

Rational Choice and Domestic Violence: How Decision Theory can inform Domestic Violence Policy

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Abstract

The field of decision theory has been all but ignored in domestic violence research. As domestic violence research has evolved to the point where it recognizes the necessity of evaluating victim decision-making, decision theory could be a great asset. The following paper argues for the inclusion of decision theory in domestic violence research because of its implication for policy and practice. The argument is made through an establishment of principles of decision theory and analysis of domestic violence literature. The study incorporates interviews with victims of domestic violence and high-ranking officials in Philadelphia as well as observational work. Implications for policy in Philadelphia are discussed.

1. Introduction

1.1 Inception of the Project

I started studying violence against women as a research assistant for Dr. Susan Sorenson¹, in the summer of 2011. My work for her has included everything from literature reviews and the basic analysis of data to conducting interviews and meeting with high-ranking officials in Philadelphia. In the fall of 2012 the Evelyn Jacobs Ortner Center on Family Violence² published a report on violence against women in the city of Philadelphia. I, under Dr. Sorenson's purview, led a team of researchers in compiling information on the status of domestic violence resources and agencies in the city. For the report I was able to meet with high-ranking officials at the Philadelphia Police Department, the District Attorney's Office, the Medical Examiner's Office, Women Against Abuse, the Women's Law Project, Menergy, and the Philadelphia Domestic Violence Task Force.

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1. Dr. Susan Sorenson is a professor of Social Policy & Practice and Health & Societies at the University of Pennsylvania as well as a Senior Fellow in Public Health and Director of the Evelyn Jacobs Ortner Center and the PhD program in Social Welfare.
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Through my work with Dr. Sorenson I noticed certain parallels between the research I was conducting and what I was studying in my courses on choice and behavior in the Philosophy, Politics, and Economics department at the University of Pennsylvania. The research I conducted for the report sparked my interest in decision-making by female domestic violence victims. After subsequent research about these two fields, there appeared to be a serious gap in the literature when it came to an application of principles of decision theory, judgment and decision-making in the assessment of domestic violence programs and resources. Many papers, books, and articles discuss the ‘decisions’ that domestic violence victims face, but do so in a rudimentary way that fails to address the decision-making process concordant with decision theory. After further research, I uncovered papers that began to touch on the concepts of decision-theory, but none that adequately evaluated the decisions and many misused terms such as risk and strategy. I hypothesized that through examining the decisions made by domestic violence victims about help-seeking, you could not only uncover when and how domestic violence resources and organizations will be most effective but also show that victims are not at fault for not making the choices that society expects them to, but, that in fact, they often reach these decisions in a rational and reasonable way.

1.2 Organization

I begin in Chapter 2 with a discussion of the process by which I conducted research for this project. The research drew on observational and interview work as well as a review of the basic necessary literature.

Chapter three begins with the background on Decision Theory (3.1) to establish a basis for which the paper can build on. 3.1.1 discusses how rational choice explains human ought make choices, and 3.1.2 explains how to model the choices that humans actually make. Section 3.2 provides the background on domestic violence: first in the United States (3.2.1) and then in Philadelphia (3.2.2).

Section 4 outlines how decision theory can positively impact the research of domestic violence and the victims themselves.

Section 5 looks at the closest the domestic violence literature has gotten to decision theory and where these models fall short. 5.1 discusses literature on victim coping and then critiques it. 5.2 discusses Elizabeth Stork’s decision-making model and states that it is a useful paper, though inaccurately casts aside decision theory.

Section 6 discusses help-seeking decisions. 6.1 makes a few quick observations about some behavior of victims that can be explained by decision theory. 6.2 gives an example of the decision theory model in progress, through the decision to call the police. 6.3 makes the model more specific to women in Philadelphia. In order to do this, 6.3.1-6.3.3 discuss Philadelphia specific observations and concludes with its impact on the model (6.3.4).

Section 7 draws some conclusions about the potential policy impact of the integration of decision theory into domestic violence research.

Section 8 discusses the limitation of the study, suggestions for continued research, and the conclusion.

2. Methodological Notes

The research for this thesis started long before the official semester in which this thesis was completed. The following methodological notes exist to outline the scope of research and observations used in this thesis.

2.1 Background Information Collection Procedure

Domestic Violence Section

The search for domestic violence literature was conducted between February 1st and April 15th, 2013. Keyword searches of relevant phrases were used on Google Scholar, a program that organizes results from academic databases according to relevance. Peer reviewed articles and books were the two main sources of the background. Literature reviews and recent articles were examined first in order to identify the important articles and to know where to target attention. An informal review was conducted of the results and the most relevant articles were selected.

Decision Theory

The background research for decision theory was guided strongly by *Thinking and Deciding* by Dr. Jonathon Baron. I worked closely with Dr. Baron on an independent study on cognitive bias in political decision-making in the spring of 2011. His book provides a well-structured reference text with which to provide background on decision-making. Materials presented in his book were a jumping off point for further in-depth research into the studies and experiments referenced. This research period occurred during February 20 through May 1, 2013.

2.2 Interviews and Observational Field Work Methodology

Two forms of interviews were conducted in my research on domestic violence in Philadelphia: interviews with officials at organizations and interviews with victims of domestic violence through Women Against Abuse (WAA), a non-profit that provides services for victims of domestic violence in Philadelphia. Observational fieldwork occurred in a ride-along with the Philadelphia Police Department in the 15th District.

Interviews with Officials

Work that was done for the School of Social Policy and Practice informed much of the research and conclusions in this paper. Under the purview of Dr. Sorenson, I led a team of student researchers in compiling data and information on domestic violence resources in Philadelphia. Dr. Sorenson reached out to her colleagues and interviews were scheduled. I met in person to discuss domestic violence resources in Philadelphia with:

Jeannine Lisitski, Executive Director of Women Against Abuse, on March 27th, 2012.

Deputy Commissioner Patricia Fox of the Philadelphia Police

Department, on March 14, 2012. I also had various other meetings with Michael Gallagher, a retired police officer who works with WAA.

Deborah Harley and James Carpenter, of the Philadelphia District Attorney's Office on April 4, 2012.

Tonny Lapp, the Assistant Director of Menergy, a batterer's intervention program, in July of 2012.

Carol Tracy and Terry Fromson, of the Women's Law Project, on April 6, 2012.

Roy Hoffman, Medical Director at the Medical Examiner's Office on April 5, 2012.

Melissa Dichter, Research Health Scientist at the Philadelphia Veterans Affairs Medical Center, on April 6, 2012.

Deputy Commissioner Susan Kinevvy, Department of Human Services, on May 12, 2012.

I also attended a meeting of the Domestic Violence Law Enforcement Task Force of Philadelphia at the District Attorney's office, where many of the above people and organizations (and more) meet to discuss their progress, on June 12, 2012.

Interviews lasted between 30 minutes and an hour. E-mail and phone correspondence were continued afterwards and some follow-up meetings occurred.

I did not meet with in person, but discussed and summarized results from meetings with officials at Women Organized Against Rape, the Department of Behavioral Health, Congreso Latino, Lutheran Settlement House, and Women in Transition. Information about these organizations will be provided in the background section.

Victim Interviews

There were two forms of interviews that took place with clients of Women Against (WAA) Abuse's Aftercare Services: one in-person interview and two phone interviews about help-seeking, in addition to ten written surveys on knowledge of resources.

Women Against Abuse provided \$25 gift cards to the subjects willing to speak in-person or over the phone. These interviews were conducted using semi-structured interviews. Questions were asked and then follow-up questions were asked as needed. See Appendix-1 for a copy of the primary questions asked and information provided.

The written questionnaire, to understand subject's knowledge of resources, was written in English and Spanish and administered in person by caseworkers at WAA's Aftercare Services. Please see Appendix-2 for a copy of the questionnaire.

Because of the institutional necessity to have all questions and procedures approved by WAA, the interviews took place late in the thesis-writing process. The in-person interview occurred on April 17, 2013. The two phone interviews occurred on April 23, 2013. The questionnaires were returned to me on May 1, 2013.

Ride Along

On April 6, 2013, I went on a ride-along with an officer in the Philadelphia Police Department's 15th district. The district is located in

Northeast Philadelphia. The car I rode in was limited to responding to calls in Public Service Area 3, the highest economic bracket in the 15th district. In 2012, from January to March, there were seven homicides in the 15th district and 24 shooting victims (2012 Homicide Report and Analysis from the PPD). The 15th district is the biggest district in Philadelphia. During my ride-along, we responded to ten calls: and three of them were labeled as related to domestic violence by the dispatcher.

While on the ride-along I conducted an informal interview with the officer with whom I was paired. We discussed the calls we responded to, the process, and his thoughts and experiences with cases of domestic violence.

3. Background

3.1 Background on Decision Theory

In order to properly address how decision theory can inform models of domestic violence victim's choices, it is important to establish the fundamental theories and background in the field of decision theory.

What we do and why we do it is an unendingly complex topic of examination. The field of decision theory has emerged in an attempt to model the decision-making process. The field of judgments and decisions has examined normative, descriptive, and prescriptive decision models and processes (Baron 2000). Though we cannot quantify or map all of human behavior, the field of judgments and decision-making has made meaningful progress in documenting the way people think and decide and their systematic errors in doing so.

Because of the universality of maximization in decision-making, this originally economic theory can now be found in all academic fields that observe and examine human behavior. Herbert Simons writes, "Assumptions of rationality are essential components of virtually all the sociological, psychological, political, and anthropological theories with which I am familiar" (1957). Simons also notes that as rationality has been incorporated into more research its definition has evolved and expanded (Simons 1957).

Decision theory has expanded broadly since its inception. Rationality, the basic assumption of decision theory, was examined first in the field of economics, a field that predated the study of psychology. The theory of economic rationality focuses on the idea of maximization: making the choice that gets the decision maker the most. This economic model of human behavior, *homo economicus*, assumed that humans had purely selfish preferences and is

now considered to be an antiquated model (Camerer & Loewenstein 2011). The integration of psychology into economics has allowed for the emergence of the field of behavioral economics, which has integrated its findings into a more descriptive model of human decision-making behavior (Camerer and Loewenstein 2011).

3.1.1. Normative and Prescriptive Models of Choice

When we evaluate choice we compare it to a paradigm of rationality. According to psychologist Jonathon Baron, rationality can be easily defined as “whatever kind of thinking best helps people achieve their goals” (Baron 2000:61). Rationality is not about making a subjectively good decision, it is merely the process of making a well-formed choice consistent with what the individual thinks is best. Rational choices can be made based on irrationally formed beliefs (Baron 2000). There are three types of choices: choice under certainty, choice under risk, and choice under uncertainty.

Choice Under Certainty

Choice under certainty occurs when the decision maker knows exactly what the outcome of each choice will be. Since there is no uncertainty the decision relies solely on the preferences of the decision-maker. When individuals compare options they subconsciously rank the outcomes according to their preferences (Baron 2000). When modeling preferences, the degree to which the outcome fulfills the decision-maker’s goals is called *utility*. Utility incorporates every aspect of the good and bad payoffs of a decision, accounted for by one common unit, a *utile*. The concept of different outcomes providing us with different levels of utility is a fundamental tenant of decision-making (Baron 2000). In choice under certainty, a rational human being will make the choice associated with the highest level of utility.

Choice under Risk and Uncertainty

Choice under risk occurs when the decision-maker knows the probability that a certain outcome will occur. For example, if I am playing roulette, I know that there is a 47.37% chance I will win if I bet on red. Deciding whether or not to do this is a choice under risk.

The economic worth of choice under risk is modeled by expected value. The expected value of a choice is an easy calculation of the value of the outcome multiplied by the probability it will occur:

$$\text{Expected value} = \sum_{i=1}^{\infty} x_i p_i$$

Figure 1: Expected Value Formula
(Let values be signified by x and probabilities be signified by p)

Let us illustrate this concept with an example. In a coin toss, if I flip heads I get \$100 and if I flip tails I do not get anything. The expected value of this gamble is: $\$100 \cdot (0.5) + \$0 \cdot (0.5) = \$50$.

Monetary value is very different from utility. Take a case in which an individual is choosing between \$100 for certain, and a 50% chance of \$0 and a 50% chance of \$205. The expected value of choice one is \$100 and for choice two it is \$102.50. If people made choices consistent with expected value, then we could expect everyone to pick choice two. However, individuals have been shown to pick the option with the lesser expected value because of the value that they place on certainty (Pratt 1964). This demonstrates a common human tendency to avoid risk.

Choice under uncertainty occurs when decision-makers do not know the probability with which outcomes will occur. The decision maker must make an evaluation of subjective probability in order to decide using expected utility theory. The formula for computing expected utility is the same as the formula for calculating expected value, but value is replaced by utility:

$$\text{Expected Utility} = \sum_{i=1}^{\infty} u_i p_i$$

Figure 2: Expected Utility Formula
(Let utilities be signified by u and probabilities be signified by p)

Expected utility theory is a normative theory³ that is good for conceptualizing decisions but not adequate as a descriptive tool.

3 There is substantial debate over expected utility theory's status as a normative theory, but it is the opinion of the author that it is one.

3.1.2 Toward Descriptive Models of Choice

Bounded Rationality

Expected utility theory is not predictive of human choices in most cases (Jones). Because of this, the idea of bounded rationality was developed (Jones 1999). Bounded rationality reconciles expected utility theory with an individual's cognitive limitations. Gigerenzer and Selten write that bounded rationality connects "rationality and psychology" (2002: 1).

H.A. Simon was the first to develop bounded rationality. He began with an examination of the way that people make tradeoffs among goals. Here he coined the term 'satisficing' to describe a procedural model of rationality. Simon writes:

"Since the organism, like those of the real world, has neither the senses nor the wits to discover an 'optimal' path — even assuming the concept of optimal to be clearly defined — we are concerned only with finding a choice mechanism that will lead it to pursue a 'satisficing' path that will permit satisfaction at some specified level of all of its needs" (Simon 1957: 270-271).

Bounded rationality is a vital critique of expected utility theory as it takes into account many aspects of human behavior. Unbounded rationality assumes that all possible alternatives and information is available to the decision-maker, which rarely occurs.

Bounded rationality is also important because it accounts for the fact that decision-makers will sometimes focus on only a few aspects of the decision rather than the decision in its entirety. This may simplify decision-analysis because fewer options are being weighed (Johnson & Payne 1986).

Probability

1. The Representativeness Heuristic

First recognized by Kahneman and Tversky in 1973, the representative heuristic states that a person evaluates a probability by the degree to which it is: "(i) similar in essential properties to its parent population and (ii) reflects the salient features of the process by which it is generated." (Kahneman & Tversky 1972: 431). Kahneman and Tversky had subjects state their perceived likelihood of the following birth sequences in one family: Girl, Boy, Girl,

Boy, Boy, Girl and Boy, Girl, Boy, Boy, Boy, Boy. The two birth sequences are equally likely, but the second is not as representative of the human population as the first. Therefore, subjects viewed the second sequence as significantly less likely than the first (Probability and representativeness 432). Individuals judge probability as a reflection of the state of the world as they know it, rather than in on its mathematical and axiomatic truth. One important implication from the representative heuristic is the gambler's fallacy, or the idea that if something has not happened in a while, it will happen soon (Baron 2000).

2. The Availability Heuristic

The availability heuristic states that people tend to assign higher probabilities to events with which they are familiar. For example, since it is easier to think of words that start with the letter K than words that have K as the third letter, subjects view the former as more likely (Tversky & Kahneman 1973). This initial judgment, based on what is accessible or easily available in the subjects mind, is inaccurate since words with K as the third letter appear more frequently in the English language (Tversky & Kahneman 1973). We judge the likelihood of certain events occurring based on our past experiences with these events. The availability heuristic could explain why people also tend to overweight low probabilities, such as plane crashes and tragedies (Lichtenstein 1978).

Framing and Risk Preferences

Framing is the idea that the way that a choice is explained or presented can affect someone's revealed preferences and subsequent choices. When people evaluate the outcomes of a choice, they consider the choice from a certain reference point. If these reference points are adjusted or shifted then people's preferences can also be changed.

Prospect Theory

Kahneman and Tversky sought to provide a descriptive model of decision-making that incorporates systematic human errors. This theory, prospect theory, is widely considered the most descriptive decision theory that exists (Camerer 1989). Prospect theory⁴ argues that decision-making happens in two stages: stage one in which options, outcomes, and contingencies are framed and stage two where the decision is evaluated. Prospect theory

⁴ To answer developments in the field, Tversky and Kahneman updated Prospect theory in 1992 (Tversky, Amos, and Daniel Kahneman. "Advances in prospect theory: Cumulative representation of uncertainty." *Journal of Risk and uncertainty* 5, no. 4 (1992): 297-323.), but the original prospect theory is sufficient for the purposes of this paper.

improves on expected utility theory in two ways: “value is assigned to gains and losses rather than to final assets and... probabilities are replaced by

decision weights” (Kahneman & Tversky 1979: 263). Kahneman and Tversky summarize their value function in the following way:

$$U = \sum_{i=1}^n w(p_i)v(x_i) = w(p_1)v(x_1) + w(p_2)v(x_2) + \dots + w(p_n)v(x_n)$$

Figure 3: Prospect Theory Formula

from the reference point; (ii) generally concave for gains and commonly convex for losses; (iii) steeper for losses than for gains (279).

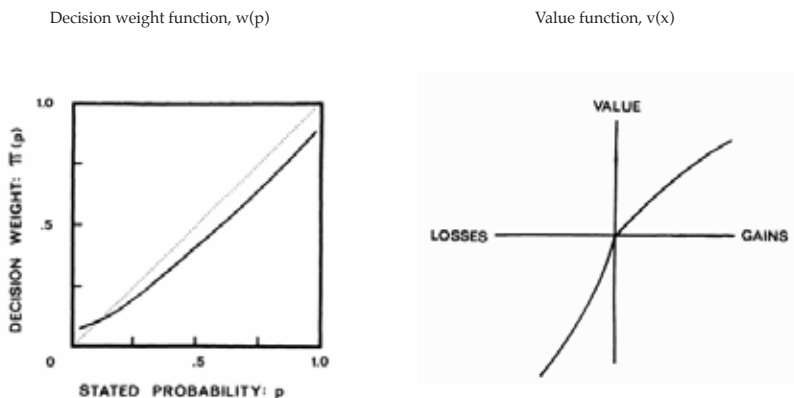


Figure 4: Decision Weight Function and Value Function

from: Kahneman, Daniel, and Amos Tversky. “Prospect theory: An analysis of decision under risk.” *Econometrica: Journal of the Econometric Society* (1979): 263-291.

Case-based Decision Theory

An additional decision theory, case-based decision theory, is particularly relevant for the present paper. Case-based decision theory (CBDT) addresses how to assess a decision in which possible outcomes are completely unknown, or knowledge of them is incomplete. The authors presenting this model, Gilboa and Schmeidler, argue that individuals make choices based on the success of those experienced strategies in the past. The authors contend that decision-makers, when faced with a problem or a decision (q), have a

memory of a similar problem ($s(p,q)$) and act (a) based on this memory (M), which leads to a result (r).

$$U(a) = U_{p,M}(a) = \sum_{(q,r) \in M} s(p,q)u(r)$$

Figure 5: Case-Based Decision Theory Formula

(Let a be the act, s be the similarity function between p and q and r be the result)

from: Gilboa, Itzhak, and David Schmeidler. "Case-based decision theory." *The Quarterly Journal of Economics* 110, no. 3 (1995): 605-639.

This model only works if the decision maker is making a choice similar to one they have encountered in the past. Gilboa and Schmeidler extended the model to incorporate past different, but similar, events in 1997 (Gilboa Schmeidler 1997). Computer simulations have shown that CBDT has accurately resembled human decision-making behavior (Pape and Kurtz 2012).

Decisions About the Future

Human beings often exhibit time inconsistent preferences (Frederick, Loewenstein, O'Donoghue 2002). There is substantial evidence that humans prefer reward in the present to reward in the future. The idea of sacrificing some future utility to gain utility in the short run is called *discounting*. Discounting can be observed in many different realms from payment to health choices (Chapman 1996).

Fairness

People have shown to place a high level of utility on punishing unfairness. The human partiality for fairness is an example of a deviation from purely self-interested rationality. This tendency can best be seen experimentally in the ultimatum game. In the ultimatum game responders are given the choice of accepting or rejecting an offer (a two-way division of some amount of money) the allocator makes. If the responder rejects the offer, both the allocator and the responder walk away with \$0. According to pure rationality, any amount greater than \$0 should be accepted, as it is better than the alternative of \$0. However, individuals consistently punish unfairness, even at a personal cost (Thaler 1988, Rabin 1993).

3.1.3 Limits to the Human Cognition of Choice

The Role of Emotion and Stress in Decision Making

In the calculation of expected future utility individuals often think about how they will feel, or their emotional state, after making a decision. Decision theorists have made many steps forward in trying to create a model that incorporates emotional expectations (Loewenstein & Lerner 2003).

Immediate emotions can directly affect the decision behavior. Low to moderate emotional state tends to only affect decisions in which emotions are a relevant concern. As emotions get more intense so do their impact on decision-making. The affect-as-emotion theory states that people often evaluate how they feel about a decision and make the choice based on that (Clore 1992, Schwartz 1990). Current mood was shown to highly correlate with expected future mood (Clore 1992; Clore, Schwartz, Conway 1994).

Some intense emotions trigger instinctual and evolutionarily engrained responses (Loewenstein and Lerner). One study found that when subjects were angry, and criminals evaded punishment, they stated the criminal deserved harsher punishments than when he was caught and prosecuted (Goldberg, Lerner, & Tetlock, 1999). Many studies have found that peoples' judgments of probability can be affected by emotion. People who are feeling good make more optimistic judgments than their negative counterparts (Bower 1981, 1991; Mayer and Hansen 1995). Stress also has a profound effect on decision-making. Keinen (1987) found that subjects performed worse on tasks when told to expect electric shocks. Keinen's finding is that stress leads to fear, which limits our ability to think of decision options.

Studies have also found that emotions indirectly impact decisions because they impact search, or the research to generate decision options. Sad and depressive moods are associated with more deep thought and introspection. Many studies have found that people in happy moods tend to make more superficial judgments based on heuristics (Bodenhausen 1994).

Cognitive Biases

Human cognitive biases number in the hundreds and exist in a wide range of categories. The following section provides brief definitions of the cognitive biases that will be referenced later in the current evaluation.

Ambiguity effect: Subjects violated axiomatic expected utility theory in order to avoid ambiguous situations, or a situation in which risk is unknown (Becker, Ellsberg).

Omission Bias: People exhibit a bias toward the status quo and prefer inaction to action. Defined by Ritov and Baron as "a bias toward harms of omission over equal or greater harms that result from action" (Baron 2000:

291). Emotional responses to outcomes are stronger for events that result from action than from inaction (Landman 1987).

Sunk cost effect: The sunk cost effect is the tendency to continue with something if you have already invested resources, time, or money into it (Arkes 1985).

3.2 Background of Domestic Violence

3.2.1 Domestic Violence in the United States

Prevalence

Domestic violence against women is a pervasive human rights and public health issue that is not limited to any political, racial, or socioeconomic group. According to a 2006 study by the World Health Organization of over 24,000 women throughout the world, the lifetime prevalence of physical or sexual partner violence varied from 15% to 71% (Garcia-Moreno et al. 2006). The prevalence of domestic violence in the United States is no exception to these findings. The first national domestic violence study found that at least half of U.S. couples have experienced some form of domestic violence (Straus and Gelles 1990). Study after study has corroborated the high level of domestic violence in the United States, emphasizing staggering rates of intimate partner violence (IPV)⁵. Tjaden and Thoennes, in a study sponsored by the U.S. Department of Justice and the Centers for Disease Control and Prevention, found that 64% of violence against women was at the hands of an intimate partner. Of the 8,000 female respondents, 22.1% were physically assaulted by intimate partners at some point in their lifetimes (Tjaden and Theonnes 2000).

3.2.2 Domestic Violence in Philadelphia

Prevalence

A recent study conducted by the University of Pennsylvania with the Institute for Safe Families examined the level of domestic violence detected in screening of patients in four city health centers. Researchers found that 6.5% of patients seen by these Philadelphia clinics were currently being victimized at the hands of an intimate partner (Rhodes 2011).

Another study, which measured health conditions in female veterans in Philadelphia who had experienced intimate partner violence, found that the

5 The current paper focuses on intimate partner violence.

subjects had high rates of lifetime IPV (Dichter and Marcus 2012). The exact IPV prevalence for the subjects was not specified, but they experienced IPV at a higher rate than their civilian counterparts.

The 2010 The National Intimate Partner and Sexual Violence Survey found that 37.7% of women in Pennsylvania, an estimated 1.9 million, have experienced IPV at some point in their lives (Black 2010). According to the Pennsylvania Coalition Against Domestic Violence, which keeps track of domestic violence homicides, between 2001 and 2010, 1,532 women, men, and children died from domestic violence (PCADV 2010).

There is limited data on the prevalence of domestic violence in Philadelphia. According to a YEAR report by the Women's law project, the commonwealth of Pennsylvania does not keep data on victims of IPV. The scope of the problem of domestic violence in Philadelphia can be seen in part by the level with which resources are accessed, though it only provides a snapshot of the pervasiveness of IPV.

1. IPV Services

In 2009, the 92 community-based domestic violence resources in all of Pennsylvania provided services to 92,000 (PCADV 2020). The 24-hour domestic violence hotline, operated by four domestic violence service organizations⁶ in Philadelphia received 9,515 calls in 2011 (Ortner Center 2012). The Women Against Abuse domestic violence shelter, located in Philadelphia, housed a total of 637 people in 2011 and turned down 8,465 requests because of lack of space (Ortner Center 2012).

4. Police Data

In 2011 there were 204,956 911 calls deemed as domestic violence related in Philadelphia (Ortner Center 2012). 6,256 arrests for domestic violence were made that same year (Ortner Center 2012). In 2010, the Philadelphia Police department responded to 30 domestic murders (Women's Law Project 2012).

5. Court Data

The Philadelphia Domestic Relations Division, known as the family court, hears all requests for Protection from Abuse Orders (PFAs). In 2010,

6 Congreso de Latinos Unidos, Lutheran Settlement House, Women Against Abuse, and Women in Transition.

41,204 individuals filed for PFAs in Pennsylvania. 11,623 (28%) of those requests come from residents of Philadelphia. Philadelphians also account for 61% of the no shows (Ortner Center 2012).

Intimate Partner Violence Victim Blaming

Blaming victims for crimes committed against them is a surprisingly common phenomenon. The blaming of victims of intimate partner violence for their situation has been documented in many studies. One study, which used a fractional factorial vignette design, found that 31% of respondents placed the responsibility of resolving the situation on the victim alone (Taylor & Sorenson 2005). This surprising result, put in plain terms, means that a third of subjects placed the onus of fixing the situation on the victim rather than on the offender. The study, which was deemed as roughly representative of the state of California, is an excellent example of the tendency of a large portion of society to expect the victim to be the primary decision-maker and key player in resolving the violence. This study also showed that subjects viewed “engaging formal authorities [12%] and/or leaving the assailant [11%]” as the primary method for resolution. Studies examining the interaction between gender and victim blaming have found mixed results (Bryant & Spencer 2003).

There have been three main theories offered to attempt to explain victim blaming in intimate partner violence: defensive attribution theory, balance theory, and the “just-world” theory (Kristiansen & Giulietti 1990). The “just-world” theory, particularly relevant to the current paper, argues that people try to maintain their belief that the world is fair by looking for ways in which victims deserved their victimization (Lerner 1980). The theory provides a psychological basis for why many place the onus on the victim. By focusing on the characteristics and actions of the victim, the “just-world” theory could account for feelings that a victim is put in a violent situation because she is doing something wrong or making bad decisions.

Notions of victim blame have also been apparent in the legal system. Before 1995, domestic violence cases were handled in a way that blamed victims. Domestic violence cases were handled by the family court and the victim acted as the complainant (Bryant & Spencer 2003). Victims are still expected to take action in many aspects of their protection in the legal system, such as applying for restraining or PFAs (Waddy 1997).

Deficit Focused Research and the Move to Victim Specific Coping

Until recently, the prevailing domestic violence literature engaged in victim blaming by focusing on a victim’s mental shortcomings and inability to

make the 'right decision.' These studies, labeled as deficit focused research, try to explain why victims do not always call the police or end the relationship, which academia has viewed to be the objectively correct actions. Studies on the supposed learned helplessness of victims, Battered Women Syndrome, and traumatic bonding are examples of deficiency-based assessments of victim behavior (Walker 1983; Dutton & Painter 1981). Some early intimate partner violence pieces even contended that women had a Freudian and unconscious desire for punishment and subjugation (Anderson & Saunders 2003). These studies emphasize the supposed cognitive impairments, distortions, and irrationality of victims (Hamby & Gray-Little 1997). Not only did this prevailing model demean victims' decision-making ability, it lumped all victims into one category and made sweeping assessments about the 'correct' behavior. According to these pieces, any woman who did not leave her abuser was making the wrong choice, and there was clearly something wrong with her (Hamby & Gray-Little 1997).

4. Decision Theory's Potential Value in DV Research

Eminent scholars in the field of domestic violence are yearning for a way to evaluate, measure, and contextualize the decisions made by victims of domestic violence. The prominent literature however, has essentially ignored all of the developments in decision theory. Most of the theories make naïve assessments about risk, strategies, and decision-making. I contend that the field of decision theory ought to be incorporated into domestic violence research for the following reasons:

Past Success

Decision theory and behavioral economics have been incorporated to examinations of perpetrator behavior since the 1960s (Horvath 2002). The decision to commit a crime is considered to be of importance to the criminal justice system (Johnson & Payne 1986). Johnson and Payne use prospect theory to explain how deterrence policy could be changed to more effectively prevent crime (Johnson & Payne 1986). Decision theory appears frequently in discussions of the criminal justice system (e.g. Greenberg 1992; Johnson & Payne 1986; Cornish 1986). Decision theory has been accepted as a legitimate mode of examination for perpetration and other aspects of crime, so applying the theory to domestic violence is a logical next step.

Emerging Field

This is a crucial time in domestic violence literature. The research has just evolved to a point where it is using language that acknowledges decision

making as important but it still ignores years of results and data provided by decision theory. As will be described in more depth later, models that are discussing and incorporating risk and victim decisions are very new (Hamby, 2007). Decision theory could provide relevant objections and guidance in these studies in this crucial formative period.

Empowers Victims

Decision theory empowers victims to make choices. Rather than framing domestic violence as a situation where the domestic violence victim is deficient, it can be shown that victims are actually making very reasonable and rational calculations given their knowledge and situation. Rather than look at an objective standard for what the victim should do (Hamby 2007), decision theory allows us to analyze the decision process rather than just the outcome. Acknowledging that victims have the ability to make decisions and make positive changes in their lives could not only empower victims and combat the stigma that victims are irrational, but could also have procedural impacts for domestic violence resources.

Helps Domestic Violence Resources Manage Their Message

Domestic violence resources want victims to access their resources. If the judgments, which are preventing domestic violence victims from accessing help, can be identified, isolated, and modeled, then domestic violence agencies can develop strategies about how to more effectively impact the victim's decision to seek help. This can include changes in advertising, changes in information disbursement methods, and changes in outreach policy. Decision theory has been used frequently in the worlds of advertising and government to discover the best way to convey a message or persuade a target population (Bagozzi 2002). By modeling the decision we can see all of the necessary parts of the decision and how to provide information in a way that leads to better decision-making and improve policy.

From the subsequent investigation of the current literature, it will become clear how years of decision theory research could inform domestic violence models.

5. Attempts at including DT in DV literature

5.1 Victim Coping

In the late 1980s, scholars began to move toward studying the different responsive behavioral strategies of victims. The subsequent field of victim "coping" emerged to try to address how victims respond to victimization.

According to Lazarus and Folkman, coping is defined as “constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person” (1984: 141). This definition of coping includes anything that the victim thinks or does in response to a stressful situation. The conception of coping is the jumping off point for today’s literature on victim decision-making.

Coping literature has reached no consensus on how to classify the coping strategies of victims, but generally agrees on distinguishing between the focuses of the coping (Zanville & Cattaneo 2012). One such classification is problem-focused and emotion-focused coping. According to Lazarus and Folkman, problem-focused coping includes strategies to take actions to fix the problem but also strategies to change psychological perspectives and cognitive processes. Emotion-focused coping is specific to “cognitive processes directed at lessening emotional distress” (Lazarus & Folkman 1984: 150). Another classification technique divides coping into categories of active coping or avoidance coping and engagement or disengagement coping (Zanville & Cattaneo 2012).

Much coping literature in the field of intimate partner violence focuses on the deficiency of victims. Until recently the research focused on why victims did not leave the relationship (Hamby 1997, 2007).

In the late 90s there was a move toward examining the victim’s coping strategies from a victim-specific approach. Dr. Sherry Hamby emphasized this literature’s break with the status quo by explaining that decision-making strategies had to be considered contextually.

Many in the general public, and even advocates and scholars with extensive experience in the field of partner violence, may find it difficult to accept that conditions of poverty and social isolation exist for so many women. Nonetheless, assumptions that leaving is always better or safer than staying have meant that people do not always recognize the wide array of protective strategies that victims use. There are many strategies in addition to leaving the abuser or staying in a shelter (Hamby 2009).

Hamby’s work here moves closer to an approach that incorporates decision theory understanding help-seeking behavior. This research advocates for a holistic approach that incorporates the obstacles that victims face. She classifies these obstacles into five categories: batterer’s behavior, financial obstacles, institutional obstacles, social obstacles, and personal values. Hamby addresses the concerns and risk that victims consider when deciding which coping strategies to adopt. Hamby concludes that there are three financial models that can be used to explain victim’s coping strategies: a strategy that

exposes the decision maker to limited risk, a more aggressive strategy, and a strategy that balances risk (Hamby 2009).

Hamby's research represents a positive move in the direction of victim research. Hamby's model points out that many scholars misinterpret the actions of victims as passive or active without considering the motives of the action. Hamby also moves away from the "one strategy fits all" approach and emphasizes the process of the decision rather than the outcome.

Goodman, Dutton, Weinfurt, and Cook expanded on Hamby's progress in 2003. They divided coping strategies into public realm and private realm coping and created an index with which to document these strategies: the Intimate Partner Violence Strategies Index (IPVS). Goodman et al. asked subjects, victims of intimate partner violence, to talk about the strategies they used to cope with violence (2003). Based on these conversations, they developed a comprehensive list of 47 coping mechanisms divided into the categories of: formal, legal, resistance, placating, safety planning, and informal.

The language and intent of a 2004 study by Waldrop and Resick makes tremendous strides toward a decision analysis. The authors note that previous examinations of battered women's coping styles often come to the conclusion that women are somehow deficient decision-makers (Waldrop & Resick 2004).

Shannon, Logan, Cole and Medley measured the coping strategies of rural and urban women in a 2006 study. This study focused on the fact that victims needed to be knowledgeable about the resources at their disposal. The authors asked 757 women about the help-seeking behaviors they used in the relationship and how hopeful they perceived those resources to be (Shannon et al. 2006).

The most recent and progressive developments toward integrating decision-making and risk into discussions of coping was Hamby and Gray-Little's *Can Battered Women Cope?* This article will be discussed in detail in the critique of coping.

5.1.1 Critique of Coping

Overall Critique

The first and most glaring problem with the coping theory is that the idea of "coping" is a misnomer for what is really going on. The operational definition of coping strategies, as it is used in the literature as defined by Lazarus and reiterated by Waldrop, is the "broad diversity of thoughts and

behaviors used to manage the demands of a taxing situation” (Waldrop & Resick 2004: 291-292). According to this definition, coping in domestic violence would be thoughts and behavior to manage the violent situation. Therefore coping is a sometimes passive and unintentional behavior. Help-seeking behavior, however, involves a person actually seeking an end to violence rather than merely “manage” the situation. Coping literature tries to divide coping into two types to deal with this problem, but the divide makes it clear that half of the factors do not fit well within the definition of coping. Often “active coping strategies” factors, like going to shelter, have no business being lumped in with more “passive coping strategies,” such as denying that there is a problem at all. The whole notion of a strategy implies that a cognizant and willful choice is being made and a plan of action is being adopted or set into motion.

Misuse of the Decision Theory Term “Strategy”

The literature further confuses itself and compounds the problem when discussing strategy. Many papers refer to the act of choosing a coping strategy (e.g. Hamby, Goodman). Most domestic violence victims’ choices are situational and individuals decide what to do in specific circumstances. Victims of domestic violence do not say “I am going to adopt a strategy that bears a lot of risk” and then make decisions that are consistent with that strategy, as implied by the idea that victims “choose a strategy.” Rather, victims make choices and reveal their preferences for risk. The eminent coping literature even recognizes this fact by classifying strategies based on the actions of women, rather than arguing that women make choices based on these strategies.

Hamby’s Model

Hamby’s 2007 risk-based model is the most recent and widely accepted coping model. Hamby, while making many strides forward and directing the literature way from deficit-based models, mishandles risk. Hamby contends that what is missing from other coping models is that they ignore how the “risk of other harms” affects domestic violence. She lays out three strategies, which she states she borrows from finance: the conservative strategy, the balanced strategy, and the venture strategy. Defined by Hamby below:

Conservative strategy: Focuses on minimizing potential for additional losses, especially in other areas such as child custody and financial well-being. Tends to maintain status quo. Avoids stigma through information management; may be reluctant to disclose.

Balanced Strategy: Willing to accept some risk of loss in some areas as seeks to increase safety and other positive outcomes. Likely to try a variety of

responses to violence. Relative balance of conservative and venture strategies can change as context changes.

Venture Strategy: Willing to take greater risks for potential greater payoffs. More likely to leave despite increased risks of separation violence, stalking, and losses in other areas. Precipitous use of venture strategies can be dangerous.

The first obvious problem with Hamby's model is that risks deals with known probabilities. When financiers are choosing between different portfolios and investment options, they know which options are riskier than others, and make those choices accordingly. Victims of domestic violence are dealing with situations of unknown probability in which they have to make probability judgments. They are not picking between different options laid out before them. Hamby's risk model also assumes perfect knowledge. Many domestic violence victims do not even know the different choices they have (shown later in present study).

Moreover, financial risks are scaled to payoffs. The riskier investments have the potential to make more money for investors, while a riskless investment, like the purchasing of a U.S. bond, has low return on investment. If the payoffs were the same for investments with different levels of risk, no one would ever make risky choices. This is not the same for victims of domestic violence. Victims of domestic violence who engage in help-seeking behavior are trying to end the violence, no matter what strategy is used to do so. If the positive benefits of help seeking are an end to the violence and a return to safety, then no matter what the strategy used for reaching this goal was, the payoff is the same. Achieving a state of security and happiness is not affected by the risk the victim takes in order to get there. If Hamby states that the three strategies, which all try to minimize violence, lead to different payoffs, then she is feeding into the generalizations and assumptions she criticizes earlier in the paper. In her description of the venture strategy, Hamby almost explicitly states that leaving the relationship leads to a higher payoff, despite the fact that she criticizes the generalization that leaving the relationship is the best option for all women.

In this way, Hamby's model ignores the risks associated with not seeking help. She states that the venture strategy, in which victims are more likely to leave and bear a high level of risk, is the riskiest of the three strategies. However, this ignores the amount of risk that the victim associates with staying in the relationship. If the victim is weighing the "separation violence, stalking and losses in other areas," risks Hamby links to leaving a relationship, against the risk of being killed or seriously injured and maybe even having her children killed or seriously injured, is the venture strategy, or the "leaving"

strategy, more risky? Hamby assumes that if a help-seeking strategy comes with more potential costs it is riskier, but ignores the level of risk that the decision maker takes in the status quo.

Hamby also points out the cultural limitations to coping models, which can be corrected by decision theory. Hamby contends that many paradigms of coping would negatively classify strategies used by different ethnic groups for coping (Hamby 2007). Decision theory would correct for this as it accounts for the individual beliefs and preferences of the decision maker, instead of an objective standard of what is correct.

The literature on help-seeking behavior in domestic violence corroborates the idea that women are making utility judgments rather than judgments on risk. According to Karla Fischer (1995), at some point women reach the point in their lives where they decide “enough is enough” and they need to make a change. This finding is difficult to explain with Hamby’s model. According to Hamby, the decision maker would be utilizing a conservative strategy, and be avoiding “risk,” up until the moment she decided, “enough is enough,” in which she would switch to a venture strategy, and make “risky choices.” Could it not be that the decision maker’s preferences for risk are stable, but there reaches a point in which she judges it to be more risky to stay with the abuser than to leave? I posit that a decision theory model more easily and accurately reflects findings on women’s decisions to leave or seek help.

If Hamby is willing to borrow from other fields, as she does with the field of finance, then why not borrow from a very clear model of decision making under uncertainty? I would like to point out that Zanville and Cattaneo describe Hamby’s model as “a complicated weighing of multiple factors shaping their options, and making choices based on that assessment” (Zanville & Cattaneo: 2012). This almost perfectly describes decision theory.

Shannon et al.

Shannon et al.’s paper (2006) is a step forward in that it examines what domestic violence victims know, a crucially important aspect of decision-making. Its flaw rests mainly in the fact that it asks women who have already accessed resources how helpful they were. The relevant question when modeling a decision, is: how helpful do you think the resources will be? This question would allow us to see the utility assigned to different help-seeking alternatives. Moreover, the word “helpful” is extremely vague. Helpful how? Can speaking with a clergy person be compared to calling the police? One may be spiritually helpful while the other is legally helpful.

5.2 The Closest Study Yet: Stork's Model of the Decision to Leave

Only one study was identified that did not completely and systematically ignore decision theory. In 2008, Elizabeth Stork constructed a model for the decision to seek shelter from intimate partner violence (Stork 2008). Stork uses naturalistic decision theory, a theory that falls within behavioral decision theory, and asserts that it is the most similar theory to the decisions of domestic violence victims. She contends that since naturalistic decision-making is reflective of every day decision making, it is closer to the decisions that domestic violence victims make. I would contend that the decision to seek help is not one that is an "every day" choice and involves a lot of analysis on the part of the decision maker. Stork uses a model of naturalistic decision-making that emphasizes the role of past experiences in decisions (Stork 2008). This model is extremely similar to case based decision theory. Her assumption that naturalistic decision theory is the best way to examine domestic violence victim's choices is flawed. Her acceptance of behavioral decision theory as a useful tool is an important and unique development in domestic violence research. Moreover, even if we accept that classic decision theory or prospect theory is a non-descriptive model, by examining a prescriptive model we can still draw meaningful conclusions about deviations from ideal behavior and decision-making.

Stork conducted interviews with 25 victims of domestic violence to identify key factors in the decision making process. The common occurrences in the cases Stork examined were "occurrence of a violent event, the generation of options about what to do as a consequence of the violent experience, and a decision to stay or to leave." Stork's research and findings can help inform the present paper.

6. Help-Seeking Decisions

6.1 Aspects of Decision Theory That Could Explain Domestic Violence Findings

Availability Heuristic

Many domestic violence victims witnessed or were the victims of abuse in youth. Experience of past violence in subjects was found to be significantly predictive of future incidences of violence (Coker 1995).

Many scholars believe that women's past experiences with abuse could be predictive of future decision-making. Gondolf & Fisher (1988), Pagelow (1981), and Schutte et al. (1988), found that domestic violence victims

who experienced abuse in youth or witnessed parental violence were more likely to leave their own abusive relationships (Anderson & Saunders 2003). This could be related to the availability heuristic, the act of making probability judgments based on past experiences. If domestic violence victims were victims in the past their probability judgments could be severely impacted by past experiences. In the case of domestic violence victims being more likely to leave, their experience of past violence could have affected their probability judgment that the violence would stop on its own or that the man would change. This judgment, formed on past experience, could be an example of the availability heuristic. Whatever the judgment process, the correlation of past violence and techniques of dealing with present violence clearly imply the presence of the availability heuristic.

Sunk Cost Bias

Numerous studies have found that the more the victim has invested in the relationship the less likely she is to leave. Strube found that economic dependence and emotional investment were both significantly and independently linked to a domestic violence victim's decision to leave the relationship (1988). According to Strube, the longer those victims were in their relationships, the less likely they were to leave their partners. This phenomenon could easily be explained, or at least analyzed, by the sunk-cost bias.

6.2 Modeling Domestic Violence Help-Seeking Decisions

In order to show how decision theory can help us analyze domestic violence help-seeking behavior, the choice to call the police is examined below: It is estimated that the police are contacted in 56% of domestic violence incidents (Bachman 1995). In order to discuss the decision from a decision theory standpoint, it is necessary to know three things: victim's perceived outcomes, the perceived probability they will occur, and their preferences/goals. From there we can glean important aspects of the decision-making process.

Most current studies examine the obstacles and psychological barriers to leaving rather than the pragmatic concerns of the decision maker (Anderson & Saunders 2003). It is important to focus on the actual decision-making process rather than simply correlates of action.

6.2.1 Calling the Police

Factors

The call will be made if the cost of not calling outweighs the cost of calling.

The factors that are correlated with police intervention are below in Tables 1 and 2. Figure 6 shows the cost benefit analysis and Figure 7 shows that same analysis in a decision tree.

Category	Concern	Found in:
Personal safety	Weapon involvement Injury Severe physical violence Substance abuse	Brookoff et al., 1997; Felson, Messner, Hoskin, & Deane, 2002, Wolfe et al 2003, Rennison, Welchens 2003, Bonomi et al. Bachman & Coker 1995, present paper, Bonomi et al. Kantor & Straus 1990, present paper, Bonomi et al. Brookoff et al., 1997;
Safety of others	Children in the home	Berk, Berk Fenstermaker, Newton & Loseke, 1984; present paper

Table 1: Relevant Predictors of Calling Police

Category	Concern	Found in:
Personal safety	Retaliation	Wolfe et al. 2003, Rennison & Welchens 2003, Fleury et al. 1998
Economic concerns	Lose Job Lose home/ place to live	Wolfe et al. 2003, Rennison & Welchens 2003, Fleury et al. 1998
Safety of others	Threats to children/ pets/ etc.	Fleury et al. 1998, Berk, et al. 1984
Perpetrator	Didn't want him to get in trouble	Fleury et al. 1998, Berk, et al. 1984

Table 2: Relevant Predictors of Not Calling Police

We know that the following deter seeking police intervention:



Figure 6: Cost Benefit Analysis Model

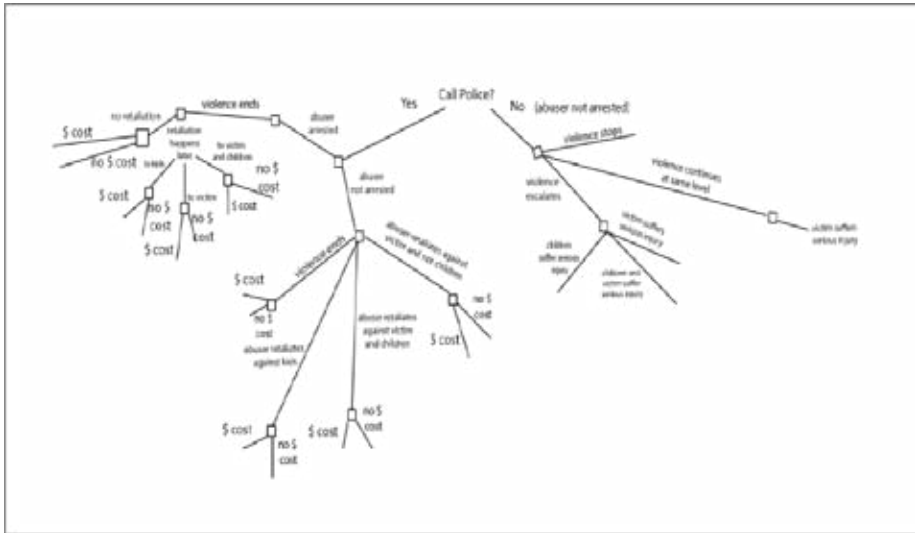


Figure 7: "Should I call the police?" Decision Tree

As demonstrated by Figure 7, the expected utility on the left side must exceed the expected utility on the right side in order for the call to take place. It is important to note that the decision tree does think about further

incidents of violence that will occur independent of calling the police. This is because victims are not likely to be engaged in planning during the heat of the moment, and will likely be addressing the factors that are affecting them in the immediate moment.

The idea that increased danger is correlated with increased calling of the police corroborates the idea that the utility of calling will have to exceed the utility of not calling the police.

Probability Judgments

In order to analyze the utility associated with each outcome we would need to know the subjective utility values and the subjective probability judgments.

Berk, Fenstermaker Berk, Newton, and Loseke were close to asking the right questions in their 1984 study. They asked subjects (201 domestic violence victims, who did not necessarily call the police) what their concerns were about police coming. Worry here can be roughly translated as the probability with which subjects thought the concern would actually be a problem.

(N=201)

Concerns	Very	Percent Worried	
		Somewhat	Not at all
Worse after police left	53.2	21.9	24.9
Do no good	28.9	27.4	43.8
Hurt relationship	36.3	17.9	45.8
Offender lose job	33.3	24.9	53.7
Bad for children	21.9	40.8	37.3
Victim lose job	27.4	18.9	53.7
Friends disapprove	14.4	18.9	66.7
His family disapprove	13.4	9.5	77.1
Her family disapprove	9.0	18.9	72.1
Dealing with cops	25.9	22.9	51.2

Table 3: Victim's Concerns About Calling the Police, from Berk et al.
From Berk, Fenstermaker Berk, Newton and Loseke

According to prospect theory, high probabilities are treated with near certainty and low probabilities as impossible. If we set "not at all" judgments to 0.00 probability they will occur, "somewhat" judgments to 0.50 probability

they will occur, and “very” judgments to 1.00 probability they will occur, we can see the distribution of probability judgments below:

Concern	Probability Judgment (p)	Frequency (# of subjects)	Average (p) Judgment
Worse after police leave	1.00	107	0.642
	0.50	44	
	0.00	50	
Do no good	1.00	58	0.425
	0.50	55	
	0.00	88	
Hurt relationship	1.00	73	0.453
	0.50	36	
	0.00	92	
Offender lose job	1.00	67	0.458
	0.50	50	
	0.00	108	
Bad for children	1.00	44	0.423
	0.50	82	
	0.00	75	
Victim lose job	1.00	55	0.368
	0.50	38	
	0.00	108	
Friends disapprove	1.00	29	0.239
	0.50	38	
	0.00	134	
His family disapprove	1.00	27	0.609
	0.50	191	
	0.00	155	
Her family disapprove	1.00	18	0.184
	0.50	38	
	0.00	145	
Dealing with cops	1.00	52	0.373
	0.50	46	
	0.00	103	

Table 4: Average Judgments

While Berk's questions are a bit outdated and restrictive in that they asked victims only about ten aspects of a decision, it is a good example of how probability can be examined. A study similar to Berk's should be conducted in order to evaluate the probability judgments of victims of domestic violence more clearly.

6.3 How this Model Will Change for Women in Philadelphia

6.3.1 Results from Philadelphia Victim Interviews

Victim A

Victim A was involved in a non-intimate partner domestic incident. She and her 13-year-old daughter were staying with the perpetrator because they were homeless. Their overall quality of life was low: they both slept on the floor and they could not be in the apartment when the perpetrator was not there. One night, after consuming a large amount of alcohol, the perpetrator attacked the victim in front of her daughter. The daughter immediately called the police and the victim's older son. When the son arrived and saw his mother, bruised and bloodied, he attacked the perpetrator. When the police arrived they arrested both the perpetrator and the victim's son. The victim dropped the charges on the perpetrator in exchange for the charges on her son to be dropped. The victim went to stay with friends and called the Women Against Abuse shelter soon after. She was pleasantly surprised by the quality of the shelter. The planning and resources at the Aftercare program have taught her important skills about benefits, employment, welfare, and legal guidance.

Victim B

Victim B was in a very economically comfortable situation with the perpetrator, her husband. She had called the police many times, but because she owned her home with the perpetrator, the police would not arrest him. It was not until the fifth time she called the police that they actually tried to arrest him, but he had left the house by the time they arrived. She had three children and was used to a certain privileged economic lifestyle. She was reluctant to leave because she did not want her children to go back to square one. Once the abuse got so bad she decided that it was worth it to lose the economic security:

"I wasn't willing to let go of anything because I felt like I worked so hard to get where I am. I was going to lose it all or keep it all. I wasn't willing to sacrifice anything. But after I had been living in my house for about a year, my peace of mind was gone. I was always scared. I couldn't watch TV — there was no comfort in it. I was losing my mind, and I finally just said, I'm going to let it all go, I have to leave. The night I told him I was leaving I ended up

in the hospital”

While in the hospital, the nurse called the Women Against Abuse Hotline and the police. The victim expected the shelter to be a really bad place with women crammed onto cots. She was pleasantly surprised when she and her children had their own room. The victim lost her job as she did not know she could legally get time off of work for domestic violence. She also lost her car, her home, her job, clothes, and furniture.

The victim noted that even though she had a Protection From Abuse order, whenever the perpetrator would attack her in her home and the police would come they would not arrest him because he owned the home.

She noted that the entire process would have been much easier without her children since they did not understand what was happening and she wanted them to have safety. Her hardest decision, she says, was to decide that her children could not see their father.

Victim C

Victim C was in a relationship with the perpetrator for 2 years before the violence began. The perpetrator would call her “50 times a day” to ask where she was. The victim “had to call” to update the perpetrator at all times. “I had to call him when I did everything, even when I was driving home from work. One day I just wished I would get in a car crash because I’m on the phone with [the perpetrator]!” The victim called the police frequently and noted that she had to go through it “over and over again” until she was tired of it and decided to leave. Each time she was abused the severity of the violence increased. Then the attacker would come back with gifts and apologize and say he would not do it again. She noted that the perpetrator provided her with economic comfort, she didn’t have to pay any bills and she had a nice car and a nice house.

It was not until she was seriously injured that she pursued legal proceedings. She noted that her three children would hear the arguments and were being emotionally affected. He would victimize her at times when her children were not there and he would “make sure there were no witnesses.” It was not until she was very hurt that the police arrested the perpetrator. After he was arrested the victim conducted a background check on the perpetrator and saw that he had a very long rap sheet of other domestic violence incidents, but he was not convicted for any of them.

The victim emphasized how the justice system had failed her. "I didn't want him to get away with putting his hands on me. I didn't want him to get away with it. I want you to know you're gonna get in trouble and shouldn't do it no more. They're gonna help me and you're gonna get in trouble." However, when she went to court the judge and the perpetrator had a jovial exchange and the DA was even surprised at the little punishment he received. "The judge acted like I was the one who wasn't telling the truth. Justice wasn't served."

After the perpetrator was arrested the victim attended an event about domestic violence at her church and learned about the shelter. She was put in touch with Women Against Abuse. Now, she says, the PFA is the only thing that gives her peace of mind.

Overall Observations:

The Perception That There Was No Choice

All three subjects commented that once the violence got to a certain level of severity "there was no choice," and they had to leave. This idea that it was okay to stay until the violence reached a certain point could reflect the victim's probability judgments. It could be that once the women had the realization that the violence was serious, they increased the probability the violence would seriously injure them and decreased the probability things would get better. Then the eminence of serious injury outweighed all other costs of staying.

The Importance of Faith

Two of the three subjects emphasized their faith in Jesus and the importance of faith and religion in getting them through their struggles. This re-emphasizes the need for domestic violence resources to communicate with clergy and ensure that churches in Philadelphia have the adequate literature and information to relay to congregants.

All Pleasantly Surprised by the Quality of the Shelter

All three victims discovered the shelter was nicer than they thought it would be. They expected the quality of life to be similar to a general homeless shelter, but all found it to be very nice. The expectation of a bad shelter could negatively effect the victim's decisions to attempt to be placed in the shelter.

6.3.2 Results from Questionnaires

The ages, age at first delivery, and the number of children of the subjects interviewed with the questionnaire are below in Table 5.

	Age	Age at first delivery	Number of children
	36	20	4
	37	12	2
	19	19	1
	28	15	1
	36	18	5
	19	19	1
	21	16	3
	22	18	1
	32	17	3
	30	19	3
Average	28	17.3	2.4

Table 5: Subject Characteristics

Organization of First Contact	How Subjects Knew About WAA
Hospital	Hospital
WAA	Friend
Police	Sister
Red Cross House	Red Cross House
WAA	"experience in repeated abusive relationships"
WAA	App on phone
Police	Family court
Eliza Shirley Shelter	"Some random girl"
Police	Police
Mother and friends	Internet

Tables 6 and 7: Organization of First Contact and How Subjects Knew About WAA

Though this sample size is small, a significant majority of subjects did not know about the resources available to them in Philadelphia. The average number of resources subjects knew about before WAA was 1.4. Given the high quality and number of resources for domestic violence victims in Philadelphia, this is a sad fact. The existence of the resources cannot positively impact the decisions or the lives of victims if they do not know that they exist. It is absolutely crucial that victims of domestic violence know about their options so that their decisions can be fully informed.

6.3.3 Other Philadelphia Specific Observations

Police Do Not Have Appropriate Materials

During my ride along with the Philadelphia Police Department I inquired about the cards with the list of resources for victims of domestic violence in Philadelphia. The officer did not have the resource cards with him, as he is required to, and he noted that there are not any at the station either as the city of Philadelphia is inefficient at making sure the police have all of the correct paperwork.

Dissatisfaction with Police Response

During my police ride, the callers we responded to were generally surprised that the police officer could not do more to help them. It was clear that their expectations of the police officer's legal abilities were inaccurate.

6.3.4 How This Applies to the Model

Knowledge

Based on my observations, Philadelphians know very little about the resources that are at their disposal. When they did know about resources, such as the police, their expectations of what the police could do for them were ill informed.

Rational decisions can be made based on incorrect beliefs. Given that the average subject in the present study only knew about one or two organizations before WAA, it is safe to assume that the average decision to seek help in Philadelphia is made based on partially formed and incorrect beliefs. Moreover, these subjects were more likely to know about resources in Philadelphia than the general population because the sample was taken from women that had already accessed resources. A representative population

would probably know of many fewer options for help.

Every branch in a decision tree represents a different possibility for the course of that decision. If the average victim of domestic violence in Philadelphia only knows of one way to get help, then her decision tree will look extremely different from a decision tree formed under perfect information. If the victim feels as though there are more avenues for success outside of her abusive relationship, it may encourage her to seek help.

7. Implications for Policy

The biggest implication of the present study on domestic violence policy is how and where information is given to victims of domestic violence. These results are summarized below.

Dispersal of Information

Organizations in Philadelphia are not doing a good job of ensuring that victims of domestic violence know about the resources available to them. Outreach efforts need to be increased. Since all of the women in the sample had given birth or were pregnant, information should be dispersed at the hospital at the time of birth.

The domestic violence resource organizations ought to conduct outreach in schools. The women in the sample gave birth at relatively young ages, shortly after high school. Therefore, information dispersal on domestic violence should not be delayed. The resources available in Philadelphia should be emphasized in Philadelphia schools.

Content of Information

Expectations ought be managed. The police officer I rode along with was dismayed that the same women were calling 911 over and over again. Yet, he did not have the informational resource cards to give to the victims. The police have a huge amount of visibility in the community. It could be that women are merely calling the police because they do not know whom else to call. Often when the police do come, victims are not satisfied with what the police can do for them. There could be a more efficient access of resources if domestic violence victims knew what different services could do for them. When the information is dispersed it needs to be made clear that in most cases, in which the victim is not in extreme danger, a call to the WAA hotline will be more helpful than a call to the Philadelphia police.

Since many victims of domestic violence do not leave until they realize the violence is severe and continuing, it may be of use to start a public service campaign educating victims that even a seemingly small abusive act is dangerous. Perhaps a slogan like, “It starts with a shove and ends with a gun” or something to that effect, could make clear to victims of domestic violence that despite the promises of the perpetrator, the violence is most likely going to escalate. A key development in the advertising and outreach of the organizations would be to make victims understand that even the least severe act of violence is unacceptable. If DV resources were able to intervene where the police cannot, before the abuse is injurious, then it would save the resources’ money and save the victims time, pain, and maybe even their lives.

8. Limitations of the Study

Because of limited time and a lack of funding the sample size of the investigation was relatively small. Further room for study would involve a full-scale survey of victims of domestic violence in the relevant population. The survey would ask about what resources they knew about at the time of the incident, what resources they know about now, and the different costs and benefits they were considering when/if they attempted to seek help. The present study is only the beginning of the potentially wonderful marriage of decision theory and domestic violence research.

9. Conclusion

It seems as though the field of domestic violence came to its own conclusions about the need to examine decisions without even knowing that the field of judgments and decisions existed. It is time to incorporate the two. Even if domestic violence scholars decide that the decision theory models are inadequate, they can borrow from the years of research on human biases, heuristics, and judgments to better understand victims of violence. It is not appropriate to effectively ignore a validated and prolific field of discovery of human behavior.

Once domestic violence victims’ perceived outcomes, probability judgments, and preferences are understood, a world of implications for policy will appear. If women are judging the likelihood that their partner will be arrested if the police come to be unreasonably high, then the police department can train its officers to explain their powers of arrest more clearly to victims. By isolating and analyzing the variables in a decision, we can see where more information is needed, and what needs to be said to make judgments more accurate and safe.

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Appendix

Appendix-1 – In-person and over the phone interview questions and information provided

Hi. I'm Lizzie, Lizzie Sivitz. And I'm working on my college degree. In order to graduate, we have to do a project. I am studying how people make decisions and I am interested in learning about how you have made decisions about your relationships, your safety, and getting help when you needed it. Last year I worked on a project about violence against women in Philadelphia that looked at a lot of different agencies. This time I want to learn about it from the woman's point of view.

Would it be okay for me to ask you a few questions? I won't record our conversation but will take a few notes from time to time. You don't have to answer any question you don't want to answer. And you might think of things that are important for me to know even if I don't ask.

What type of resources have you accessed?

Informal resources: friends, family, church, etc.?

Did you seek a PFA order through the family court? (If no, skip to next set of questions.)

When did you decide to do this?

What made you think that you needed a PFA?

What did you think a PFA would do?

What happened?, I mean, how did it work?

Was the process like what you expected?

Did you end up getting a PFA? (why or why not)

Did you call the police? (If yes, how many times? Did they come?) (If no, skip to next set of questions.)

When did you decide to do this?

Why did you call the police?

What did you think would happen when you called the police?

What happened after you called the police?
Was the process like what you expected?
Did you call the WAA hotline? (If no, skip to next set of questions.)
When did you decide to do this?
Why did you decide you needed to call?
What did you think calling would do?
What happened?, I mean, how did it work?
Was the process like what you expected?
Did you access the DV shelter? (If no, skip to next set of questions.)
When did you decide to do this?
Why did you need to access the shelter?
What did you think would happen when you went to the shelter?
What happened?, I mean, how did it work?
Was the process like what you expected?

Appendix-2

I am studying how people make decisions and I am interested in learning about how you have made decisions about your relationships, your safety, and getting help when you needed it.

How old are you? _____

Do you have children? Yes/No

If yes, age(s): _____

Why did you decide to seek help?

What resources/ people did you think were there to help you at the time you wanted help? Please list all of the organizations in Philadelphia you knew about and how you knew about them: (example: Women Against Abuse, or the police).

What resources (organizations, police, friends, etc.) did you contact when you first sought help?

How did you know about these resources?