

**TIME PERSPECTIVE AND IMPULSIVITY AMONG
INTIMATE PARTNER VIOLENCE OFFENDERS**

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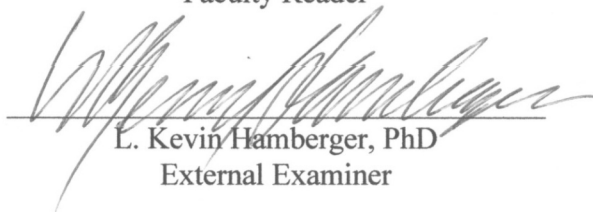
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Abstract

Time Perspective and Impulsivity among Intimate Partner Violence Offenders

by

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This investigation proceeds from a review of selected theoretical and research literature on partner violence, to a discussion of the constructs of personal time perspective and impulsivity, to the relationship between time perspective and impulsivity, and finally to their hypothetical relationship with intimate partner violence. In this study of 152 partner violence offenders in the Domestic Violence Counseling Center (DACC) intervention program of Pittsburgh, measures of personal time perspective assessed by means of the Zimbardo Time Perspective Inventory (ZTPI) and the Strathman Consideration of Future Consequences scale (CFC) predicted 58% of total variance in measures of the Barratt Impulsivity Scale (BIS), suggesting a strong relationship between personal time perspective and impulsivity. Two very distinct clusters of personal time perspective and impulsivity measures were identified in this sample, suggesting that impulsive behavior within this population may be associated with diminished orientation toward the future and toward positive aspects of the past. Clinical implications of these relationships for partner violence intervention protocol are considered.

Keywords: domestic violence, partner violence, impulsivity, time perspective

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CHAPTER ONE: Introduction

About 600,000 distressed American families fall under the influence of the criminal justice system each year as a result of arrests for intimate partner violence offenses (American Psychological Association, 1996). A large percentage of the offenders from these families are now being remanded to mandatory intervention programs. Recent meta-analyses of the outcome research that has been conducted indicate only a modest treatment effect across the programs that have been studied (Babcock, Green, & Robie, 2004a; Jackson, 2003), which highlights an enormous opportunity to leverage improvements in the theory and treatment of partner violence. This dissertation proceeds from a review of selected theoretical and research literature on partner violence, to a discussion of the constructs of personal time perspective and impulsivity, to the relationship between time perspective and impulsivity, and finally to their hypothetical relationship with intimate partner violence.

The broad thesis of this dissertation is that partner violence offenders can be usefully classified in two groups, which might correspond in certain important respects to distinctions that have been made between instrumental vs. impulsive, Type I vs. Type II, and/or domestic terrorist vs. common partner violence offenders. In order to gain a reasonable distance from the many associations and controversies that are associated with each of these terms, the two groups will be referred to in this study as Category A and Category B offenders. These two groups are *defined by* a characteristic relationship between the various factors of time perspective and impulsivity.

First, a survey of prevalence, risk factors, and developmental issues in partner violence leads to a review of selected literature on offender typology and patterns of personality disorder among male offenders. Next, the distinction between instrumental and impulsive aggression is elaborated, as well as distinctions among the behavioral styles that are associated with these typologies. Finally, the constructs of impulsivity and time perspective are developed and the nature of the relationship between these two is examined. Presuming that the hypothetical relationships among personal time perspective, impulsivity, and partner violence can be established, the clinical opportunity for an increased emphasis on time perspective factors in treatment is highlighted.

The research component of this dissertation is a questionnaire survey among court-referred partner violence offenders in Pittsburgh using three existing measures of time perspective (Carstensen & Lang, 1996; Strathman, Boninger, Gleicker, & Baker, 1994a; Zimbardo & Boyd, 1999) and one measure of impulsivity (Patton, Stanford, & Barratt, 1995). The regular treatment group facilitators classified the men in their groups into two categories on the basis of “whether or not you believe that his abuse is generally *planful and systematic*”, and this classification served as an independent variable against which each of the time perspective and impulsivity measures were evaluated. A separate analysis identified time perspective/impulsivity profiles which were not reflected in the facilitator classifications. Finally, the opportunity was taken to examine the relationships among the three time perspective instruments that were used in order to evaluate the extent to which they appear to be accessing common underlying constructs.

CHAPTER TWO: Theory and Research in Partner Violence

Risk Factors and Correlates of Partner Violence

Partner violence is a complex phenomenon which no single factor or simple model suffices to explain entirely (Crandall, Nathens, Kernic, Hold, & Rivara, 2004; Dutton & Murphy, 1999; Geffner & Rosenbaum, 2001; Stets, 1997; Gondolf, 2002; Hamberger & Potente, 1996; Harway & O'Neil, 1999; Tjaden & Thoennes, 2000). A wide variety of risk factors have been associated with partner violence by means of empirical research and theoretical speculation. Several studies have established that age is a significant predictor of partner violence (Straus, Gelles, & Smith, 1990; Tjaden & Thoennes, 2000), although Okun (1986) has suggested that such findings may simply reflect the fact that younger women are more likely to report abuse and to seek the aid of women's shelters. Most ethnic minorities in the U.S. experience a significantly higher rate of partner violence than do Anglo-Americans (Crandall et al., 2004; Straus et al., 1990; West, 1998), although most researchers who report this association point out the other social and economic disparities that are also associated with these populations. Economic stress, unemployment, and low academic achievement are among such correlates, and each of these has been associated with partner violence (Cunradi, Caetano, Clark, & Schafer, 2000). Straus and his colleagues found in both of their national surveys that families with incomes less than \$20,000 (in 1975 and 1985 dollars, respectively) experienced a rate of domestic violence five times higher than that of families with incomes over \$20,000 (Gelles & Straus, 1988).

Alcohol dependence and abuse clearly constitute both predisposing and precipitating risk factors in partner violence (Cogan & Ballinger, 2006). In the national population surveys conducted by Straus and Gelles, almost half of the couples who reported involvement in any form of partner violence indicated the use of alcohol by the violent partner, by the victim, or both (Gelles & Straus, 1988). There are numerous explanations for the impact of alcohol on intimate partner violence, but none can account for all individuals or types of violence. Despite the clear association of alcohol with partner violence, the relationship certainly involves interaction with other variables, including personality style (Heyman, O'Leary, & Jouriles, 1995), the pattern of abuse (Leadley, Clark, & Caetano, 1999), and the degree of conflict in the relationship (O'Farrell, Hutton, & Murphy, 1999). Several studies have established that heavy drinkers, as well as nondrinkers, are less abusive than moderate drinkers (Thompson & Kingree, 2004), and it has been demonstrated that *expectations* about the disinhibiting effects of alcohol have a much greater effect on aggressive behaviour than actual alcohol consumption, most dramatically illustrated when placebo and double-blind controls are employed (Hoaken, Giancola, & Pihl, 1998; Zhang, Weite, & Wieczorek, 2002). According to this reasoning, increasing consumption to produce a higher level of intoxication can help prepare an offender to commit a socially unacceptable or violent act for which some predisposition or intention has been previously established.

Developmental Factors and Attachment Style

One of the most consistent findings in the family violence literature is that children who witness parental violence or who receive excessive punishment are at increased risk for involvement in an abusive relationship as an adult, either as victims or as abusers (Avakame, 1998; Ehrensaft et al., 2003; Kwong, Bartholomew, Henderson, & Trinke, 2003; Straus & Yodanis, 1996). This pattern is often referred to as the "intergenerational transmission of violence" and it is generally addressed in the family violence literature in the context of either social learning theory (Bandura, 1973; Gelles, 1983) or attachment theory (Bowlby, 1984; Sroufe, Carlson, Levy, & Egeland, 1999). From the perspective of attachment theory early experiences, especially parenting style and the relationship between parents, influence the capacity of the child for self-regulation of emotions and determine adult expectations about the meaning of interpersonal relationships (Babcock, Jacobson, Gottman, & Yerington, 2000; Bowlby, 1984). Children who have experienced parental rejection or maltreatment tend to display hostile attribution biases (Dodge & Newman, 1981) and they tend to exhibit social problem-solving deficits (Babcock et al., 2001). They learn to anticipate and actively avoid rejection and they generalize this especially to intimate relationships (Feiring & Furman, 2000). Building on the perspective of attachment theory, Dutton has proposed that the childhood combination of being shamed, an insecure attachment with the primary caregiver, and a direct experience of physical abusiveness in the home produces what he calls "the abusive personality" in adult men (Dutton, 2001; Dutton & Murphy, 1999).

Typologies of Male Partner Violence Offenders

“T understanding of marital violence is more likely to be advanced by drawing attention to differences (between violent men) than by continuing to treat all violent husbands as one homogenous group...the identification of batterer subtypes opens the possibility of patient-treatment matching that may increase intervention effectiveness.”

(Holtzworth-Munroe, Meehan, Herron, Rehman, & Stuart, 2000, p. 1000)

While it is clear that partner violence is a complex phenomenon involving the interpersonal dynamics of men and women in intimate relationships and in society, it is also clear, at least within clinical samples, that violence perpetrated by men against women has more serious physical, psychological, and social consequences than violence perpetrated by females against males (Hamberger, 2005). Also, the practical reality is that the vast majority of partner violence research to date has been conducted with male offenders, and the social institutions of intervention and treatment are primarily oriented toward male offenders. A great deal of progress has been made in differentiating among the various characteristics of the male offender population in terms of the severity of their violence, the extent to which they exhibit violence outside the family, and their personality/psychopathological characteristics. It is noteworthy that several researchers have found an extremely high prevalence of personality disorder, in the range of 80% to 90%, among both self-referred and court-referred populations (Dutton & Starzomski, 1994; Hamberger & Hastings, 1986; Hastings & Hamberger, 1988; Saunders, 1992). This is in marked contrast with an estimated incidence of personality disorder of less than 20% among the general population (American Psychiatric Assn., 1995; Narrow, Rae, Robins, & Regier, 2002).

Several independent studies have consistently identified three sub groups among male partner violence offenders. This line of investigation was pioneered by Hamberger and Hastings in 1986 with their factor analysis of MCMI personality profiles and other psychometric assessments among men attending a domestic violence treatment program (Hamberger & Hastings, 1986), which was a replication of a previous study by the same team (Hamberger & Hastings, 1985). Their overall analysis revealed three significant personality clusters among these men:

Schizoid/Borderline: These men are characterized as withdrawn, moody, and hypersensitive to interpersonal slights. They tend to be volatile and impulsive, and they are likely to overreact to minor conflicts. The men in this group have high levels of anxiety, depression, and anger proneness, and tend toward problems with alcohol and illicit drugs.

Narcissistic/Antisocial: These men are characterized by a self-centered approach to life and the instrumental use of others to meet their emotional, financial, and other needs. The men in this group do not report feelings of anxiety or depression, but also tend toward problems with alcohol and illicit drugs.

Passive-Dependent/Compulsive: These men are characterized as tense and rigid individuals who are low in self-esteem and emotionally dependent upon a few significant others, particularly their intimate partners. These men tend to repress feelings of rebelliousness and hostility, which break through impulsively when they feel that their needs are not being met.

Hamberger and Hastings also found that about 88% of their sample displayed some personality dysfunction in their MCMI profiles, which is in the same range that has been found by other researchers, as indicated above.

In 1994 Holtzworth-Munroe and Stuart published a *very* widely cited review and analysis of the numerous studies that had been conducted to that date, generalizing the basic tripartite model of male partner violence offenders that was originally identified by Hamberger and Hastings, and highlighting the differentiation between instrumental and impulsive clusters (Holtzworth-Munroe & Stuart, 1994). In addition to aggregating the results of previous studies, Holtzworth-Monroe attempted to adjust for the fact that most of the research samples had been drawn from clinical populations, and she offered estimates that she thought should be representative of partner violence offenders in the general population. The three generic categories of partner violence offender identified in the Holtzworth-Monroe review, and subsequently verified by Hamberger et al. using a large independent sample of abusive men (Hamberger, Lohr, Bonge, & Tolin, 1996) and again by Waltz and associates (Waltz, Babcock, Jacobson, & Gottmak, 2000), were as follows:

Family Only: Estimated to constitute 50% of all male partner violence offenders in the general population, abuse in this group is largely confined to the home, engages in the least severe forms of violence and is least likely to engage in sexual or psychological abuse. They display few signs of psychopathology

or personality disorder and their use of violence is likely to be impulsive rather than systematic and instrumental.

Dysphoric/Borderline: Estimated to constitute 25% of all male partner violence offenders in the general population, this group engages in moderate to severe physical violence and sometimes utilizes sexual and psychological abuse as well. These men are the most dysphoric, psychologically distressed, and emotionally volatile. They tend to display borderline and schizoid personality characteristics and many have problems with alcohol and drug abuse. Their chronic use of violence tends to be episodic and can be generally characterized as impulsive rather than systematic and instrumental.

Generally Violent/Antisocial: Estimated to constitute 25% of all male partner violence offenders in the general population, this group engages in moderate to severe physical violence, including psychological and sexual abuse. These men tend to engage in violence outside the home and are most likely to be involved in other criminal activities. They are most likely to have problems with alcohol and drug abuse and they frequently display antisocial personality disorder, sociopathology, or other psychopathologies. Their use of violence tends to be systematic and instrumental.

The Impulsive Versus Instrumental Dichotomy

The suggestion of a dichotomy between impulsive versus instrumental cognitive and behavioural styles of partner violence cuts across many of the typologies discussed above, and it may distinguish between the automatic versus controlled information processing styles that are discussed below. Impulsivity is defined here as a predisposition toward rapid, unplanned reactions to internal or external stimuli without regard to the negative consequences of these reactions or, more generally, as acting without thinking. In the family violence literature and in the popular press as well, the alternative to impulsive aggression is generally referred to as instrumental aggression, which is planful, goal oriented, and manipulative rather than emotional and expressive.

Impulsivity was identified by Holtzworth-Monroe and Stuart as a personality trait that appears to be related to many of the offender typologies that they formulated in their 1994 review (Holtzworth-Munroe & Stuart, 1994). They characterized impulsivity as an inherited, biologically based personality dimension related to temperament, physiological reactivity, and neurologically based behavioural control systems. Impulsivity is associated with disinhibition, novelty seeking, and sensation seeking and it is listed as a diagnostic criterion for several personality disorders in the DMS-IV (American Psychiatric Assn., 1995), although no operational definition of impulsivity is given therein. A variety of studies have shown significantly elevated measures of impulsivity among psychiatric patients with conduct disorder, personality disorders, and substance use disorders (Moeller, Barratt, Dougherty, Schmitz, & Swann, 2001). More specifically,

robust correlations with impulsivity have been established in a number of studies comparing violent versus non-violent offenders in incarcerated populations (Cherek, Moeller, Dougherty, & Rhoades, 1997; Wang & Diamond, 1999; Woodworth & Porter, 2002), and one study of offenders in a mandatory batterer intervention program showed elevated impulsivity when compared to a control group on several neuropsychological measures (Cohen et al., 2003).

Cohen and his colleagues had previously demonstrated a variety of cognitive deficits among IPV offenders, as compared to matched nonviolent controls, on several neuropsychological and cognitive measures of executive function, learning, and memory, as well as verbal and problem-solving ability (Cohen, Rosenbaum, Kane, Warnken, & Benjamin, 1999). In a follow-up study, Cohen's team sought to confirm their earlier findings and also to examine whether impulsivity is correlated with executive deficits among partner violence offenders (Cohen et al., 2003). Using another matched nonviolent control group, Cohen found significantly higher neuropsychological measures of impulsivity among the offenders, although the magnitude of these elevations was not great, and not all offenders exhibited them. Cohen's team concluded that impulsivity *was* a significant factor in domestic violence, although it was probably not the sole determinant of the strong relationship they had reconfirmed between cognitive functioning and partner violence.

Cohen's demonstration that impulsivity is more strongly associated with partner violence than with cognitive function suggests that impulsivity has some independent

relationship to IPV, beyond its indirect contribution to executive and other cognitive deficits. This might be simply because impulsive behavior *circumvents* the cognitive processes of practical rationality altogether, or else it might be that impulsivity is the manifestation of some other process entirely. The Cohen study evaluated impulsivity with a variety of neuropsychological instruments, and an incremental effect might be found through the use of other instruments like the Barratt Impulsiveness Scale (Barratt & Stanford, 1995), which might cast a different light on the construct of impulsivity. In any case, the association of impulsivity with partner violence, by whatever measure, begs the question of *its* etiology.

Impulsive violence may also be seen as a reaction to situational stress and regarded as a response to frustration (Berkowitz, 1989). According to Berkowitz, the impulsive personality responds to frustration with violence if the inhibitions against aggression are weak and if there is a suitable target available (Berkowitz, 1983). Male partner violence offenders have been found to demonstrate deficiencies in verbal and social problem-solving skills (Cohen et al., 2003) which could be regarded as mediating variables that foster such frustration in conflict situations. In fact, Barratt has found that measures of verbal skill and impulsivity were inversely correlated among inmates incarcerated for violent crimes, and that verbal proficiency discriminated between their commission of impulsive versus nonimpulsive acts of aggression (Barratt, Stanford, Kent, & Felthous, 1997).

Much of the psychiatric research on impulsivity since it was originally proposed as a central factor in personality structure (Eysenck & Eysenck, 1977) has focused on establishing its biophysical correlates and causes. Several studies have established the correlation of traumatic head injury with subsequent partner violence (Rosenbaum, Hoge, Adelman, Warnken, & Fletcher, 1994) and with general psychosocial adjustment (McKinlay, Dalrymple-Alford, Horwood, & Fergusson, 2002), which may be mediated by the deterioration of inhibitory executive function related to extremely common closed-head orbitofrontal, anterior, and inferior temporal contusions, which are common in acceleration-deceleration injuries (McAllister, 1992). A wide variety of other neurophysiologic correlates of impulsivity have been established since Eysenck introduced it as a central construct in personality (Dixon et al., 2005; Moeller et al., 2001; Seroczynski, Bergeman, & Coccaro, 1999; Swann, Bjork, Moeller, & Dougherty, 2002). Twin studies have variously found that impulsivity is determined between 16% and 45% by heritable components (Seroczynski et al., 1999) although the mechanisms are unclear. Indeed, the number of seconds that a preschooler is willing to wait for two marshmallows, rather than settling for one immediately, is predictive of cognitive and social outcomes decades later, including SAT scores and arrest (Mischel, Shoda, & Rodriguez, 1989). At any rate the trait of impulsivity is clearly correlated with distinctive patterns and rates of psycho-physiological arousal (Mathias & Stanford, 2003) and with distinct cognitive attributes (Dickman, 1990; Hoaken, Shaughnessy, & Pihl, 2003).

Jacobson and Gottman's Psychophysiological Reactor Typologies

This general line of inquiry inspired Neil Jacobson and John Gottman to identify two categories of partner violence offender on the basis of physiological arousal in response to either vicarious or personal experience of conflict (Gottman et al., 1995; Jacobson, Gottman, & Shortt, 1995). Their approach was intended to extend previous systems of partner violence typology by combining psychophysiological, cognitive, and personality variables with a measure of physiological reactivity. On the basis of the *change* in heart rate during the first third of a conflict with their partner, conducted under laboratory conditions, two distinct types of offenders were identified, which Gottman and his colleagues labelled “Type 1” (instrumental abusers or “Cobras”) and “Type 2” (emotional/impulsive abusers or “Pit Bulls”). Gottman’s team found that the two types exhibit essentially inverted physiological, emotional, and cognitive responses to escalating conflict. In contrast to what is commonly regarded as a normal reaction to escalating stress, Type 1 offenders exhibited *lowered* heart rate and general sympathetic system activation, and measures of their attention to relevant stimuli improved. The Gottman team suggested that reactivity type might discriminate between men who were planful and systematic about their abusive behaviour from those who were not, and this distinction received extremely wide public attention and notoriety.

In fact, psychophysiological hyporeactivity (e.g., reduced resting heart rate and skin conductance levels, increased slow-wave EEG, and poor response to classical conditioning) is one of the most robust and best replicated findings in adult antisocial and

violent criminal populations (Scarpa & Raine, 1997), and also among aggressive children (Vitiello & Stoff, 1997). However, the association of what Gottman called Type 1 reactors with the constellation of antisocial personality and partner violence characteristics that his team identified in their original study was *not* supported in two careful replication studies that were subsequently conducted by Jeffrey Meehan, Amy Holtzworth-Munroe et al. (Meehan & Holtzworth-Munroe, 2001) and later by Julia Babcock and her team (Babcock, Green, Webb, & Graham, 2004). Both replication studies *did* reliably identify the two basic types of physiological reactors across *all* groups within the probands of each study, as Jacobson and Gottman had also found.

In the wake of the Meehan replication study, he and Holtzworth-Munroe re-analyzed the original Gottman data and found that participants in both of his groups exhibited baseline heart rate significantly higher than they expected, leading them to speculate that Gottman's baseline readings might have been confounded by some aspect of his laboratory environment. They therefore recommended that subsequent replication studies evaluate baseline measures over a longer period and corroborate them with other psychophysiological measures of reactivity, which the Babcock team did in their later study. Although Babcock et al. failed to replicate Gottman's association of reactor type with antisocial characteristics and levels of partner violence, they *did* find a similar association with their more sophisticated baseline reactivity measures, which is consistent with the extensive record of reactivity within the antisocial and criminal populations cited in all of the studies above. In a further follow-up study by the same team these findings

were replicated and the Babcock team reported that their “results suggest that autonomic *hypo*-reactivity is a risk factor among SV [severely violent] men, whereas autonomic *hyper*-reactivity is a risk factor among LLV [low level violent] men” (italics mine) (Babcock, Green, Webb, & Yerington, 2005).

So it is clear that further refinements in the constructs associated with psychophysiological baseline and reactivity typologies, as well as further experimental studies to evaluate these, will be required in order to sort out this issue. None of the studies cited here have specifically attempted to evaluate measures of impulsivity with these or other reactivity classifications. The evidence to date is therefore inconclusive with respect to differentiating what has become popularized as “Instrumental vs. Impulsive” partner violence offenders on the basis of psychophysiological baselines and reactivity, but this intriguing possibility has not yet been ruled out and relationships between reactor type and other attributes or behaviour related to partner violence may yet be established.

The Pervasive Construct of Dual Executive Systems

Taken together, the findings related to impulsivity and instrumentality discussed above are consistent with the personality typologies of partner violence offenders identified by Hamberger and Hastings (Hamberger & Hastings, 1985, 1986; Hastings & Hamberger, 1988), and also with the more general typologies extracted from the literature review and analyses of Holtzworth-Munroe et al. (Holtzworth-Munroe & Meehan, 2004; Holtzworth-Munroe & Stuart, 1994). They tend to distinguish reflexive and emotional from planful and calculated behaviour. There are a number of theoretical models, and a great deal of empirical evidence, which suggest that this general distinction reflects fundamentally different cognitive-executive modalities, and probably the utilization of different brain structures, which either compete or govern individuals under different circumstances, particularly circumstances related to the perception of temporal or physical proximity (Chaiken & Trope, 1999).

The considerations discussed in the previous section illustrate that the specific relationships among psychophysiological reactivity, psychopathology, cognitive attributes, and various forms of partner violence are not yet clear. However, the consistent group distinctions that have been drawn among these same factors in most of the studies cited above is intriguing and suggestive nonetheless. Regardless of the specific relationships among these factors as they are eventually established, the distinction between men who engage in various degrees of reflection and deliberation in

the course of their domestic conflicts and those who do not will remain, and this distinction is mirrored in the construct of dual-process executive modalities.

Dual-process executive models have been common throughout the history of philosophy and psychology. Outside the specific context of aggression and family violence these two systems are generally characterized as *deliberative* versus *affective*, or as *reasoning* versus *intuitive*. The affective system “learns” relatively slowly over time, emphasizing generality, pattern recognition, and stereotypes. The affective system operates rapidly and effortlessly in response to proximate environmental cues, as though it were a matter of survival. The more flexible deliberative system can deal with novel circumstances in a symbolic and creative way, but operates more slowly and requires conscious effort.

Not surprisingly, deliberative functions rely on recently evolved brain structures, notably the frontal cortex (Goldberg, 2001), whereas affective functions and autonomic response are governed by more primitive “limbic” structures (Damasio, 1994). It is tempting to think of the deliberative system as a sophisticated *overlay* of the primitive mind:

At the center of the brain lies a cluster of strange-shaped modules that together are known as the limbic system. This is the powerhouse of the brain; generator of the appetites, urges, emotions and moods that drive our behavior. Our conscious thoughts are mere moderators of the biologically necessary forces that emerge from this unconscious underworld; where thought conflicts with emotion, the latter are designed by the neural circuitry in our brains to win. (Carter & Frith, 1999, p. 54)

In this view, the deliberative system actively inhibits, stimulates, and moderates the automatic operation of the affective system; which essentially has a primitive mind of its own. In this sense, the affective system would normally be the source of impulsive partner violence and the deliberative system would constitute a check on such violence, except in the case of instrumental partner violence, which would be itself the product of deliberation. The effortful imposition of guidance upon the affective system is experienced as willpower, which apparently requires some scarce resource and is therefore of limited capacity and effectiveness (Loewenstein, Read, & Baumeister, 2003). The factors that determine the relative dominance of one executive system over the other are clearly of great clinical and theoretical interest, and the construct of individual time perspective figures prominently in each of the following dual-executive models.

Kahneman's Hierarchy of Cognitive Systems

Kahneman's hierarchical model of intuitive and reasoning systems (Kahneman, 2003) is guided by the principle that intuitive judgment holds an intermediate position between the automatic operation of perception and the deliberate operations of effortful intentional reasoning, and that there is an ongoing dynamic interchange among these systems. The operations of perception and intuition (which he calls System 1) are typically very fast, automatic, effortless, largely unconscious, and emotionally charged. In contrast, the operations of deliberate reasoning (which he calls System 2) are slower, sequential, and effortful. Deliberate reasoning is generally more flexible than intuitive reasoning, it is oriented toward the future, and it may be governed to a greater or lesser extent by formal rules. Kahneman's illustration of this dynamic reasoning system appears below as Figure 1.

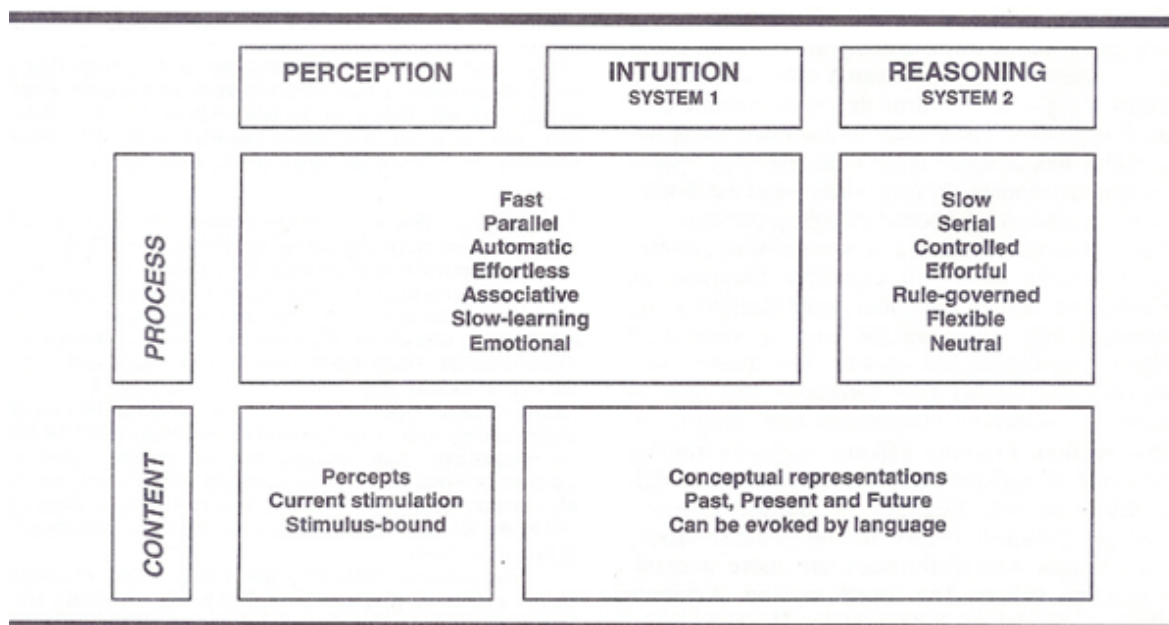


Figure 1. Kahneman's model of process and content in two cognitive systems.

Metcalf's Hot and Cool Systems

Metcalf and Mischel address the question of how human beings overcome immediate impulses to satisfy the pleasure principle in order to exert the self-control or willpower that is necessary to realize future objectives. They have described a dual-executive model of "*hot*" and "*cool*" systems that characterize the underlying processes believed to determine behavior (Metcalf & Mischel, 1999). Their model purports to reflect the architecture and ontogeny of the human brain. The hot system represents the spontaneous response to immediate environmental stimuli, which they believe to be coordinated by the amygdala, which is functional at birth. The hot system contributes emotional tone and valence to phenomenology. The cool system represents the development of self-control, or the ability to delay gratification in favor of future rewards by inhibiting the responses of the hot system to salient environmental stimuli. The cool system weaves together the *knowledge* of sensations, emotion, and thoughts in an "ongoing narrative that is coherent, goal-sensitive, and strategic," but devoid of any emotional quality. They believe that this cool system is coordinated by the hippocampus and frontal lobe, which develop and become increasingly functional later in childhood.

The cool system in this model of impulsive behavior represents an active process on the part of the individual to resist the "temptations" of the highly stimulus-responsive hot system. Individual differences in ability to delay gratification reflect differences in cool-system functioning. Individuals who have weak cool systems have difficulty with the inhibition of impulsive behavior and have a harder time delaying gratification and

exhibiting willpower generally. The costs of failure in self-regulation include substance abuse, educational underachievement, and domestic violence (Baumeister & Heatherton, 1996).

Carstensen's Theory of Socioemotional Selectivity

In their work with geriatric populations and issues related to aging, Laura Carstensen and her colleagues have developed a model of future time perspective and its effect on social interaction that they have called *socioemotional selectivity theory*. The central tenet of socioemotional selectivity theory is that the assessment of time plays a fundamental role in the ranking of goals, and consequently in the ranking of potential behaviours to address these goals (Carstensen, Isaacowitz, & Charles, 1999). According to Carstensen and her colleagues, when time is perceived as open-ended in any particular situation, emphasis is placed on the exploration of alternatives and the acquisition of additional knowledge that can be used to support strategic goals, and the emotional needs of the present tend to be subordinated to future rewards. On the other hand, when time is perceived as limited, immediate goals which focus narrowly on emotional regulation assume primacy. In terms that are consistent with those that have been used to describe the other dual-executive models above, socioemotional selectivity theory suggests that extended future perspective promotes a deliberative or instrumental style, whereas foreshortened future perspective promotes an intuitive or impulsive style.

Thus far, socioemotional selectivity theory is in accord with other dual-executive models and with the common association of impulsivity with partner violence that has

been made in the family violence literature generally. Unlike the other models discussed above, however, socioemotional selectivity theory predicts that the intuitive/impulsive style associated with foreshortened future time perspective is predictive of *superior* quality in an individual's personal relationship network rather than the inferior quality of relationship that is presumably associated with partner violence. Carstensen and Lang derived support for this hypothesis from a study of 488 German participants, selected at random from a general registry of the population of Berlin, ranging in age from 20 to 90, in which the size, composition, and perceived quality of social networks was significantly associated with *foreshortened* future time perspective (Lang & Carstensen, 2002).

These findings appear to contradict the association of impulsivity and foreshortened future perspective with partner violence that has been so broadly suggested, and which is a central thesis of this dissertation. Several possibilities for this apparent contradiction suggest themselves. First and most obviously, what Carstensen and Lang actually assessed in their study was future time perspective and subjective quality of social networks, whereas the role of impulsivity in their model is theoretical speculation rather than experimental finding. Second, time perspective is undoubtedly a complex and multidimensional construct with many different aspects and ramifications (see the section entitled *Dimensions of time perspective*, below) and Carstensen may well have been accessing a different aspect of future time perspective than other studies have done. The Carstensen team developed their own questionnaire (Carstensen & Lang, 1996) and translated it into German to assess future time perspective in their population

survey and it may simply be that their instrument accessed something other than the instruments used in other time perspective studies. Third, the hypothesis that individuals who exhibit foreshortened future time perspective exhibit an impulsive cognitive style remains without empirical verification in the German population study, since no direct measure of impulsivity was employed in it. Finally, Carstensen and Lang were assessing the quality of social networks in general in their study rather than intimate partner relationships in particular, and it may be that the quality of an individual's overall social network may not correlate closely with the quality of his or her intimate partner relationships for some reason. In fact, anecdotally, many times it seems as though men who brutalize their intimate partners are simultaneously well liked and respected within their greater communities, although I am not aware of any empirical research that bears on this observation one way or the other.

Practical Rationality in Partner Violence

Regardless of the specific psychophysiological mechanisms that underlie the distinction between the two broad cognitive modalities discussed above, or between the impulsive versus instrumental aggression that pertains more specifically to partner violence, the fundamental distinction is always between reflexive or automatic behavior versus deliberate reasoning or practical rationality. Rationality reflects the *quality* of the relationships among the totality of reasons and conclusions, or among the totality of means and ends, within any given system (Kahneman, 2003; Mele & Rawling, 2004;

Nozick, 1993). Practical rationality is the process of effortful deliberative reasoning which tends to result in objectively rational results.

Of course, the value of any particular end or motive is subjective and individual, so what might appear to be rational to one person may appear to be irrational to another. This is a crucial question in the context of partner violence and its treatment. If the fundamental motive behind partner abuse is literally the establishment and maintenance of power and control at all levels, then partner violence may be regarded as *rational* behavior (from the limited perspective of domestic terrorism), and interventions directed at developing and promoting the skills and habits of rational deliberation among partner violence offenders would only make batterers more effective in their abuse. In this case effective treatment must be directed at changing the motives (attitudes) that define rationality itself. On the other hand, if partner violence is regarded as impulsive behavior motivated by the need for immediate emotional regulation, but which has negative or disastrous longer-term consequences as a side-effect, then the development of extended future perspective and deliberative rationality is a natural objective of effective intervention and treatment.

Time Perspective in Practical Rationality

Time is fundamental to all physical, psychological, and social processes and it is arguably essential to the notion of existence itself (Heidegger, 1962). Beyond the immediate temporal aspects of all biopsychosocial processes, however, various cognitive factors related to the *perception* of time fall within the purview of social and personality

psychology due to their systematic influence on perception, thought, and behaviour (McGrath & Tschan, 2004). The various aspects of individual time perception are collectively referred to as *time perspective* (Thor, 1962). It is to these cognitive representations of time that this discussion addresses itself, rather than to the fundamental issues of physical duration, sequence, and causality that apply to all fields of systematic inquiry.

The nature and scope of the plans and projects that can be undertaken, and the manner in which they are approached, has a great deal to do with an individual's orientation toward time, especially toward the future (McGrath & Tschan, 2004). *Future time is the terrain on which all action unfolds and on which all intentions are either actualized or not.* Major decisions like where to live, what kind of family to establish, what sort of career to pursue, or when to retire often involve the allocation of time prior to death. Death is the horizon of most practical rationality, even for practical religious purposes (Jaspers, 1955; Searle, 2001). Within that ultimate horizon, each domain of behavior has its own characteristic horizon and timescale, which both enable and constrain the operation of practical rationality. Intimate partner relationship management constitutes just such a domain.

Lewinian Life-Space and the Principle of Contemporaneity

Kurt Lewin introduced the concept and terminology of "*field theory*" in order to emphasize the dynamic and holistic nature of psychosocial processes (Lewin, 1951). In this view it is only that which is actually present in the "*life-space*" at any particular

moment that can influence thought, affect, or behaviour. The past manifests itself in the present either by means of prior conditioning or else by means of some cognitive representation that is constructed on the fly, in the light of present purposes, generally from a memory. The future manifests itself in a similar way, except that in this case conditioning and memory are the consequence of fantasy, speculation, and planning rather than of past actual experience. What we call past and future are actually dynamic reifications of memories, expectations, hopes, and fantasies, all of which are contemporaneous psychological artifacts, existing only in the present. Lewin called this the *principle of contemporaneity* (Lewin, 1935).

Lewin's contemporaneous field suggests a metaphor for the life-space as a *container* for every possible environmental, biological, psychological, social, or cultural factor that can possibly influence an individual (Nuttin & Lens, 1985). All of these contents are either actually constituted in the moment (e.g., visual perception of a landscape, body temperature, the pressure of the handcuffs) or else they are present in the moment as a cognitive construction of some kind (e.g., memory of a landscape, expectation of excitement, an appreciation for art).

Time perspective is the individual tendency to consider or emphasize particular sorts of representations of past and future events. Lewin defined it as "*the totality of the individual's views of his psychological future and his psychological past existing at a given point in time*" (Lewin, 1951, p. 75). For many of the theorists and researchers who have studied time perspective, future orientation is particularly important because it is

only in the future that goals can be (realistically) established, and in which plans and projects to achieve them can be articulated and executed. The particular emphasis on future orientation reflects the social action bias of theorists like Lewin, and the instrumental bias of Western scientific culture generally.

In fact, in several studies on personal time perspective, risky and impulsive behaviour is correlated much more closely with present than with future orientation (Agnew & Loving, 1998; Hodgins & Engel, 2002; Keough, Zimbardo, & Boyd, 1999; Wills, Sandy, & Yaeger, 2001; Zimbardo, Keough, & Boyd, 1997). This is intriguing and somewhat counter-intuitive. It may be that future and present orientation are simply the ends of a single continuum and that future orientation must always be at the expense of present orientation and vice versa. It may also be that the emphasis on present or future orientation reflects a priority on either immediate or longer-range considerations, as the Carstensen and Lang study discussed above seems to suggest (Lang & Carstensen, 2002). An emphasis on immediate considerations could *sometimes* favour a violent reaction which achieves short-term advantages in spite of longer term negative consequences.

Not surprisingly, some time perspectives are more adaptive than others in particular situations and Joseph Nuttin has coined the term *time competence* to highlight the fit between time perspective and the particular domain that is under consideration (Nuttin & Lens, 1985).

Symmetry and Conservation in Time Perspective

In the context of time perspective, symmetry and conservation refer to the proposition that temporal orientation is a limited resource, like physical mass or energy, such that “a unit of” past orientation must be at the expense of “a unit of” future orientation, and so on. An argument can certainly be made that symmetry and conservation properties apply to at least some aspects of time perspective. To the extent that all cognitive representations carry some temporal sign, and are therefore distinguished from one another (Nuttin & Lens, 1985), then at least some conservation properties *must* apply, depending upon how the constructs associated with time perspective are operationalized and assessed. For example, time or energy devoted to future events are not available for reflection on the past or for the evaluation of present circumstances, and fixation on immediate stimulus diminishes the consideration that can be given to future consequences (Strathman, Gleicher, Boninger, & Edwards, 1994). Clinical intervention for partner violence might seek to augment the future orientation of an offender who becomes fixated on his immediate circumstances under stress, even though his present behavior is the actual target.

But Zimbardo cautions against the expectation of symmetry or conservation properties among the scales of his time perspective inventory, and he admonishes us to regard the various dimensions of time perspective as independent of one another (Zimbardo & Boyd, 1999). In the same article, however, Zimbardo describes the lengths to which his team has gone to ensure the discriminant validity of the five scales of his

time perspective inventory. It is possible that this discrimination is actually a statistical artifact of the test construction process rather than a genuine indication that the various temporal orientations which it measures are genuinely distinct from one another. In this case, the fact of statistical evidence that the past, present, and future orientation scales of the ZTPI are independent of one another (because their intercorrelation is low) does not exclude the possibility that incidental aspects of the survey questions have been selected as an artifact of the test construction process, but which do not really discriminate among distinct underlying constructs. For example, if this is the case with the ZTPI, then the various time perspective scales might exhibit good psychometric discrimination, while the underlying constructs actually *do* observe conservation and symmetry properties that would go undetected by that instrument. This possibility highlights the risk of confounding the psychometric requirement for discriminate construct validity in assessment instruments with the true independence of the underlying constructs (NIST, 2002; Trochim, 1997).

Regardless of the extent to which conservation and symmetry properties may apply to the various factors of personal time perspective in a clinically relevant way, the amount of time and attention that is devoted to past, present, and future issues *in treatment groups* certainly *is* clinically relevant, and this allocation of limited intervention resources (group time) nicely illustrates the conservation property of time perspective in a context that is only slightly different than its psychological significance for individuals. Specifically, to the extent that future orientation and future issues turn out

to be important factors in the effective treatment of partner violence, then too exclusive an emphasis on the violent encounter itself might be counter-productive due to the consequent neglect of the future perspective and issues related to it. To the extent that future orientation and its consequences can be established as moderators of abuse, it may be appropriate to reexamine the temporal emphasis in some partner violence treatment programs.

Dimensions of Time Perspective

What then is time? If no one asks me, I know what it is. If I wish to explain it to him who asks, I do not know. St. Augustine

The various aspects and factors of personal time perspective are clearly all related, in one way or another, to what the physical sciences regard as an objective and universal temporal dimension, and regarding which we all presumably share the intuition of time that Augustine was famously unable to articulate. It is also clear that time perspective is a complicated and multidimensional psychological construct (Loewenstein et al., 2003; McGrath & Tschan, 2004). It is not clear to what extent the various aspects of time perspective listed below actually reflect alternate views of a unitary underlying reality, or to what extent the unity that we attribute to them is an adaptive but illusory simplification of evolution and social consensus.

In fact, this is a superset of the “conservation and symmetry” question, since conservation and symmetry are only two aspects of the ways in which time perspective factors can be related to one another. The emphasis in the time perspective literature, and especially in the related assessment instruments that have been developed to date, has

been primarily on temporal *directionality* rather than upon the many other aspects of personal time perspective that might be theoretically or clinically important in various contexts. For purposes of the present study, the emphasis is on the dimension of directionality as well, although there is clearly a great deal of opportunity for the theoretical and clinical development of other temporal factors. Consider the following important aspects of personal time perspective:

Directionality: Does the individual tend to look forward, backward, or at immediate circumstances? The most obvious dimension of time perspective is general orientation toward the past and future relative to the present and this is the aspect that most discussions of time perspective emphasize. The timeline can be divided into any number of segments and construed in a wide variety of ways. The Zimbardo Time Perspective Inventory (ZTPI) purports to assess five distinct factors of past, present, and future temporal orientation (Gonzales & Zimbardo, 1985; Zimbardo & Boyd, 1999). Then, of course, there is the question of how to regard the cognitive preoccupation with things that are not apparently temporal, such as mathematics or certain philosophy.

Density: How *many* thoughts about the past, the future, or the present are in the individual's head? One way to characterize the relative strength of directional orientations is in terms of either the proportion or the absolute number of responses that can be elicited in each of the temporal categories (Nurmi, 1989). Researchers have attempted to operationalize this aspect of time

perspective by means of story completion, expert analysis of clinical transcripts, choice of time-related words, and association of various stimuli with points on a time-line. This approach always relies upon counting something.

Content: What specific associations does the individual make with the past, present, or future? Temporal orientation must always be *about* something. A fixation on the past must have some specific content, like thinking *about* the good old days or seething in resentful frustration *about* an old injustice. As this example illustrates, the nature of the content may have important clinical implications. Selective memory bias emphasizing particular types of content is associated with depression, mania, and other clinical conditions (Barry, Naus, & Rehm, 2004; Philippot & Schaefer, 2001). There are also many cultural, familial, educational, and even biological sources of content bias. Police are trained to envision potentially aggressive actions in the near future during much of their time on duty, the attention of individuals with chronic illness may be drawn toward medical matters, and effective partner violence intervention programs might encourage greater attention to the positive aspects of intimate relationship.

Horizon: How much time does the individual feel that he or she has left in whatever domain is under consideration? The perspective that an individual takes on the time remaining in any particular domain can dramatically

influence his or her approach to it. The effect of approaching deadlines on task strategy for both groups and individuals has been examined in great detail (Ariely & Wertenbroch, 2002) and the perception of open or closed horizon is central to most dual-executive models (Bandura, 1997; Carstensen et al., 1999; Chaiken & Trope, 1999; Metcalfe & Mischel, 1999). As mentioned above, Carstensen and her colleagues have developed an instrument called the Future Time Perspective Scale (Carstensen & Lang, 1996), which purports to assess individual differences in future time horizon.

Affective valence: Does the individual feel generally positive or negative about the past, present, or future? To the extent that a temporal orientation *itself* can assume a generalized affective valence, then the effects of various events may be moderated by the temporal perspective in which individuals tend to classify them (McGrath, 1990). For example, an individual who has somehow developed a generalized resentment about the past may tend to become angry or hostile in discussions which emphasize the past, regardless of the specific content of the discussion. This is the sort of generalized temporal perspective that Zimbardo purports to access with the distinction between Past-Positive and Past-Negative scales of the ZTPI (Zimbardo & Boyd, 1999). General affective valence is broadly taken as an important element of temporal orientation and some affective attribute is incorporated

into most operationalizations of time perspective (Fraisse, 1963; Jason, Shade, Furo, Reichler, & Brickman, 1989; McGrath & Tschan, 2004).

Linearity: Linear time is the alternative to circular time. Does the individual believe that the future is open or that history repeats itself? A linear time perspective entails the perception of a developmental process extending into the indefinite future, whereas a circular time perspective entails the perception of stasis, repetition, and fatalism. I am not aware of any empirical treatment of this temporal dimension, but Martin Heidegger was very clear about its importance to personal experience (Heidegger, 1962). Problem solving and constructive action generally make sense only from a linear time perspective.

Reality: Is the perception of events in certain temporal orientations systematically distorted? I can find no reference for reality as a temporal attribute, but it seems that any of the standard psychodynamic transformations (e.g. denial, repression, idealization, conversion, etc.) could and do apply to temporal categories as well as to other themes.

Intentional Space

The various dimensions of time perspective mentioned above can be viewed as attributes of any intentional object (Bratman, 1999; Dennett, 1987; Malle, Moses, & Baldwin, 2001; Oberauer, 1995; Searle, 1980), in the sense of intentionality originally proposed by Franz Brentano (Brentano, 1973). Figure 2 illustrates the impact of time

perspective on motivation and achievement. All potential objects of intentionality can be represented in an “*Intentional Space*,” which can be arranged along the two axes of future-past, and positive-negative emotional valence. The amount of time and energy that an individual devotes to objects in the four resulting quadrants can be taken as characteristic of her personal time perspective. Encouraging the practical expansion of time perspective may prove to be a highly pertinent objective of treatment for IPV.

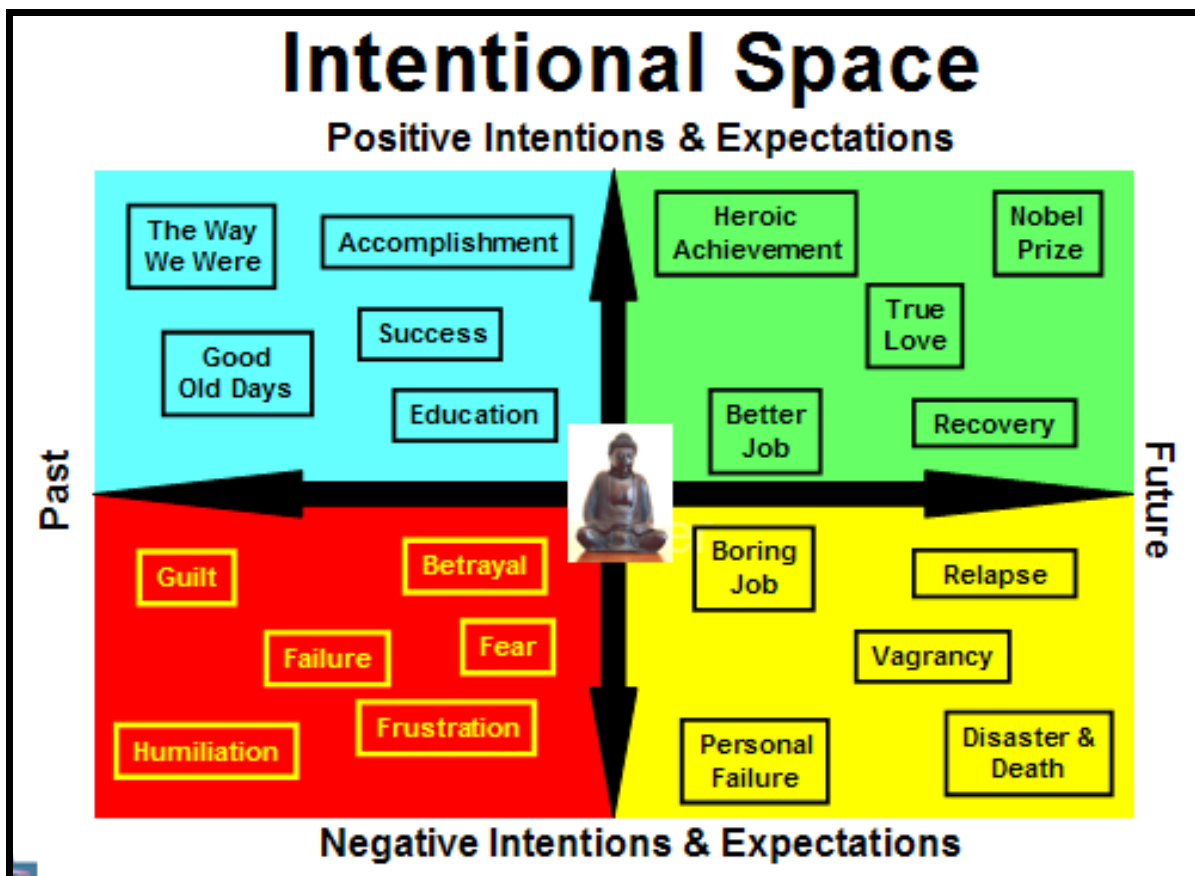


Figure 2. Illustration of the idea of *Intentional Space*

Attribution and Time Perspective

One of Zimbardo's students, Günter Bierbrauer, provided a theoretical argument and empirical evidence in his dissertation that time perspective is a predictor of dispositional versus situational attribution in interpersonal inference (Bierbrauer, 1974). He based his approach on Milgram's famous electric shock studies (Milgram, 1963), in which participants administered what they thought were increasingly severe shocks to a confederate in response to the demands of the experimenter. Sixty percent of the participants, across socioeconomic and education categories, administered shocks they had reason to believe might be lethal. The Milgram experiment demonstrated the tremendous power of the situation to affect behavior, but observers also consistently misattributed responsibility for their actions to the participants (dispositional attribution) rather than to the experimental situation.

Bierbrauer recreated Milgram's experiment in order to determine whether the time perspective of the observing participants influenced their attribution of responsibility for the shocking behavior of the active participants to dispositional or situational factors. He varied both the delay between witnessing the experiment and the assessment of attribution, and also the time pressure that was applied to the observer while the assessment of attribution was being recorded. In conditions where either type of time constriction was imposed (early assessment or time pressure during assessment) he found a significant bias toward dispositional rather than situational attribution. In popular terms, Bierbrauer's findings suggest that when time perspective is constricted, there may be a

tendency to “blame it on her,” adding emotional fuel to the fire in circumstances that may already be conducive to partner violence.

Impulsivity, Self-Control, and Temporal Compression

As discussed at greater length in the review of partner violence literature and dual executive models above, impulsivity is the tendency to react to circumstances quickly, without deliberation or the evaluation of future consequences (Strathman, Gleicher et al., 1994), and it is associated with the broader issue of self-control (Ajzen, 2002; Dixon et al., 2005). Impulsivity and lack of self-control have been associated with substance abuse (Kirby, Petry, & Bickel, 1999), gambling (Petry, 2001), risky driving (Zimbardo et al., 1997), and partner violence (Cohen et al., 2003). Impulsivity has been associated with time perspective on a number of measures (Lennings & Burns, 1998). In fact, disproportionate consideration of present rather than future consequences is inherent in the very definition of impulsivity.

Motivational Impact of Proximal Versus Distal Goals

Goals are hierarchical in the sense that subtasks are generally required to meet any objective, extending down below the limit of social or psychological analysis to the physical motions that are ultimately required to put any plan into action (Fung & Carstensen, 2004; Karniol, 1996). Distal goals and events tend to be evaluated at a higher and more abstract level of analysis than proximal goals and events (Vallacher & Wegner, 1989). Short-term decisions tend to be made primarily on the basis of feasibility and long-term decisions tend to be made on the basis of desirability (Liberman & Trope,

1998). This corresponds to the assumptions of all the dual-executive models discussed earlier, and to the short-sighted interpersonal decisions that result in partner violence.

The salience and priority of higher level goals influence the utility evaluation of lower level goals in immediate circumstances, which is the basis for delayed gratification (Metcalf & Mischel, 1999). Ascetics represent the ultimate in future orientation by tolerating or seeking discomfort in the service of future enlightenment or immortality. Impulsive hedonists and infants represent the ultimate in present orientation by evaluating every alternative in terms of immediate utility only. Partner violence falls somewhere between these extremes.

Time Perspective and Impulsivity in Partner Violence

A substantial corpus of research indicates that, in general, people who register higher measures of future orientation and lower measures of present orientation seem to exhibit more considered behaviour, and people who register lower measures of future orientation and higher measures of present orientation seem to engage in more impulsive, risky, and unhealthy behaviour. If this relationship can be established in the context of partner violence, and if the malleability of time perspective can be demonstrated, then these insights should inform the ongoing enhancement of intervention protocol. This might reduce the incidence of partner violence and improve the domestic situation in the families who come under treatment.

In order to assess the various aspects of time perspective discussed above, Zimbardo et al. constructed a time perspective questionnaire known as the Zimbardo

Time Perspective Inventory (ZTPI), the current version of which includes the following five temporal orientation scales: Past-Negative, Past-Positive, Present-Hedonistic, Present-Fatalistic, and Future (Zimbardo & Boyd, 1999). These scales claim to access factors of individual time perspectives along the various dimensions of time perspective discussed above, as follows:

Past-Negative embodies a pessimistic, negative, or aversive attitude toward the past. It is associated with negative rumination, depression, anxiety, unhappiness, and low self-esteem. A strong relationship was also found with measures of the Buss and Perry Aggression Questionnaire (Buss & Perry, 1992).

Past-Positive is characterized by a glowing, nostalgic, positive construction of the past. It is negatively correlated with depression, anxiety, and aggression and it is positively correlated with self-esteem.

Present-Hedonistic reflects a hedonistic risk-taking attitude toward time and life. It includes the questions “Taking risks keeps my life from becoming boring,” “I do things impulsively,” “I often follow my heart more than my head,” and “When listening to my music I often lose all track of time.” It is negatively correlated with measures of Strathman’s Future Consequences Scale (Strathman, Gleicher et al., 1994b).

Present-Fatalistic reflects the absence of a focused time perspective or, in terms of the linearity dimension of time perspective suggested above, a circular

temporal perspective. It is positively correlated with depression and anxiety, and negatively correlated with the consideration of future consequences.

Future is characterized by planning and pursuit of future goals. It is positively correlated with conscientiousness, consideration of future consequences, preference for consistency, and it is negatively correlated with novelty seeking, and sensation seeking.

Scores on the Impulse Control scale of the Big Five Questionnaire (Caprara, Barbaranelli, Borgogni, & Perugini, 1993) were positively correlated with both measures of present orientation on the ZTPI, and with Past-Negative orientation. This measure of impulsivity was negatively correlated with Future orientation.

Zimbardo et al. conducted a series of related studies on a large sample of college students ($n = 5696$) using previous versions of the ZTPI that included only three scales for past, present, and future orientation. They established a relationship between present orientation and risky driving habits (Zimbardo et al., 1997) as well as with alcohol, drug, and tobacco use (Keough et al., 1999). In both studies they found that the risky behaviour was also negatively correlated with their measure of future orientation, but less strongly than the present correlations. In similar studies with less impressive sample sizes and a variety of assessment instruments, similar relationships have been established between time perspective and the use of condoms (Agnew & Loving, 1998), heroin abuse (Kirby et al., 1999), and gambling (Petry, 2001).

Such risky behaviours, which reflect high present and low future orientations, suggest impulsivity, and there is also some direct empirical support for a relationship between time perspective and impulsivity. Beyond the correlation of past and present time perspective measures of the ZTPI with the Big Five Impulse Control scale, discussed above, a broad review and analysis of the time perspective literature conducted by Lennings and Burns suggested similar and reasonably consistent relationships between time perspective and impulsivity on a wide variety of measures (Lennings & Burns, 1998). Of special interest here is the relationship that was established between impulsivity and partner violence by Cohen et al., as discussed above (Cohen et al., 2003). Taken together, these findings suggest that distinctive patterns of time perspective and impulsivity might be found among partner violence offenders, consistent with the relationships of time perspective to risky and impulsive behaviour discussed above.

CHAPTER THREE: Statement of the Problem

The principle propositions which motivate this dissertation are that:

1. The various factors of personal time perspective are, to some extent, predictive of impulsivity.
2. Partner violence offenders can be usefully classified in two groups, which might correspond in certain important respects to the distinctions that have been made between instrumental vs. impulsive, Type I vs. Type II, and/or domestic terrorist vs. common partner violence offenders. In order to gain a reasonable distance from the many associations and controversies associated with these terms, the two groups will be referred to in this study as Category A and Category B offenders. These two groups may be defined either by a characteristic relationship profile of time perspective and impulsivity measures, or else by group facilitator classification.
3. The implications for effective intervention and treatment may be very different for these two classes of partner violence offender, possibly even cutting across some of the categories of personality and other offender typology that are reviewed above.

This idea is consistent with the nearly universal emphasis in the family violence literature on the heterogeneity of the partner violence offender population. Among both classes of partner violence offender, a consistent relationship is expected to be found between the factors of personal time perspective and impulsivity. Category A offenders should exhibit lower measures of impulsivity, higher future orientation, and lower past and present orientation, whereas Category B offenders should exhibit higher measures of impulsivity, lower future orientation, and higher past and present orientation. The current research will test for these characteristic profiles among a group of partner violence offenders enrolled in a pretrial treatment program in Pittsburgh, both by evaluating the association of various time perspective and impulsivity measures with a classification made by the treatment group facilitators as to “*whether or not you believe that his abuse is generally planful and systematic*” (offenders who are classified as “planful and systematic” will be designated Category A), and also by means of a cluster analysis which will attempt to identify two or more profiles irrespective of the facilitator classification.

The *research* hypotheses of the present study are

H₁: Group facilitator classifications of offender type according to their perceived planfulness will differentiate the two groups on various instrument scales as indicated in the following specific hypotheses.

H_{1a}: The group classified as more planful (Category A) will score significantly lower on all present and past scales of the Zimbardo Time Perspective Inventory than Category B.

H_{1b}: The group classified as more planful (Category A) will score significantly higher on the future scale of the Zimbardo Time Perspective Inventory than Category B.

H_{1c}: The group classified as more planful (Category A) will score significantly higher on the Strathman Consideration of Future Consequences scale than Category B.

H_{1d}: The group classified as more planful (Category A) will score significantly higher on the Carstensen Future Time Perspective scale than Category B.

H_{1e}: The group classified as more planful (Category A) will score significantly lower on the Barratt Impulsiveness scale than Category B.

H₂: Cluster analysis of scale scores for each participant will reveal two or more distinctive profiles, including those specified in the following specific hypotheses.

H_{2a}: A well-defined cluster of participants will exhibit a scale score profile which is characterized by relatively high scores on all future time perspective scales, relatively low scores on all present and past scales of the ZTPI, and relatively low scores on the BIS impulsiveness scale.

- H_{2b}: A well-defined cluster of participants will exhibit a scale score profile which is characterized by relatively low scores on all future time perspective scales, relatively high scores on all present and past scales of the ZTPI, and relatively high scores on the BIS impulsiveness scale.
- H₃: The various instrument scales will be correlated with one another as indicated in the following specific hypotheses.
- H_{3a}: The scales of the ZTPI will not be significantly correlated with one another.
- H_{3b}: The future scale of the ZTPI, the CFC scale, and the FTP scale will be significantly positively correlated with one another.

CHAPTER FOUR: Method

A cross-sectional survey questionnaire study was conducted among 152 male partner violence offenders enrolled in the court-referred Domestic Abuse Counseling Center (DACC) intervention program in Pittsburgh, Pennsylvania, during February and early March of 2006. Participants were classified in two groups by their treatment group facilitators, according to whether the pattern of abuse appeared to be “planful and systematic” or not, and participants completed the three measures of time perspective and the measure of the impulsivity described below.

Participants

Research participants were recruited from among the male participants enrolled in the 16-week pretrial diversionary psychoeducational group treatment program of the Domestic Abuse Counseling Center (DACC) in greater Pittsburgh, Pennsylvania. Participants in the DACC program are mostly men referred by the Pittsburgh area municipal courts prior to trial, following arrest on misdemeanor domestic violence or assault charges. Although some women are referred to the DACC program, they are treated in separate groups which were not included in this study. There are also some very occasional male participants in the program who have not been referred by the courts and no attempt was made to identify or exclude such volunteers from the research described here. Participation in the study was voluntary and each participant signed an informed-consent form, which included an option to participate in a \$100 lottery prize for participants (attached as Appendix A) after the anonymous data collection procedure

described below was discussed with them. Attendance at DACC group sessions is routinely prohibited if group members appear to be intoxicated upon arrival, in which case they would have been automatically excluded from this study, although this did not occur in any of the group sessions at which this study was conducted. Literacy is a requirement for DACC group participation and only English-language groups were included in this study. No other exclusion criteria were applied and any group members who volunteered to participate were included in the study.

Materials

Prior to the data collection procedure described below, manila envelopes were prepared for each group member containing the following materials, in the order in which they appear below:

1. A crossword puzzle containing words representing key concepts in the DACC psycho-educational program, prepared by DACC personnel, to be completed during the testing period by group members who did not choose to participate in the research study
2. Two copies of the informed consent and lottery participation form: attached as Appendix A
3. The demographic information form: attached as Appendix B
4. The *Zimbardo Time Perspective Inventory*
5. The Strathman *Consideration of Future Consequences Scale*
6. The Carstensen *Future Time Perspective Scale*
7. The *Barratt Impulsiveness Scale*

A separate manila envelope was prepared for the DACC facilitator of each treatment group session, which contained the *DACC Group Facilitator Classification Worksheet*, attached as Appendix C

Informed consent and lottery participation form. Group members who elected to participate in the research survey read and signed the informed consent form. At their option, participants could also provide their mailing address if they chose to participate in a \$100 lottery, two of which were awarded at random from among participants who completed the informed consent form. The \$100 lottery prize was mailed to the winners immediately after the conclusion of data collection. Participants who chose to provide their mailing address could also elect to receive a summary of the research results by mail when they become available. The informed consent and lottery participation form is attached as Appendix A.

Demographic information form: Completed by each participant, including age, ethnicity, marital status, number of children, education, employment, and number of weeks in the DACC program completed prior to the session in which the study was conducted. The demographic information form is attached as Appendix B.

Zimbardo Time Perspective Inventory (ZTPI) (Zimbardo & Boyd, 1999): Participants respond to the 56 statements on the ZTPI by checking a mark on a 5-point Likert scale ranging from 1 (Very Untrue) through 5 (Very True). The ZTPI was originally developed by Philip Zimbardo and Alexander Gonzalez and was completed by 12,000 readers of *Psychology Today* magazine (Gonzales & Zimbardo, 1985). Sample items from the ZTPI are “It gives me pleasure to think about my past,” “Happy memories of good times spring readily to mind,” “I keep

working at difficult, uninteresting tasks if they will help me get ahead,” and “I complete projects on time by making steady progress.”

The ZTPI has been refined through item analyses (both exploratory and confirmatory), factor analyses, and reliability assessments (Keough et al., 1999; Zimbardo, 1990; Zimbardo & Boyd, 1999; Zimbardo et al., 1997). Test-retest reliabilities of the five subscales of the ZTPI were established with 58 Stanford University introductory psychology students over a 4-week period. Reliabilities ranged from .70 to .80. The Future scale demonstrated the best test-retest reliability (.80) followed by Present-Fatalistic (.76), Past-Positive (.76), Present-Hedonistic (.72), and Past-Negative (.70). All correlations were significant at $p < .01$.

Convergent and discriminant validity has been supported for relationships of the five scales of the ZTPI with independent measures of aggression, energy, friendliness, conscientiousness, emotional stability, depression, openness, consideration of future consequences by means of the Strathman CFC scale (Strathman, Gleicher et al., 1994), ego control, impulse control by means of the Impulse Control scale of the Big Five personality questionnaire (Caprara et al., 1993), novelty seeking, preference for consistency, reward, dependence, self-esteem, sensation seeking, and trait anxiety (Zimbardo & Boyd, 1999).

Predictive validity has been supported by a number of experimental and correlational studies (Rothspan & Read, 1996), as well as by several studies using

in-depth interviews and observations of participants selected as high on each of the five ZTPI scales. Using a broad range of population samples, significant associations were established between the ZTPI scale factors and depression, relationship satisfaction, substance use and abuse, and problem-solving ability. In two large-scale companion studies ($N \Rightarrow 2,600$), present time perspective was “highly related” to risky driving (Zimbardo et al., 1997) and also to more frequent smoking, consumption of alcohol, and drug use (Keough et al., 1999).

Many of these associations rely upon testing within university student populations that may be substantially different than the participant population of this study in important respects. In any case, the wide variety of associations with time perspective measures echoes the constellation of personality factors that have been associated with the various other dichotomies of partner violence offender, discussed above. These associations may inform the characterization of the Category A and Category B offenders identified in this study, should those categories prove to be robust. More directly, the five scales of the ZTPI are the most extensively tested measures of time perspective currently available.

Consideration of Future Consequences Scale (CFC) (Strathman, Gleicher et al., 1994):

Purports to measure a “stable individual difference in the extent to which people consider distant versus immediate consequences of potential behaviors.” The CFC was developed and validated by Alan Strathman and his colleagues using three samples of college students from the University of Missouri, the University of

California at Los Angeles, and the University of California at Santa Barbara.

Participants respond to the 12 statements on the CFC by writing a number next to each statement indicating how much the statement applies to them on a scale from 1 (Extremely Uncharacteristic) through 5 (Extremely Characteristic). Sample items from the CFC are “I only act to satisfy immediate concerns, figuring the future will take care of itself,” “My convenience is a big factor in the decisions I make or the actions I take,” and “I am willing to sacrifice my immediate happiness or well-being in order to achieve future outcomes.”

Cronbach’s alpha was computed for four university student samples in constructing the final version of the CFC and in establishing its psychometric properties. In terms of internal consistency, Cronbach’s alphas for the four samples were .80 (item-total correlation range of .26-.67), .82 (item-total correlation range of .30-.70), .86 (item-total correlation range of .32-.71), and .81 (item-total correlation range of .27-.64). Test-retest reliability was computed on the basis of 88 of the original 167 respondents after a 2- week interval using the identical measure, and the correlation between the first and second administration was .76, $p < .001$. Test-retest reliability was also computed on the basis of 102 from a separate sample of 323 respondents after a 5-week interval using the identical measure and the correlation between the first and second administration was .72, $p < .001$. These correlations provide evidence of the temporal stability of the CFC scale.

Convergent and discriminant validity of the CFC has been supported by significant associations with independent measures of locus of control, willingness to delay gratification, response to counter-factual information, and also with future orientation items from earlier versions of the ZTPI (Strathman et al., 1994a). Significant predictive associations in two companion studies have also been established with high levels of sensation seeking, impulsivity, “a focus on the immediate consequence of behavior,” and aggression (Joireman, Anderson, & Strathman, 2003). Many of these associations rely upon testing within university student populations that may be substantially different than the participant population of this study in important respects. In any case, the wide variety of associations with time perspective measures echoes the constellation of personality factors that have been associated with the various other dichotomies of partner violence offender, discussed above.

Future Time Perspective Scale (FTP) (Carstensen & Lang, 1996): Purports to measure the extent to which the future is perceived as open-ended or closed (Carstensen et al., 1999). Participants respond to the 10 statements on the FTP by writing a number next to each statement, indicating how true they feel that it is on a scale from 1 (Very Untrue) to 10 (Very True), with 3 items expressed in negative terms and recoded to invert the rated values. Sample items from the FTP include “Do you think many opportunities await you in the future?”, “Do you expect that you will set many new goals in the future?”, “Do you think that your future is filled

with possibilities?” and “Do you think most of your life lies ahead of you?” In a study exploring the relationship of future time perspective to motivational patterns Fung, Lai, and Ng found Cronbach’s alpha to be .77 (Fung et al., 2001), and a German-language version of the FTP demonstrated an alpha of .92 in a large ($n = 480$) general population sample (Lang & Carstensen, 2002).

In the German study future time perspective was found to be negatively associated with several measures of healthy social adaptation which, as noted earlier, is in apparent contradiction with the association that has been found between the ZTPI future perspective scale and risky, unhealthy behavior. To the best of my knowledge, no other psychometric, validity, or predictive data is available for the FTP. Although many of these associations also rely upon testing within the general German population, which may be substantially different than the participant population of this study in important respects, the FTP is the only other prominent questionnaire measure of time perspective in addition to the ZTPI and the CFC.

Barratt Impulsiveness Scale (BIS) (Barratt & Stanford, 1995): Developed to assess impulsivity, “which is conceptualized as related to the control of thoughts and behavior and is broadly defined as acting without thinking. The BIS is perhaps the most widely used measure of impulsivity and is easily administered and widely used” (Rush, 2000). The BIS was originally developed by E.S. Barratt in 1959 and has been refined through 11 revisions and validated extensively over the years

in a wide variety of psychiatric, incarcerated, and general population samples. The version of the BIS that was administered in this study was taken from the electronic compact disc supplement to the *Handbook of Psychiatric Measures* (Rush, 2000), which contains 24 of the questions that appear on version 11 of the BIS, which is documented in that volume. Participants respond to the statements on the BIS by indicating a number next to each statement indicating how often they feel that the statement applies to them on a scale ranging from 1 (Rarely/Never) to 4 (Almost Always/Always). Sample items from the BIS include “I make up my mind quickly,” “I concentrate easily,” “I am happy-go-lucky,” and “I like puzzles.”

There are no standardized norms for the BIS, but the total score on the full 30 questions of version 11 averaged 63.8 ± 10.02 in a sample of 412 undergraduates, 69.3 ± 10.3 in a sample of 164 psychiatric inpatients with substance abuse problems, 71.4 ± 12.6 in 84 general psychiatric inpatients, and 76.3 ± 11.9 in a sample of 73 prison inmates. There is good evidence of the internal consistency of the BIS. Cronbach’s alpha for the BIS in the sample of 412 undergraduate students cited above was .82 and it has ranged from .79 to .83 in large samples of undergraduates as well as clinical and prison populations (Rush, 2000). This is broadly consistent with the Cronbach’s alpha of .87 that was observed in this study. The somewhat higher reliability that was observed in this study is probably due to the fact that the 6 items that were excluded from the version of the BIS

administered in this study were somewhat less reliable than the 24 that were retained, although this conclusion is speculative.

Significant correlations have been found between total BIS scale scores and other measures of impulsivity-related traits, including hostility and anger. In a sample of 214 university students, the BIS correlated with the Buss-Durkee Hostility Inventory (BDHI) Total Hostility score, and with six of its subscales ($r = 0.17 - 0.38$) as well as with the number of aggressive incidents reported in the past month ($r = 0.25$). The BIS has been found to correlate with the Anger Out scale of the State-Trait Anger Expression Inventory (STAXI) ($r = .051$) and also with the Eysenck Personality Questionnaire (EPQ) Psychoticism scale ($r = 0.66$) but not with its Extroversion and Neuroticism scales. The BIS has also been shown to distinguish aggressive from nonaggressive college students, matched noninmate controls from prisoners, male college students and psychiatric patients from prisoners, and female college students from psychiatric patients. In these same studies the BIS distinguished impulsively from nonimpulsively aggressive inmates and also male college students from psychiatric patients (Rush, 2000).

Many of these associations rely upon testing within populations that may be substantially different than the participant population of this study in important respects. In any case, the wide variety of associations with the BIS echoes the constellation of personality factors that have been associated with the various other dichotomies of partner violence offender, discussed above.

DACC Group Facilitator Classification Worksheet: Completed by the regular treatment group facilitator while the group members were in another room completing either the research questionnaires or else the crossword puzzle that was provided as an alternative activity for those who chose not to participate in the research. Each line of the worksheet provides space for the facilitator to write the name of each group member, the number of weeks that he has completed in the DACC program, a check mark to indicate that he is either “*planful and systematic*” in his abuse or not, and the facilitators’ level of confidence in that classification, expressed as a percentage. The DACC Group Facilitator classification Worksheet is attached as Appendix C.

Good internal reliability was observed for each of the instruments that were completed in this study. Descriptive statistics and Cronbach’s alpha for each scale that was utilized are reported in Table 1.

Table 1

Descriptive Statistics and Cronbach's Alpha for The Zimbardo Time Perspective Inventory (ZTPI), Consideration of Future Consequences Scale (CFC), Future Time Perspective Scale (FTP) and the Barratt Impulsiveness Scale (BIS)

Scale Name	# Items	Mean	Std. Deviation	Possible Range	Observed Range	Cronbach's Alpha
CFC	12	38.6	7.9	12 – 60	13 – 60	.748
FTP	10	52.2	10.7	10 – 70	24 – 70	.792
ZTPI Future	13	46.1	6.9	13 – 65	29 – 64	.715
ZTPI Present Fatalistic	9	21.6	5.4	9 – 45	9 – 37	.689
ZTPI Present Hedonistic	15	46.7	7.6	15 – 75	32 – 69	.736
ZTPI Past Positive	9	29.8	5.4	9 – 45	14 – 44	.681
ZTPI Past Negative	10	32.0	7.0	10 – 50	14 – 48	.793
BIS Full Scale	24	52.5	10.9	24 – 96	30 – 80	.872
BIS Attentional Key	7	15.5	3.6	7 – 28	8 – 25	.661
BIS Motor Key	7	14.6	4.1	7 – 28	7 – 26	.794
BIS Nonplanning Key	10	22.1	4.9	10 – 40	12 – 35	.706

Procedure

The principle investigator (PI) attended 19 group sessions of the DACC partner violence intervention program between 2/15/06 and 3/9/06, around the greater Pittsburgh area. The PI arrived at each group session half an hour early to meet with each of the 10 DACC group facilitators who were responsible for the 19 sessions that were attended. The procedures described herein were discussed with each facilitator before each group began, but not the specific focus or content of this research. At the beginning of each 1.5-hour group session, after the DACC facilitator had collected fees and recorded attendance as usual, the facilitator introduced the PI to the group. The PI then introduced himself as a graduate student working on his PhD in clinical psychology with Fielding Graduate University, explained that he was conducting research on the characteristics of men in partner violence groups like theirs, and invited their voluntary participation in his dissertation research project.

The PI emphasized to the group members that their participation was strictly voluntary and assured them that, should they choose to participate, their responses to the questionnaires that they were asked to complete would not have their names or any personal identification recorded on them, and that their responses would remain strictly anonymous. The PI read the informed consent form aloud and explained that the consent form would be separated from the research questionnaires by the PI immediately following the group, that the consent forms would remain in the possession of the PI for a period of 3 years after the conclusion of the research project, and that no DACC

personnel or parties other than the PI and the Fielding Institutional Review Board (IRB) would have access to them. They were told that, while the questionnaires were being administered, the DACC group facilitator would be answering some questions about *all* group members, but that the group facilitator would have no way of knowing which members participated in the study and which members did not. They were told that, immediately after the group session, the PI would transfer the answers that their group facilitator provided onto the anonymous questionnaires that volunteers completed, and that the form with the facilitator's answers and their names on them would be destroyed as soon as the matching information had been recorded on the anonymous questionnaires.

Group members were told that, should they elect to participate in the study and sign the informed consent, they could also choose to provide their mailing address in order to enter the \$100 lottery among participants, to be drawn shortly after the conclusion of data collection in Pittsburgh, expected to be 2 or 3 weeks from that time. At one of the later sessions at which the study was conducted, one of the group members asked what the odds of winning the lottery were, and the PI said that he thought they would be about 1 in 120. Since a total of 152 protocols were ultimately collected, two lottery prizes were awarded at random rather than one, and these were mailed to the winners on 3/9/06. Group members were also told that participants who chose to provide their mailing address could also request a summary of the research results when they became available. Group members were assured that, should they decide not to participate in the study, no written record would be made of that fact and no negative

consequences would result from that decision. The PI explained the procedure that follows in detail before distributing the research packets to everyone present at the group session. Before the packets were distributed, the DACC facilitator left the room until after all the research packets had been returned to the PI, at which point each group member held an identical copy of the crossword puzzle and a copy of the informed consent form, whether they had participated in the study or not. While the DACC facilitator was out of the room he or she completed the *DACC Group Facilitator Classification Worksheet*, discussed in the instrument description section below and attached as Appendix C, which was described to them during their meeting with the PI prior to the start of the group session. The DACC facilitator had no way of knowing which members participated in the study and which did not unless the group members themselves subsequently chose to reveal that information.

The PI then asked the participants to remove the contents of their packets from the envelopes and to either complete the forms according to the instructions that appeared at the beginning of each or else, if they did not choose to participate in the research, to complete the crossword puzzle that was included in the packet without completing the forms. When they had completed the forms, or else when they had finished working on the crossword puzzle, participants were asked to keep the crossword puzzle and one copy of the informed consent form, whether they chose to participate in the study or not, to replace all of the other forms in the manila envelope, and to return the envelope to the PI. When all group members had returned their envelopes, the PI thanked the group members

for their time, re-called the DACC facilitator to the meeting room, collected the envelope containing the *DACC Group Facilitator Classification Worksheet* from the facilitator, and turned the remainder of the session over to him or her.

The protocols took between 20 and 40 minutes to complete and the participants appeared to have no difficulty in properly following the oral and written instructions for completing them. The only difficulty that study participants appeared to have with the language on the questionnaires was with the word “nostalgic,” which appears in one of the questions on the Zimbardo Time Perspective Inventory (“*I get nostalgic about my childhood*”). Someone in almost every group asked about the meaning of this word, to which the PI responded, “Nostalgia is thinking fondly about the good old days; thinking about the past in a positive way.”

CHAPTER FIVE: Results

The sample population under observation in this study will be characterized first, followed by an examination of the hypotheses that are related to intervention group facilitator classifications of their offenders, the relationship of impulsivity to the various time perspective measurements that have been taken in this study, and finally by an analysis of the relationships among the various time perspective measures themselves.

Sample Description

A total of 152 protocols were collected from among 172 men who attended 19 partner violence intervention group meetings of the Domestic Abuse Counseling Center (DACC) around the Pittsburgh area from 2/15/06 through 3/9/06. Two of these protocols were excluded from this analysis, one because only a portion of the demographic information sheet was completed and none of the instruments, and the other because the same answer was provided to every question on all instruments (a “straight line” protocol). This sample afforded sufficient statistical power to evaluate the relationships under consideration. During the data collection interval DACC program records showed an offender census of about 400 men, indicating an absentee (or unrecognized dropout) rate of about 60%.

The ethnic composition of the participant population mirrored the demographics of the Pittsburgh area almost exactly. Ethnic identification was almost entirely either African American/Black (27%) or Anglo/White (68%). Only four participants reported other ethnicities, each of which was unique in this sample population. Participant ages

were distributed normally in the range of 18 to 61 years about a mean age of 34. Just over half of the participants indicated that they were either married (29.3%) or living with a partner (27.3%), 14.0% were divorced, and 29.3% were single and not living with a partner. Eighty-six percent of participants reported having graduated from high school, 32.0% having completed some college, 14.7% having graduated from college, and 4 participants reported graduate studies. Twenty-two percent of the participants indicated that they were currently unemployed, 8.0% were working part-time, and 68.7% were working full-time. The number of weeks reported as having been completed to date in the 16-week partner violence intervention program was normally distributed about the mean of 8.3 weeks, as should be expected.

Relationship of Demographic Factors and Scale Scores

Only 3 significant relationships were observed between the demographic factors that were evaluated and the time perspective or impulsivity scales that were observed in this study. When conducting these analyses a setwise Bonferroni correction was utilized to allocate the probability of a Type I error equally within each group of analyses (Newton & Rudestam, 1999). Following Newton and Rudestam (1999), the decision was made to adjust within each set of analyses to balance the probability of inflated alpha levels with the loss of power created by adjusting alpha across all 88 tests represented in Appendixes D through H. Thus, the analyses conducted with each demographic variable were considered a group or “set” of analyses, and using the Bonferroni method the alpha level was set to .005.

Accounting for the Bonferroni correction, education was found to be significantly and positively related to the Zimbardo Future scale ($F[3, 143] = 6.816, p < .001$) and also with the Attentional Key of the Barratt Impulsiveness Scale ($F[3, 137] = 4.504, p = .005$). Participant age was significantly and negatively correlated with the Carstensen FTP scale ($r[136] = -.299, p < .001$).

Group Facilitator Classifications and Score Profiles

The first set of hypotheses (H_1) all suggest that group facilitator classifications of each offender, according to whether or not “his abuse is generally *planful and systematic*,” predict score profiles that are consistent with the model of high and low impulsivity offenders offered in the second set of hypotheses (H_2). This model predicts that lower scores on the Barratt Impulsiveness Scale will be associated with higher scores on all three measures of future time perspective (the Zimbardo Future scale, the Strathman CFC, and the Carstensen FTP) and with lower scores on all other scales of the Zimbardo Time Perspective Inventory (Past Positive, Past Negative, Present Hedonistic, and Present Fatalistic). Although some support for this model is presented below, no significant associations were found between facilitator classification and any other measure that was taken in this study, as indicated in Table 2, except for a significant relationship with Carstensen FTP Total scores ($F[1, 143] = 4.065, p = .046$). No significant relationships were observed when the facilitator classification was weighted by the confidence factor that the facilitators associated with each offender classification, or when the number of weeks completed in the treatment program was taken into account. No substantive conclusions regarding what insight group facilitators might have about the planfulness or impulsivity of their individual group members can be supported by the results of this study.

Table 2

One way ANOVA for the Zimbardo Time Perspective Inventory (ZTPI), Consideration of Future Consequences Scale (CFC), Future Time Perspective Scale (FTP), and the Barratt Impulsiveness Scale (BIS) by Facilitator Classification

		N	Mean	Std. Deviation	F	Sig.
BIS Total Score	Not Planful	80	52.1625	10.24935	.113	.737
	Planful	54	52.8148	12.05502		
BIS Attentional Key	Not Planful	84	15.4167	3.58110	.035	.852
	Planful	56	15.5357	3.85635		
BIS Motor Key	Not Planful	85	14.7882	3.97640	.284	.595
	Planful	58	14.4138	4.32875		
BIS Nonplanning Key	Not Planful	83	21.7229	4.39876	1.248	.266
	Planful	58	22.6552	5.49179		
CFC Total	Not Planful	86	38.9070	8.77380	.318	.573
	Planful	59	38.1525	6.43218		
FTP Total	Not Planful	85	53.8000	10.86475	4.065	.046
	Planful	60	50.2000	10.18440		
ZTPI Future	Not Planful	86	46.5000	6.55430	.692	.407
	Planful	60	45.5333	7.39323		
ZTPI Past Positive	Not Planful	85	30.2118	5.47308	1.118	.292
	Planful	58	29.2414	5.26261		
ZTPI Past Negative	Not Planful	87	31.9770	6.84203	.015	.904
	Planful	61	31.8361	7.21614		
ZTPI Present Hedonistic	Not Planful	87	47.3563	7.68868	1.257	.264
	Planful	61	45.9344	7.45848		
ZTPI Present Fatalistic	Not Planful	87	21.5402	5.55272	.056	.813
	Planful	61	21.7541	5.16932		

Relationships of Time Perspective to Impulsivity

The second set of hypotheses (H_2) proposes an offender typology which predicts that lower scores on the BIS will be associated with higher scores on all three future time perspective measures and also with lower scores on all four past and present scales of the ZTPI (H_{2a}), and that higher scores on the BIS will be associated with lower scores on all three future time perspective measures and with higher scores on all four past and present scales of the ZTPI (H_{2b}). Strong relationships corresponding to this model were observed, except that

1. The Carstensen FTP scale is far less predictive of this model than are the CFC and the ZTPI future scales, and
2. The ZTPI Past Positive scale was found to be *negatively* associated with impulsivity scores rather than positively ($r[130] = -.330, p < .001$), as predicted by the model that is suggested in H_2 .

As indicated in Table 3, the Strathman Consideration of Future Consequences scale (CFC) was found to be a strong predictor of the time perspective and impulsivity profiles suggested in H_2 with the exception of its marginal relationship to the ZTPI Past Positive scale ($r[141] = .170, p = .044$), which was in the opposite of the predicted direction. This finding is consistent with the unexpected relationship that was observed between Past Positive and the BIS impulsivity scale, as noted above. Although the strength and significance of these same relationships with the ZTPI Future scale were generally weaker than they were with CFC, the same pattern of significant relationships

was evident in both cases. Participants who scored higher on the ZTPI Future scale tended to score lower on both ZTPI measures of present orientation as well as on ZTPI Past Negative. Consistent with the relationship to the CFC scale, Past Positive was significantly and positively associated with the ZTPI Future scale ($r[141] = .277, p = .001$).

Table 3

Correlations of the Consideration of Future Consequences Scale (CFC) Total Score, the Zimbardo Time Perspective Inventory (ZTPI) Future Score with the Barratt Impulsiveness Scale Total Score, and the Zimbardo Time Perspective Inventory (ZTPI) Hedonistic, Fatalistic, Past Positive, and Past Negative Scores

Scale Name	CFC Total Score (N)	ZTPI Future Score (N)
BIS Total	-.619*** (133)	-.468*** (132)
ZTPI Present Hedonistic	-.281*** (145)	-.046 (146)
ZTPI Present Fatalistic	-.449*** (145)	-.251** (146)
ZTPI Past Positive	.170* (141)	.277*** (141)
ZTPI Past Negative	-.318*** (145)	-.108 (146)

* $p < .05$ ** $p < .01$ *** $p < .001$

Consistent with this typology of offender profiles, stepwise multiple regression of all time perspective scales against full scale scores on the Barratt Impulsiveness Inventory yielded the following regression model, which accounts for 58% of total variance with CFC as the primary predictor, followed by ZTPI Past Negative, ZTPI Future, and ZTPI Present Hedonistic ($R^2 = .584, F[4,117] = 43.34, p < .001$). The correlation table for this regression model is presented in Table 4 and the regression results are presented in Table 5.

Table 4

Correlation Matrix of the Barratt Impulsiveness Scale (BIS), the Consideration of Future Consequences Scale (CFC), the Future Time Perspective Scale (FTP), and the Zimbardo Time Perspective Inventory (ZTPI)

Scale Name	BIS	CFC	FTP	ZTPI-F	ZTPI-PP	ZTPI-PN	ZTPI-PH
BIS Total Score							
CFC Total	-.641***						
FTP Total	-.058	.180*					
ZTPI Future	-.496***	.395***	.149				
ZTPI Past Positive	-.355***	.192*	-.057	.264**			
ZTPI Past Negative	.506***	-.323***	-.136	-.147	-.310***		
ZTPI Present Hedonistic	.443***	-.297***	.032	-.059	-.163*	.559***	
ZTPI Present Fatalistic	.569***	-.458***	-.199*	-.276***	-.229**	.593***	.574***

Note. N = 122

*p < .05 **p < .01 ***p < .001

Table 5

Stepwise Multiple Regression Analysis of the Barratt Impulsiveness Scale (BIS) on the Consideration of Future Consequences Scale (CFC), and the Zimbardo Time Perspective Inventory (ZTPI)

Independent Variable	B	SE _b	Beta	t	p
CFC Total	-.533	.091	-.396	-5.84	< .001
ZTPI Past Negative	.363	.111	.236	3.26	.001
ZTPI Future	-.463	.101	-.295	-4.60	< .001
ZTPI Present-Hedonistic	.261	.106	.176	2.46	.015

Note. N = 122. Results are shown for the final step. Adjusted $R^2 = .584$, $F[4, 117] = 43.40$, $p < .001$. ZTPI Past Positive and Present Fatalistic were not significant and were excluded from the final model.

In order to avoid the use of multiple measures of future time perspective, when ZTPI Future was removed from stepwise regression, the resulting model still accounts for 53% of the total variance in BIS impulsivity scores with CFC as the primary predictor, followed in this case by ZTPI Past Negative, Present Fatalistic, and ZTPI Past Positive

($R^2 = .533$, $F[4,117] = 34.30$, $p < .001$). The results of this regression model are summarized in Table 6.

Table 6

Stepwise Multiple Regression Analysis of the the Barratt Impulsiveness Scale (BIS) on the Consideration of Future Consequences Scale (CFC), and the Zimbardo Time Perspective Inventory (ZTPI) Excluding the ZTPI Future Scale

Independent Variable	B	SE _b	Beta	t	p
CFC Total	-.609	.097	-.444	-6.28	< .001
ZTPI Past Negative	.289	.125	.185	2.32	< .05
ZTPI Present Fatalistic	.407	.165	.204	2.47	< .05
ZTPI Past Positive	-.309	.133	-.153	-2.32	< .05

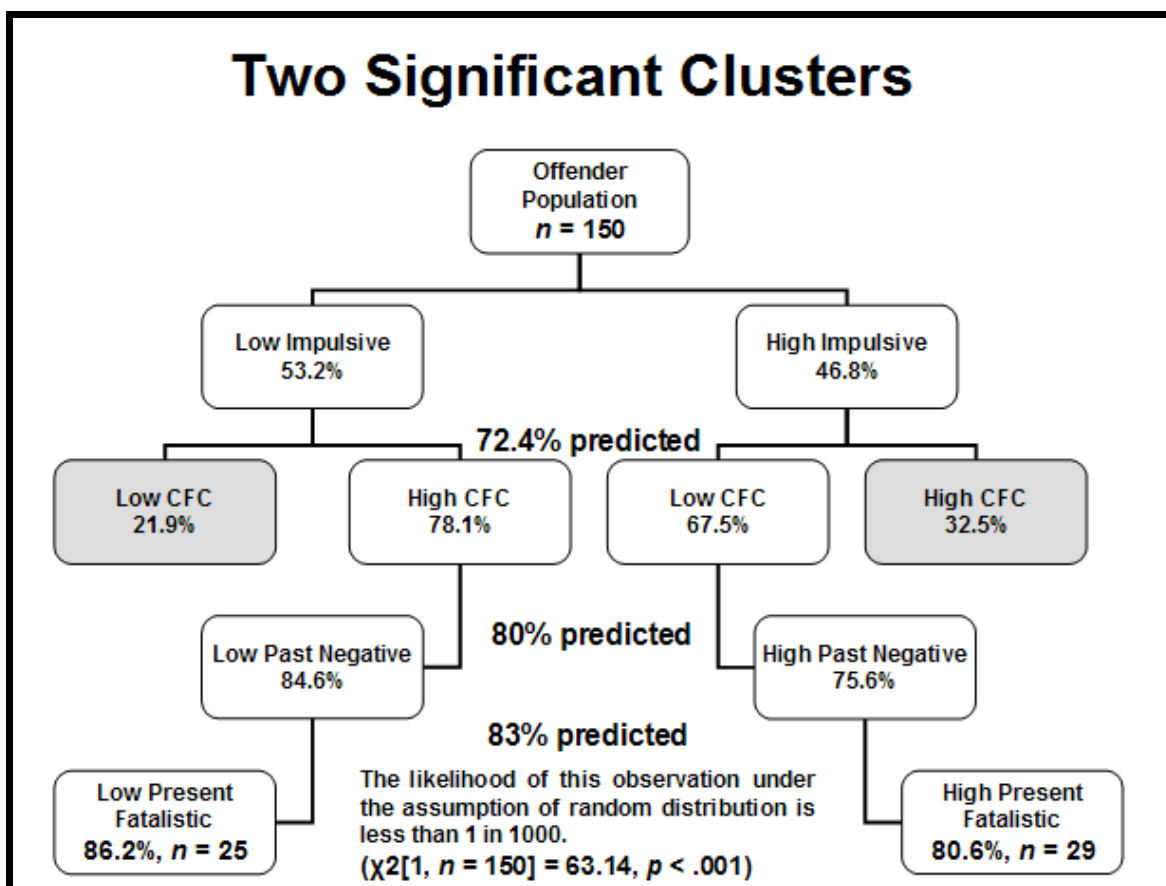
Note. N = 125. Results are shown for the final step. Adjusted $R^2 = .533$, $F[4, 120] = 34.30$, $p < .001$.

Profiles of Time Perspective and Impulsivity

A cluster analysis based on cross-tabulation of the scale scores observed in this study confirms the existence of two distinct groups of offenders with very specific impulsivity/time perspective profiles. For purposes of this cluster analysis participants were assigned to either High or Low groups, divided at the median of each scale. Hierarchical cross-tabulations were examined to determine the frequency of predicted profiles and to identify other clusters. Decision trees were constructed based on observed classifications within each scale (low or high) and nested in the order of several strong solutions that were found in step-wise linear regressions against the BIS full scale score. The tree structure that is illustrated in Figure 3 was ordered in the same sequence as the variables that entered into the stepwise regression summarized in Table 6, for which all scales except the ZTPI Future scale were offered as independent variables ($R^2 = .533$, $F[4,117] = 34.30$, $p < .001$).

Participants with higher impulsivity scores tend to exhibit lower Future and Past Positive scores, and higher Past Negative, Present Hedonistic, and Present Fatalistic scores. Participants with lower impulsivity scores tend to exhibit the opposite tendencies. These observations are consistent with the correlations and regression model summarized in Table 6, which is consistent with the general model suggested in H₂, as modified by the observed positive correlations of Past Positive scores with impulsivity. Those who score above the median score on the CFC scale are 3.14 times as likely to be non-impulsive (scoring below the median on the BIS full scale).

Examination of the hierarchical cross-tabulation that is illustrated in Figure 3 reveals 54 out of 150 participants scoring in the two predicted cells three branches down the decision tree, against an expectation of 9.75 cases in each cell under the assumption of random distribution. Roughly one third of the total population falls into 1 of the 2 predicted cells (out of 16) at the third level of the cross-tabulation. The level-to-level conformity to the model is 72.4% at the first level (BIS à CFC), 80% at the second level (BIS/CFC à Past Negative), and 83% at the third level (BIS/CFC/PN à Present Fatalistic). The likelihood is less than 1 in 1000 of getting these observed cell frequencies, under the assumption of randomly distributed cell frequencies ($\chi^2[1, N = 150] = 63.14, p < .001$).



Note: The two shaded boxes represent the paths that are not predicted by the cluster model and are presented only at the first level for simplicity.

Figure 3. *Decision Tree Representing Predicted Pattern of Offender Clustering*

Relationships among Future Time Perspective Measures

As anticipated in hypothesis H_{3b}, the Zimbardo Future scale was significantly and positively correlated with the Strathman Consideration of Future Consequences (CFC) scale ($r[143] = .386, p < .001$) and it was associated in a similar manner with the other time perspective scales that were assessed in this sample, as summarized in Table 7. CFC scores were found to be substantially less closely, but still significantly, correlated with Carstensen FTP scale scores ($r[144] = .186, p = .025$).

Table 7

Correlations of the Consideration of Future Consequences Scale (CFC) Total Score, the Zimbardo Time Perspective Inventory (ZTPI) Future Scale, and the Future Time Perspective Scale (FTP)

Scale Name	FTP Total (N)	CFC Total (N)
FTP Total		
CFC Total	.186* (144)	
ZTPI Future	.120 (143)	.386*** (143)

* $p < .05$ *** $p < .001$

Contrary to H_{3b}, no significant correlation was found between ZTPI Future and FTP scores ($r[143] = .120, p = .154$). In fact, FTP does not appear to be related to any of the other measures that were included in this study in the way that both the ZTPI Future and the CFC scales appear to be related to them, as reported above. The only significant correlations that were found with FTP observations were negative associations with ZTPI Present Fatalistic ($r[145] = -.230, p = .005$) and with ZTPI Past Negative ($r[145] = -.181, p = .029$).

Relationship among ZTPI Scales

The scales of the ZTPI were *not* found to be independent of one another, as indicated in the article which describes their development (Zimbardo & Boyd, 1999) and as proposed in hypothesis H_{3a}. The observed relationships among the ZTPI scales are shown in Table 8. ZTPI Future was correlated positively with Past Positive ($r[141] = .277, p = .001$) and negatively with Present Fatalistic ($r[146] = -.251, p = .002$). Past Positive was correlated negatively with Past Negative ($r[143] = -.289, p < .001$), and also with Present Fatalistic ($r[143] = -.212, p = .011$). Present Fatalistic was correlated positively with Past Negative ($r[148] = .580, p < .001$) and Present Hedonistic ($r[148] = .540, p < .001$) and negatively with Past Positive ($r[143] = -.212, p = .011$) and Future ($r[146] = -.251, p = .002$). Past Negative was also correlated positively with both Present Hedonistic ($r[148] = .534, p < .001$) and Present Fatalistic ($r[148] = .580, p < .001$). The only significant correlations of Present Hedonistic with other ZTPI scales was with Past Negative ($r[148] = .534, p < .001$) and Present Fatalistic ($r[148] = .540, p < .001$).

Table 8

Correlation Matrix of the Zimbardo Time Perspective Inventory (ZTPI)

ZTPI Scale Name	Future (N)	Past Positive (N)	Past Negative (N)	Present Hedonistic (N)
Future				
Past Positive	.277*** (147)			
Past Negative	-.108 (146)	-.289*** (143)		
Present Hedonistic	-.046 (146)	-.120*** (143)	.534*** (148)	
Present Fatalistic	-.251** (146)	-.212*** (143)	.280*** (148)	.540*** (148)

** $p < .01$ *** $p < .001$

Summary of Results

The principle hypotheses of this study revolve around the proposition that impulsivity and personal time perspective are related in a systematic way which distinguishes two groups within the participant population of partner violence offenders enrolled in the DACC partner violence intervention program in Pittsburgh. Specifically, these hypotheses propose that elevated scores on three measures of future time perspective would predict low scores on the Barratt Impulsivity Scale and also low scores on all other measures of time perspective.

1. The first set of hypotheses proposes that group facilitator classification of offenders according to whether their abuse is seen to be “planful and systematic” would distinguish between these groups. The results of this study *did not* support this first set of hypotheses.
2. The second set of hypotheses proposes that two groups would be identified by cluster analysis of the results regardless of facilitator classifications. This prediction *was* strongly supported by the identification of two very distinct groups within the participant population, which matched the anticipated profile except that scores on the ZTPI Past Positive scale were negatively correlated with impulsivity rather than positively, as was predicted.
3. The third set of hypotheses proposes that all three measures of future time perspective would predict membership in these groups and that scores on

the five scales of the ZTPI would be independent of one another. Both the CFC and the ZTPI Future scales predicted these two profiles significantly but the FTP scale did not. Contrary to expectations, the five scales of the ZTPI were found to be significantly intercorrelated.

CHAPTER SIX: Discussion

In this study of 152 offenders enrolled in the DACC partner violence intervention program of Pittsburgh, measures of personal time perspective assessed by means of the Zimbardo Time Perspective Inventory (ZTPI) and the Strathman Consideration of Future Consequences scale (CFC) predicted, with a high level of statistical confidence, 58% of total variance in measures of the Barratt Impulsivity Scale (BIS), which is a well-established indicator of behavioral impulsivity that has been validated repeatedly in a wide variety of prison, psychiatric, and general population samples. The specific pattern of relationships that was observed among the CFC and the five scales of the ZTPI revealed distinct profiles of personal time perspective that are associated with high and low impulsivity in this sample of partner violence offenders. Participants who scored above the median on the Barratt impulsivity scale tended, quite reliably, to score below the median on the Strathman Consideration of Future Consequences scale, the Zimbardo measure of future orientation, and the Zimbardo measure of positive orientation toward the past. These same participants tended, also quite reliably, to score above the median on the Zimbardo measure of negative orientation toward the past and also on both ZTPI measures of personal orientation toward the present (fatalistic and hedonistic). Participants who scored below the median on the Barratt impulsivity scale also scored in the opposite direction than their more impulsive counterparts on all of the time perspective scales that were assessed in this study. These two clusters of impulsivity and time perspective profile were sufficiently distinct that fully one third of the participant

population matched the prototypical impulsivity/time perspective profiles exactly, and most of the remaining sample approximated one of the prototypical profiles.

It is noteworthy that the group facilitator's classification of offenders in their groups according to whether they were "systematic and planful" in their pattern of abuse did not correlate significantly with any of the findings of this study, either those related to personal time perspective or those related directly to impulsivity. This could be because facilitators interpreted the question that was put to them in some unintended way, or it could be that the facilitators really did not have accurate impressions about their group members in this area. It may be that the psychoeducational format of the intervention program under study emphasizes the presentation of information to the group rather than extensive discussion of the offender's individual situation, so that group facilitators are not exposed to the information that would allow them to make this type of judgment accurately. To the extent that group facilitators are not cognizant of the impulsive vs. planful status of their group members there is clearly no opportunity for them to tailor their interaction to individual offenders on that basis. Future research might profitably explore this question in greater depth through the use of a more extensive questionnaire for facilitators, or by other means.

Time Perspective as an Aspect of Impulsivity

Although the subtle interpretation of the specific constructs that underlie the time perspective findings of this study must await further research, the strength and consistency of the time perspective profiles that predict impulsivity in this study are

compelling and certainly merit the future research effort that will be necessary to elaborate and explain them fully. The strong and distinct profiles of personal time perspective and impulsivity that are reflected by the CFC, the ZTPI, and the BIS in this study suggests an expanded basis for understanding impulsivity and, by extension, the pervasive distinction between impulsive versus instrumental partner violence. In order to validate this possibility it would be necessary for future research to map the findings of this study onto various dimensions of actual partner violence, such as pattern, severity, frequency, context, and so on. The close association of personal time perspective with impulsivity sheds additional light on most of the partner violence offender typologies reviewed by Holtzworth-Monroe in her influential 1994 survey of the partner violence literature (Holtzworth-Munroe & Stuart, 1994), in which she identified impulsivity as one of the important personality traits associated with partner violence. Similarly, the close association of time perspective with impulsivity may also be useful for understanding the role of impulsivity in the three personality types that were identified in the pioneering studies of Hamberger and Hastings among partner violence offenders in the 1980s (Hamberger & Hastings, 1986; Hastings & Hamberger, 1988). Finally, this expanded understanding of impulsivity can also be applied to the various dichotomies that have been proposed in dual-executive cognitive models such as Metcalf's "hot and cold" cognitive systems (Metcalf & Mischel, 1999), Kahneman's hierarchical model of intuitive and reasoning systems (Kahneman, 2003), and Carstensen's theory of socioemotional selectivity (Carstensen *et al.*, 1999).

Each of these models and typologies contrasts the construct of impulsivity, in one way or another, with some more deliberate cognitive process that takes place over an extended period of time, at least compared with its impulsive counterpart, and which takes some set of relevant factors systematically into account to determine behaviour. In the case of partner violence this implies that “instrumental” offenders utilize violence as a considered method to achieve ends that they pursue intentionally, whereas impulsive offenders jump directly to violent behaviour without necessarily considering either their objectives or the consequences that their behaviour might have in the future. In either case the applicable mode may be taken to imply a habitual temporal orientation, at least toward the future.

Carstensen Foreshortened Future and Zimbardo Past Positive

It is noteworthy that scores on the Carstensen Future Time Perspective instrument were not associated with the distinctive time perspective profiles that the CFC and the ZTPI predicted so strongly in this sample, nor were they significantly correlated with the ZTPI Future scale itself. Although the FTP does exhibit a weak correlation with the CFC, it appears to be accessing some aspect of future time perspective that is unrelated to the Barratt measure of impulsivity. As noted in the discussion of Carstensen’s socioemotional selectivity theory that appears in the literature review section of this dissertation, the results of a study conducted by Carstensen and Lang on the quality of social relationships in a German general population study (Lang & Carstensen, 2002) were also inconsistent with the findings that would have been expected had the FTP

instrument accessed some aspect of future orientation that was correlated with impulsivity in the way that the CFC and the ZTPI Future scales both appear to be. In that study, and in the Carstensen theoretical model, a foreshortened future perspective is associated with the development of *positive* social relationships rather than with antisocial impulsivity, as is presumably the case in the context of partner violence. This interpretation is also consistent with the common, although generally anecdotal, impression that life-threatening illnesses or experiences can accentuate the appreciation of life, however limited its future, and of the relationships that are most meaningful.

Notably, the questions on the FTP instrument are oriented toward *how much* future time the participant perceives to be available to her, rather than *how intensively* she tends to focus on that future as, it could be argued, the other two future perspective instruments tend to do. This is consistent with the fact that one of the very few robust correlations that was found in this study between demographic factors and instrument scale scores was the negative correlation between participant age and FTP scores, as Carstensen and Lang found in their German general population study (Carstensen & Lang, 1996). It is possible that the FTP reflects an accentuated awareness of the limited time that is perceived to be available rather than a neglect of the future, in which case the development of meaningful social relationships would be a sensible way to maximize the time that is remaining. It is also possible that some similar effect might account for the unexpected negative association that was observed between impulsivity and the ZTPI measure of a positive orientation toward the past. Perhaps a focus on the positive

interpretation of past events tends to foster an optimistic assessment of future opportunities, which makes those future opportunities seem worthy of the effort that is required to develop them.

Clearly, the larger construct of time perspective is broader than the scope of this study or the instruments that have been employed to explore it here. Joseph Nuttin has coined the term “time competence” to highlight the fit between time perspective and the particular domain that is under consideration (Nuttin & Lens, 1985). It would be overly simplistic to presume that the consequences of any of the aspects of time perspective that have been captured here would have uniform or straightforward implications across circumstances, and it is perhaps remarkable that the level of consistency has been found in the results that have been presented here.

The Internal Structure of Time Perspective

The significant correlations of the CFC and the BIS impulsivity scale with the five scales of the Zimbardo Time Perspective Inventory demonstrate a complex relationship among the various aspects of time perspective, and between these and impulsivity. The unexpected finding that the five Zimbardo time perspective scales are strongly correlated with one another may be taken to suggest that the independence observed among them by their authors (Zimbardo & Boyd, 1999) was an artificial result of the statistical procedure that was used in the instrument development process rather than a reflection of truly independent underlying constructs. Instead, the relationships observed in the present study suggest a complex relationship among diverse aspects of

personal time perspective which share a common framework. This complexity is in accord with the many aspects of time perspective that are associated with the offender typologies and dual-process executive theories that have been discussed elsewhere in this thesis. In the same light that reveals the distinctions among various aspects of time perspective, significant correlations among the scales of the ZTPI that purport to measure them suggest a common underlying construct that exhibits certain holistic properties, such as the negative correlation between Past Positive and Past Negative, as though past perspective were, in some sense, a limited resource.

Relationship of Demographic Variables to Time Perspective and Impulsivity

Although several interesting relationships were found between demographic variables and individual scale results, the demographic variables collected in this study did not significantly predict the profiles of impulsivity and time perspective that are the principle focus of this study. Although younger men scored higher on the Carstensen Future Time Perspective scale (FTP), the FTP itself was not found to be predictive of the impulsivity/time perspective profiles that were identified. Similarly the significant association of education with the ZTPI measure of future orientation and with the BIS Attentional Key is suggestive, but also insufficient to significantly predict the time perspective/impulsivity profiles that were found.

The fact that so few significant associations were found between demographic variables and the other measures that were assessed in this study suggests that the distinctive impulsivity/time perspective profiles that were identified are generalized

throughout the participant population without regard to demographic factors. The sample observed in this study was notably restricted almost entirely to two ethnic categories (African American and White-Anglo), and future investigations might profitably explore whether the observed relationship between impulsivity and personal time perspective holds within other ethnic groups.

Clinical Implications

The association of impulsivity with aggression and violence, including partner violence, has been established in numerous studies (Cherek et al., 1997; Cohen et al., 2003; Hoaken et al., 2003; Holtzworth-Munroe & Meehan, 2004; Holtzworth-Munroe & Stuart, 1994; Luengo, Carrilo-de-la-Pena, Otero, & Romero, 1994; Seroczynski et al., 1999) and it has been broadly accepted within the partner violence treatment community, as evidenced by the nearly universal emphasis in program materials on some form of “time-out” when certain physiological, behavioural, and psychological “warning signs” are detected. A significant relationship between impulsivity and personal time perspective has also been established by Zimbardo and Boyd in the construction and validation of the Zimbardo Time Perspective Inventory (Zimbardo & Boyd, 1999), and this relationship has been supported by the findings of the present study.

The two clusters of time perspective/impulsivity profile that were clearly identified among the participants in this study indicate that the most relevant aspects of time perspective, among those that were measured, are future orientation, a positive orientation toward the past (past-positive), and a fatalistic orientation toward the present (present-fatalistic). Education and exercises, such as those suggested below, which target these aspects of personal time perspective in the treatment of partner violence offenders might counteract their impulsive tendencies and thereby mitigate the violence in their relationships in the same way that “time-out” is intended to do, only more prospectively. It seems clear that at least some aspects of personal time perspective change naturally

over the course of human development (Carstensen et al., 1999; Fingerman & Perlmutter, 1995; Lang & Carstensen, 2002), as the significant negative correlation between participant age and scores on the Carstensen Future Time Perspective scale in this study demonstrates.

It seems likely that training and exercises in structured goal setting and systematic problem solving should enhance (or even constitute) future orientation by establishing explicit and constructive intentions regarding at least the most prominent partner relationship issues. These prior intentions should counteract impulses that arise, by definition, in the present, thereby mitigating violence in the relationship. From a practical clinical perspective, future orientation and the systematic problem-solving skills and exercises that foster it can be regarded as extensions of the existing focus on impulsivity in partner violence treatment. A general framework for exercises which foster this type of constructive goal setting and systematic problem solving might be as follows:

1. A didactic psychoeducational presentation is made by the group facilitator which is focused on the benefits of explicit goal setting and systematic problem solving. The emphasis of this presentation should be on its application to partner and other personal relationships, but the advantages of this type of systematic approach in all areas should be highlighted. A list of common areas in which goal setting and systematic problem solving might apply should be provided, and a simple formula should be given for the problem-solving cycle. It should be noted that all such formulas

approximate the scientific method itself. Figures 4 and 5 illustrate these elements of the didactic presentation. Have each group member formulate a list of goals for himself, at least some of which pertain to his intimate relationship if he is in one.

2. Review and discuss each group member's list of goals, identifying one or more on which he will actually work during the course of the treatment program.
3. Have each group member relate the steps in the systematic problem-solving formula that was presented by the group facilitator to the goals that he has identified to work on.
4. Periodically review the progress that each man is actually making on the goals that he has identified so that the group and the facilitator can provide feedback, encouragement, and suggestions for refinement or further progress.

Such exercises should ideally be conducted throughout the course of partner violence treatment programs so that the specific goals and problem-solving exercises developed by each offender can be revisited, discussed, revised, and reinforced.

Identify Important Goals

➤ Some areas are common

- ❖ Relationships
- ❖ Violence
- ❖ Children
- ❖ Money
- ❖ Job
- ❖ Alcohol & drugs
- ❖ Weight, fitness & health
- ❖ Department of Motor Vehicles




Figure 4. Sample overhead slide on the identification of constructive goals

Relationship Problem Solving

Outcome 1. Change 2. Acceptance 3. Resentment 4. In progress	Procedure 1) Identify the problem or opportunity 2) Say how you view the situation 3) Understand your partner's point of view 4) Create as many solutions as possible together 5) Mutually pick a solution and try it for a while 6) Evaluate your progress periodically and repeat		
	Interpersonal Skills		
	Integrity	Reciprocity	Leadership
	Communication	Negotiation	Compromise

Figure 5. Sample overhead slide on systematic problem solving in relationships

Another promising approach to the enhancement of future orientation has received a fair amount of attention in the literature of education under the label “possible selves,” a term initially introduced by Hazel Markus and Paul Nurius 20 years ago (Markus & Nurius, 1986). Possible selves are our cognitive schemas about what we would like to become in the future, what we could become, what we expect to become, and what we are afraid of becoming. A good deal of research has established that the possible selves that can be elicited from students and adolescents tend to be good indicators of their future behaviour and achievement (Oyserman & Markus, 1990; Stein, Roeser, & Markus, 1998), and it is reasonable to suppose that this might be true of partner violence offenders under treatment as well. The literature of education is replete with recommendations for the systematic development of constructive possible selves among students (Day, Borkowski, Punzo, & Howsepiane, 1994; Pizzolato, 2006), although little research has apparently been done to assess the malleability of these cognitive schemas by means of such exercises, or the persistence of such changes (Unemori, Omoregie, & Markus, 2004).

Work with possible future selves could be incorporated into almost any partner violence treatment program by means of assignments in which, following a presentation of the exercise by the group facilitator, each offender would write short essays which describe, in his own language, the sort of man, partner, and father he would (ideally but realistically) like to become in the future. These descriptions could be read aloud in the group by each member in order to foster commitment to what he had written and in order

to promote group discussion and facilitator feedback. The group facilitator could help group members to focus on selected elements of the descriptions that each man might realistically be able to make progress on during the course of the program. These objectives, and the descriptions of possible future selves, could be revisited from time to time throughout the treatment program in order to reinforce these constructive self-schemas, and also to evaluate and highlight any progress that might be made on actualizing them.

Such exercises, discussion, and reflection on possible future selves might enhance and reinforce future orientation by fostering self-effective attributions and by suggesting methods for achieving desirable states, *especially when these are related to each individual's personal circumstances and when behavioural experiments are encouraged in areas where success can realistically be achieved*. Such exercises need not stand alone in a treatment plan intended to enhance the quality of offenders' orientation toward the future. In the context of partner violence intervention, exercises in the construction of possible future selves could serve as a means to generate specific future goals, which could serve in turn as the objects of structured problem-solving exercises.

Promising interventions within the psychoeducational framework which could be expected to affect the other two most significant factors in the impulsive/instrumental clusters that were identified among the participants in the present study, past-positive and present-fatalistic temporal orientations, are not as obvious as are the approaches to future orientation that have been suggested above. A frequent objective of psychotherapy,

however, is to examine what a client sees as negative past events or present circumstances with a view to reinterpreting them from a more expansive perspective or in more favourable light. This is the explicit objective of dialectical behaviour therapy (DBT), which is an innovative synthesis of mindfulness practice and cognitive behavioural techniques (Robins, Schmidt, & Linehan, 2004; Hayes, Follett, & Linehan, 2004) that aims to foster a non-judgmental frame of mind in which problematic material can be revisited and re-evaluated. DBT was originally developed for the treatment of borderline personality disorder, but has since been expanded and employed with various populations, including incarcerated populations of violent offenders (Evershed et al., 2003; Trupin, Stewart, Beach, & Boesky, 2002). Although DBT does not fit neatly within the context of the prevailing psychoeducational format for mandatory partner violence treatment, its objectives seem well suited to address the resentments and negative interpretations of past and present events and circumstances that are so characteristic of partner violence offenders. Partner violence treatment providers might do well to consider the possible applications of DBT methods and/or concepts in their overall treatment approach.

Much of the theoretical and research literature in the field of partner violence strongly recommends differential diagnosis and treatment of partner violence offenders according to various diagnostic criteria, including the impulsive/instrumental dichotomy supported by the findings of this study (Geffner & Rosenbaum, 2001; Hamby & Gray-Little, 1997; Lawson, 2003; Rosenbaum & Geffner, 2002). Treatment programs which

actually provide any type of differential treatment, however, are extremely rare (Geffner & Rosenbaum, 2002) and it is important to recognize and accommodate the homogeneous court-referred treatment approach that is so pervasive and well-entrenched in jurisdictions throughout the United States. A treatment emphasis which focuses effectively on the establishment of constructive future goals and on systematic problem-solving techniques to pursue them could address the treatment needs of both impulsive and instrumental offenders in a constructive way. The differential effects of such an approach could be to mitigate the tendency toward impulsivity among impulsive offenders and to foster more socially desirable strategies among instrumental and even antisocial offenders.

Conclusion

The present study is notably limited in the range of ethnic groups that were represented in the population under study, by the absence of appropriately matched control groups from the general population, and by the absence of verification that the pattern of abusive behavior that the offenders under study actually exhibit is predicted by the typologies that have been reported here. Future research might profitably address these limitations and extend this line of inquiry to operationalize the various dimensions of personal time perspective in behavioral terms which might suggest new treatment approaches. Further research is also indicated to account for the failure of the Carstensen Future Time Perspective instrument to predict the typologies that the Zimbardo ZTPI and the Strathman CFC instruments both predicted so strongly, and to illuminate the

conditions under which a foreshortened future time perspective has positive rather than negative consequences generally. Finally, future research should explore the apparent failure of treatment group facilitators to predict any of the time perspective or impulsivity measures taken in this study.

In his introduction to the article in which he describes the Zimbardo Time Perspective Inventory (Zimbardo & Boyd, 1999), Zimbardo attributes his own liberation from impoverished and stultifying circumstances in his childhood to his education, and specifically to the shift from a fatalistic present orientation to the future perspective that education fosters. Zimbardo notes the important emphasis that is consistently placed upon future orientation in many important domains of Western society. His personal allegory illuminates the importance and constructive potential of personal temporal orientation, and it also suggests that time perspective is malleable and therefore subject to treatment or intervention. If the relationship between the factors of personal time perspective and impulsivity can be verified, and if those factors of personal time perspective are found to be malleable under practical clinical circumstances, then a fruitful emphasis in the treatment of intimate partner violence will be recommended.

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Appendix A

Informed Consent to Participate in Research

Please read this form carefully and sign it if you choose to participate in this research study. *Your participation is entirely voluntary and you should feel free NOT to complete this form or the enclosed materials if you do not want to. You may withdraw from the study at any time even if you choose to participate. If you do not participate, there will be no penalty of any kind, and it will not affect your status in the DACC program.* If you do not want to participate in this study, please read the enclosed article while others complete their surveys and then return the forms in the envelope that they came in, keeping the article and one unsigned copy of the informed consent for yourself.

This study is concerned with the way in which men enrolled in the Domestic Abuse Counseling Center (DACC) treatment program think about the future. The results of this research may help to improve programs like the one you are enrolled in. This study is being conducted by Joe Ferguson in partial fulfillment of his requirements for the Ph.D. degree in clinical psychology from Fielding Graduate University.

The study involves the completion of 4 short questionnaires plus a short form indicating your age, ethnicity, marital status, number of children, education, employment, family income, and number of weeks completed in the DACC program so far. It should take 20 to 30 minutes to complete all study materials. The information you provide will be kept strictly confidential and anonymous. *The questionnaires will not include your name and no personally identifying information will be recorded anywhere except on this informed consent form.* This informed consent form will be separated from the other study materials immediately following this group session and stored by for a period of 3 years, after which they will be destroyed. The only use that will be made of the personal information on this form will be to select a winner of the optional \$100 lottery for research participants, and to mail a summary of results when this research project is completed if you request one. No individual results will be recorded or reported. The \$100 lottery prize will be mailed to a participant selected at random after the study is completed at the address you may choose to provide below. There is no other financial reward for participation in this study.

There is no risk to you perceived in this research study and you may develop some personal awareness as a result of your participation in this research. If you become uncomfortable at any time you are free to withdraw from the study. The results of this research will be published in the researcher's dissertation and possibly in journals or books.

If you have any questions about any aspect of this study or your involvement, please speak to Joe Ferguson before signing this form. Feel free to contact Joe Ferguson at any time by phone at (949) 235-2615, or by mail at 2155 Temple Hills Drive, Laguna Beach, CA 92651. You may also contact Dr. Anthony Greene at (352) 392-1161 ext. 4278, or Dr. Kjell Rudestam at (805) 898-2908.

Two copies of this informed consent form have been provided. If you choose to participate in this study, please sign both, indicating you have read, understood, and agreed to participate in this research. Whether you choose to participate or not, please return one copy of the informed consent in the envelope along with the other research materials and keep the other copy for yourself.

The Institutional Review Board of Fielding Graduate University retains access to all signed informed consent forms.

NAME OF PARTICIPANT (please print)

SIGNATURE OF PARTICIPANT

DATE

.....
Provide your mailing address below only if you want to enter the \$100 participant lottery or if you want to receive a summary of the results from this study after it is completed.

- ☐ Check here to enter the optional \$100 lottery for participants
- ☐ Check here to receive a summary of research results

Street Address

City, State, Zip

Appendix B: Demographic Information Form

Information about you

Age: _____

Ethnicity (check all that apply):

- Asian-Pacific Islander
- African American
- Hispanic
- White/Anglo
- Other: Please specify: _____

Marital status (check one):

- Married
- Divorced
- Widowed
- Single, living with a partner
- Single, not living with a partner

Number of children: _____

Education (check one):

- Some high school
- Graduated from high school or GED
- Some college classes
- Graduated college
- Some graduate level classes
- Master's degree
- Doctorate, law, or medical degree

Employment: (check one):

- Full time
- Part time
- Homemaker
- Unemployed
- Retired
- Other: Please specify: _____

Number of weeks completed in the DACC
program so far (not counting this week): _____

For each group member, record how many weeks of the DACC program have been completed, not counting the current session, and indicate whether or not you believe that his abuse is generally ***planful and systematic*** by checking the appropriate box on the line with his name. Also please indicate ***your confidence in the classification*** that you have made of each man, as a percentage from 0 to 100, with 100% being complete confidence and 0% being no confidence at all.

[illegible]

Appendix D

Descriptive Statistics and One-way ANOVA for Relationships among Race/Ethnicity, Time Perspective, and Impulsivity Scales

		N	Mean	S. D.	F	Sig.
BIS Attentional Key	African American	34	15.50	3.24	.003	.957
	White/Anglo	102	15.46	3.75		
BIS Motor Key	African American	38	13.97	3.69	1.240	.267
	White/Anglo	101	14.84	4.23		
BIS Non-Planning Key	African American	37	22.76	4.44	.900	.344
	White/Anglo	101	21.87	5.00		
BIS Total Score	African American	31	52.52	10.34	.014	.906
	White/Anglo	100	52.25	11.12		
CFC Total	African American	40	37.33	7.63	1.240	.267
	White/Anglo	102	38.95	7.90		
FTP Total	African American	40	48.73	8.95	4.963	.028
	White/Anglo	101	53.12	11.12		
ZTPI Past Negative	African American	41	32.63	7.45	.465	.496
	White/Anglo	102	31.75	6.77		
ZTPI Present Hedonistic	African American	40	45.88	8.74	.740	.391
	White/Anglo	103	47.10	7.15		
ZTPI Future	African American	40	45.28	7.37	.654	.420
	White/Anglo	101	46.32	6.70		
ZTPI Past Positive	African American	39	29.23	5.21	.800	.373
	White/Anglo	100	30.15	5.53		
ZTPI Present Fatalistic	African American	40	21.93	5.35	.200	.655
	White/Anglo	103	21.49	5.24		

Note. None of the above relationships is statistically significant when using a Bonferroni adjusted alpha of .005.

Appendix E

Descriptive Statistics and One-way ANOVA for Relationships among Marital Status, Time Perspective, and Impulsivity Scales

		N	Mean	S. D.	F	Sig.
BIS Attentional Key	Divorced	16	15.38	3.20	2.051	.110
	Married	43	14.67	3.39		
	Single: Living With Partner	41	16.59	3.46		
	Single: Not Living With Partner	41	15.22	4.14		
BIS Motor Key	Divorced	18	14.72	4.65	.980	.404
	Married	43	13.88	4.16		
	Single: Living With Partner	40	15.43	3.37		
	Single: Not Living With Partner	43	14.63	4.40		
BIS Non-Planning Key	Divorced	19	21.84	3.78	2.221	.088
	Married	43	20.77	4.54		
	Single: Living With Partner	40	23.45	4.46		
	Single: Not Living With Partner	40	22.40	5.75		
BIS Total Score	Divorced	16	52.25	9.70	2.470	.065
	Married	43	49.33	9.93		
	Single: Living With Partner	39	55.79	9.68		
	Single: Not Living With Partner	37	52.65	12.97		
CFC Total	Divorced	20	39.50	7.25	2.050	.110
	Married	42	39.50	7.58		
	Single: Living With Partner	40	36.00	7.58		
	Single: Not Living With Partner	44	39.68	8.34		
FTP Total	Divorced	20	51.30	10.48	1.211	.308
	Married	43	52.19	10.16		
	Single: Living With Partner	39	50.13	11.37		
	Single: Not Living With Partner	44	54.50	10.72		
ZTPI Past Negative	Divorced	21	33.71	6.34	2.516	.061
	Married	43	29.65	6.50		
	Single: Living With Partner	41	32.27	6.75		
	Single: Not Living With Partner	44	33.11	7.54		
ZTPI Present Hedonistic	Divorced	20	48.20	7.47	3.226	.024
	Married	44	44.09	6.65		
	Single: Living With Partner	41	46.66	6.30		
	Single: Not Living With Partner	44	48.77	8.95		
ZTPI Future	Divorced	21	46.14	4.46	.570	.636
	Married	43	47.19	6.84		
	Single: Living With Partner	41	45.41	6.02		
	Single: Not Living With Partner	42	45.57	8.59		
ZTPI Past Positive	Divorced	21	30.52	5.42	.927	.429
	Married	41	30.56	5.42		
	Single: Living With Partner	39	28.72	5.20		
	Single: Not Living With Partner	43	29.77	5.47		
ZTPI Present Fatalistic	Divorced	21	20.67	4.76	2.812	.042
	Married	44	20.07	5.13		
	Single: Living With Partner	40	22.15	4.63		
	Single: Not Living With Partner	44	23.11	6.12		

Note. None of the above relationships is statistically significant when using a Bonferroni adjusted alpha of .005.

Appendix F

Descriptive Statistics and One-way ANOVA for Relationships among Education, Time Perspective, and Impulsivity Scales

		N	Mean	S. D.	F	Sig.
BIS Attentional Key	Some H. S.	20	17.50	3.58	4.504	.005
	H. S. Grad	56	15.96	3.71		
	Some College	43	14.49	3.20		
	College Grad	22	14.27	3.67		
BIS Motor Key	Some H. S.	19	16.16	3.78	1.287	.281
	H. S. Grad	57	14.70	3.77		
	Some College	46	14.35	4.22		
	College Grad	22	13.77	4.80		
BIS Non-Planning Key	Some H. S.	21	23.29	3.73	3.871	.011
	H. S. Grad	54	23.11	4.60		
	Some College	45	21.78	5.28		
	College Grad	22	19.32	4.68		
BIS Total Score	Some H. S.	19	57.42	9.87	3.885	.011
	H. S. Grad	52	54.15	9.89		
	Some College	42	50.76	11.28		
	College Grad	22	47.36	11.47		
CFC Total	Some H. S.	21	37.52	6.25	2.125	.100
	H. S. Grad	59	37.02	7.14		
	Some College	45	40.07	9.29		
	College Grad	21	40.95	7.24		
FTP Total	Some H. S.	19	49.79	11.75	1.124	.341
	H. S. Grad	59	52.66	10.81		
	Some College	46	51.15	10.55		
	College Grad	22	55.32	9.83		
ZTPI Past Negative	Some H. S.	21	32.24	7.32	.313	.816
	H. S. Grad	58	32.40	6.99		
	Some College	48	31.90	6.95		
	College Grad	22	30.73	6.98		
ZTPI Present Hedonistic	Some H. S.	21	47.90	7.84	.404	.750
	H. S. Grad	59	46.83	7.29		
	Some College	47	46.72	7.35		
	College Grad	22	45.36	8.90		
ZTPI Future	Some H. S.	19	43.47	7.13	6.816	<.001
	H. S. Grad	59	43.93	6.62		
	Some College	47	48.34	5.71		
	College Grad	22	49.27	7.23		
ZTPI Past Positive	Some H. S.	21	29.00	4.90	1.195	.314
	H. S. Grad	57	29.11	4.93		
	Some College	45	30.44	5.53		
	College Grad	21	31.24	6.46		
ZTPI Present Fatalistic	Some H. S.	21	22.43	5.32	1.206	.310
	H. S. Grad	58	22.38	5.43		
	Some College	48	20.65	5.23		
	College Grad	22	20.91	5.46		

Note. When using a Bonferroni adjusted alpha of .005 only the relationships of BIS Attention Scale and ZTPI Future Scale with Education are statistically significant.

Appendix G

Descriptive Statistics and On- way ANOVA for Relationships among Employment Status, Time Perspective, and Impulsivity Scales

		N	Mean	S. D.	F	Sig.
BIS Attentional Key	Part-time	97	15.19	3.57	.923	.400
	Full-time	12	15.75	2.83		
	Unemployed	31	16.19	4.25		
BIS Motor Key	Part-time	99	14.31	3.86	.971	.381
	Full-time	12	15.67	3.65		
	Unemployed	32	15.19	4.95		
BIS Non-Planning Key	Part-time	98	21.65	4.55	1.911	.152
	Full-time	12	23.92	6.05		
	Unemployed	31	23.10	5.22		
BIS Total Score	Part-time	94	51.34	10.28	1.666	.193
	Full-time	12	55.33	10.89		
	Unemployed	28	55.00	12.91		
CFC Total	Part-time	100	38.63	7.27	.019	.981
	Full-time	12	38.17	8.75		
	Unemployed	34	38.65	9.36		
FTP Total	Part-time	99	53.22	10.14	2.630	.076
	Full-time	12	53.25	11.00		
	Unemployed	34	48.47	11.66		
ZTPI Past Negative	Part-time	102	31.26	6.56	1.733	.180
	Full-time	12	34.50	6.50		
	Unemployed	34	33.06	8.17		
ZTPI Present Hedonistic	Part-time	102	46.58	6.67	3.555	.031
	Full-time	12	51.92	9.30		
	Unemployed	34	45.26	9.00		
ZTPI Future	Part-time	102	46.23	6.91	.101	.904
	Full-time	12	45.42	4.83		
	Unemployed	32	45.81	7.68		
ZTPI Past Positive	Part-time	98	30.01	5.21	.652	.523
	Full-time	12	30.83	4.43		
	Unemployed	33	29.00	6.18		
ZTPI Present Fatalistic	Part-time	102	21.10	4.71	1.857	.160
	Full-time	12	23.67	7.32		
	Unemployed	34	22.53	6.32		

Note. None of the above relationships is statistically significant when using a Bonferroni adjusted alpha of .005.

Appendix H

Correlations Among Participant Age, Number of Children, Number of Weeks in Program, and Facilitator Weeks in Program with the Zimbardo Time Perspective Inventory (ZTPI), Consideration of Future Consequences Scale (CFC), Future Time Perspective Scale (FTP) and the Barratt Impulsiveness Scale (BIS)

		Participant Age	Participant Children	Participant Weeks In Program	Facilitator Weeks In Program
BIS Attentional Key	Pearson Correlation N	-.094 130	.211* 130	.026 135	.032 140
BIS Motor Key	Pearson Correlation N	-.072 133	.101 133	.039 138	.055 143
BIS Non-Planning Key	Pearson Correlation N	-.098 133	.053 132	.020 136	.028 141
BIS Total Score	Pearson Correlation N	-.094 126	.147 125	.029 129	.039 134
CFC Total	Pearson Correlation N	.021 135	-.175* 135	.016 141	.027 145
FTP Total	Pearson Correlation N	-.299** 136	-.155 135	.070 140	.073 145
ZTPI Past Negative	Pearson Correlation N	-.016 138	.183* 138	-.055 142	-.015 148
ZTPI Present Hedonistic	Pearson Correlation N	-.118 138	.008 138	.054 142	.055 148
ZTPI Future	Pearson Correlation N	.039 136	.066 136	-.003 140	.023 146
ZTPI Past Positive	Pearson Correlation	.130 134	-.016 134	-.065 139	-.063 143
ZTPI Present Fatalistic	Pearson Correlation N	-.067 138	.112 139	.012 142	-.009 148

* $p < .05$ ** $p < .01$ (unadjusted)

Note. When using a Bonferroni adjusted alpha of .005 only the relationship of FTP Total with Participant Age is statistically significant.