

## Review Article

# A Behavioral Learning Model of Intimate Partner Violence: How Learning History, Couple Context and Potentiating Conditions Contribute to IPV Incidents

Brandi C. Fink\*

Department of Psychiatry and Behavioral Sciences, The University of New Mexico, United States

## \*Corresponding author

Fink BC, Department of Psychiatry and Behavioral Sciences, 1 University of New Mexico, MSC 09 5030, Albuquerque, New Mexico 87131, USA, Tel: 505-272-6045; Email: bcfink@unm.edu

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## Abstract

Despite the significant public health problem that intimate partner violence (IPV) presents, the field is woefully inadequate at effectively intervening with this problem. Some of the reasons for this fact may be that intervention targets are socially, not scientifically, determined, and the field is lacking from an integrated understanding of this problem. This review proposes a behavioral learning model of IPV that distinguishes family-only IPV from the partner violence of generally violent individuals, discusses the strengths of this model in its ability to integrate existing literature, specify hypotheses regarding influences on instances of IPV, as well as the model's ability to suggest novel treatments.

## ABBREVIATIONS

IPV: Intimate Partner Violence

## INTRODUCTION

Intimate partner violence (IPV) is a significant public health problem that exacts a toll on medical and mental health care, social services and criminal justice systems. IPV is estimated to cost the United States \$8.3 billion dollars annually with \$6.2 billion of that in direct medical and mental health costs [1]. There are approximately 22.4 million physical assaults committed by a current or former intimate partner per year against an estimated 10 million Americans [2,3]. National surveys reveal that nearly one third of couples will experience physical aggression at some point in their relationship and 16% to 39% of couples will experience IPV in any given year [4].

Despite the widespread financial, physical, and mental health consequences of intimate partner violence (IPV), we are woefully inadequate at effectively intervening with this problem. Meta-analytic reviews of intimate partner violence interventions reveal that treatment effects have a minimal effect on recidivism [5,6]. There are likely two main reasons

that current treatments for IPV fail. The first is that as a field, we have a poorly integrated understanding of the constituent processes involved in IPV. Because of this, the targets of IPV interventions have been, for the most part, socially determined and have focused almost exclusively on men. These interventions are also bereft of influence from basic emotion, aggression, alcohol use, and couples research; phenomena all represented in IPV. For example, the traditional feminist approach, such as the Duluth Model, is the predominant treatment approach that focuses almost exclusively on patriarchal values. Even in cognitive-behavioral groups conducted by psychologists or other mental health professionals, patriarchal values and empathy for victims are intervention targets [5]. A great deal of research has demonstrated that neither of these variables is related to the violence and aggression present in these relationships [7-12], and calls have been made for a theoretical approach and a return to psychology and science in the study of IPV [13,14]. As such, some of the most extensive and influential research over the past 30 years has been in the area of creating batterer typologies [15-20] with some suggesting that scientific progress in the area would be facilitated by classifying men who are violent toward their female partners [21,19]. Although this approach has made an

important contribution in underscoring the heterogeneity of male IPV, much like the traditional feminist approaches, this research has fallen short of offering effective intervention strategies due to the nearly exclusive focus on males. There is substantial evidence that the occurrence of IPV is strongly influenced by dyadic process [22], and that there is gender symmetry of both psychologically and physically aggressive behaviors exhibited by partners in relationships with IPV [7,23-34].

The purpose of this review is to propose a behavioral learning model to guide research in both the basic processes of IPV, and research into effective treatments for IPV. Recently, Capaldi and Kim [22] proposed a dynamic developmental systems approach for understanding IPV. This model has many strengths, such as its view that the dyad is interactive and important to the occurrence of IPV, but also its consideration of the developmental characteristics of each partner, the consideration both proximal and distal variables related to IPV, and influences on the course of aggression over time. A behavioral learning model holds these same strengths, however, but is superior in its ability to make specific predictions about the influences of constituent processes (e.g., dyadic, proximal and distal influences) on IPV incidents, the maintenance or escalation of IPV over time. Because of a behavioral learning model's ability to make specific predictions about the influence of constituent processes, it is also able to suggest the effect of specific types of interventions on the constituent processes and on the IPV incidents themselves. This type of model possesses the ability to have a sustained influence on future IPV research and intervention.

## BEHAVIOR: A LEARNING PERSPECTIVE

From a behavioral learning perspective, behavior is best understood as being comprised of four elements, all of which combine to form a contingency. The first element is the antecedent which is the circumstance that comes before the behavior. The second element is the behavior of interest itself, here, IPV. The third element is the consequence which is the circumstance that occurs after the behavior that either reinforces (leads to its increase or maintenance) the behavior or punishes (leads to its decline or extinguishes) the behavior. The fourth element, the establishing operation, is the influence of variables on the entire three elements of contingency. This is termed the *four-term contingency* and includes the most basic principles of operant conditioning and a contextual approach to understanding behavior. Not only is this contingency useful for organizing the existing IPV data and integrating it with neighboring areas of research, but it constrains our description and prediction. In addition, principles of operant conditioning embed IPV in both the historical context of the individual, and the historical context of the couple, which represents risk factors and how prior interactions influence current and future displays of IPV. While what is discussed here is a depiction of static interaction, it is important to remember that this contingency is a dynamic process involving complex reciprocal interactions between the individual and the environment over time. While most discussions of this contingency begin with the most critical element, the behavior or operant response, for illustration sake I will discuss the elements as they pertain to IPV in the order in which they occur in time (Figure 1).

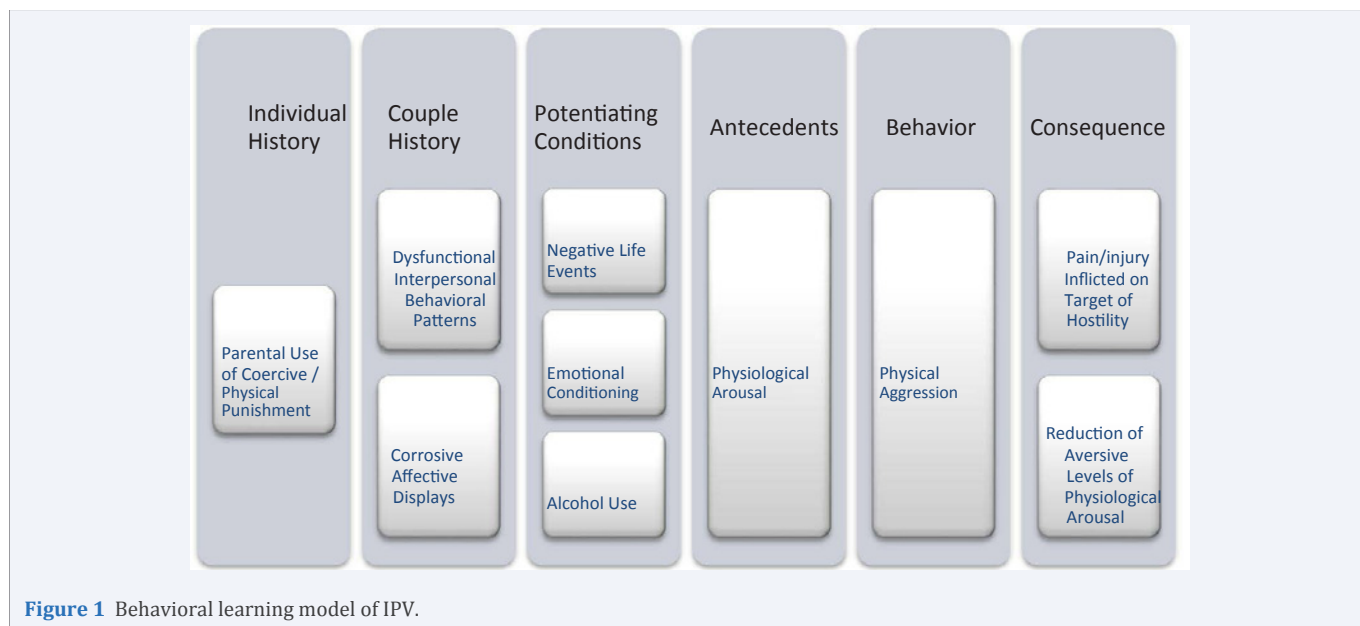
## HISTORICAL CONTEXT OF THE INDIVIDUAL PARTNER

The literature is fairly consistently in supporting two broad categories of men who are violent within their relationships; those who tend to be antisocial and generally violent, and those who only tend to be violent with their families [17,18, 21,35-38]. Emerging evidence suggests that such a categorization may be appropriate for partner violent women, as well [33]. The distinction between these two groups may begin in childhood. Many prior studies have shown that poor parenting is associated with conduct disorder problems and antisocial behavior in children [39-47], and that these children's antisocial behavior is associated with the use of coercive and aggressive behavior in interacting with peers [48,39], and, later, adult partners [31,49,50]. The process by which poor parenting leads to adult antisocial behavior has been termed the coercive family process and its putative mechanisms of action are through negative reinforcement [44,46]. The resulting antisocial behavior in adolescence is also predictive of other developmental failures (e.g., peer rejection and academic failure) and an accelerated pathway to adulthood that includes increased stressful life events, substance abuse, and depression [51-53], all of which have been associated with an increased risk of partner violence as adults [6,28,54].

It may be most appropriate to consider the partner violence among the group of antisocial and generally-violent men and women as an extension and consequence of the coercive family process. It is likely that the partners of generally violent men and women are only one of the many individuals with whom these individuals use physical aggression to control interactions. Any intervention efforts with these individuals may be better targeted toward their antisocial behavior, generally, rather than their IPV, specifically.

Although the development of antisocial behavior and its association to IPV in adulthood is better-documented, less is known about the individual histories of those exhibiting family-only violence. Because most acts of physical aggression occur in the context of conflict [54], the developmental course of physical aggression may be a good place to begin understanding family-only IPV. There is good evidence that physical aggression has a normal developmental course and that the mean frequency of physical aggression increases during the first year after birth and appears to peak at about age two [56-59], with steady decreases occurring, on average, from ages 10 to 18 years [60-62]. The steady decreases in physical aggression are associated with good parenting [63]. Good parenting involves a number of behaviors, including recognizing problem behavior, defining appropriate behavior, and setting clear objectives for a child. Because good parenting is associated with decreases in the use of physical aggression in conflict across development, it is logical to examine what factors might be associated with the persistence in the use of physical aggression, as well as the other emotional and interpersonal problems exhibited by violent couples.

There is controversy around whether the use of corporal punishment results in poor outcomes for children [64,65]. There is, however, evidence that its use contributes to the development



**Figure 1** Behavioral learning model of IPV.

of problematic relationship behaviors in adulthood [66-68]. Prospective and retrospective studies have shown that the more husbands and wives reported being physically punished (e.g., spanked, slapped) as children the more likely they were to be accepting of and report engaging in verbal and physical aggression with their adult partners [23,67-69]. A history of childhood corporal punishment also appears to negatively impact the ability of a partner to understand the perspective of the other partner, and increases the likelihood, for female partner at least, to engage in more critical and controlling behaviors toward their partner [23]. Corporal punishment has also been shown to thwart the development of a broader behavioral repertoire for conflict resolution and dealing with negative emotions [70,71]. Although the purpose of this paper is not to debate the use of corporal punishment, it does model the use of verbal and physical aggression as means of dealing with conflict with others, especially those with whom one has a close and intimate relationship.

Parental disciplinary styles are also relevant to the discussion of how children learn to regulate emotion within the course of parent-child interactions [72-76]. Parent-child interactions reflect an ongoing process of teaching children how to maintain, alter, and modulate their emotional experiences, and expression [77]. Such teaching occurs through modeling affective expression and regulation, direct coaching in how to recognize and cope with emotions and the situations that give rise to them, and/or the reinforcement of emotional displays. It is suggested that an approach to this called emotion-coaching teaches children how to inhibit inappropriate behavior, how to self-soothe physiological arousal induced by strong negative effect, and how to focus attention and organize behavior for coordinated action in the service of an external goal [75,78].

All of these findings are important because they suggest that a history of physical punishment puts individuals at risk for engaging in family-only partner violence because it has modeled the use of verbal and physical aggression as a response to conflict

with a person with whom one has a close, intimate relationship. This literature also suggests that a lack of learning about how to experience distinct, differentiated emotions (e.g., feeling simultaneous, but identifiable fear, anger, sadness rather than an undifferentiated blend of these emotions) puts these individuals at risk for corrosive affective displays in their adult relationships, and for becoming highly physiologically aroused in response to partner conflict [75,78]. Furthermore, a behavioral learning model predicts that the combination of childhood corporal punishment and a lack of learning to experience a differentiated emotion that presents the greatest risk for the adult escalation of conflict that results in IPV.

### HISTORICAL CONTEXT OF THE COUPLE

In addition to the risk presented by the historical context of the individual partners, the historical context of the couple appears to present a unique risk for IPV. The behavioral patterns of couples with a history of IPV have been examined in many different ways, and have consistently been found to be more pathological than distressed nonviolent couples, and certainly more pathological than nondistressed nonviolent couples. Although many of the studies have been cross-sectional examinations of these behavioral patterns, it is important to keep in mind that these patterns have likely been repeated time and time again over the course of a violent couple's relationship. Longitudinal studies will be needed to fully appreciate the effects of these repeated patterns on subsequent conflict and relationship quality, but they are likely substantially negative.

Sequential analysis of couple behavior during conflict has found that violent couples are more likely than their nonviolent counterparts to engage in *negative reciprocity*, which is the tendency to continue and, at times, escalate, negative behavior once it begins [79]. They have also been shown to engage in abnormal *demand-withdraw patterns* [35,80,81]. In a demand-withdraw pattern, individuals in a demanding role generally want more intimacy or closeness in an interaction whereas the

individuals in the withdrawing position attempt to withdraw from these interactions out of a desire for greater autonomy or separateness. Analyses of violent couples have shown that they are much more likely to exhibit both a male demand/female withdraw and a female demand/male withdraw pattern [35]. Distressed nonviolent couples do not present themselves this way. Either one partner is in the demanding role in the relationship or

the pattern does not exist in any form. It appears that both partners in violent relationships respond to the other's demands for closeness or intimacy by withdrawing and that each partner alternates this role at different times. This dynamic would certainly lay the foundation for high conflict, power struggles, and feelings of distrust toward one's partner, and frustration from the lack of support from one's partner; all experiences reported by violent couples [82].

Violent relationships have also been analyzed using adult attachment style as an index of emotional responding in these relationships [83]. Contemporary discussions of attachment theory acknowledge that current relational contexts account for more of the variance in expressed relationship behaviors than any early mother-child dyadic experience [84]. As such, contemporary attachment theory assumes that one learns through having a history of interactions with supportive and loving others who bring comfort during times of stress, that an intimate relationship can be an effective avenue for increasing feelings of security, closeness and intimacy. If one has a history of interacting with an unresponsive intimate partner, however, one learns that defenses should be developed against these painful interactions.

It has been found that individuals in physically aggressive relationships respond to the lack of security and supportiveness in these relationships (resulting from *negative reciprocity* and abnormal *demand-withdraw patterns*) with clinging and hypervigilant responses [83]. Violent men who were classified as insecurely attached were preoccupied with maintaining closeness, more belligerent in marital arguments, and decidedly not distancing. The process of wives trying to withdraw from the marital interaction was the only predictor of violence for the couples engaged in this type of relationship dynamic. This finding is consistent with other research suggesting that insecurely attached individuals are more likely to engage in dysfunctional expressions of anger, such as anger-proneness, contemptuous and belligerent anger expressions, and the attribution of hostile intent to neutral behaviors from a partner [82,85-88]. Because of the lack of effective strategies for disengaging from conflict (presumably given partner's individual learning histories), the couples classified as insecurely attached also exhibited expressive or reactive aggression that appeared to function as a way to reduce negative affect in response to fears of abandonment [83]. These responses would also be predicted in these violent relationships because of the propensity for the other partner to withdraw in times of desired closeness (as in during the abnormal *demand-withdraw pattern*).

## THE ROLE OF AFFECT IN HISTORICAL CONTEXT OF THE COUPLE

Fueling the escalation of these maladaptive interpersonal

processes is the violent couples' propensity to have poor verbal skills, in general [35,89], and to express high levels of contempt and belligerence when in conflict [28]. In fact, violent distressed couples are distinguishable from non-violent distressed couples on both partners' expressions of contempt and belligerence, but not anger per se [28]. Results show that violent men and women who engaged in contemptuous, belligerent, and critical behavior in conflict become increasingly physiologically aroused and more psychologically abusive as the conflict continues [28,35,86,90], and that these couples have difficulty disengaging from conflict once it begins without it escalating to physical aggression [86,90-92].

Relevant to these dysfunctional conflict interactions is the physiological arousal the results from these high conflict interactions, termed *emotional flooding* by some [93] (e.g., Gottman, 1994), and the role that it plays in the escalation of violent couples' conflict, and their inability to effectively disengage from it. Physiological arousal or emotional flooding occurs when an individual, through emotional conditioning, responds to a wide range of stimuli with negative affect blends of anger, fear, and sadness [93,94]. When "flooded," the emotional and physiological state becomes so dysregulated that it is difficult to attend to anything but the physiological state, which is highly disruptive of organized behavior. To the individual, flooding is experienced as feeling emotionally out of control in the face of negative emotions, and has been shown to contribute to the escalation of conflict in violent couples [28,93,95]. Furthermore, individuals who are in relationships that chronically generate negative affect blends that lead to flooding become hypervigilant to potentially threatening and escalating interactions and are more likely to misattribute threat potential to relatively neutral or positive acts [93].

In behavioral terms, physiological arousal can be elicited by unconditioned stimuli, such as pain, or by conditioned stimuli, such as contemptuous insulting, name calling, or belligerent and provocative statements, and is a powerful contributor to hostile aggression [28,96]. Hostile aggression is widely conceptualized as being impulsive, anger driven, unplanned and occurring as a result of some sort of provocation or aggressive cue. Physiological arousal is thought to influence hostile aggression in some important ways. First, arousal can strengthen a dominant action tendency, meaning that if a person is instigated to aggress at the time arousal occurs, heightened aggression can result. Second, arousal can result from irrelevant sources (e.g., alcohol, exercise), thus producing anger-motivated aggressive behavior if the person is provoked. Thirdly, arousal is an aversive physiological state that motivates aggression the same way that other aversive stimuli, such as pain, do [97,98]. Furthermore, laboratory examinations of arousal and hostile aggression show *over-arousal* is the state most likely to facilitate emotionally aggressive or violent acts [99] and that arousal will remain high when the provocation is perceived as being deliberate or intentional, much like the conflict of distressed violent couples [100-103]. Furthermore, meta-analytic studies of gender differences in aggressive behavior (not just IPV) found that there are no gender differences in aggressive behavior when males and females are in aroused states [104]. This finding is consistent with the IPV literature of over 150 studies showing gender symmetry



in IPV [105]. Furthermore, physiological arousal is relevant to understanding a sensitization process that appears to result from the repeated exposure to aversive and punishing dyadic interactions of violent couples. Sensitization is the progressive amplification of the arousal response to the partner's behavior, contributing to the tendency to misattribute threat potential to neutral or positive partner behavior. This is also where the type of violent partner's learning histories, as they pertain to the use of physical aggression, is particularly relevant. When in such an aroused state, individuals are unable to coordinate their behavior and will rely on old, over-learned behavior. For violent couples who have experienced corporal punishment throughout childhood, this old, over-learned behavior is physical aggression.

### **REINFORCEMENT OF THE USE OF PARTNER VIOLENCE (THE OPERANT RESPONSE)**

The most basic understanding about the persistence of behavior, even maladaptive behavior, is that it continues because it is being reinforced. Because the maladaptive dyadic behavior displayed by violent partners is very aversive, partners become targets of hostility for each other. The reinforcing effects of inflicting pain or injury on a target of hostility have been witnessed across animal and human studies of aggression [106,99]. IPV in this instance would be positively reinforced by inflicting pain or injury on the target of hostility. In addition, because, the use of partner violence may also be negatively reinforced because it terminates the highly aversive state of arousal [95] elicited by these patterns of behavior.

### **THE ROLE OF POTENTIATING CONDITIONS**

The fourth term in the four-term contingency is the potentiating condition or the establishing operation (Figure 1). An establishing operation is any environmental stimulus that operates on the entire contingency (antecedent, behavior, and consequence) and either increases the reinforcing effects of some stimulus or increases the frequency of all behavior that has been reinforced by that stimulus, object, or event in the past [107]. Mood has been found to make some operant contingencies more or less likely to occur [96] and the effects of stress on mood may make it more likely that an individual will respond to interpersonal conflict with physical aggression.

### **STRESS**

Longitudinal investigations have found that incidents of IPV wax and wane within relationships as levels of stress from both within and outside of the relationship vary. Couples are at the highest risk for IPV when they are experiencing high levels of relationship conflict and demands from outside of the relationship [90]. Consistent with this finding are those that have found that rates of IPV are the highest at young ages and earlier in relationships and that IPV tends to diminish over the course of the relationship [108, 109], presumably coinciding with the trajectory of chronic stressors, such as financial hardship [54,90]. Relatedly, while the occurrence of IPV cuts across all socioeconomic groups, there is a greater occurrence of it among socially disadvantaged populations [110,111]. Sociostructural theories of violence suggest that factors such as racial discrimination, unemployment, and poverty lead to chronic stressful life conditions that are strong promoters of IPV [112].

Couples report that when they are experiencing higher than average stress from outside the relationship they engage in more psychologically aggressive behaviors within the relationship [90]. Thus, the negative, but nonphysical aggression that partners engage in during such interactions may provide the physiological arousal that fuels IPV in times of acute stress. This appears to be especially true for men, who have been found to be more reactive to acute negative events [113]. In addition, women's use of IPV covaries with their perceptions of their relationship such that when they perceive their lives as more demanding and stressful, and their relationships less supportive, their use of IPV increases [90]. Levels of stress have also been found to effectively differentiate between women who are nonviolent, moderately violent, and severely violent [114].

### **ALCOHOL USE**

In addition to stress, another significant potentiating condition of partner violence is the use of alcohol. The relationship between IPV and alcohol use is well-established. Alcohol use by one or both partners is present in 57% to 70% of all violent episodes. Alcohol use is also associated with an increase in the frequency and severity of IPV with more severe IPV incidents occur during heavier drinking episodes (e.g., binge drinking) [115-120]. Experimental studies of alcohol use and aggression have found that alcohol is a promoter of aggression when the drinker is experiencing one of three affective states: inhibitory conflict (where cues for inhibiting aggression are in conflict with cues promoting aggression), provocation, and frustration [121]. It can be argued that the maladaptive dyadic behavior and affective displays of violent couples are analogous to the experimental conditions under which alcohol promotes aggression. In addition, in experimental studies of alcohol and aggression, where participants had the option to respond non-aggressively, the non-aggressive option appeared to dampen aggressive responses. Given the proposed historical context of individuals (physical punishment during childhood) in violent relationships, and the historical context of the couple (repeated negative and escalating behavioral patterns), nonaggressive response options may be less available to violent partners as nonaggressive response options may be less likely to be in their behavioral repertoire.

### **TESTING THE MODEL AND SUGGESTIONS FOR NOVEL TREATMENTS**

As previously mentioned, the current model presents several strengths to alternative models of IPV put forth thus far. A notable strength of the current model is that it integrates the existing IPV literature and makes specific hypotheses regarding how the variables associated with family-only IPV work to give rise to IPV incidents. For example, a lack of nonaggressive options in an individual's behavioral repertoire may increase the risk for the occurrence of IPV in high conflict situations. The model also allows for the investigation of specific potentiating conditions (e.g., alcohol use) in order to obtain a greater understanding of their influence on incident-level IPV events. For instance, current work in this author's lab is investigating several neuropsychophysiological mechanisms which may mediate the association between alcohol use and IPV.

The current model also makes predictions about what types of treatments should work for IPV and allows for the identification of novel targets for intervention. For example, treatments that focus on increasing nonaggressive conflict strategies and improving interpersonal should be effective for remediating this deficit and reducing both psychological and physical aggression between partners. Novel targets of intervention, such as those that target the hypothesized neuropsychophysiological mechanisms between alcohol use and IPV, may be useful adjuncts to treatments that focus on conflict and interpersonal strategies.

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