

The Roots of Intimate Partner Violence

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Sometimes people hurt strangers. Indeed, victims of aggression tend to be those who we perceive as different from ourselves [1]. Yet people also occasionally hurt others they love. This phenomenon—*intimate partner violence (IPV)*—refers to when people attempt to harm or control their current or former romantic partners against their will. IPV usually falls into four categories: physical violence, psychological aggression, sexual violence, and stalking [2]. Why might people try to harm those closest to them, whose relationship is characterized by loving affection? In what follows, we shed light on this puzzling phenomenon by reviewing the literature on the theoretical, social, and biological underpinnings of IPV.

Prevalence

IPV occurs at staggering rates. In the U.S., approximately 22-35% of women and 7-29% of men have experienced some form of violent or stalking behavior from their intimate partner [2]. These prevalence statistics match worldwide rates of IPV [3]. When it comes to perpetration of IPV, men and women tend to show equivalent rates, yet women are more likely to experience physical injury and to use IPV in self-defense [3]. Beyond self-defense, why does IPV occur?

Ultimate Explanations

IPV has a long history. Indeed, IPV has roots in both evolutionary and cultural forces. In the context of evolutionary processes, IPV may have evolved because it facilitated survival goals (e.g., self-defense) and reproductive goals such as preventing mates from defecting to other potential partners, committing sexual infidelity, or to help reacquire former mates [4]. The reproductive benefits that IPV yielded may have ingrained such tendencies in our species' genetic code. In contrast, feminist scholars

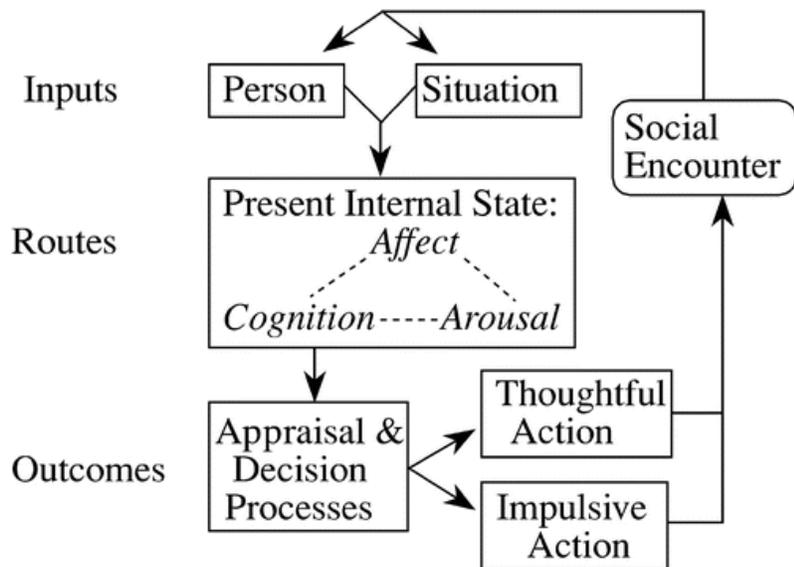
have proposed that IPV arose out of a structural, patriarchal system, in which men seek to dominate and subdue women [5]. Moreover, socio-cultural forces (e.g., norms) may glorify and engender violent tendencies that result in IPV. These perspectives are not mutually exclusive; IPV likely results from a confluence of evolved and socially-constructed processes. These ultimate explanations for IPV are critical, yet more proximate explanations for IPV have also been substantially articulated. The following sections review these proximal explanations of IPV.

Theories of Aggression: Shedding Light on IPV

Many theories have been constructed in an effort to explain the complex and costly act of human aggression. These perspectives have been synthesized into two meta-theories of aggression: the General Aggression Model [6**,7] and the I³ Model [8**,9].

General Aggression Model (GAM). The GAM details a temporal sequence of processes that explain whether an individual will act aggressively or not at a given moment (Figure 1) [6**,7]. According to this model, person (e.g., genotype) and situation (e.g., alcohol) factors act as inputs. These inputs then affect the individual's internal state (i.e., their affect, arousal, and cognition), which provides the bottom-up motivation for aggressive acts. This present state then feeds into top-down, self-regulatory processes that determine whether an individual's subsequent behavior is impulsively aggressive or thoughtfully non-aggressive. Whether the individual chooses to act aggressively or not feeds back into the situation and person inputs, which influences the likelihood of future aggression.

Figure 1. The General Aggression Model.



The GAM allows for substantial insights into the underlying, proximal motivations behind IPV perpetration [10]. A host of person and situation factors (summarized later in this review) have been implicated

in IPV perpetration. Further, present internal state variables such as angry arousal and hostile cognition have also been linked to greater IPV perpetration [11] and self-regulatory processes are associated with lower IPV perpetration [12]. The fact that IPV perpetration is cyclical, with one act predisposing IPV perpetrators toward another [13], lends further evidence for the applicability of the GAM to acts of IPV. The GAM provides a coherent framework for these various processes.

I³ Model. Whereas the GAM was constructed with general acts of aggression in mind, the I³ Model was constructed to attempt to better understand IPV specifically [8**,11,14]. This approach posits that aggressive acts such as IPV occur due to a combination of *impellance*, *instigation*, and *inhibition*. Impellance refers to any person or situation factor (as in the GAM) that magnifies the likelihood of an aggressive act (e.g., aggressive personality traits). Instigation refers to any such factor that incites an urge to act aggressively (e.g., insults), and inhibition refers to factors that reduce the likelihood of an aggressive act (e.g., the presence of a police officer). The probability of IPV is highest when a “perfect storm” occurs, in which impellance is high, instigation is high,

and inhibition is low [8**]. Supporting the utility and veridicality of this approach, IPV perpetration was greatest among individuals high in trait aggressiveness, who had just been provoked, and who had low self-regulatory resources [14].

IPV perpetration is undoubtedly a complex phenomenon, yet the General Aggression and I³ Models can distill this complexity into well-articulated processes that suggest novel avenues for hypothesis-testing and intervention. However, both of these models are broad, by design, and thus we now delve into specific inputs, routes, and factors that are well-established predictors of IPV.

Interpersonal Factors Underlying IPV

Given that humans are social beings and that IPV is a social process, it is no surprise that interpersonal factors are some of the most potent causes of aggression between romantic partners.

De-humanization. IPV disproportionately harms women, and women are often seen less as people and more as sex objects, which has implications for violent behavior directed towards them [15]. The extent to which men objectify women is positively associated with their IPV tendencies towards those women [16].

Infidelity. Often, romantic relationships are predicated on sexual and intimate exclusivity. When partners commit sexual or romantic infidelity, IPV often ensues. IPV appears to be both a punishment inflicted on partners for their infidelity [17], as well as a deterrent for potential future infidelity [18].

Rejection (and other provocations). People desire close and meaningful bonds with others [19], particularly their romantic partner. Yet partners often reject, exclude, and ostracize each other. Experiments in which participants are rejected by their

romantic partners increase aggressive behavior towards their romantic partner [12]. A potential explanation for this rejection-IPV link is the finding that social rejection is painful and that this social pain has been linked to greater aggressive retaliation [20].

Other forms of antagonistic social interactions, such as insults and provocations are also reliable elicitors of IPV [11]. The social causes and consequences of IPV continue to change as social interactions more frequently occur in virtual environments. Research is needed on this burgeoning venue where IPV may be occurring at rates and in forms of which we are unaware. Although interpersonal factors aid understanding of the causes of IPV, intrapersonal factors (i.e., psychological processes occurring within an individual) also help explain IPV perpetration.

Intrapersonal Factors Underlying IPV

Psychopathology. Perpetrators of IPV often display symptoms of various forms of psychopathology. Antisocial and borderline personality disorders are associated with IPV, though for seemingly different reasons [21]. Antisocial perpetrators use IPV both proactively (in the absence of provocation) and reactively (in response to provocations), whereas perpetrators with borderline personality disorder typically perpetrate IPV reactively. Major depressive and post-traumatic stress disorders are also reliably linked to IPV [22]. Given the large-scale prevalence of psychopathology, more research is needed to better understand the link between psychopathology and IPV.

Self-control fatigue. No matter how much we love our romantic partners, they will sometimes do things that ignite aggressive urges. Overriding these urges requires self-control energy. However, self-control (and self-regulation more broadly) is not always reliable and tends to become fatigued with greater use, rendering individuals

prone to aggressive acts [23]. Individuals induced to experience self-control fatigue exhibited greater aggressive retaliation towards their romantic partners who had recently provoked them [11].

Substance abuse. People use and abuse substances (e.g., alcohol, cocaine, marijuana) for many reasons, including the need to cope with relationship conflicts. But such self-medication can backfire, creating more relationship problems by spurring IPV. Alcohol use and abuse are reliably associated with greater perpetration of IPV among both men and women [24]. Stimulants such as methamphetamine and cocaine are also consistently linked to the perpetration of IPV [25]. Thus, whether the substance tends to depress or stimulate central nervous system activation, they tend to increase IPV tendencies. These effects hint at a complex underlying biology of IPV, to which we turn next.

Biological Factors Underlying IPV

Genetic factors. IPV has evolutionary roots and is also transmitted from parents to their children [26*]. These findings suggest that IPV has clear genetic underpinnings. Indeed, the majority of the variance in IPV is linked to genetic factors, and relatively less is due to environmental factors [27]. For example, genetic polymorphisms that regulate the brain's serotonergic functioning (MAOA, 5-HTTLPR) predict IPV perpetration [28]. Epigenetic mechanisms have even been found; specific genes that predispose individuals to antisocial acts (e.g., IPV) exhibit more methylation (i.e., an epigenetic mechanism) if the mother experienced IPV in utero [29]. Such epigenetic mechanisms are concrete pathways through which biological and environmental forces interact to influence IPV.

Neurological and neuroendocrine factors. IPV perpetrators have higher rates of traumatic brain injuries than matched controls [30] and perform poorly on tests of frontal lobe function [31*]. Said simply, dysregulation in the brain leads to dysregulated aggression towards intimate partners. Images depicting IPV elicit greater activity in conflict-processing regions of the prefrontal cortex (i.e., the anterior cingulate cortex) among IPV perpetrators [32]. Exaggerated levels of circulating testosterone have also been observed among IPV perpetrators, a hormone reliably linked to dominant and aggressive acts [33]. These findings tell a complex story of altered neurobiological functioning among IPV perpetrators. But biology is not destiny. The next section discusses interventions aimed at reducing IPV recidivism.

Interventions

IPV arises from a complex array of causes, therefore intervening upon and treating them is a particularly difficult task. One particularly promising avenue is emotional reappraisal, the act of re-framing one's emotional experience from the perspective of an objective outside observer [34]. Newly-wed couples who received training in this skill did not exhibit the typical decline in marital satisfaction that other couples experienced, suggesting that effective emotion-regulation skills might serve as an effective means to reduce IPV. Another potential intervention might be self-control training, which helps individuals cultivate a robust ability to inhibit their aggressive impulses. Compared with a control group, a 2-week self-control training intervention proved effective in reducing IPV tendencies [12]. Of the various clinical therapy approaches, couples-based therapies that target substance abuse and effective coping strategies appear most effective at reducing IPV recidivism [35]. More work needs to be

done to identify effective intervention strategies, particularly those which are tailored to the various forms of IPV (proactive vs. reactive; physical versus sexual versus psychological).

Summary and Conclusions

Relationships are complicated, and none more than those between romantic partners. All too often, this complexity results in aggressive acts in this intimate context. IPV is likely deeply rooted in evolutionary and cultural forces, which explains its universal and persistent nature. Meta-theories such as the General Aggression and I³ models offer useful perspectives that articulate the proximal processes that promote IPV. Indeed, IPV arises from a complex array of interpersonal and intrapersonal processes rooted in altered biological functioning. There exist some promising avenues for IPV treatment, yet more needs to be done to tailor interventions towards the multidimensional nature of IPV. By reviewing the current state of understanding related to IPV, we hope to inform future research and reduce IPV perpetration.

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