

Time Perspective in Partner Violence

PSY 705: Social Bases of Behaviour for Dr. David Blustein
Joe Ferguson – August, 2005

In general, people who register higher measures of future orientation exhibit more considered behaviour, and people who register higher measures of present orientation engage in more risky and unhealthy behaviour (Agnew & Loving, 1998; Bierbrauer, 1974; Carstensen et al., 1999; Fraisse, 1963; Fung & Carstensen, 1999, 2004; Gilovich et al., 1993; Hodgins & Engel, 2002; Jason et al., 1989; Karniol, 1996; Keough et al., 1999; C. Lennings, J. & Burns, 1998a; Loewenstein et al., 2002; Madey & Gilovich, 1993; McGrath, 1990; McGrath & Tschan, 2004; Metcalfe & Mischel, 1999; Murrell & Mingrone, 1994; Nuttin & Lens, 1985; Stein et al., 1968; Vuchinich & Simpson, 1998; Wills et al., 2001; P.G. Zimbardo, 1994; Philip G. Zimbardo & Boyd, 1999; P. G. Zimbardo et al., 1997). If this relationship can be established in the context of partner violence, and if the malleability of time perspective can be demonstrated within the current framework of mandatory IPV intervention, then these insights should inform the ongoing enhancement of intervention protocol. It might reduce the incidence of partner violence and improve the domestic situation in the families who come under treatment.

Time in clinical perspective	2
The pervasive construct of dual executive systems	2
Kahneman's hierarchy of cognitive systems	3
Carstensen's theory of socioemotional selectivity	4
Metcalfe's hot and cool systems.....	4
Lewinian life-space and the principle of contemporaneity	5
Autonoetic consciousness and episodic memory	5
Symmetry and conservation in time perspective.....	6
Dimensions of time perspective	7
Intentional Space	9
Attribution and time perspective.....	10
Impulsivity, self-control, and temporal compression.....	10
Motivational impact of proximal versus distal goals	10
Intimate partner violence and time perspective.....	11
References	12

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. Augustine

Time in clinical perspective

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 social psychology addresses itself, rather than to the fundamental issues of physical duration, sequence, and causality that arguably apply to all fields of systematic inquiry.

Time perspective is of practical clinical interest because anxiety about the indefinite future or counterproductive fixation on the past are at the heart of so many therapeutic issues, and because achieving some new perspective on time is so often an important object of therapeutic intervention (Bugental, 1992; Jason *et al.*, 1989). In particular, this paper will consider the role that time perspective might play in the dynamics of intimate partner violence. Some aspects of time perspective that bear closely upon either predisposing or triggering factors in partner violence may, in the light of subsequent research, turn out to be malleable within the current framework of mandatory intervention in the United States. In particular, there are promising suggestions of clinical opportunity to be found in theoretical and empirical support for a number of models in which relatively distinct alternative executive systems can govern decision-making and behaviour in very different ways, depending largely on time perspective.

The pervasive construct of dual executive systems

There is more than one way to skin a cat, and if skinning a cat is literally what you are up to then you will probably be more emotional, and less analytical, than you were while scheduling the requirements for completion of your PhD (although, on second thought, this might be a bad example). Likewise, if you regard the escalating conflict with your intimate partner entirely in terms of the immediate situation rather than as a developmental opportunity in a long term relationship, you are more likely to clock her than to seize upon the opportunity that the conflict represents. Where time perspective is limited to the immediate present and the very near future, this might actually make sense. There are a number of theoretical models, and a great deal of empirical evidence, which suggest that this general distinction reflects fundamentally different executive modalities, and probably 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).

Dual-process executive models have been common throughout the history of philosophy and psychology (Kahneman & Tversky, 1977; Plato *et al.*, 360 BCE; Smith, 1759). The 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 is designed by the neural circuitry in our brains to win.”

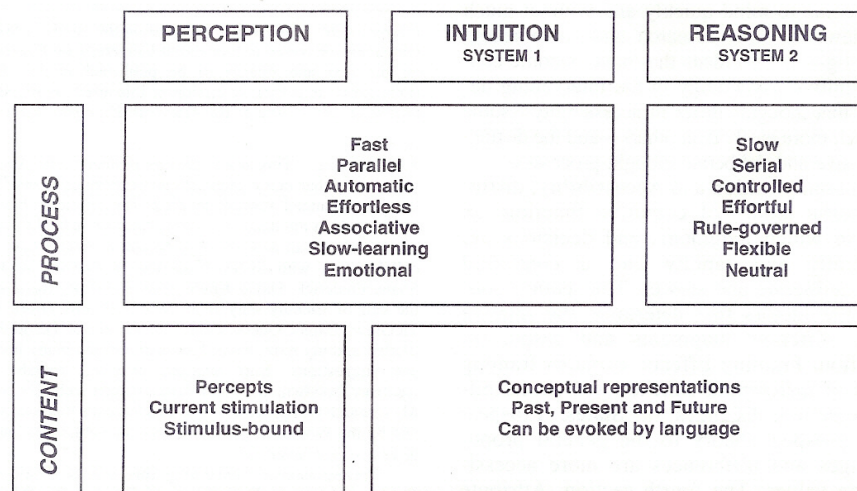
(Carter & Frith, 1999)

In this view, the deliberative system actively inhibits, stimulates, and moderates the automatic operation of the affective system; which has a primitive mind of its own. 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 *et al.*, 2003). The factors that determine the relative dominance of one executive system over the other are clearly of great clinical and theoretical interest, and time perspective figures prominently in 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 (System 1) are typically very fast, automatic, effortless, largely unconscious, and emotionally charged. In contrast, the operations of deliberate reasoning (System 2) are slower, sequential, and effortful. Deliberate reasoning is generally more flexible than intuitive reasoning, and it may be governed to a greater or lesser extent by formal rules. Kahneman’s illustration of this dynamic reasoning system appears below.

Figure 1
Process and Content in Two Cognitive Systems



Carstensen's theory of socioemotional selectivity

The central tenet of Carstensen's socioemotional selectivity theory is that the assessment of time plays a critical role in the ranking of potential behaviours that aim at particular types of goals (Carstensen *et al.*, 1999). The perception of an expansive future is associated with the pursuit of knowledge-related goals whereas the perception of limited time shifts the focus to present-orientated, emotional goals. The approach of endings is associated with heightened emphasis on feelings and emotional states whereas the perception of open-ended time is associated with knowledge gathering and a more planful and analytic approach (Lang & Carstensen, 2002).

Metcalf's hot and cool systems

Metcalf and Mischel 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 mirror the development and architecture of the human brain. The hot system represents the spontaneous response to environmental stimuli, which they believe may be represented in the amygdala, which is functional at birth. The cool system represents the development of self-control, or the ability to inhibit responses by the hot system to salient environmental stimuli. They believe that this cool system may be represented in 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 in terms of behavior inhibition are more impulsive and have a harder time delaying gratification and exhibiting willpower generally.

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, possibly 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 experience. What we call past and future are actually dynamic reifications of memories, expectations, hopes, and fantasies; all of which are contemporaneous psychological artefacts, 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 mountainous 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. recollection of the last hostage experience, fear of battery cables, hopes of rescue and comfortable shoes).

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). 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 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, some of the most interesting correlations of time perspective with risky and impulsive behaviour relate to present and past rather than future orientation (Agnew & Loving, 1998; Hodgins & Engel, 2002; Keough *et al.*, 1999; Wills *et al.*, 2001; P. G. Zimbardo *et al.*, 1997). Not surprisingly, some time perspectives are more adaptive than others in particular situations and Joseph Nuttin coined the term *time competence* to highlight the fit between time perspective and the domain under consideration (Nuttin & Lens, 1985).

Autonoetic consciousness and episodic memory

Humans possess the extraordinary capacity to experience time perspective directly by projecting our personality identity, more or less intact, into actual or

hypothetical circumstances of the past or future. A great deal of cerebral architecture is dedicated to the temporal organization of mental processes by means of episodic memory, and by means of auto-noetic consciousness (Goldberg, 2001; Schore, 1994; Wheeler *et al.*, 1997). Auto-noetic consciousness is memory or imagination from a first person perspective, experienced as though one were actually present in an unfolding scene (Gardiner, 2001). Auto-noetic consciousness enables a sort of mental time travel in which an individual can experience herself in hypothetical future circumstances and ponder alternative scenarios as though *in situ*, with her ordinary phenomenological context at least largely intact. In other words auto-noetic consciousness enables a robust imagination. Weekends would be impossible to implement without this facility.

Auto-noetic consciousness is distinguished from noetic consciousness, which is limited to feelings of familiarity or knowing (Metcalf & Shimamura, 1994). Noetic consciousness, which includes third person knowledge of the past or future, is identified with semantic memory. Semantic memory and noetic consciousness deal with general, abstract information. Auto-noetic consciousness is identified with episodic memory, which is subserved by largely distinct memory systems (Wheeler *et al.*, 1997) that have evolved only recently (Klein *et al.*, 2002). Auto-noetic consciousness seems to be, literally, the subjective perspective on memory. The association of noetic modality with these two memory systems is important because individuals differ significantly in the prominence of one memory systems over the other (Gardiner, 2001). Unfortunately, to date the assessment of auto-noetic consciousness has focused on the evaluation of neurological damage rather than on individual tendencies to engage it (Natsoulas, 2003). I can find no systematic evidence one way or the other than individuals differ in terms of their auto-noetic consciousness, although it seems to be a particularly interesting aspect of time perspective. I am unaware of any diagnostic instrument that purports to assess auto-noetic consciousness directly.

Symmetry and conservation in time perspective

An argument can certainly be made that conservation properties apply to at least some aspects of time perspective. To the extent that all cognitive representations carry some temporal sign (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 is not available for reflection on the past or for the evaluation of present circumstances; and fixation on immediate stimulus diminishes the consideration of future consequences. 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. On the other hand, it might be appropriate to encourage meditation and the augmentation of present orientation in a suicidal client who is at sea with his fixation on the murky and unlimited future.

But Zimbardo cautions against the expectation of symmetry or conservation 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 (Philip G. Zimbardo & Boyd, 1999). In the same article, however, he describes the lengths to which his team went to ensure the discriminant validity of the five scales of his time perspective inventory instrument. Considerations of psychometric validity guarantee the independence of these scales; possibly in defiance of any underlying realities that might unite them. Zimbardo's warning highlights the risk of confounding the psychometric requirement for discriminant construct validity in assessment instrument with the question of symmetrical or conservative properties among the underlying constructs.

The question of conservation and symmetry is clinically relevant because it determines whether the target of intervention must be addressed directly, or whether it can be effectively approached by addressing its complement instead. This is a particularly relevant issue in the field of partner violence due to the widespread presumption, and sometimes policy, that the temporal focus must remain on the violent encounter itself rather than on factors that may not appear to be directly related to it. The indirect approach is frequently preferable because it avoids resistance and habituation that may be associated with the target of intervention and factors that are immediately proximal to it.

Dimensions of time perspective

Before touching upon some of the more prominent models of time perspective and the assessment instruments that attempt to operationalize them, it might be useful to take the bird's eye view and enumerate some of the dimensions on which time perspective has been characterized. While there appears to be considerable overlap in the factors that the various models of time perspective consider, there is also a distinct shading that emerges from the operationalization of time perspective factors in each (Loewenstein et al., 2003; McGrath & Tschan, 2004). It is an open question whether or not the various aspects of time perspective listed below actually reflect alternate views of a unitary underlying reality, or whether the unity that we attribute to them is an adaptive but illusory simplification that evolution and social consensus have forced upon us for purposes of expedience. This is the quandary to which St. Augustine seems to have been referring in his famous quotation, which appears on the title page of this essay.

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. Of course, this general orientation must be elicited by some specific stimulus for assessment purposes, so generalization to a general orientation can always be confounded with an idiosyncratic temporal orientation associated with the stimulus domain. The Zimbardo Time Perspective Inventory (ZTPI), which has demonstrated good validity and psychometric properties, purports to assess five factors of past, present,

and future general temporal orientation (Gonzales, 1985; Philip G. Zimbardo & Boyd, 1999).

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 types of associations does the individual make with the past, present, or future? The temporal perspective that individuals take on various factors may have important clinical implications. For example, the selective memory effects associated with depression, mania, and other clinical conditions are well documented (Barry *et al.*, 2004; Philippot & Schaefer, 2001). Stress effects of various events are also strongly moderated by the temporal perspective in which individuals tend to classify them (McGrath, 1990).

Horizon: How much time does the individual feel that they have left? The perspective that an individual takes on the time remaining in any particular domain can dramatically influence their 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).

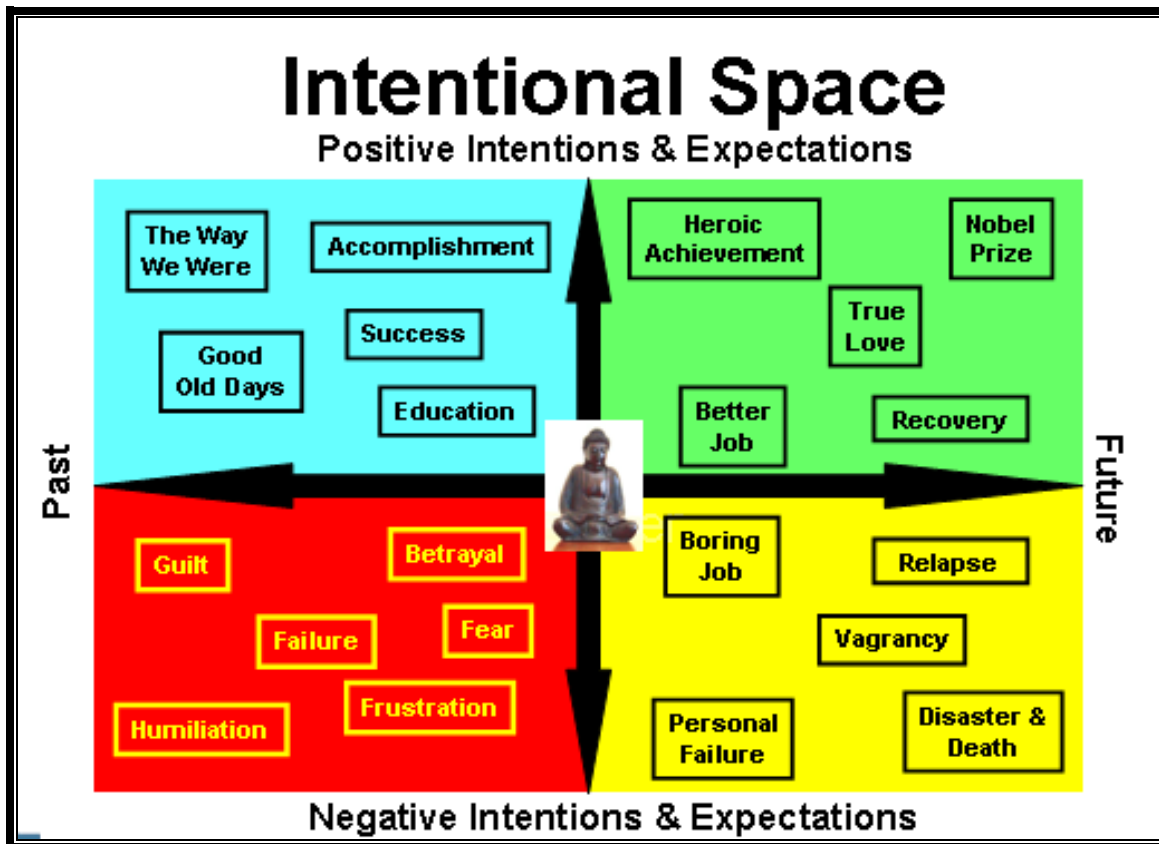
Affective valence: Does the individual feel generally positive or negative about the past, present, or future? General affective valence is broadly taken as an important element of temporal orientation and some affective attribute is incorporated into most operationalizations of time perspective (Frisse, 1963; Jason *et al.*, 1989; McGrath & Tschan, 2004).

Linearity: Does the individual believe that the future is open or that history repeat itself? The broad issues of personal control, and self-efficacy, and fatalistic perspective can be construed as individual perception of time as either circular or linear (Ajzen, 2002; Bandura, 1997; Pulkkinen & Ronka, 1994).

Reality: Is the perception of events in certain temporal orientations systematically distorted? I have 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. How realistic are *your* current expectations, actually?

Intentional Space

The various dimensions of time perspective mentioned above can be viewed as attributes of any intentional object (Bratman, 1999; Dennett, 1987; Malle *et al.*, 2001; Oberauer, 1995; Searle, 1980). During my practicum in partner violence intervention I had the following slide blown up to a 3' x 5' cardboard poster, which I used constantly to illustrate the impact of time perspective on motivation and achievement. This idea is within the ready grasp of the many offenders that I had the opportunity to work with. Encouraging the practical expansion of time perspective is a highly pertinent intervention objective which does not encounter significant resistance.



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 subjects administered what they thought were increasingly severe shocks to a confederate in response to the demands of the experimenter. Sixty percent of the subjects, 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 consistently misattributed responsibility for their actions to the subjects (dispositional attribution) rather than to the experimental situation.

Bierbrauer recreated Milgram's experiment in order to determine whether the time perspective of the observing subjects influenced their attribution of responsibility, for the shocking behavior of the active subjects, 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 are already conducive to partner violence.

Impulsivity, self-control, and temporal compression

Impulsivity is the tendency to react to circumstances quickly, without deliberation or the evaluation of future consequences and it is associated (or confounded?) with the broader issue of self-control (Ajzen, 2002; Dixon *et al.*, 2005). Impulsivity and self-control have been associated with substance abuse (Kirby *et al.*, 1999), gambling (Petry, 2001), risky driving (P. G. Zimbardo *et al.*, 1997), and partner violence (Cohen *et al.*, 2003). Impulsivity has been associated with time perspective on a number of measures (C. J. Lennings & Burns, 1998b). 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 all of the dual-executive models discussed earlier, to the evolution of my dissertation proposal over 3 years from wildly comprehensive to as narrow as my committee will tolerate, and to the short-sighted 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.

Intimate partner violence and time perspective

In general, people who register higher measures of future orientation exhibit more considered behaviour, and people who register higher measures of present orientation engage in more risky and unhealthy behaviour (Agnew & Loving, 1998; Bierbrauer, 1974; Carstensen et al., 1999; Fraisse, 1963; Fung & Carstensen, 1999, 2004; Gilovich et al., 1993; Hodgins & Engel, 2002; Jason et al., 1989; Karniol, 1996; Keough et al., 1999; C. Lennings, J. & Burns, 1998a; Loewenstein et al., 2002; Madey & Gilovich, 1993; McGrath, 1990; McGrath & Tschan, 2004; Metcalfe & Mischel, 1999; Murrell & Mingrone, 1994; Nuttin & Lens, 1985; Stein et al., 1968; Vuchinich & Simpson, 1998; Wills et al., 2001; P.G. Zimbardo, 1994; Philip G. Zimbardo & Boyd, 1999; P. G. Zimbardo et al., 1997). If this relationship can be established in the context of partner violence, and if the malleability of time perspective can be demonstrated within the current framework of mandatory IPV intervention, then these insights should inform the ongoing enhancement of intervention protocol. It might reduce the incidence of partner violence and improve the domestic situation in the families who come under treatment. I believe this is the case.

The foundations of partner violence are laid in advance, partly as a consequence of the habitual time perspective of the principles, and it is carried out within a timeframe that is a matter of individual perception. Whether or not these are actually two independent factors, both aspects of time perspective clearly contribute to the etiology of partner violence.

1. To the extent that salient prior intentions have been established regarding conflictual domestic issues or interactions, those intentions have the potential to moderate behaviour during encounters that might otherwise lead to violence. The extent to which such prior intentions actually *do* moderate behaviour is a matter for separate examination. It is trivially true that no moderating influence is possible in the *absence* of prior intentions.

It may be in this negative sense that foreshortened future orientation contributes to partner violence.

2. Time perspective theory and research indicate that present time perspective is associated with a more affective or intuitive executive mode, which emphasizes emotional and intuitive determinants of behaviour. To the extent that prior intentions and consideration of future consequences are restricted by foreshortened future orientation, then stressful encounters will tend to elicit short-sighted behaviour.

The social and psychological consequences of partner violence may be rewarding in the very short term, including control of the situation, emotional relief, and (let us assume the worst) even sadistic satisfaction. In most environments within the United States, the utility of partner violence diminishes decisively when interpersonal, social, legal, and financial considerations extending beyond a few minutes are taking into account.

Many common elements of intervention, including the ubiquitous “time-out”, are already directed at some aspect of time perspective management. It may be that an explicit emphasis on changes in time perspective, both in general and in the interpersonal domain, could inform existing intervention protocols as well as new approaches to the important social project of partner violence intervention.

References

- Agnew, C. R., & Loving, T. J. (1998). Future time orientation and condom use attitudes, intentions, and behavior. *Journal of social behavior and personality*, 13(4), 755.
- Ajzen, I. (2002). Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior. *Journal of Applied Social Psychology*, 32(4), 665-683.
- Ariely, D., & Wertenbroch, K. (2002). Research article: Procrastination, deadlines, and performance: Self-control by precommitment. *Psychological Science* 13, no, 3, 219-224.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY, US: W. H. Freeman & Co, Publishers.
- Barry, E. S., Naus, M. J., Rehm, L. P. A. D. o. P. U. o. H. T., esb12@psu.edu, Department of Psychology, U. o. H. T., & Department of Psychology, U. o. H. T. (2004). Depression and implicit memory: Understanding mood congruent memory bias. *Cognitive Therapy and Research* 28, no, 3, 387-414 (328 pages).
- Bierbrauer, G. (1974). *Attribution and perspective: Effects of time set and role on interpersonal inference*. Unpublished Book; Archival Material, Stanford, Palo Alto.
- Bratman, M. (1999). *Intention, plans, and practical reason*. Stanford, Calif.: CSLI: Cambridge.
- Bugental, J. F. T. (1992). *The art of the psychotherapist*. New York: Norton.
- Carstensen, L., Isaacowitz, M., & Charles, T. (1999). Taking time seriously. *American Psychologist [PsycARTICLES]*, 54(3), 165.

- Carter, R., & Frith, C. D. (1999). *Mapping the mind*. Berkeley: University of California Press.
- Chaiken, S., & Trope, Y. (1999). Dual-process theories in social psychology. from <http://www.loc.gov/catdir/bios/guilford051/98054246.html>
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<http://www.loc.gov/catdir/bios/guilford051/98054246.html>Materials specified: Publisher description
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<http://www.loc.gov/catdir/toc/guilford041/98054246.html>
- Cohen, R. A., Brumm, V., Zawacki, T. M., Paul, R., Sweet, L., & Rosenbaum, A. (2003). Impulsivity and verbal deficits associated with domestic violence. *Journal of the International Neuropsychological Society: JINS*, 9(5), 760-770.
- Damasio, A. R. (1994). *Descartes' error: Emotion, reason, and the human brain*. New York: Putnam.
- Dennett, D. C. (1987). *The intentional stance*. Cambridge, MA, USA: Mit Press.
- Dixon, M. R., Jacobs, E. A., Sanders, S., Guercio, J. M., Soldner, J., Parker-Singler, S., et al. (2005). Impulsivity, self-control, and delay discounting in persons with acquired brain injury. *Behavioral interventions*, 20(1), 101.
- Fraisse, P. (1963). *The psychology of time*. New York: Harper & Row.
- Fung, H., & Carstensen, L. (1999). Influence of time on social preferences. *Psychology and Aging [PscARTICLES]*, 14(4), 595.
- Fung, H., & Carstensen, L. (2004). Motivational changes in response to blocked goals and foreshortened time. *Psychology and Aging [PscARTICLES]*, 19(1), 68.
- Gardiner, J. M. (2001). Episodic memory and autonoetic consciousness: A first-person approach. *Philosophical transactions of the Royal Society of London Series B, Biological sciences*, 356(1413), 1351-1361.
- Gilovich, T., Kerr, M., & Medvec, V. H. (1993). Effect of temporal perspective on subjective confidence. *Journal of Personality and Social Psychology [PscARTICLES]*, 64(4), 552.
- Goldberg, E. (2001). *The executive brain: Frontal lobes and the civilized mind*. Oxford; New York: Oxford University Press.
- Gonzales, A., & Zimbardo, P.G. (1985). Time in perspective. *Psychology Today*, March 1985, 21-26.
- Heidegger, M. (1962). *Being and time*. New York: Harper.
- Hodgins, D. C., & Engel, A. (2002). Future time perspective in pathological gamblers. *The Journal of nervous and mental disease*, 190(11), 775-780.
- Jason, L. A., Schade, J., Furo, L., Reichler, A., & Brickman, C. (1989). Time orientation: Past, present, and future perceptions. *Psychological Reports*, 64, 1100-1205.
- Kahneman, D. (2003). A perspective on judgment and choice: Mapping bounded rationality. *The American psychologist*, 58(9), 697 (624 pages).
- Kahneman, D., & Tversky, A. (1977). *Prospect theory: An analysis of decision making under risk*. Eugene, Ore.: Decision Research, Perceptronics.
- Karniol, R. (1996). The motivational impact of temporal focus: Thinking about the future and the past. *Annual Review of Psychology*, 47, 593-620.

- Keough, K., Zimbardo, P., & Boyd, J. (1999). Who's smoking, drinking, and using drugs? Time perspective as a predictor of substance use. *Basic and Applied Social Psychology* 21, no. 2, 149-164.
- Kirby, K. N., Petry, N. M., & Bickel, W. K. (1999). Heroin addicts have higher discount rates for delayed rewards than non-drug-using controls. *Journal of Experimental Psychology: General [PscARTICLES]*, 128(1), 78.
- Klein, S. B., Cosmides, L., Tooby, J., & Chance, S. (2002). Decisions and the evolution of memory: Multiple systems, multiple functions. *Psychological review*, 109(2), 306 (324 pages).
- Lang, F. R., & Carstensen, L. (2002). Time counts. *Psychology and Aging [PscARTICLES]*, 17(1), 125.
- Lennings, C. J., & Burns, A. M. (1998a). Time perspective: Temporal extension, time estimation, and impulsivity. *The Journal of Psychology*, 132(4), 367.
- Lennings, C. J., & Burns, A. M. (1998b). Time perspective: Temporal extension, time estimation, and impulsivity. *The Journal of psychology*, 132(4), 367-380.
- Lewin, K. (1935). *A dynamic theory of personality; selected papers* (1st ed.). New York: London, McGraw-Hill Book Co.
- Lewin, K. (1951). *Field theory in social science: Selected theoretical papers (edited by dorwin cartwright)*. NY: Harpers.
- Liberman, N., & Trope, Y. (1998). The role of feasibility and desirability considerations in near and distant future decisions. *Journal of Personality and Social Psychology [PscARTICLES]*, 75(1), 5.
- Loewenstein, G., Frederick, S., & O'Donoghue, T. (2002). Time discounting and time preference: A critical review. *Journal of economic literature*, 40(2), 351 (351 pages).
- Loewenstein, G., Read, D., & Baumeister, R. F. (2003). *Time and decision: Economic and psychological perspectives on intertemporal choice*. New York: Russell Sage Foundation.
- Madey, S. F., & Gilovich, T. (1993). Effect of temporal focus on the recall of expectancy-consistent and expectancy-inconsistent information. *Journal of Personality and Social Psychology [PscARTICLES]*, 65(3), 458.
- Malle, B. F., Moses, L. J., & Baldwin, D. A. (Eds.). (2001). *Intentions and intentionality: Foundations of social cognition*. Cambridge, MA, US: The MIT Press.
- McGrath, J. E. (1990). Time and the stress process: Some temporal issues in the conceptualization and measurement of stress. *Stress Medicine*, 6, 2, 93-104.
- McGrath, J. E., & Tschan, F. (Eds.). (2004). *Temporal matters in social psychology: Examining the role of time in the lives of groups and individuals*: American Psychological Association.
- Metcalfe, J., & Mischel, W. (1999). Articles - a hot/cool-system analysis of delay of gratification: Dynamics of willpower. *Psychological review*, 106(1), 3 (16 pages).
- Metcalfe, J., & Shimamura, A. P. (Eds.). (1994). *Metacognition: Knowing about knowing*. Cambridge, MA, US: The MIT Press.
- Milgram, S. (1963). *Behavioral study of obedience*.
- Murrell, A., & Mingrone, M. (1994). Correlates of temporal perspective. *Perceptual and motor skills*, 78(3), 1331.

- Natsoulas, T. (2003). What is this auto-noetic consciousness? *The Journal of mind and behavior*, 24(2), 229.
- Nurmi, J.-E. (1989). *Adolescents' orientation to the future: Development of interests and plans, and related attributions and affects, in the life-span context*. Helsinki: Finnish Society of Sciences and Letters.
- Nuttin, J., & Lens, W. (1985). *Future time perspective and motivation: Theory and research method* (Rev. ed.). Leuven, Belgium: Leuven University Press: Hillsdale, N.J., U.S.A.
- Oberauer, K. (1995). Intentionality and reflection: Towards a theory of mind from the intentional stance. *University of Potsdam, Doctoral Dissertation*.
- Petry, N. M. (2001). Pathological gamblers, with and without substance use disorders, discount delayed rewards at high rates. *Journal of abnormal psychology*, 110(3), 482-487.
- Philippot, P., & Schaefer, A. (2001). Emotion and memory. In T. J. Mayne & G. A. Bonanno (Eds.), *Emotions: Current issues and future directions* (pp. 82-122). New York, NY, US: Guilford Press.
- Plato, Jowett, B., & tr. (360 BCE). *Plato's the republic*. New York: The Modern library.
- Pulkkinen, L., & Ronka, A. (1994). Personal control over development, identity formation, and future orientation as components of life orientation: A developmental approach. *Developmental psychology*, 30(2), 260-271.
- Schore, A. N. (1994). *Affect regulation and the origin of the self: The neurobiology of emotional development*. Hillsdale, N.J.: L. Erlbaum Associates.
- Searle, J. R. (1980). The intentionality of intention and action. *Cognitive Science*, 4(1), 47-70.
- Smith, A. (1759). *The theory of moral sentiments*. Oxford [Oxfordshire]: Clarendon Press: New York.
- Stein, K. B., Sarbin, T. R., & Kulik, J. A. (1968). Future time perspective: Its relation to the socialization process and the delinquent role. *Journal of consulting and clinical psychology*, 32(3), 257-264.
- Thor, D. H. (1962). *"time perspective" and time of day*. Granville: Ohio, Denison University.
- Vallacher, R. R., & Wegner, D. M. (1989). Levels of personal agency. *Journal of Personality and Social Psychology [PsycARTICLES]*, 57(4), 660.
- Vuchinich, R. E., & Simpson, C. A. (1998). Hyperbolic temporal discounting in social drinkers and problem drinkers. *Experimental & Clinical Psychopharmacology*, 6(3), 292-305.
- Wheeler, M. A., Stuss, D. T., & Tulving, E. (1997). Toward a theory of episodic memory: The frontal lobes and auto-noetic consciousness. *Psychological bulletin*, 121(3), 331 (323 pages).
- Wills, T. A., Sandy, J. M., & Yaeger, A. M. (2001). Time perspective and early-onset substance use. *Psychology of Addictive Behaviors [PsycARTICLES]*, 15(2), 118.
- Zimbardo, P. G. (1994). Whose time it is, i think i know: Research on time perspectives. *102nd Annual Convention of the American Psychological Association*.

- Zimbardo, P. G., & Boyd, J. N. (1999). Putting time in perspective: A valid, reliable individual-differences metric. *Journal of Personality & Social Psychology*, 77(6), 1271-1288.
- Zimbardo, P. G., Keough, K. A., & Boyd, J. N. (1997). Present time perspective as a predictor of risky driving. *Personality and individual differences*, 23(6), 1007.