the Evidence, and Sample Type

Implicit Theory	Support <i>n</i>	Evidence quality	Sample type	Partial support <i>n</i>	Data quality	Sample type	No support <i>n</i>	Data quality	Sample type
1. Opposite sex is dangerous	16	2 A 1 B 1 C 6 D 6 E	2 A 1 B 1 B 6 B 6 A				4	1 A 2 D 1 E	1 A 2 B 1 B
2. General entitlement	13	2 A 1 B 2 C 8 E	2 A 1 B ^a 1 A, 1 B 8 A	6	1 A 2 B 3 D	1 A 2 B 2 A, 1 B	4	3 A 1 D	3 A 1 B
3. Relationship entitlement	10	1 A 2 C 3 D 4 E	1 A 2 A 1 A, 2 B 4 A	3	1 B 1 D 1 E	1 B 1 B 1 B	3	1 A 2 D	1 A 1 A, 1 B
4. Normalisation of relationship violence	55	3 A 9 B 7 C 26 D 10 E	3 A 9 B 3 A, 4 B 3 A, 23 B 9 A, 1 B ^a	19	3 A 6 B 1 C 9 D	3 A 6 B 1 B 3 A, 6 B	30	9 B 1 C 20 D	9 B 1 B 5 A, 15 B
5. Normalisation of violence ^b	53	8 A 10 B	8 A 10 B	27	4 A 8 B	4 A 8 B	40	10 B 3 C	10 B 1 A, 2 B

		8 C 18 D 9 E	5 A, 3 B 5 A, 13 B 9 A		2 C 13 D	2 B 5 A, 8 B		27 D	5 A, 22 B
6. It's not my fault	28	2 A 4 B 3 D 19 E	2 A 4 B 3 B 15 A, 4 B	1	1 A	1 A	6	1 A 1 B 3 D 1 E	1 A 1 B 1 A, 2 B 1 B
7. I am the man	10	1 A 1 B 1 C 4 D 3 E	1 A 1 B 1 A 3 A, 1 B 3 A	1	1 B	1 B	9	2 B 7 D	2 B 1 A, 6 B

Note. In the Evidence quality column: A = CCA/CCA-m studies; B = CCB/CCB-m; C = GC; D = M or C; E = D or Q. In Sample type column: A = Convicted IPV offenders or referred to IPV intervention programs; B = non-offender samples (i.e., student, community, and mixed offender and non-offender samples). The number in front of each letter indicates the number of the studies, e.g., 2 A means that 2 studies with A evidence quality were found. The sample type corresponds to its adjacent data quality. Empty cells indicate that there were no studies providing (or not) support.

^a Incarcerated self-identified batterers, IPV not the index offence. ^b No studies were identified for the factor 'Attitudes'.

Table 4

Summary Table of the Reviewed Research for Women, with Number of Statistical Analyses Across the Studies Retained for Each Implicit Theory which Found Full, Partial, or no Support for each IT, Quality of the Evidence, and Sample Type

Implicit Theory	Support <i>n</i>	Evidence quality	Sample type	Partial support <i>n</i>	Data quality	Sample type	No support <i>n</i>	Data quality	Sample type		
1. Opposite sex is dangerous	5	1 B	1 B				2	1 D	1 B		
		1 C	1 B					1 E	1 B		
		2 D	2 B								
		1 E	1 A								
2. General entitlement	3	1 D	1 B	1	1 A	1 A	3	1 B	1 B		
		2 E	2 A					2 D	2 B		
3. Relationship entitlement	16	1 B	1 B	3	1 B	1 B	1	1 E	1 A		
		2 C	1 A, 1 B							1 D	1 B
		5 D	5 B							1 E	1 A
		8 E	4 A, 4 B								
4. Normalisation of relationship violence ^a	21	3 B	3 B	7	2 B	2 B	20	7 B	7 B		
		1 C	1 B					1 C	1 A	13 D	1 A, 12 B
		9 D	9 B					4 D	4 B		
		8 E	7 A, 1 B								
5. Normalisation of violence ^b	33	6 B	6 B	8	3 B	3 B	25	7 B	7 B		
		1 C	1 B					1 C	1 A	1 C	1 A
		13 D	13 B					4 D	4 B	17 D	2 A, 15 B
		13 E	13 A								
6. It's not my fault	19	2 B	2 B				2	1 D	1 B		
		4 C	2 A, 2 B					1 E	1 B		

2 D 2 B
11 E 6 A, 5 B

Note. In the Evidence quality column: A = CCA/CCA-m studies; B = CCB/CCB-m; C = GC; D = M or C; E = D or Q. In Sample type column: A = Convicted IPV offenders or referred to IPV intervention programs; B = non-offender samples (i.e., student, community, and mixed offender and non-offender samples). The number in front of each letter indicates the number of the studies, e.g., 2 A means that 2 studies with A evidence quality were found. The sample type corresponds to its adjacent data quality. Empty cells indicate that there were no studies providing (or not) support.

^aNo studies identified for the 'Peer influence' factor. ^bNo studies identified for the factors: 'Attitudes', 'Denial, justification or minimisation', and 'Peer influence'.

Appendices B – E are excluded from the on-line version

APPENDIX F

Chapter 4 tables

Table 1

Intercorrelations Among the Explicit Measures and Between IPV and the Explicit Measures in the Student Sample (Study 1)

	1	2	3	4	5	6	7	8	9	10	11
1. IPV (1 = yes, 0 = no)		-.27*	-.23*	.37***	.51***	.05	-.17	.25*	.21*	.06	.24*
2. BIDR		–	.26*	-.36***	-.35***	-.14	.14	.02	-.33**	-.15	-.35***
3. DAS			–	-.61***	-.42***	-.16	.08	.28*	-.39***	-.30**	-.25*
4. Dominance	.20			–	.48***	.23*	-.51*	-.17	.42***	.14	.40***
5. CBS-R	.40**			.24*	–	.03	-.49*	.15	.27*	.15	.29**
6. PES	-.02			.14	-.07	–	.25	-.03	.18	.12	.20
7. AWS (M)	-.10			-.53*	-.46*		–		-.16	-.15	-.03
8. AWS (F)	.32 ^a			-.03 ^a	.31 ^a	.02		–	.05	.39***	-.12
9. OGH	.09			.20	.02	.12	-.17	.16 ^a	–	.16	.30**
10. IBPB	.01 ^a			-.07 ^a	.03 ^a	.08	-.14	-.32**	.03 ^a	–	.24*
11. Expagg- instrumental	.09			.31**	.19	.15	-.01	-.13	.20	.21	–

Note. IPV = intimate partner violence; 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; OGH = Opposite gender hostility; IBPB = Inventory of Beliefs about Partner Beating. Zero-order correlations between all explicit measures are above the diagonal. Partial/semipartial correlations controlling for BIDR and/or DAS are below the diagonal. Empty cells below the diagonal mean that neither of the two scales was correlated with the BIDR or the DAS, and therefore the correlation coefficient is the same as above the diagonal. All correlations are 2-tailed. A higher score in the AWS indicates more egalitarian attitudes. In all the other scales high scores indicate more endorsement of the construct.

^a Correlation between unstandardised residuals

* significant at $p = .05$. ** significant at $p = .01$. *** significant at $p = .001$.

Pages 388 – 396 excluded from the on-line version

Table 7

Intercorrelations Among the Explicit Measures and Between IPV and the Explicit Measures in the IPV and Control Samples (Study 2)

	1	2	3	4	5	6	7	8	9	10
1. IPV (1 = yes, 0 = no)	–	-.11	-.36*	.52***	.55***	.40*	-.57***	.58***	.54***	.60***
2. BIDR		–	.15	-.18	-.25	.01	-.01	-.25	-.21	-.41**
3. DAS			–	-.60***	-.54***	-.09	.48**	-.58***	-.33*	-.28
4. Dominance	.41**			–	.63***	.39*	-.72***	.76***	.54***	.48**
5. CBS-R	.47**			.47**	–	.06	-.45**	.71***	.45**	.42**
6. PES	.40*			.42**	.05	–	-.36*	.42**	.29	.37*
7. AWS	-.49**			-.62***	-.27	-.36*	–	-.58***	-.73***	-.41**
8. OGH	.49**			.64***	.58***	.45**	-.42**	–	.54***	.54***
9. IBPB	.48**			.45**	.37*	.28	-.70***	.46**	–	.44**
10. Expagg-instrumental	.56*** ^a			.38 ^a	.28 ^a	.41**	-.38** ^a	.42** ^a	.33 ^a	–

Note. IPV = intimate partner violence; 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; OGH = Opposite gender hostility; IBPB = Inventory of Beliefs about Partner Beating. Zero-order correlations between all explicit measures are above the diagonal. Partial/semipartial correlations controlling for BIDR and/or DAS are below the diagonal. Empty cells below the diagonal mean that neither of the two scales was correlated with the BIDR or the DAS, and therefore the correlation coefficient is the same as above the diagonal. All correlations are 2-tailed. A higher score in the AWS indicates more egalitarian attitudes. In all the other scales high scores indicate more endorsement of the construct.

^a Correlation between unstandardised residuals

* significant at $p = .05$. ** significant at $p = .01$. *** significant at $p = .001$.