AGENDA-SETTING FOR INTIMATE PARTNER VIOLENCE:

EXPLORING THE ROLE OF SOCIAL MEDIA

UNITED STATES - BASED TWITTER

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ABSTRACT

AGENDA-SETTING FOR INTIMATE PARTNER VIOLENCE:

EXPLORING THE ROLE OF SOCIAL MEDIA

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Richard Gelles

This dissertation examines agenda-setting and social policy in the case of intimate partner violence. More specifically, the study investigates the use of social media in the United States as a means of agenda-setting and policy formation. The study employs the agenda-setting theoretical framework developed by Kingdon (1984, revised in 1995). Kingdon proposes three streams of policy agenda setting processes, including "problem recognition," "policy formation," and "politics." The study has two goals: 1) investigates the transformation of IPV from a private trouble into a social policy issue in the US; 2) focuses on the use of social media as a means of agenda-setting of IPV. The examination of social media focuses on Twitter, which is a leading platform with millions of registered users and quantifiable and accessible data for research. The study is an exploratory content analysis combining computational and manual methods to investigate the contents on Twitter. The study uses topic modeling method, *Latent Dirichlet Allocation,* for mining IPV data on Twitter. Then, the study tests the coding protocol in a sample of tweets (n=900) and tests for the inter-coder reliability between two independent coders. The unit of analysis is each individual tweet. Results show that

Twitter reveals the current agenda-setting of IPV in the US, with an emphasis on problem recognition, rather than existing policies, and regulations, supporting resources or social movements. I do not see a coupling or window of opportunities for policy changes for IPV in the U.S. from my sample. Limitations, and implications to research, policy and advocacy are discussed. My study provides an insight that it is enough to discuss about IPV on the problem identification level. In order to set the policy agenda of IPV on social media, advocates and IPV organizations should focus more on the tweets contents related to existing policy, programs, and supporting systems to increase public awareness of IPV, as well as inform policymakers. For a period of thirty years of post-VAWA, advocates and researchers can consider developing social media-based strategies to promote a re-coupling of "problem recognition," "policy formation," and "politics" to set the agenda of IPV.

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Keywords: Intimate partner violence, Social media, Agenda-setting, Policy-making,

Comparative study, Computational social science.

CHAPTER 1 Introduction: Agenda-Setting for Intimate Partner Violence:

Exploring the Role of Social Media: United States-Based Twitter

Problem Statement and Study Purpose

This dissertation examines agenda-setting and social policy in the case of intimate partner violence (IPV). More specifically, the study investigates the role of social media in the United States as a means of agenda-setting. The study employs the agenda-setting framework developed by Kingdon (1984, revised in 1995). Kingdon identifies three streams of processes, including "problem recognition," "policy formation," and "politics" in his analysis of social policy agenda-setting.

Intimate Partner Violence is the most common type of violence against women (VAW), occurring in various forms (i.e., physical, psychological and sexual violence). Intimate Partner Violence is a longstanding, prevalent, and ongoing social problem across societies and cultures (WHO, 2012).

The present study has two goals. First, the study employs Kingdon's framework to investigate how IPV was transformed from a private trouble (Mills, 1965) into a social policy issue in the United States. Second, the study uses Kingdon's framework to focus on how social media reveal the current agenda-setting of IPV in the United States. The examination of social media focuses on the social media platform of the micro-blogging service Twitter in the U.S. (the service commenced in 2006). This micro-blogging site is

a leading platform of social media with millions of registered users and quantifiable and accessible research data.

Research Questions

The first major research question is to systematically review:

RQ1: How was IPV transformed from a private trouble (Mills, 1965) into a social policy issue in the United States?

The second major research question examines how Twitter reflects the agenda-setting of intimate partner violence?" In order to answer this question, the study is designed to address the following sub-questions:

RQ2: Can machine learning document analysis identify IPV – related conversations and topics on Twitter?

    RQ2a: What are the most popular IPV-related words in the sample document collection?

    RQ2b: What IPV-related words tend to co-occur together?

    RQ2c: Which IPV-related topics appear most frequently?

    RQ2d: On which topics does the whole document collection focus?

    RQ2e: What are the differences in topics and thematic structure between organization tweeters and individual tweeters on Twitter?

RQ2f: Do the identified topics and thematic structure reflect the agenda setting of intimate partner violence?

RQ3: Are tweets with defined hashtags relevant to IPV constructed in order to engage in agenda-setting of IPV? If so, how?

    RQ3a: What are the level of "defining problems" of IPV occurring on Twitter?

    RQ3b: What are the indicators (i.e. statistical data that indicate the occurrence) of IPV occurring on Twitter?

    RQ3c: What are the "focusing events" of IPV occurring on Twitter?

    RQ3d: Is there a feedback mechanism for tweets related to IPV on Twitter?

    RQ3e: What are the victims' self-revelations occurring on Twitter?

    RQ3f: What are the promoting self-helps occurring on Twitter?

    RQ3g: What are the advocates' experiences occurring on Twitter?

RQ4: Do tweets with defined hashtags relevant to IPV on Twitter reflect policy formation and agenda-setting of IPV? If so, how?

    RQ4a: What are the characteristics of policy ideas about IPV posted on Twitter?

    RQ4b: Who are the "policy communities" (principle users) on Twitter that post tweets mentioning the selected hashtags relevant to IPV (i.e. individuals, interest groups, NGO/NPO, academic groups, or news media)?

RQ5: Do tweets with defined hashtags relevant to IPV on Twitter reflect politics in the agenda-setting of IPV? If so, how?

RQ5a: Do social movements or grassroots activities use tweets to facilitate promotion and mobilizations for IPV on Twitter? If so, how?

RQ5b: What are the event promotions occurring on Twitter?

RQ5c: What is the fund raising occurring on Twitter?

RQ5d: What are the volunteer recruitments occurring on Twitter?

RQ5e: What is the lobby and advocacy occurring on Twitter?

RQ5f: What is the raising of public awareness occurring on Twitter?

RQ5g: What are the characteristics of "political" tweets about IPV posted on Twitter?

RQ6: Are there "coupling and windows" of agenda-setting for IPV on Twitter?

Intimate Partner Violence in the United States: From Private Trouble to Social

Problem to Policy Agenda

Women's Movement Identifies Wife Abuse as a Social Problem

Intimate partner violence (IPV) is now recognized as a significant social problem in the United States. However, prior to 1970s there was not even a term to describe the issue of violence toward women in intimate relationships and no estimates on the extent of the phenomenon (Ashcroft, 2000; Gelles & Straus, 1988). IPV was essentially a private trouble. Gelles (1990, p.13) explains that husband-to-wife-violence did not emerge as a social problem because "no sizable or influential group in the population defined it as a problem." Violence against women (VAW) received attention in the past three decades, not because it became more prevalent, or because the public increased their concern about the issue, but because the Women's Movement of the 1960s to 1970s began to identify violence toward women and engaged in efforts to alert the nation to wife beating as a social problem rather than a private matter (Morgan, Nackerud & Yegidis, 1998; Pleck, 1987; Schecter, 1982; Tierney, 1982;). The Women's Movement viewed VAW as a crime and its policy agenda for VAW included the reform of criminal justice systems for providing equal protection for women (Ferraro, 2009, p.82). Activists in the Women's Movement began to seek appropriate remedies and services (Kurz, 1989) in several areas, such as battered women's shelters, prosecution and arrest of offenders (Tierney, 1982, p.208). Increasing the recognition of VAW as a social problem was critical to getting the attention of policy makers to implement policies to protect women

from intimate violence. The Women's Movement paved the way for legislation, laws and policies to address VAW (Hempel, 1996). The following sections discuss some of the substantial influences.

Shelters

One substantial impact of the Women's Movement was the development of battered women's shelters. In 1971, English activist Erin Pizzey co-founded the first battered woman shelter, Chiswick Women's Aid, in London, England. In the early 1970s, advocacy groups in the U.S. began to organize shelters for battered women across the country. The first shelter opened in St. Paul, Minneapolis in 1973 (Murray, 1988; Prah, 2006), and by 1980, the number of shelters increased to nearly 500 (Murray, 1988). There was at least one shelter for battered women in every major city in the U.S. (Ferraro, 2009). Shelters continuously received calls from battered women who requested services and supports. However, many victims were turned away because of the limited space in existing shelters. The fact confirmed Pleck's (1987) claim that "if a larger number of battered women went to shelters, then a social problem clearly existed" (Pleck, p. 190). Thus, the Women's Movement pressed federal government for additional funding to support shelters (Schechter, 1982). The organized responses of promoting shelter services in Women's Movement reflected the transition of wife abuse from a private trouble to a social problem. Today, battered woman shelters are crucial services to protect female victims and children from family violence.

Early Research on IPV

Sociologists began to study family violence in the 1970s. The decade of seventies witnessed "a wholesale increase in attention to, and published reports" on family violence (Gelles, 1980. P.874), such as the prevalence of family violence, theories on the causes of family violence, and feminists' research and experimental research on the effects of policy intervention. The results from early research informed the public and policy makers that family violence is a legitimate social problem.

Researchers carried out the *First National Family Violence Survey* in 1975 (Straus, Gelles & Steinmetz, 1980) and later the *Second National Family Violence Survey* in 1985 (Straus & Gelles, 1986). Researchers employed the *Conflict Tactics Scale* (CTS) (Straus, 1979) to measure levels of violence in the two national studies as well as surveys of college students. The CTS and the revised CTS (Straus, Hamby, Boney-McCoy & Sugarman, 1996) are the most widely used measure for identifying intimate partner violence in the world (Straus & Douglas, 2004). These pioneer studies on the prevalence of family violence made it clear for the need for legislation focusing on the prevention and treatment of violence against women, and also paved way for later studies on family violence worldwide.

Researchers in the seventies also developed theoretical explanations for family violence, such as *Resource theory* (Goode, 1971), *General system theory* (Straus, 1973), *Structural model of conjugal violence* (Gelles, 1974), *Resource theory* (Allen & Straus, 1975), *An ecological perspective* (Garbarino, 1977), *An evolutionary perspective* (Burgess, 1979), and *Patriarchy and wife abuse* (Dobash & Dobash, 1979). Gelles and

Straus summarized theories of interpersonal violence in their work (Gelles & Straus, 1979).

In 1975, Susan Brownmiller published a book on sexual violence against women, *Against Our Will: Men, Women and Rape,* which significantly impact the field. The feminist activist Del Martin and her book, *Battered Wives* (Martin, 1976) were among the first efforts to alert the general public and to organize feminist reforms to prevent and treat men's violence against women. One year later, Lenore Walker introduced a concept of "Battered Woman" and later introduced the concept of "The Battered Women's Syndrome" in 1984 (Walker, 1977; Walker, 1984). These concepts brought attention to the psychological and behavioral symptoms a woman experienced in a battering relationship.

Experimental research in the 1980s had a powerful impact on current legal policy in domestic violence. Lawrence Sherman and Richard Berk's *The Minneapolis Domestic Violence Experiment* (MDVE) was carried out between 1981 to 1982 (Sherman & Berk, 1984). The study demonstrated the effectiveness of police arrest of offenders and found that arrest was the most effective police response. The study was a random experiment with random assignment for arrest, separation and some form of advice (i.e. mediation). During a six-month follow-up period after each police intervention, the frequency and seriousness of domestic violence were measured by collecting officers' reports (Sherman & Berk, 1984). The study had unprecedented impact on police practices as law

enforcement agencies began to enact mandatory arrest of offenders in numerous states (Buzawa & Buzawa, 2003).

Legislation: Enactment of VAWA in 1994

In 1994, the Congress enacted the first comprehensive federal legislation in the U.S.—*Violence Against Women Act* (VAWA) to address violence in intimate relationships (Pub. L. #103-322). VAWA of 1994 appropriated 1.6 billion for services, programs and interventions, such as shelters, hotlines, rape prevention, and judicial enforcement training for domestic violence (Clark et al., 2002). The VAWA created the office of Violence Against Women (OVW), a component in the U.S. Department of Justice in 1995 to administer the financial and technical assistance to the develop programs, policies and practices across the country. The VAWA also funded the National Domestic Violence Hotline (Cramer, 2004). Every 5 years, VAWA must be reauthorized. Up to now, VAWA has been reauthorized in Congress in 2000, 2005 without major changes. After long legislative battle for the Act's 2012 renewal, VAWA was reauthorized in March 2013 and expanded federal protections of LGBT community, Native Americans, and undocumented immigrants.

Current Data on Prevalence

The National Intimate Partner and Sexual Violence Survey (2011) reported that about 35.6% of women report being the victim of some form of violence, such as rape, physical violence or stalking, by an intimate partner in their lifetime. Key findings about women victims by an intimate partner are:

- 32.9% of women report at least one lifetime incident of physical violence victimization by an intimate partner.

- 22.3% of women report at least one lifetime incident of severe physical violence victimization by an intimate partner.

- 48.4% of women have experienced psychological aggression by an intimate partner in their lifetime.

- 9.4% of women have been raped by an intimate partner in their lifetime.

- 16.9% of women have experienced sexual violence, other than rape, by an intimate partner at some point in their lifetime.

- 10.7% of women have been stalked by an intimate partner during their lifetime.

Even though women are more likely to be victims of partner violence, men are also victimized by intimate partner violence. Estimates are 28.5% of men report being the victims of some form of violence by an intimate partner in their lifetime. Key findings are:

- 28.2% of men report an incident of physical violence victimization by an intimate partner.

- 13.8% of men report at least one lifetime of severe physical violence by an intimate partner.

- 48.8% of men report experiencing psychological aggression by an intimate partner during their lifetime.

- There are no estimates on the rape victimization by an intimate partner.

- 8.0% of men report experiencing sexual violence other than rape by an intimate partner during their lifetime.

- 2.1% of men report being stalked by an intimate partner during their lifetime.

Agenda Setting

Definition of Agenda, Agenda-setting

A policy agenda refers to a list of social problems/subjects that receive attention of people both inside and outside of government and a result of the dynamic interplay (Kingdon, 2011, p.3; Dearing & Rogers, 1996, p.2). Not all social problems become policy agenda items. For example, a social problem needs to be exposed in the mass media in order to become an agenda item (Dearing & Roger, 1996). Dearing & Roger (1996) discuss how the problem of "cigarette smoking" in the 1970s transformed from an individual problem to a policy agenda through coverage by the media. As a result of media coverage, the anti-smoking message was accepted by the public and thus received attention from people inside the government and became public and policy agendas.

Agenda-setting is the process by which "public officials learn about new problems, decide to give them their personal attention, and mobilize their organizations to respond to them" (Nelson, 1986, p. 25). The agenda-setting process narrows and focuses on the "set" of the list of social problems/subjects. Therefore, understanding the agenda-setting includes "why the agenda is composed as it is at any one point in time" and "how and why it changes from one time to another" (Kingdon, 2011, p.3).

Kingdon's book *Agendas, Alternatives, and Public Policies* (1984, revised in 1995) provides a seminal framework in understanding the complex dynamics of the policymaking process. Kingdon approaches agenda-setting research by using a multiple stream model including the triad of: (1) problems, (2) policies, and (3) politics. A *problem* refers to a real-world social problem that requires the attention of government and policymakers, highlighted by various indicators, focusing events, and feedback mechanisms (Kingdon, 1995). *Policy* is defined as a list of policy solutions or alternatives that generated from an accumulation of knowledge, perspectives, and interactions from specialists, such as academics, researchers, interest groups, Congressional staff, and bureaucrats who work in what Kingdon calls the policy stream to address a problem (Kingdon, 1995). *Politics* refer to the influential factors that affect the agenda in the political process, either as an impetus or constraint, such as national mood, public opinion, partisanship, election results, changes in administration, and the ideological distribution in Congress (Kingdon, 1995).

Kingdon's framework is useful in understanding the complex dynamics of the policymaking process because of its underlying assumption that "policymaking is dynamic, irrational, and unpredictable" (Nutley, Walter, & Davies, 2007). Researchers utilize Kingdon's framework to understand public policy formation (Mclendon, 2003) and agenda-setting research both in the U.S. (Moya, 1998; Weiner, 2011; Sabatier, 1999; Young, Shepley & Song, 2010; Gates, 2010) and China (Chow, 2014; Huang, 2006; Zhu & Sun, 2009) in various domains of social issues, such as environmental policy (Clark,

2004), health policy (Sardell & Johnson, 1998), education policy (Chow, 2014) and transportation policy (Lindquist, 2006).

Role of Main Stream Media in Agenda-Setting—Public as Information Recipient

Many factors potentially influence the process by which social problems become salient political issues that merit the attention of policymakers. The factors include interest groups, social science data, economic crisis, and mass media (Cook et. al., 1983). Among these factors, the study of the agenda-setting impact of mass media has a rich history as a theoretical perspective in communication studies.

As early as 1922, journalist Walter Lippmann raised the assumption that the mass media serve to connect the world outside with the pictures in people's heads (Public Opinion, 1922). Cohen (1963) expanded on Lippmann's assumption and suggested that the media tell the public what to think about. Ten years later, McCombs & Shaw (1972) conducted the Chapel Hill study to investigate how the salience of an issue transfers from the media to the public. Since McCombs & Shaw's study in 1972, a growing body of researchers has examined the agenda-setting impacts of mass media on the public. Researchers emphasized that the public is considered as information receivers and the public relies heavily on the mainstream media to "inform their understanding of issues" (McCombs & Shaw, 1972; Roberts & Bachen, 1981; Winter & Eyal, 1981; Chaffee & Metzger, 2001). Amplified media coverage of certain issues leads to the judgments of an issue's importance in the minds of the public. Besides the agenda setting impact of mass media on the general public, empirical studies also examined the effects of mass media

on governmental policy makers, interest group elites, and policy. Cook et al (1983) showed that even policy makers' own issue priorities did not change; they make policy change by being convinced by the public's opinions of issue importance.

Social Media

Definition of Social Media

Social Media refer to Internet-based applications offering users the platforms to create and exchange user-generated contents, which is built on the ideological and technological foundations of Web 2.0 (Kaplan & Haenlein, 2010). The term "social media" is different from the term "social networking," even though the two are often used interchangeably (Moorhead et al., 2013). Social media applications include different categories in various forms, such as blogs, microblogs (e.g. Twitter), social networking sites (e.g. Facebook), business networking sites (LinkedIn), virtual social worlds (e.g., Second Life), collaborative projects (e.g., Wikipedia), media sharing sites (e.g., YouTube, Flickr), and virtual gaming worlds--e.g., World of Warcraft-- (Mangold & Faulds, 2009; Kietzmann et al, 2011). Social media represent various platforms of consumer-generated content (CGC) in which users generate information as well as exchange opinions and initiate discussions. Social media can also run on mobile devices by employing mobile technology, featured by incorporating new factors such as the geographic location of the users.

Major Social Media in the U.S.

In the United States, estimates are that 87% of population had access to the Internet in 2014 (Internet Users by Country, 2014). Among these Internet users, 74% use social media platforms such as Facebook, Twitter, Pinterest, or LinkedIn (Social Networking Fact Sheet, 2014). In addition, 52% of online adults are using two or more social media sites (Social Media Update 2014).

Facebook is the most commonly used social media site. Estimates are that 71% online users have a profile on Facebook in 2014 (Social Media Update 2014). An increasing number of senior adults (ages 65 and older) are using Facebook: one third of all seniors in the U.S. used Facebook in 2014. Besides online adults, Facebook is also the most popular social media site among American teens (ages 13 to 17). Approximately 71% of all American teens use Facebook (Teens, Social Media & Technology Overview, 2015).

Other popular social media platforms among all online adults following Facebook are LinkedIn, Pinterest, Instagram, and Twitter, with usage rates of 28%, 28%, 26% and 23% respectively in 2014 (Social Media Update 2014). Many social media sites have grown significantly, for example, Twitter users increased from 18% of those on the internet in 2013 to 23% in 2014. The increases cross demographic groups, such as men, whites, users ages 65 and older, and urbanites (Social Media Update 2014). For all American teens ages 13 to 17, top social media sites are Facebook (71%), Instagram (52%), Snapchat (41%), Twitter (33%), Goolge+ (33%) and Vine (24%) (Teens, Social Media & Technology Overview, 2015).

Mobile technology, such as smartphones, facilitates the access of social media on mobile devices. The Mobile phone is a primary way to access social media sites. Seventy-five percent of smartphone owners (ages 18 and older) used their cell phones to access social networking at least once (Chapter Three: A "Week in the Life" Analysis of Smartphone Users, 2015). About a third of 1.32 billion Facebook users only log in via their phones and the mobile user base has grown year over year (The Verge, 2014; Number of mobile phone Facebook users in the U.S. from 2011 to 2018, Statista, 2015).

Role of Social Media in Agenda-setting: Public as Information Generator

Traditionally, communication scholars viewed the public as information receivers, but the public are now both active audiences and information sources in the Internet era. The growth and popularity of social media blur the distinctions between information sources and receivers by providing an instant-message-sharing and disseminating platform for the general public. Average people no longer primarily rely on mainstream news media as the only sources of understanding salient issues (Chaffee & Metzger, 2001; Gillmor, 2004; Bowman & Willis, 2003 in Wu et al., 2013). On the contrary, the public can propose issues that they consider as important and think need government's attention in the new participation mechanisms.

Studies on agenda-setting were born in a period of print and broadcast media. With the growth of social media, recent scholarship has shifted to the question "Who sets the media agenda?" (McCombs & Shaw, 1993). Scholars now point out that *agenda-setting* research is facing challenges because social media have impact on the dynamics

of agenda-setting process (Chu & Fletcher, 2014). In the agenda-setting process, social media, exemplified as micro-blogging sites (Twitter), make content available for the public to shape public agenda. The general public are telling the media what issues they want to think about rather than what issues the media tell people to think about (Chaffe & Metzger, 2001), which challenges the singular power of traditional media in the agenda-setting process. Thus, researchers began to explore the impact of social media on agenda-setting (Delwiche, 2005) or whether agenda-setting is applicable to social media. More existing literature about the extent to which social media affect agenda setting is discussed in Chapter 4.

Twitter

Twitter is one of the most popular social media sites in the US. Twitter was launched as the first micro-blogging service in 2006 in the U.S. It has more than 302 million monthly active users and 500 million tweets are sent per day (Twitter usage, 2015). Estimates are that 23% of online adults are using Twitter and 35% of these Twitter users visit the site daily (Social Media Update 2014). The main purpose of using Twitter is to post users' daily lives and thoughts ("what's happening") within the 140-character limits. Simply clicking "follow," users can subscribe to any user's real-time tweets. As long as users' accounts are set as public (default), their real-time posts are visible to anyone whether or not they have a Twitter account. Unlike other social networking sites with privacy restrictions, Twitter serve as public viewing platforms for generating, gathering, and disseminating information. Due to their salient feature of

public available information in a quantifiable mode, Twitter has been utilized as empirical data source for research studies in the U.S.

Twitter and Intimate Partner Violence

Intimate partner violence is global public health problem. For decades, scholars have collected data about the nature of this social problem from interviews with victims, surveys that employ in-person interviews or questionnaires, and by analyzing official data, such as crime statistics or medical records (Gelles, 2000). Social media in general, and Twitter, in particular, provide a new window into the nature of domestic violence. For example, 53% of 261 agencies serving abused and assaulted women have social media links on their websites, and 23% of the agencies use Twitter for advocacy (Sorenson, Shi, Zhang & Xue, 2014). Victims of partner violence and sexual assault post on Twitter, seek information, and/or attempt to build communities that allow them to discuss their personal experience as well as inform the public about the magnitude of this social problem, such as the #Metoo campaign. Given the importance of the social problem of domestic violence and the growing and rather substantial use of Twitter, there is a reasonable argument for exploring the contents regarding what Twitter users are talking about domestic violence on Twitter. However, there is as no research that examines the topics posted on Twitter. The findings of the study could be a resource for practitioners and advocates of domestic violence to better understand Twitter's possible contribution as a platform of information diffusion to implement violence prevention and intervention.

Organization of Remaining Chapters

This study is organized into eight chapters. Chapter 2 introduces the conceptual framework by first reviewing the evolution of agenda-setting theory followed by reviewing the agenda-setting framework of John Kingdon's (1984) multiple streams that guides the study. Chapter 3 reviews the growth of social media in order to follow the development of public policy on IPV in current digital environment, to explain why social media is important to understand the agenda-setting process. The first 3 chapters serve as a literature foundation for the study.

Chapter 4 presents research methodology used in this study by employing computational data collection methodology.

Chapter 5, 6 and 7 are the results sections. Chapter 5 answers the first major research question through systematically reviewing and analyzing how IPV came to be constructed as a social problem, how policy solutions are proposed, and what were the political factors in the U.S. Kingdon's model of three streams (problem, policy and politics) guides the evaluations and comparisons in the U.S.

Chapter 6 answers the second major research questions and presents the results from machine learning text analysis based on an approximate of 3 million tweets in the dataset. Chapter 7 answers the third to fifth research questions, presenting the results of content analyses from a randomly selected 900 tweets in the dataset.

Chapter 8 presents the discussion of the study, limitations and challenges of the study and implications for future work, and conclusion of the study.

CHAPTER 2 Conceptual Framework: Agenda-Setting

Evolution of Agenda-setting Research

First-level Agenda-Setting

In the book *Public Opinion* (1922), Walter Lippmann states that "people did not respond directly to events in the real world," but lived in a pseudo-environment composed of "the pictures in our heads." He raises up the assumption that the mass media serve to connect the world outside with the pictures in people's heads. As one of the critical themes in the field of communication, the theory of agenda-setting stems from Lippmann's assumption (Lippmann, 1922, cited in McCombs et al., 2000). Expanding on this assumption, Cohen (1963) suggests that the media tell the public what to think about. The Chapel Hill study motivates and expands more empirical agenda-setting studies by investigating how the salience of an issue transfers from the media to the public (McCombs & Shaw, 1972). Agenda-setting theory holds that the public perceives issues that are highlighted in the news media as important in public's minds - "the news media can set the agenda for the public thought and discussion" (McCombs & Reynolds, 2002, p.1). Agenda-setting is an influential theory for communications scholars to investigate the power and role of mass media for the public.

As the opening research question in agenda setting research, scholars focus on "Who sets the public agenda-and under what conditions?" The public agenda refers to the focus of public attention, which is often assessed by public opinion polls and surveys (McCombs, 2002). McCombs and Shaw (1972) show that the news media have a

significant influence in setting the public agenda by comparing the media agenda (issue salience in mass media) a few weeks prior to conducting interviews of public opinion (perceived issue salience in the public) among voters in the 1968 presidential campaign, which mark the opening phase of agenda-setting research. This study interviewed 100 undecided voters among the residents of Chapel Hill, NC to investigate the correspondence between "what the residents think are the most important current issues," as measured by a voter survey, and the "news content from mass media," as measured by content analysis about 20 days before the election. The results show a nearly perfect correlation between the two sets of data (r=.96) and thus show the powerful role of mass media in shaping the public agenda. The transfer of issue salience from the media to the public is known as "first-level agenda settings". Since this seminal study, there have been hundreds of empirical studies published about the powerful role of mass media in shaping the public agenda.

Second-level Agenda-Setting

Research shows that first-level agenda setting deals with the salience of "objects" in the mass media, such as issues, organizations, or political candidates, and how the salience leads to increased public concern about those same "objects" (Kiousis & McCombs, 2004; Lopez-Escobar, Llamas, & McCombs, 1998). However, the concept of agenda can be expanded from simply objects to the attributes that have "characteristics and traits that fill out the picture of each object" (McCombs et al. 2000). In order to scrutinize the process of how media salience develops, there is another core theoretical assertion in agenda-setting research called "second-level agenda setting."

First and second level agenda-setting differ depending on whether "the media not only tell us what to think about (the first level of agenda setting—object salience), they also tell us how to think about it (the second level of agenda setting—attribute salience)." (McCombs et al, 2000. p.78). For example, the media have an effect on public perceptions of political candidates' images (Kiousis et al., 1999). Gandy (1982) states, "I suggest we go beyond agenda setting to determine who sets the media agenda, how and for what purpose it is set, and with what impact on the distribution of power and values in society" (p. 266). The research focus of *second level agenda setting* is about the transfer of various attributes of an issue (certain features of an issue) from the media to the public (Kiousis et al., 1999). Moreover, attributes also have their own agenda according to their salience (Tan & Weaver, 2010, p. 415). Studies show high correlations or even a causal relationship between the media's attribute agenda and the public's attribute agenda.

Intermedia Agenda-Setting

First and second level agenda-setting research both focus on the impact of the media on the public by exploring the question: "Who sets the public agenda and under what conditions?" However, recently scholars focus on agenda-setting research toward answering the question: "Who sets the media agenda?"

As an important agenda-setting research topic in communication, *intermedia agenda setting* refers to the influence of media content on the content in other media (McCombs, 2004) and investigates how the media agenda is set by other media (Lopez-Escobar et al., 1998). In this vein of research, scholars explore intermedia agenda-setting

by investigating the influence of national newspapers on local newspapers and on television (Protess & McCombs, 1991). For example, the *New York Times* plays a leading role in signaling the issue saliency of news stories to local or even international outlets (Gilbert et al., 1980; Golan, 2006). Scholars also explore the relationships between traditional news media and non-traditional media. The results suggest that, at the issue level, traditional mass media is still able to set the agenda for non-traditional media (Meraz, 2011; Sweetser, Golan & Wanta, 2008). Sweetser et al (2008) examine the agenda in traditional media and in campaign blogs during the 2004 presidential election and show that the media-to-blog influence is strong at the issue level.

John Kingdon's Multiple Streams Model

Kingdon's Three Streams Model

In agenda-setting research, Kingdon's book *Agendas, Alternatives, and Public Policies* (1984, revised in 1995) provides a seminal framework in understanding the triad of problems, policies and politics. This work is the most cited work on agenda setting. Kingdon suggests that the policy process is a function of only three streams rather than four streams—problems, solutions, participants and choice opportunities (Cohen et al., 1972, p.2)—that determine the decision process. Kingdon's framework is useful in understanding the complex dynamics of the policymaking process.

Kingdon (1984) approaches agenda setting research by using a multiple stream model. He uses qualitative methods to investigate the ways in which a social problem becomes part of the agenda in the policy formation process. By conducting 247

interviews with government officials, decision makers and participants, Kingdon explains the policymaking process in the United States and the dynamics of how the national agendas for health and transportation policy were set from 1976–1979.

Specifically, Kingdon proposes a "multiple-streams theory" including three kinds of streams: (1) problem recognition, (2) policy formation, and (3) politics (Kingdon, 1995, p. 88). In Kingdon's model, a *problem* refers to a real-world social problem that requires the attention of government and policymakers, who need to do something to solve this problem (p.109). A problem may be highlighted by various indicators, focusing events and feedback mechanisms (Kingdon, 1995). The second stream, *policy formation,* is defined as a list of policy solutions to solve the problems. Policy proposals or alternatives are generated from an accumulation of knowledge, perspectives and interactions from specialists, such as academics, researchers, interest groups, Congressional staff, and bureaucrats, who work in this stream to address a problem (Kingdon, 1995). *Politics* in Kingdon's model refers to the influential factors that affect the agenda in the political process, either as an impetus or constraint. These factors include the national mood, public opinion, partisanship, election results, changes in administration and the ideological distribution in Congress (Kingdon, 1995).

The first stream emphasizes the recognition and the nature of the problem itself. Through focusing events, indicators and feedbacks, problems can attract the attention of the government. Indicators refer to statistical data that indicate the occurrence of specific behaviors, such as the prevalence rate of intimate partner violence. The function of indicators is to assess the magnitude of a problem and influence how the facts are

interpreted, which in turn influences the transformation of data into policy problems (Kingdon, 1995). Focusing events can be disasters or symbols, and feedback refers to the media and public channels. The following chapter discusses how the social issue of intimate partner violence found its way onto the government agenda in the U.S. in the early 1990s.

The second stream, policy formation, consists of policy proposals, strategies and initiatives to tackle the problem. This stream functions like a "primeval soup" where some ideas float around, "bumping into one another, encountering new ideas, and forming combinations and recombination" (Kingdon, p. 200). Some ideas float to the top of the agenda while others fall down to the bottom. Some ideas survive because of their "technical feasibility, congruence with the values of community members, and the anticipation of future constraints, including a budget constraint, public acceptability, and politicians' receptivity" (p.200). The struggle of these alternatives leads to the final output for the governing agenda.

The third stream, politics, refers to the influential factors, such as public opinion, election results, national mood, demands of interest groups, partisanship, changes in administration and ideological distribution in Congress, that affect the agenda in the political process (Kingdon, 1995). Due to the influence of the third stream, in certain periods some problems are more recognized and amenable to proposed solutions (Peters, 2013).

No public policy can emerge without the coupling of the three steams. These three streams of problem recognition, policy formation and politics are independent of each other and have their own rules of development. However, these three streams sometimes converge together at a good timing, known as a "policy window" or a "window of opportunity". A policy window refers to the critical times when a problem is recognized, a solution is proposed and available for the policy community, and opportunities for policy changes are possible under the political environment (p.174). These critical times and opportunities through advocates, research, community involvement and policy development are accepted by public opinions (Kingdon, 1995). Policy windows may open up due to a compelling event or problem (Zahariadis, 2007). When a policy window is open, the social issues become a part of the policy agenda and also receive attention from policymakers, thus ensuring the development of policymaking steps (Kingdon, 1995). The opening of a "policy window" can lead to a successful launch of policy changes (Brunner, 2008). However, the policy window may also close due to various reasons, such as "ineffective action, a change in actors, or a passing of the events that originally framed the window" (Galligan & Burgess, 2005). Thus, policy windows are opportunities that make changes possible, although they are also unpredictable, but yet "in the case of successful implementation of public policy, work in tandem" (Gates, 2015). The American policy process requires a convergence of these three streams, with different other dimensions and factors. As such, Kingdon identifies the importance of active participants in the agenda-setting process. Active participants such as the President, interest groups, the mass media and bureaucrats, are more effective

in identifying policy alternatives. Policy entrepreneurs work actively both in the problem stream and in the policy stream to promote and get ideas to be placed on the decision-making agenda (Kingdon, 1995).
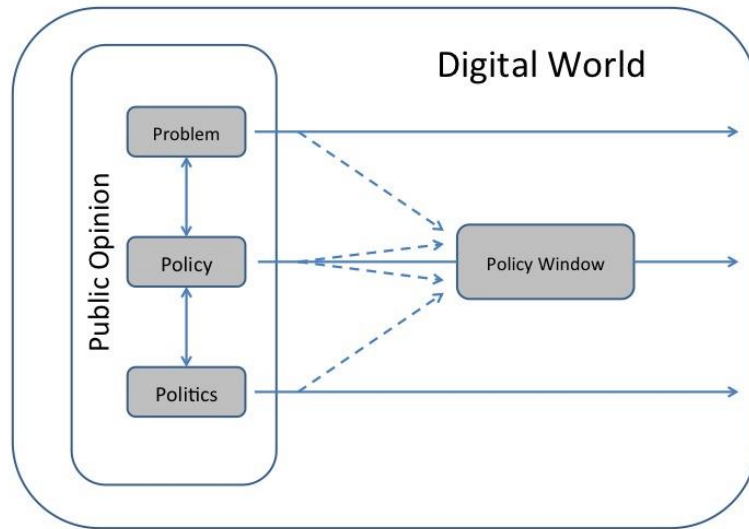
Figure 1. Updated Kingdon's "Multiple-stream" Model

Application of Kingdon's Model: Agenda-setting Research in the United States

A handful of researchers have applied Kingdon's framework to understand public policy formation (Mclendon, 2003) in the U.S. and worldwide, including countries such as the United Kingdom, Canada, France, and Germany (Howlett, 1998; Keeler, 1993; Kendall, 2000; Sabatier, 1999; Zahariadis, 1995a, 1995b; Zahariadis & Allen, 1995), as well as developing countries like China (Xia & Pahl-Wostl, 2012; Zhu & Sun, 2009;). Moreover, researchers use the multiple streams model in various domains of social issues, such as environmental policy (Clark, 2004; Pralle, 2009), health policy (Sardell &

Johnson, 1998), education policy (Holderness, 1992; Houlihan & Green, 2006; Stout & Stevens, 2000), and transportation policy (Lindquist, 2006). Kingdon's MS model helps understand why some policy proposals are accepted while others are rejected in policy agenda.

In the United States, extensive studies show the application of Kingdon's MS in actual cases (Liu, Lindquist, Vedlitz & Vincent, 2010; Moya, 1998; Mills, 2007; Young, Shepley & Song, 2010;). Moya (1998) tested Kingdon's model of agenda setting to explain the growth management in Maricopa Country in Arizona. This study analyzed each of Kingdon's three streams (problem, policies, and politics) independently and then a confluence of all three streams that open a policy window for setting a governmental agenda. The study shows that Kingdon' model appears mostly descriptive and generate robust descriptions of events but does not lead to predictions of the futures. Mills (2007) uses the model to investigate the reorganization of the higher education system in Florida. Young and colleague's study (2010) apply Kingdon's MS model to explain how the issue of reading became government agenda in several states during the 1990s. Liu et al. (2010) utilized a Kingdon's agenda-setting approach to examine local policymaking by interviewing 271 local policy stakeholders in three U.S. Gulf Coast areas, including Florida, Louisiana, and Texas. But this study does not capture the interactive dynamics among the three streams (problems, policies and politics) in Kingdon's framework and the study call for future research to discuss the connections between the three streams as well as address the moments of "policy windows" when the three streams are coupled.

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To sum up, these studies confirm the utility of Kingdon's framework as an organizing and explanatory model to understand public policy process in the U.S.

Evaluation of Kingdon's Model and Modification in the Present Study

Scholars consider Kingdon's model as a significant breakthrough to understand public policy (John, 2003) for both analyzing the policy process and applying it to develop policy strategies (Zahariadis, 1999). First of all, as an empirically-based framework, Kingdon's multiple streams model demonstrates that the policymaking process is dynamic, decisions are unpredictable, and outcomes have randomness in real situations under the influences of external factors, including timing, national mood, and political ideologies (Black, 2001). In contrast, traditional policymaking models assume that policymaking is a linear process because all decisions are rational and systematic, but that a linear process may not reflect all situations (Teodorovic, 2008). Furthermore, Kingdon conceptualizes public policy as a "primeval soup" and sees it as "akin to biological natural selection" (p. 226), which implies his evolutionary idea for highlighting the dynamic aspect of his model for public policy. Thus, Kingdon's multiple streams model is more relevant to the complex real world (Pollitt, 2008, p. 127) because of its underlying assumption that "policymaking is dynamic, irrational, and unpredictable" (Nutley, Walter, & Davies, 2007).

There are critics of Kingdon's model. As with many agenda-setting theorists, public policy and politics, Kingdon also ignores the active role of feminist's social movements in the agenda-setting process (Kenney, 2003). Nevertheless, women's

movements have long been known to promote social recognition of addressing violence against women both in the U.S. (Chapter1). Kenney (2003) argues that scholars need to broaden the scope to include social movements and newly politicized grassroots activists

Therefore, for this study, I integrate the analysis of women's movements and their impact on the recognition of the problem of intimate partner violence and the development of policies to deal with it in the agenda-setting process (Chapter 3). Kingdon's multiple streams framework guides the present research project in the analysis of policy formation and agenda setting in the domain of intimate partner violence. Serving as a theoretical foundation, Kingdon's "three streams" agenda-setting framework for the policymaking process will guide the literature review, documents review, case studies and analysis.

CHAPTER 3 Literature Review: Evolution of Social Media and Its Impact on Agenda-Setting: U.S. Twitter

Twitter

Twitter is launched as the first micro-blogging service in 2006 in the U.S. It has more than 302 million monthly active users and 500 million tweets are sent per day (https://about.twitter.com/company, Mar. 2015). The main purpose of using Twitter is to post users' daily lives and thoughts ("what's happening") within 140 characteristics. Simply clicking "follow", users can subscribe to any user's real-time tweets. As long as users' accounts are set as public (default), their real-time posts are visible to anyone whether or not they have a Twitter account.

Twitter has more functions than simply posting messages, such as reply, retweet, hashtag, and favorite. Reply represents in a format of "@yourusername" in the replies tab. Retweeting is a newer feature on Twitter since 2009, which occurs when a user re-tweet a tweet written by other users in a "RT@username" format. The contents of

retweets could be the same with original tweets or slightly modified messages. Retweeting is an important mechanism of information dissemination in the Twitter network. Hashtags are words or phrases prefixed with a pound sign "#" and are used by Twitter users to organize tweets on specific subjects. Twitter users can find the same subject of topic by using and searching common hashtags. In the sidebar named *trending topics*, the #topics symbolized the most popular and mentioned topics by tweeter users. Thus, each common #hashtag represents a single stream of common tweets in which users share thoughts on a single subject. The function of favorites is represented by a star icon under s tweet and is commonly used when users like a tweet by simply turning the star icon to gold.

Twitter as Research Data

Twitter can produce potential data for research due to its salient features of public available information in a quantifiable mode (Thelwall et al., 2008). Unlike other social networking sites with privacy restrictions, Twitter serves as a public viewing platform for gathering information, disseminating messages and generating a large amount of publically available content. With such a large volume of easily accessible data, Twitter is used for various research studies (Thelwall, Wouters & Fry, 2008). For instance, Tweets have been used to determine the extent of the H1N1 outbreak (Chew & Eysenbach, 2010). Culotta (2010) found that monitoring influenza-related Tweets provide cost- effective and quick health status surveillance.

Twitter provides large amounts of data, serving as an assessment of public sentiment regarding a source of public opinions for research studies. Even though individual tweets are not informative, the accumulation of millions of tweets messages can produce valuable knowledge. Existing research shows that Twitter's Application Programming Interface (API) is used widely to extract tweets for data analysis, making twitter a feasible option for quantitative social science research. With a large volume of researchable data, twitter content is used as empirical data source in health - related studies, such as psychological wellbeing (Schwartz et al, 2013), allergies (Paul & Dredze, 2011), influenza rates track (Culotta, 2010), and obesity (Guha & Ghosh, 2013).

Social Media and Their Impact on Agenda-Setting

This section employs Kingdon's framework to explore the role of social media in agenda setting in three streams: problem recognition, policy formation, and politics.

The problem recognition stream

Various mechanisms, such as indicators, focusing events, and feedback affect how government officials pay attention to one problem rather than another. Indicators are used to assess the magnitude and changes of a problem in a complicated process rather than a straightforward assessment. Focusing events like a crisis or disaster push problems to greater recognition by interest groups, policy makers, media or the public, including new problems or existing, but dormant problems. Feedback refers to responses from the operation of existing programs (Kingdon, 1995).

Social media sites like Twitter (U.S.) are used to discover breaking news, affect news coverage on mass media, and respond to social events, such as natural disasters. With the widespread popularity of social media, scholars indicate that social media are a viable source for traditional mass media and the power of mass media for the public in the agenda-setting process is facing challenges. Recent research shows that agenda-setting could be used on Twitter to create saliency about issues. In examples that employed time-series analysis, studies show that Twitter influences the news coverage by traditional media (Wright & Hinson, 2008). User-contributed messages on Twitter are like live broadcasting (tweeting) and identifying trending topics (trending topics) of real-world events ranging from small scale local events to well-known global events. Research confirms the function of Twitter in breaking news by showing that some news breaks out on Twitter sometimes even earlier than CNN (Kwak et al.2010). In addition, Twitter has a popular function "hashtag" to allow people to have conversations and search for conversations on particular topics of interest. Since its establishment in 2007, the *hashtag* functions as searching of trending topics available on the homepage of users' accounts. Kingdon indicates the importance of "focusing events" in the problem recognition stream. Twitter's trending topics could be considered as a form of focusing events.

Social media have become an identification of real-world events, being harnessed in response to social events, such as natural disasters. For example, Twitter is an influential way of empowering detection and response to natural disaster by providing a platform of looking to, sharing, and distributing information of real-world events.

Replying messages, sending messages (@username), Retweeting (RT@user msg) on Twitter imply the feedback mechanism in the problem stream. These feedback mechanisms on Twitter compose a practical conversational ecology in which public voices interplay. Retweeting could be understood as a form of engagement or further agreement with original tweets. Prior research shows there is no casual relationship between the numbers of followers and number of retweeted messages (Cha et al., 2010). The most frequently retweeted messages are not from the users with the highest followers.

The policy formation stream

In the policy communities defined by Kingdon (1995), policy communities are composed of specialists in a given policy area who are scattered both through and outside the government. In terms of interactions, they know each other's ideas, research, or proposals.

Twitter offers users immediate information access and message interactions (Kusin, dissertation, 2010; Johnson & Yang, 2009). Twitter also facilitates collaborations and bridges the gap between individuals, organizations, news industry, and policy-makers by serving as a platform for users to interact with others (Honeycutt & Herring, 2009). An increasing number of organizations, such as intimate partner violence advocacy groups, are using Twitter for their advocacy work, making Twitter a potential source of opinions from advocacy groups in addition to individual opinions. Thus,

Twitter provides an important platform for advocacy groups and organizations to frame their own agenda.

The politics stream

The political stream consists of public mood, pressure groups, campaigns, election results, partisan or ideological distributions in Congress and changes of administration (Kingdon, 1995). The development of the political stream has a powerful impact on agendas. Scholars show that Twitter is the latest social networking tool to reshape politics (Small, 2011). For example, the 2009 Iran residential election event (#iranelection) was the number one news topic on Twitter in 2009, creating a debate in the literature to make Twitter become a new source of journalism. Similar examples are also found in China, for example, the 2008 Sichuan earthquake.

Social movement. Recently, social media are playing an instrumental role in the success of social protests, such as Occupy Wall Street movement, and Arab Spring Egyptian revolution of 2011, and Iranian Protests. Prior research shows that social media play a critical role in shaping political debates, spreading democratic ideas in the Arab Spring by analyzing millions of tweets, YouTube contents and blog posts (Howard et al., 2011). Howard et al. (2011) reveal that democratic conversations on social media (Twitter) immediately preceded mass protests and confirm the power of opposition movements equipped with social media. Eltantawy & Wiest (2011) show that social media changed the dynamics of social mobilization in the Egyptian revolution through enabling domestic and international Egyptian activists to follow real-time conditions in

Egypt. Activists created groups on social media to facilitate communication, speed interactivity, and unite protesters through social media medium like Facebook, Twitter, Flickr and Youtube.

Public opinions. Twitter is an alternative method of public salience that was usually measured by public opinion surveys. Even though individual tweets are not necessarily informative, the accumulation of millions of tweets can signal salient trends, making it an important representation of public opinion. It is less expensive to collect data through Twitter (Guha & Ghosh, 2013). Recently, scholars assessed online users' comments and discussions as public opinions in the 24-hour digital environment, including non-elite individuals, protest groups, organizations, and social movements (Roberts, Wanta & Dzwo, 2002). For example, Twitter is used as an accurate outlet to assess public sentiment regarding political issues (Brustein, 2010), which supports the use of Twitter as a source of public opinions.

CHAPTER 4 METHODOLOGY

Research Design

This is a cross-sectional study, and there are two levels of analyses. The first level is to explore the topics and structures from the sample of Tweets by using unsupervised machine learning topic modelling techniques. Second, I analyze a random sample of 900 tweets (300 tweets from each month) from the final dataset to conduct both quantitative content analysis and qualitative inductive analysis of the tweets. Thus, this study's analysis methodology employs a hybrid approach combining computational and manual

coding methods (Lewis, Zamith & Hermida, 2013). I compared the results from first level and second level of analyses, in other words, comparing the results from unsupervised data mining and the results coded from Kingdon's agenda setting theory, which will inform future research on IPV tweets analyses.

The methodology of content analysis is consistent with previous studies of the role of mass media in agenda-setting research (Ader, 1995; Wanta, Golan & Lee, 2004). In addition, content analysis is an appropriate method for web-research (Anderson & Kanuka, 2003, p. 174) and Twitter-based analysis (Rui, Chen, & Damiano, 2013), with confirmed validity and reliability (Small, 2011). Content analysis is an appropriate method because it includes quantifying qualitative aspects of the texts (counted and summarized) and qualitative inductive analyses that also allows researchers to make "replicable and valid inferences from texts" (Krippendorf, 2004).

Data Collection

Inclusion criteria: defined hashtags as search terms

The study collected all publicly available tweets messages that mention the defined hashtags. I selected a set of hashtags that are key terms related to IPV, including "#dating violence," "#domesticviolence," "#dv," "#DVAM," "DVAM2015," "#intimatepartnerviolence," "#ipv," "#rape," "#vaw," and "violenceagainstwomen". The study used the hashtags as search terms for fetching tweets. In addition, the study uses

key terms "domestic violence," 'intimate partner violence," and "partner violence" to fetch tweets.

The rationale for using hashtags as search terms is that hashtags help organize tweets relevant to specific topics. A hashtag is a short keyword prefix with the symbol "#", describing some topics on Twitter. Hashtags representing similar topics are user-generated contents because Twitter does not group similar topics. Hashtags coordinate information-sharing and discussions around similar topics on Twitter. For example, hashtags "#rape", "#daterape" coordinate tweets relevant to the theme of rape. By following and posting to a hashtag conversation, Twitter users employ hashtags to search and organize similar information and communicate with groups of users of interest around similar hashtag topics without needing to be connected through the "followers' networks (follower and followee relationship). Research (Chapter 4) shows that hashtags allow the general public, activists, interest groups, policy makers, and thought-leaders on Twitter to communicate beyond their followers (Rzeszotarski et.al., 2014; Small, 2011;).

Exclusion criteria

The cleaning process collected tweets to evaluate and screen to exclude the tweets that match the exclusion criteria. Exclusion criteria included: (1) Tweets are not written in English (non-ASCII characters); (2) Tweets that do not contain IPV-relevant contents; and (3) Tweets that are about IPV in countries other than the U.S.

Twitter data collection

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The study employed *DiscoverText* (http://discovertext.com), a cloud-based collaborative and text-analytics program to collect Twitter data. *DiscoverText* has built - in function to connect Twitter search Application Programming Interface (API), and allows users to search and import data from Twitter and various sources such as Facebook, Youtube, and Tumblr. It allows users to create a static dataset and export data in various formats (e.g. ".csv") for analysis. Previous research confirms the utility and validity of the DiscoverText program for social media data collection (Beyer, 2012; Blaszka et al., 2012; Clavio, Burch & Frederick, 2012; Driscoll & Thorson, 2015; Frederick et al., 2012; Giglietto & Selva, 2014; Ji & Zhao, 2015; Sivek, 2014; Theocharis et al., 2015; Thompson et. al., 2015). The procedure is as follows:

On the dashboard of *DiscoverText*, users need to log into their own Twitter account to obtain authorization to extract tweets (Satyanarayan, Das & Krishnan, 2015). Then, users enter their specific search keywords, hashtags, and number of tweets (sample size) during a given time period. The program allows users to collect 1-2% of all tweets based on user-defined keywords. Previous research shows that the 1-2% is a typical percentage of tweets that users can get by using similar computing programs to access Twitter's API (Application Programming Interface). In addition, Ahmed and Bath (2015) state that compared to other softwares, *DiscoverText* obtains a complete set of tweets.

The Twitter data consist of publicly available content, including the context of each tweet, nature of each tweet (original tweet or retweet), gender of the users, followers count, friends count, favorites count, retweet count, user description and users' timestamp

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and geolocation that indicate the time when and the place where users send the tweets. *DiscoverText* also automatically provides metadata about the frequency of defined hashtags and Klout scores (ranging from 0 to 100) that indicate the influence of a source on social media.

Time frame and datasets

The tweets of the timeframe ranged from Oct. 1st, 2015 to Dec. 31th, 2015. The final sample is 322,863 tweets. The tweets were used to identify topics in research question #2. The numbers of tweets collected (raw data) by hashtags are presented in Appendix 1. The randomly selected 900 messages from October, November, December were used to answer research question #3, #4, and #5. A total of 900 messages make up the manual content analysis for Twitter.

<div align="center">

Latent Dirichlet Allocation and Data Analysis

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According to Blei (Blei et al., 2003), Latent Dirichlet Allocation (LDA) is an unsupervised machine-learning method that identifies latent topic information in a document collection. It employs a "bag of words" approach, i.e, documents are represented using counts of linguistic units, where the linguistic units can be either single words (uni-grams)[1] or contiguous sequences of *n* words (*n*-gram)[2], disregarding grammar and the order of the units. The model assumes that each document consists of a mixture over various latent topics, and each topic is characterized using a distribution over the

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[1] Uni-gram: when an n-gram of size equals to 1

[2] When we use bi-gram (N=2), it means the pairs of consequent words.

linguistic units. By applying the model to a document collection, I expect to extract the following information:

1.The distribution over linguistic units for each latent topic, where the units with high frequency indicate that those units tend to co-occur together. I was able to assign a theme for each latent topic by analyzing the distributions.

2.The distribution over topics for each document. By observing the distribution, we understand on which topics each document focuses.

3.The distribution over topics for the whole document collection. The distribution tells us an overview about which topics are more popular and which appear less frequently.

LDA employs unsupervised learning methods and presents the data distributions based on the data themselves, which indicates that LDA can be used in large dialogue datasets like Twitter. Prier and colleagues (2011) identify health-related topics on Twitter, and in particular, Tobacco-related Tweets by applying LDA. The study generated 250 topic distributions for single words (uni-grams) and structural units (n-grams), which exhibit sufficient cohesion. Wang and colleagues (2014) applied LDA to website posts and generated 20 topics. LDA gives a topic probability distribution that reveals the probability of a post corresponding to each topic. Godin and colleagues (2013) used LDA model in the context of Tweets hashtag recommendation. They trained the LDA model to cluster Tweets into various topics and then used the keyword to suggest new Tweets. Zhao and colleagues (2011) used LDA model to discover topics

from Twitter and compare them with traditional news media – e.g. the <u>New York Times</u>. They compared standard LDA, author-topic model and Twitter-LDA and proposed that the Twitter-LDA model outperform the other two models for identifying topics from Twitter. Their Twitter-LDA model is based on the hypothesis that one Tweet expresses one content of a topic. Yamamoto & Satoh (2013) used LDA to extract topics and also propose a two-phase extraction method by combining LDA for clustering large amounts of documents and constructing an association between the topics and aspects.

I analyzed the data using the computer program in Python. I configured LDA to generate 10 latent topic distributions by using structural units bi-grams (n-gram, when n=2). A bi-gram is a sequence of two adjacent linguistic elements, such as a pair of words (e.g. "domestic violence," "violence victims"). I analyzed the dataset using LDA Python code (see Appendix 1).

The process is given as follows:

1.I removed the hashtag symbol "#", "@ users," and URLs from the messages because, in my analysis, I did not make use of the author information, and the hashtag symbols or the URLs did not provide topic information. In addition, since I focused our analysis on the messages in English, I removed all non-English characters.

2. I converted Twitter messages into a document-term matrix, whose element represents the count of each bi-gram (contiguous sequences of 2 words, such as "domestic violence," or "human trafficking") that occurs in each of the messages. This was done by applying the CountVectorizer function provided in the scikit-learn package.

3.I analyzed the obtained document-term matrix using the LDA model, by making use of the Latent Dirichlet Allocation class provided in the scikit-learn package. The computer program fit the LDA model to the obtained matrix and returned the distributions of topics in each of the documents and the distributions of terms for each topic. I summarize the results in Table 1, 2, 3, 4 and 5.

4.To better understand what are the themes in each of the latent 10 topic, I randomly sampled 10 twitter messages as examples for each topic. These examples compose 90% or more of the contents in each topic. For example, the Tweets example of "PLS RT no more justice4cindy Cindy Canoy murdered & burned by son & gf w/live pets" in Topic 1. 90% of the linguistic units in this tweet belong to Topic 1. I selected 2 out of 10 examples in several latent topics and present them in Table 5.

Kingdon's Framework and Data Analysis

Coding Protocol

I developed a coding protocol to provide guidelines for coding tweet contents extracted from Twitter. The coding protocol follows Kingdon's model and involves three main themes as: "problem recognition;" "policy formation;" and, "politics" (Kingdon, 1995). These themes and their categories were used to code and analyze all tweet contents in the study. Moreover, the study analyzed sample characteristics, such as user-level information, number of followers, and nature of tweets (i.e. original, retweets). I present the coding protocol in Table 3. The following provide the definitions and operational definitions and relevant examples of the coding protocol.

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Problem.   The theme "problem recognition" refers to "a real-world social problem that requires the attention of government and policymakers, who need to do something to solve this problem" (Kingdon, 1995, p.109).   Its categories include indicators, focusing events, feedback mechanism, and personal revelation; and, are operationally defined as follows:

Indicators refer to statistical data that indicate the occurrence of specific

behaviors, such as the prevalence of IPV, functioning as transforming data into

policy problems (Kingdon, 1995). To fit the medium of Twitter, this definition is

identified where the statistics of IPV are used (e.g, "Prevalence of teen dating

violence associated with health risks - More than 20% of female students and

10% of male…http://goo.gl/fb/xNMISy").

Focusing events refer to disasters or symbols, and feedback refers to the media

and public channels (Kingdon, 1995). The study modifies focusing events to

include the IPV events, news reports with URL directing to the new events (e.g.,

"NFL Player Arrested on Domestic Violence Charges http://thkpr.gs/3662589 via

@username"), and the use of hashtags referring to a specific event (e.g., "Is public

forgiveness possible for men accused of violence against women?" Fuck the hell

NO! #BillOReilly #RayRice

http://www.theguardian.com/culture/2015/sep/02/pubic-forgiveness-dr-dre-josh-

duggar-ray-rice ").

Feedback mechanism refers to the feedback about the operation of existing programs by governmental officials through channels of systematic monitoring, complaints and casework and bureaucratic experience. To fit the medium of Twitter, the study modifies this definition to include tweets using reply (@username) and retweet (RT). Tweets of using a reply as a feedback mechanism can be recognized as @policymakers (e.g., "@JoeBiden"), @domestic violence organizations (e.g., "@DCCAVD"), @mass media (e.g., "@NBC"), and @individuals.

Personal Revelation is added as another two categories under the theme of problem. It recognizes tweets revealing personal affairs about self or others' experience of IPV, including victimization or perpetration (e.g. "#DV, My husband strangulated me, please help.").

Defining Problem is added after testing the training datasets. It recognizes tweets indicating the definition of intimate partner violence, the nature of and the consequences of this social problem (e.g., "Domestic Violence is a Men's Issue." "Emotional abuse is also a common form of #domesticabuse.").

Promoting self-help is added after testing the training datasets. It recognizes tweets revealing how the readers might use the information in the tweets to identify intimate partner violence and to help themselves out of the abusive relationship (e.g., "Does your partner ever isolate you 10 Warning Signs Of

Domestic Abuse." "If you are in need of help, you can always call Domestic Violence hotline at 1-800-621-4673.").

Policy.   The second theme "policy formation" refers to policy proposals, strategies and initiatives to tackle the problem (Kingdon, 1995). The categories include policy ideas and policy community, which recognizes tweets mentioning proposed ideas for policy change, and people who are sending out these tweets, and are operationally defined as follows:

Policy ideas refer to ideas as "a 'primeval soup' where some ideas float around, bumping into one another, encountering new ideas, and forming combinations and recombinations." (Kingdon, 1995, p.200). In the coding protocol of this study, policy ideas refer to as specific policy initiatives at the micro level. Policy ideas are recognized as tweets containing information about existing, alternative, or changes of specific IPV polices, programs and services (e.g., "…family violence, cities policy, inequality ... Plug into some ideas at http://www.chifley.org.au").

Policy community refers to communities composed of specialists in a given policy areas, such as individuals, interest groups, non-government organizations, academic groups, or news media (Kingdon, 1995). To fit the medium of tweets in the study, policy community is recognized as users who tweet about policy ideas mentioned above (e.g., "@Username, I'm currently working on some policy ideas to lower gun violence in the US #commonsensegunreform").

Politics. The third theme "Politics" refers to influential factors, such as public opinion, election results, national mood, demands of interest groups, partisanship, changes in administration and ideological distribution in Congress, that affect the agenda in the political process (Kingdon, 1995). As discussed in Chapter 2, Kingdon's model ignores the active role of feminist's social movement in the agenda-setting process and the present study integrates the analysis of social movement and grassroots activists. Thus, this study adds the category of "movements or grassroots activists" in the coding scheme. Furthermore, the other category under the theme "politics" is "political," operationally defined as follows:

> *Movement and Grassroots activities.* I designed and modified this definition by incorporating the coding scheme developed by Lovejoy and Saxton (2012), which was the first to classify social media messages by organizations, including major functions as "information, community and Action." I use the category of "action" to recognize tweets relevant to the theme "movement and grassroots activities," such as promoting an event, call for volunteer & employee and lobbying and advocacy (e.g., "#Volunteers needed for Domestic Violence Awareness Month Fence Decorating! Click here to sign up..."). After testing the training dataset, I further coded the tweets that belong to this categories into subcategories including (1) *promoting an event*; (2) *fund raising*; (3) *recruitment*; (4) *lobby or advocacy*; (5) *raising public awareness*.

Political. To fit the tweets contents, I employed and modified the typology of political theme developed by Macias and colleges (2009). Political includes comments on government response, and information about government response referring to what the government is doing to respond to the disaster, which can be recognized as tweets including information about law enforcement (e.g., "Reauthorization of the Violence Against Women Act (#VAWA) TAKE ACTION").

Policy window. The theme "policy window" refers to the convergence of the above three streams, and the opportunities that make policy changes possible when a problem is recognized, a solution is proposed and available for policy community, and policy changes are possible under the political environment (Kingdon, 1995, p. 174). In the coding protocol of this study, the theme is operationally defined as the co-occurrence of previous three themes for each single tweet.

Sentiment. Public sentiment includes categories of positive, neutral, or negative in the present coding scheme, representing the sentiment observed by analyzing tweets about the IPV events or perpetrators' behaviors (i.e. Negative sentiment: "She's a victim of domestic violence and she's being further punished because of her partner's behavior. Sucks!").

Coding procedure and inter-coder reliability

Regarding the second level of analysis, a pilot study tested the coding protocol in a sample of tweets (n=200) and tested for the inter-coder reliability between two independent coders. The units of analysis were each individual post on Twitter.

For the purpose of this study, two coders coded the tweet contents. Both coders participated in a collective training session, including being familiar with Twitter, training for content analysis, and discussing the coding protocol and understanding of Kingdon's model. After the training session, I selected a random sample of 10% (150 tweets from Twitter) of tweets from the primary datasets in order to assess the inter-coder reliability between two coders (Riffe et al., 2008). It involved individual coding of the same sample tweets separately. Based on pilot coding results, I computed Krippendorff's alpha to assess inter-coder reliability for each theme and their categories between two coders (Drippendorff, 2004; Hayes & Krippendorff, 2007). Coders discussed and resolved all disagreements and consulted an expert for disagreements (committee chair). Two coders refined the coding manual and sent it to the committee chair for an assessment before proceeding with further coding. The process and reliability tests were repeated until reaching a good reliability score for all themes and categories before coding the full datasets. Finally, two coders achieved a kappa coefficient of .85, which indicates good inter-coder reliability (Wimmer & Dominick, 2006). After achieving the aimed score (higher than .75), each coder randomly and evenly distributed the dataset and coded tweets for analysis.

Statistical analysis

This study gathered and archived the primary dataset from *DiscoverText*, which stored all tweets contents from Twitter on its internal database, which ensures all coders will analyze a single and static dataset. Then I exported all tweets as a comma separated values (csv.) file for further analysis. The STATA14 was used to analyze the data.

Descriptive statistics calculated the frequency of tweets for each theme and its categories. The theme "policy window" in the coding protocol is counted when previous three themes co-occur in each single tweet. The percentage of each theme and its sub-categories were counted to understand the ratios and distributions of each theme. Chi-square tests the difference between original tweets and RTs. This study generated Word Clouds to present the most frequently used words related to the topic of intimate partner violence under each categor on the platform of Twitter. Word Cloud is a visual representation of user-generated contents, with each word's frequency correlated with font size (Figure 2 to 15 show the word cloud results).

CHAPTER 5: Results I: Agenda-Setting of Intimate Partner Violence in the U.S. Using Kingdon's Framework (1970 to present)

"During the 1960s and more importantly in the 1980s, intimate violence and child abuse and neglect gradually became both a social issue — a condition that captures public attention and generates concern, controversy, and in some cases collective action, and finally a social problem--a condition found to be harmful to individual and/or societal well-being".

— Richard Gelles

Consistent Definition of IPV in the Study

In the present study, the terms *domestic violence*, *intimate partner violence*, *family violence*, *wife abuse*, *wife beating*, and *spousal violence* are used interchangeably based on the use of the original terms in the literature. A consistent definition is necessary because I will determine the scope of the problem with respect to the prevalence and risk factors, and comparison of the policy trends over time in a uniform manner. A consistent definition is ultimately necessary to inform prevention and intervention efforts and to contribute knowledge for policymaking research.

Thus, in the present study, I use the definition from *the Center for Disease Control and Prevention (CDC, 2018)* to describe this social problem—intimate partner violence, which includes physical, sexual, or psychological harm by a current or former partner from a married relationship, cohabiting relationship, and/or dating relationship. Intimate violence could occur among heterosexual couples including male – to - female partner violence (MFPV) and female – to - male partner violence (FMPV), or homosexual couples. The age range will cover people in their teens and adults.

The Problem Recognition of IPV

This section presents the analyses of the transformation of intimate partner violence from a private issue to a recognized social problem through Kingdon's lens of the problem stream. Kingdon discusses that conditions come to be defined as social problems in three ways: (1) the place of values in the problem, such as "appropriate for governmental action" or "people's rights;" (2) comparisons with others; (3) the place into a particular category (Kingdon, 1984). Mechanisms, such as indicators, focusing events, and feedback bring the attention of governmental officials to certain problems rather than others. Indicators examine the magnitude of the condition. Crisis or disasters are examples of focusing events. Negative feedback from existing polices can bring issues to the attention of the government. Intimate partner violence found its way to be defined as a social problem that received public and government attention from the 1970s through the 1990s in the American society.

Wife beating as an age-old pattern

Wife beating was often accepted and condoned in early common law in American society. Physical force and violence were considered as an appropriate means to control over the subordinate group. Due to women's inferior status to men in patriarchal culture, women have been victims of physical violence in families for centuries (Gelles, 1995, p. 452). Before 1970s, there was little concern with wife abuse. Studies show that a about quarter of adult man and one in six adult women during late 1960s held the attitudes that spouse physical abuse is appropriate under certain circumstances (U.S. Commission on the Causes and Prevention of Violence, 1968). Until early 1970s, public attitudes toward family violence did not change much, as a third of husband and a quarter of wives said a couple slapping one another was normal and necessary (Straus, Gelles, & Steinmetz, 1980). Cultural norms supported husband-to-wife violence and the support was more prevalent than condemnation. Intimate partner violence, and in particular, wife abuse was considered as normative and husband–to-wife violence was justified when men's rights were challenged.

Focusing events

In the late 19th century, the Mary Ellen case was a focusing event that increased the interest in the issue of abused children and led to the creation of the *New York Society for the Prevention of Cruelty to Children* (Gelles, 1995). Among different types of family violence, child abuse received considerable public attention in the early 1960s, which was earlier than wife beating. On the other hand, there were no focusing events in American

history that led to the increase of public concern about wife abuse, just as Gelles said "There was no Mary Ellen for battered women" (Gelles, 1995, p.453).

By the 1980s some key cases of domestic violence become the rallying point to push forward domestic violence policy in the United States. One of the turning points was *The Burning Bed* in 1984, which became a made-for-television movie as well. The book and movie were about the story of Francine Hughes, who poured gasoline on her sleeping ex-husband and set him on fire. The brutal murder case come after her 12 year-abusive history at the hand of her husband. The case raised the public awareness on the extent and seriousness of domestic violence incidents and the difficulties that victims were facing in protecting themselves in abusive relationships.

Another watershed moment that helped highlight the problem of domestic violence was the OJ Simpson murder case in 1994. Former football star O.J. Simpson was arrested for murdering his ex-wife Nicole Brown Simpson and her friend Ron Goldman. Before the event, researchers, activities, and interest groups were working hard to get people to understand the problem of domestic violence. Even though Simpson was acquitted of murder, his case awakened the nation to the epidemic and danger of domestic violence in the country, and especially built the connection between domestic violence and intimate partner homicide. The Simpson case helped pave the way to the enactment of *Violence Against Women Act* (PL 103-322) in 1994.

Indicators

55

Empirical evidence regarding the magnitude of wife abuse in contemporary society was rare before the 1970s. Academic knowledge was not available regarding the prevalence, causes, and consequences of wife beating in the 1960s (Tierney, 1982).

Sociologists had begun to study family violence in 1970s. In 1971, surveys of college students in New Hampshire showed the extent and meaning of family violence. Results indicated that family violence was much more extensive than researchers thought, and students' answers were consistent with their parents' answers. Later findings by interviewing families indicated that more than one third of respondents reported violence between their partners (Straus, Gelles & Steinmetz 1980).

In 1975, researchers carried out the First National Family Violence Survey in the U.S. and reported findings in the book *Behind Closed Doors: Violence in the American Family* (Straus, Gelles & Steinmetz, 1980). A sample of 2,146 individual family members (presently married or cohabiting with opposite sex partner) were interviewed face-to-face and the level of violence was measured using the *Conflict Tactics Scale* (CTS). The first survey found that female-to-male violence had similar rate as male-to-female violence, which created "an uproar" among advocates of battered women's movement who had been fighting for female victims. The results were as following (Straus, Gelles, and Steinmetz, 1980):

- 121 per 1,000 subjects reported husband–to-wife violence in 1975;

- 116 per of 1,000 subjects reported wife–to-husband violence in 1975;

- The rate of severe wife beating was 38 incidents per 1,000 women;

- The rate of severe violence toward husbands was 46 incidents per 1,000 husbands;

The Second National Family Violence survey was conducted in 1985 through telephone interviews rather than in person interviews. The surveys yielded the extent and patterns of family violence between intimates. The second survey showed that the rate of female-to-male violence had increased slightly while male-to-female rate had decreased slightly. The results were the following (Straus & Gelles, 1986):

- 113 per 1,000 respondents reported husband–to-wife violence in 1985 (lower than that in 1975);
- 121 per 1,000 respondents reported wife–to-husband violence (higher than that in 1975);
- Rates of severe wife beating declined to 30 incidents per 1,000 women in 1985;
- Rates of severe violence toward husbands remained similar with 44 incidents per 1,000 husbands in 1985;

Since the national family violence studies from 1975 to 1985, other studies investigated the prevalence of family violence, not limited to wife abuse. Research findings showed the prevalence of domestic violence indicating that domestic violence, especially against women continues to be a serious social, criminal, and public health problem. The most updated surveys show that in the U.S. over 36.4%, or 43.6 million, women experiences contact sexual violence, physical violence, and/or stalking by an

intimate partner during their lifetime. About 33.3%, or 37.2 million, men experiences contact sexual violence, physical violence, and/or stalking by an intimate partner during their lifetime (NISVS, 2015).

Media coverage of IPV

Media representations of intimate partner violence affect both public perceptions and public policy responses to IPV. Media not only portray events, but also "imply causes or consequences of events," and the way an issue is framed impacts the way that the general public perceive "social phenomena" (Sotirovic, 2003). Individuals make behavioral decisions in a social context that is influenced by media (Yanovitzky & Bennett, 1999). The media play a major role in changing public perceptions about the extent to which IPV is perceived as a social problem rather than as an isolated individual affair or private trouble (Maxwell, 2000). In other words, media framing of IPV may be able to turn it from an individual issue to a legal issue, and thus influence social policy. Prior research reveals the important role of media in transforming child abuse into an important social welfare issue, helping establish a new area of public policy (Nelson, 1984). This section examines the role of media in responding to cases of intimate partner violence before the enactment of VAWA in 1994.

Prior to 1970s, media reporting on domestic violence incidents were almost nonexistent and media representations of domestic violence were still sporadic until 1994 (Enck-Wanzer, 2009). It was the women's movement that demanded that the media acknowledged the existence of domestic violence (McCarthy, 1994). In 1973, *Ms.*

Magazine was successful in bringing public attention to the issue of battered women. The article focused on a domestic violence shelter in England established by the English writer Erin Pizzey and her book *Scream Quietly or the Neighbors Will Hear* (1974), which became prototype for later efforts in the U.S. Since early 1970s, advocacy groups began to organize shelters for battered women across the U.S.

Domestic violence received serious attention across the nation with one of the most (in)famous cases of domestic violence with O.J. Simpson being charged with killing his ex-wife. This domestic violence case received the most extensive media coverage nationally and even globally, focusing the public on both the case and the broader issue of domestic violence. *Newsday* and *New York Newsday* reported over 1,300 stories about Simpson's case (Mulvaney, 1994) and Time ran a cover story called "When Violence Hits Home" as a response to Simpson's murder case. The trial was updated daily in newspapers and on televisions—especially cable television (Smolowe, 1994). Media not only covered this case, but also provided a platform for extensive discussions about the phenomenon of domestic violence. Feminists and experts in field of violence against women were interviewed on numerous television programs. Media coverage also revealed the ineffectiveness of the criminal justice system in responding to abused women.

Media coverage of domestic violence cases reflected the powerful role of media to put a subject on the policy agenda, and also revealed that domestic violence among celebrities attracted more media attention than violence ordinary people. Extensive and

continuing long - time media coverage of domestic violence contributes to the discussions among the public and interest groups, and also lead policymakers to set an agenda to deal with domestic violence.

The Policy Formation of IPV

My analyses on the transition of IPV as a social problem to a policy agenda continues through the lens of the Kingdon policy stream. The policy stream addresses the generation of policy proposals or solutions to the problems by the communities of specialists, including researchers, congressional staffers, academics, interest group analysts, and people in planning and evaluation offices and in budget offices (Kingdon, p. 116). The communities begin to propose viable policy solutions when a problem is recognized as a social problem and receives the attention of policymakers. Described as the "policy primeval soup," different proposed solutions come together from different groups. In the case of intimate partner violence, the watershed legislation was VAWA signed into law by President Clinton in 1994. This section analyzes the policy proposals available before the VAWA and the policy communities that contributed to the passage of VAWA in 1994.

Policy and legislations

The first American statute against domestic violence was included in the document of the Massachusetts Body of Liberties in 1641, stating that "every married woman shall be free from bodily correction or stripes by her husband, unless it is in his own defense upon her assault" (Wald, p.9). It was each Puritan community's

responsibility to watch domestic violence cases. However, "the body of liberties" placed family preservation ahead of anything else, and the intervention of wife abuse only aimed to maintain social order. Thus, divorce cases due to wife abuse were rare.

Until the 1970s, police held the beliefs that wife beating was a family issue and not a criminal case. This caused the indifference of battered women's requests for protection as well as potential re-victimization of the victims. Protection orders for victims of domestic violence were first issued by Pennsylvania in 1976 (Flowers, 2000). Mandatory pro arrest laws were issued first in Oregon for domestic violence victims in 1977 (Ensign & Jones, 2007; Flowers & Prah, 2006). One year later, Minnesota allowed the policy to arrest without warrants and the issue of protection orders in domestic violence cases (Ensign & jones, 2007; Flowers & Prah, 2006). However, 22 states still barred police from presumptive arrest into the 1980s when only 6 states did not have domestic violence laws (Prah, 2006; Stacey & Shupe, 1983). The Family Violence Prevention and Services Act (PL 98-457) was the first federal legislation specifically aimed to address the social problem of battered women. It passed Congress in 1984 (H.R. 1904, 98th Cong., 1984). Alabama is the first state to rescind the legal right of men to beat their wives (Fulgrahm v. State, Lemon, 1996). Massachusetts also declared wife beating illegal (Schechter, 1982). In 1984, the Victims of Crime Act (VOCA) was enacted to allow federal government to allocate funds to state and local agencies in supporting of victims of domestic violence, including shelters, legal assistance, and counseling.

Policy communities

As one of the key policy communities, sociologists and their work contributed to policy ideas formation in the United States in the 1970s, including the magnitude of IPV, theories on the causes of IPV, and experimental research on the effects of policy intervention. The results from early research informed the public and policy makers that family violence is a legitimate social problem. As discussed in Chapter 1, researchers carried out the *First National Family Violence Survey* in 1975 (Straus, Gelles & Steinmetz, 1980) and later the *Second National Family Violence Survey* in 1985 (Straus & Gelles, 1986). The development of the *Conflict Tactics Scale* (CTS) (Straus, 1979) and revised CTS (Straus, Hamby, Boney-McCoy & Sugarman, 1996) enable researchers to measure the prevalence and magnitude of IPV among different age groups and across cultures. These studies and reports indicate that there is a need for legislation for abused women and also paved way for later studies on IPV worldwide.

The ecological model (Garbarino, 1977) was one of the initial and widely applied theoretical explanations for IPV (Belsky, 1980; Carlson, 1984; Dutton, 1994; Heise, 1998). The ecological model conceptualizes violence as a multifaceted/multi-level phenomenon among personal, situational, and sociocultural factors (Heise, 1998). Adapted from the work of Uri Bronfenbrenner (1992) and advanced by Belsky (1980), the ecological framework consists of ontogenic development (individual factors), the microsystem (relationship factors), the exosystem (community factors), and the macrosystem (sociocultural factors). The model can be visualized as four concentric

circles, with the innermost circle as the individual factors. The inner levels of factors are embedded within and influenced by outer levels of factors (Malamuth et al., 1991). For instance, the macrosystem influences the inner three levels of factors in the ecological model (Heise, 1998). The ecological model views individuals as imbedded in the nested systems, which can be leveraged to impact changes in behavior (Hammond & Arias, 2011).

While it is important to measure the magnitude of IPV and the causes of the incidents, we also need further remedies to address this social problem of IPV. Lawrence Sherman and Richard Berk's *the Minneapolis Domestic Violence Experiment* (MDVE) in the 1980s impacted current DV policy and practice. The study reported that mandatory police arrest was an effective deterrent (Sherman & Berk, 1984). The study had unprecedented impact on police practices as law enforcement agencies began to enact mandatory arrest of offenders in numerous states after the public release of the Minneapolis Domestic Experiment findings (Buzawa & Buzawa, 2003).

The Politics Stream of IPV

My discussion of the transformation of IPV from a social problem to a policy agenda concludes with the political stream lens. The political stream consists of factors as public mood, pressure group campaigns, election results, partisan or ideological distributions in the Congress, and changes of administration (Kingdon, 2011, p.145).

Mechanisms in the political stream could be reflected in the presence of a broad social movements and policy decision makers' perception. The complex of these factors can make social issues receive serious attention from government and prominence on the policy agenda or can also make it impossible to place an issue on the agenda.

Women's liberation movement

The women's liberation movement during 1960s and 1970s focused on women's equality in society and began to uncover and bring public attention to the issue of wife beating. The battered women's movement grew out of the women's liberation movement of the 60s and 70s. This rebirth of women's liberation movement was a result of prior influences of the *Anti-War Movement* and the *Civil Rights Movements* from 1950 to 1960s. Movements served as a ground for women's political action and development of feminism for women's struggle for equality (Pleck, 1987; Schechter, 1982).

Prior 1970s, there was even no term to define the issue of wife abuse and no estimates on the extent of the problem (Ashcroft, 2000; Gelles & Straus, 1988). Husband-to-wife violence has not yet emerged as a social problem because "no sizable or influential group in the population has defined it as a problem" (Gelles, 1990, p.13). The women's movements aimed to transform wife abuse from a private matter to a public issue (Morgan, Nackerud & Yegidis, 1998) and then to get attention of policy makers. Activists realized the need to proliferate services in the society (Murray, 1988). One indication is the growth of battered women's shelters. The first shelter opened in St. Paul, Minneapolis in 1973 (Murray, 1988; Prah, 2006). After 4 years, a total of 89

shelters for battered women were opened in the United States (Roberts, 2002). The transition from a private issue to a social problem is reflected in the organized responses of promoting shelter service for battered women in the 1970s. These important practical applications provided battered women a setting for help and increased the recognition of wife beating as a social problem by creating an atmosphere where the public could talk about wife beating. It was the battered women's movements that pushed the federal government for more local and state funding to support the victims who had been turned away due to the lack of space (Schechter, 1982).

Administration in the government

Under the administration of President Carter, the federal office of family violence (OFV) was established in the Department of Health and Human Services in1979. The OFV provided technical, education and research assistance to victims of domestic violence on a national scale. The office was closed by President Reagan in 1981. Two federal reports were published separately by the U.S. Commission on Civil Rights in 1982 and by the Attorney General's Task Force on Family Violence in 1984. The second report redefined domestic violence as a criminal problem and suggested that the criminal justice system is responsible for domestic violence cases.

However, under President Reagan's administration, the national mood changed to the issue of child abuse and neglect, which led to the closure of the Office of Family Violence in 1981. Battered women shelters did not received favors or funding from

politicians because they considered shelters as "hotbeds for anti-male, anti-marriage, and anti-family attitudes" (Stacey & Shupe, 1983, p.133).

In a short period of two years, the shift caused by a president election influenced the national attention on the issue of domestic violence and the government terminated the assistance for preventing of domestic violence.

In 1990s, political factors turned back to favor the social problem of violence against women. Senator Joe Biden served as an advocated and worked for bringing public awareness about domestic violence and changing attitudes regarding federal legislation. Controversy existed about whether or not the federal government should set an agenda on an issue that the public considered as a private family matter. Biden's published his influential article titled "Violence Against Women: The Congressional Response," which influenced the ideological distribution in Congress who began to respond to legislative responses from advocates and victims (Biden, J.R., 1993).

Social services of shelter

As discussed in Chapter 1, the development of battered women's shelters was a product of the women's movement. There was an increasing number of women victims who sought housing support from domestic violence organizations during the 1960s and 1970s. In the early 1970s, advocacy groups in the U.S. began to organize shelters for battered women across the country, with a goal of addressing violence against women and children. Schechter (1982) said that early shelters for abused women were built by religious groups, feminist activists, or social service professionals. It is known that the so

called "first shelter" was opened in London, and the British model became the model for shelters in North America (Riger et al., 2002). In the U.S., the first shelter opened in St. Paul, Minneapolis in 1973 (Murray, 1988; Prah, 2006), and by 1980, the number of shelters increased to nearly 500 (Murray, 1988). There was at least one shelter for battered women in every major city in the U.S. (Ferraro, 2009). Shelters continuously received calls from battered women who requested services and supports, thus the Women's Movement pressed federal government for additional funding to support shelters (Schechter, 1982). The organized responses of promoting shelter services in Women's Movement reflected the transition of wife abuse from a private trouble to a social problem. Today, battered woman shelters are crucial services to protect female victims and children from family violence. In addition, there was no domestic violence shelter that was built for male victims, which is still perceived as a gap in practice in terms of protecting male victims from intimate partner violence. The establishment of shelters in the U.S. was closely related to the women's movement which protected abused women/wife. Thus, unequal services in terms of shelters exist between genders.

The political stream, the efforts of Senator Joe Biden, the supports from advocacy groups, the favorable environment for drafting the legislation of Violence Crime Control and Law Enforcement Act, the election of Bill Clinton all served as an impetus for the Congress to pass the Violence Against Women Act (VAWA) in 1994.

Coupling of three streams

Family violence is an age-old pattern and a variety of efforts to identify the problem of violence against women began in 1600s. The transformation from a private issue occurring behind closed doors to an object of public concern is reflected in setting an IPV agenda on media, public, and policy. No single effort can achieve this transition.

I present the results from a systematic review and analysis of a variety of factors behind the transformation since 1970s. I applied Kingdon's model to guide the analyses and evaluations. Through the problem, policy and political stream lens, there was the coupling of three streams: the passage of federal legislation, The Violence Against Women Act of 1994 (PL 103 -322). More specifically, all the components within Kingdon's agenda-setting model were ready, including (1) the focusing event O.J. Simpson's murder case in 1994; (2) available indicators; (3) research findings from social scientists. More importantly, the VAWA of 1994 was an Act of Congress dealing with crime, which means that VAWA was placed into 1994 federal crime bill passed by the Clinton administration and both the House and Senate. In addition, there was a peak in violent crime in 1994 when there is a political push to do something about the violence crime, such as hiring more police officers. Thus, the political factors play an important role in pushing forward the agenda-setting of IPV in the 1990s. When all the factors from streams of policy and politics are ready, O.J. Simpson's case played the role of a crucial focusing event and made its way through the push the coupling of all the three streams and open the policy window for VAWA of 1994.

However, the coupling of all the three streams of factors is unusual because the historical reviews in this chapter show that the coupling has not occurred again since 1994. For 30 years, advocacy, policy makers, victim support services and research have focused on problem identifications. There is a deficiency in forming policy ideas and positive political atmosphere in the field of domestic violence. The uniqueness of the present study is that the historical reviews and analyses in Chapter 5 inform researchers that we do not see the re-coupling of three streams for agenda setting of IPV for 30 years. The following chapters will identify whether Twitter can reflect another coupling in the field of policy making of intimate partner violence in 2015, whether Twitter reinforce the policy ideas, or simply focus on identification IPV as a problem. The aim of this study is to push the DV field to do more about the policy ideas, social services of IPV, and "enough about the problem recognition".

CHAPTER 6: Results II: Using Data Mining Techniques to Identify IPV Topics on Twitter

Popular words relating to intimate partner violence

I collected 461,668 tweets as my document population. The table1 lists the number of tweets using each key search terms, including "#dv," "dv," '#domesticviolence,' 'domestic violence,' '#ipv,' 'ipv,' '#intimatepartnerviolence,' 'intimate partner violence,' '#dating violence,' and 'dating violence.'

Table 1. Number of Tweets by Hashtags

Hashtags	Number of Tweets
'#dv', 'dv'	185,510
'#domesticviolence', 'domestic violence'	347,820
'#ipv', 'ipv'	8,380
'#intimatepartnerviolence', 'intimate partner violence'	9,249
'#dating violence',	1,098

dating violence

Total: 461,668

Among all 461,668 tweets in the sample, I analyzed the most popular 20 terms related to intimate partner violence, which takes 24.1% of the whole document, such as 'rape,' 'women,' 'victims,' 'awareness,' 'help,' 'nfl,' 'men,' 'nomore,' and 'support.' Even though there is a higher percentage of 'women' (1.25%) than 'men' (0.38%), the results show that both genders appear to be salient words on Twitter. In addition, words including 'victims,' 'help,' 'nomore,' and 'support' are among the most frequent words in the document, revealing there is support for the victims in the tweets. I also noticed that 'hardy,' 'greg,' 'justice4cindy' are popular words suggesting that high profile news events are discussed on Twitter as well when people talk about this social problem.

Table 2. Top 20 popular unigram (single word) in the text document

Unigram	Percentage
violence	6.22%
domestic	5.82%
rape	1.49%
women	1.25%
domesticviolence	1.17%
dv	1.10%
vaw	0.95%

awareness	0.77%
victims	0.61%
help	0.59%
hardy	0.53%
abuse	0.52%
greg	0.42%
nfl	0.42%
dvam	0.41%
nomore	0.40%
men	0.38%
justice4cindy	0.37%
support	0.35%
month	0.33%
Total:	24.1%

High frequency of co-occurred intimate partner violence words

In addition to one of the key search terms "domestic violence," the results show that popular bi-grams (pairs of words) include "violence awareness," "greg hardy[1]," "awareness month," "victims domestic," "stop domestic," and "ronda rousey[2]" (shown in Table 3). Note that bi-gram merely captures two concessive words, regardless of the

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[1] Greg Hardy is a professional football player. During the time of data collection he played for the National Football League team, The Dallas Cowboys.

[2] Rhonda Rousey is an American mixed martial artist, judoka, and actress. Rousey was the first U.S. woman to earn an Olympic medal in judo at the 2008 Summer Olympics in Beijing.

grammar structure and sematic meaning. Therefore, some bi-grams might not be self-explanatory. For instance, popular pairs of words such as "hardy domestic," and "violence women" are not long enough to be meaningful. After I investigate other popular bi-grams, I identify that they represent the meanings of "greg hardy domestic violence," and "domestic violence women."

Among all collected Tweets, there are 630,407 bi-grams (e.g., "domestic violence," "stop domestic"). I choose the 20 most common words (10.25%) with highest percentage in all 630,407 bi-grams (100%) and present them in Table 3. For instance, "domestic violence" made up 6.15% among all 630,407 bi-grams, which means "domestic violence" appears, on average, once in every sixteen bi-grams.

LDA helps browse words that are frequently found together or share a common topic. My LDA outputs reveal that many bi-grams tend to co-occur together among intimate partner violence-related Tweets, such as "justice4cindy cindy," "live pets," "raise awareness," "participate purplethursday," and celebrity-athlete names including "greg hardy," "william gay," and "ronda rousey."

Table 3. Top 20 popular bi-grams (pairs of words)

Bi-grams	Percentage
domestic violence	6.152%
violence awareness	0.577%
greg hardy	0.462%
awareness month	0.307%

intimate partner	0.266%
victims domestic	0.240%
partner violence	0.207%
stop domestic	0.194%
hardy domestic	0.188%
face dv	0.187%
violence incident	0.182%
violence victims	0.177%
ronda rousey	0.177%
violence women	0.175%
jose reyes	0.142%
nomore dv	0.128%
murdered burned	0.126%
justice4cindy face	0.123%
william gay	0.122%
support domestic	0.119%

Notes: I choose top 20 common words with the highest percentage in all 630,407 bi-grams (100%). The rest of the 630,387 bigrams compose 89.75%.

High frequency of IPV-related topics

In addition, the co-occurring words share common topics (I set the number of topics as 10 in this study). All the identified 10 latent topics with high frequency of co-occurrence bi-grams are sorted according to their frequency and are presented in Table 4.

Table 4 presents the distributions of all 10 latent topics (sum equals to 100%), indicating the most common latent topics that the whole document of collection focuses on. For instance, Topic 10 has the highest distribution (16.7%), ranking the most latent one, among all 10 latent topics. Table 4 also indicates the bi-grams that tend to co-occur together among all collected intimate partner violence related tweets in the sample. For instance, within Topic 10, pairs of words "violence awareness," "awareness month," "hardy domestic," "greg hardy," "women men," and "violence incident" have high frequency of co-occurring together. These pairs of words co-occur together to share the same Topic 10.

Table 4 Topics relevant to intimate partner violence and their components with distribution

Topic	Topic components bi-gram	Distribution
10	domestic violence, violence awareness, awareness month, hardy domestic, greg hardy, women men, violence incident, october domestic, men domestic, violence join, 800 799, william gay, stand women, participate purplethursday, join participate, violence hotline, victims domestic, incident published, hotline 800, wearing purple, photographs hardy, 799 7233, gay fined, purple shoes, national domestic, 7233 stopdomesticviolenc, end domestic, shoes domestic, breast cancer, sexual assault	16.7%
8	domestic violence, stop domestic, jose reyes, arrested domestic, reyes arrested, report jose, stand domestic, greg hardy, violence victims, domestic violenc, victims just, el masri, just important, important female, violence victim, hazem el, violence shelters, violence shelter, pet friendly, friendly domestic, rape victims, charged domestic, violence joke, male domestic, raise awareness, violence policy, hardy alleged, taking stand, violence isn, violence	13%

75

awareness

| 6	domestic violence, ronda rousey, rousey domestic, violence women, double standard, violence rowdy, benefits double, standard video, rowdy benefits, victims domestic, responds domestic, rousey responds, violence accusations, intimate partner, violence awareness, partner violence, domestic violenc, violence people, violence victims, guilty domestic, raise domestic, nfl fines, violence intimate, journey drummer, cleats raise, love hormone, inclinations intimate, oxytocin love, increases inclinations, hormone increases	10.74%
2	domestic violence, intimate partner, partner violence, greg hardy, victims domestic, sexual assault, twitter bio, violence rape, violence sexual, domestic abuse, changed twitter, hardy changed, male victims, jokes domestic, don understand, jerry jones, johnny manziel, make jokes, people make, football players, women experience, like really, againstwomen vaw, understand people, assault domestic, violence intimate, rape tweet, mentions like, domesticabuse vaw, feminists mentions	10.6%
1	domestic violence, greg hardy, hardy domestic, violence charges, dallas cowboys, charges expunged, cowboys rumors, rumors greg, spite common, expunged spite, common htt, awareness domestic, raise awareness, porn rape, video xxx, domestic violence, rape video, free porn, adult free, fined player, dv survivors, nfl fined, trying raise, support dv, player trying, hopeline support, help hopeline, pre paid, phone bundle, paid phone	9%
7	domestic violence, violence awareness, support domestic, help support, add twibbon, awareness speak, speak add, donating old, million phones, phones donating, domesticviolence help, stand domesticviolence, help hopeline, hopeline collect, collect million, dv vaw, sexual violence, greg hardy, violence victims, abuse domestic, iran regime, violence women, vaw abuse, issues domestic, rape military, gay rape, underreported pentagon, military underreported, dv lottery, step step	8.42%
9	domestic violence, greg hardy, alleged domestic, violence incident, photos greg, hardy girlfriend, girlfriend alleged, incident released, guns hands, hands domestic, jose reyes, convicted stalkers, need guns, domestic abusers, dailyabuse dailyabuse, star review, read rockmusic, abusers convicted, rockmusic sexabuse, sexabuse domesticviolenc, review bookclub, rape	8%

	murder, sexual assault, violence women, new domestic, dr nel, reyes arrested, rape capital, dvam dvam2015, sweden rape	
4	domestic violence, bring attention, william gay, act domestic, mother killed, purple cleats, cleats bring, gay mother, attention dv, killed act, worn purple, violence octobers, octobers worn, violence women, condone domestic, stay safe, public inquiry, women week, turned away, killed current, violence victims, jerry jones, violence guess, victims need, need voca, week killed, did condone, guess jerry, organization did, said organization	7.98%
3	domestic violence, domestic abuse, wearing purple, purple shoes, mark dvam2015, shoes mark, dvam2015 despite, nfl fine, thank wearing, despite nfl, end vaw, male male, sexual trauma, male sexual, gay rape, rape debacle, pentagon gay, alleging male, debacle report, report alleging, trauma retracted, women killed, lg tone, experience domestic, tone pro, abusive relationship, year old, men don, rosie batty, vaw iran	7.78%
5	domestic violence, violence domestic, domestic terrorism, day elimination, gun violence, international day, elimination vaw, clinic violence, violence women, whiteribbonday domesticviolence, domesticviolence ht, domestic gun, elimination violence, sir patrick, opens door, patrick stewart, greg hardy, violence choice, man make, choice man, make whiteribbonday, stewart violence, rape sexualviolence, domestic workers, domesticviolence domesticabuse, gulf states, street harassment, sexual violence, abuse domesticviolence, today international	7.55%
Total:		100%

Figure 1. Topics distributions by date

The study calculated the topic distributions on all 10 latent topics by date. Figure 1 shows the changes of several topics' distributions over time. In Figure 1, I only present the topic distributions for Topics 1, 4, 6, 8, and 10 from October 1st 2015 to January 7th 2016, because the distributions of these topics change over time while the changes of

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other topics do not fluctuate. For each single date, the distributions of total 10 topics sums to 100%.

In Figure 1, we can see that topics change over time. For example, Topic 1 (blue line), has a distribution of 26% on November 18th, which takes a quarter of all topics' distributions on that date. In contrast, Topic 1 has lower topic distributions on other dates. One important tweet example within Topic 1 is "*Dallas Cowboys Rumors: Greg Hardy's Domestic Violence Charges Expunged In Spite Of Common...*", indicating that Twitter users frequently broadcast Greg Hardy's domestic violence news events on November 18th compared to other days. Similarly, Topic 6 (green line) peaks on Nov. 11th at 28.34%. Important tweets examples within Topic 6 include "Ronda Rousey Domestic Violence: 'Rowdy' Benefits From Double Standard [VIDEO]," and "Ronda Rousey responds to domestic violence accusations."

CHART TITLE

topics1 — topics4 — topics6 — topics8 — topics10
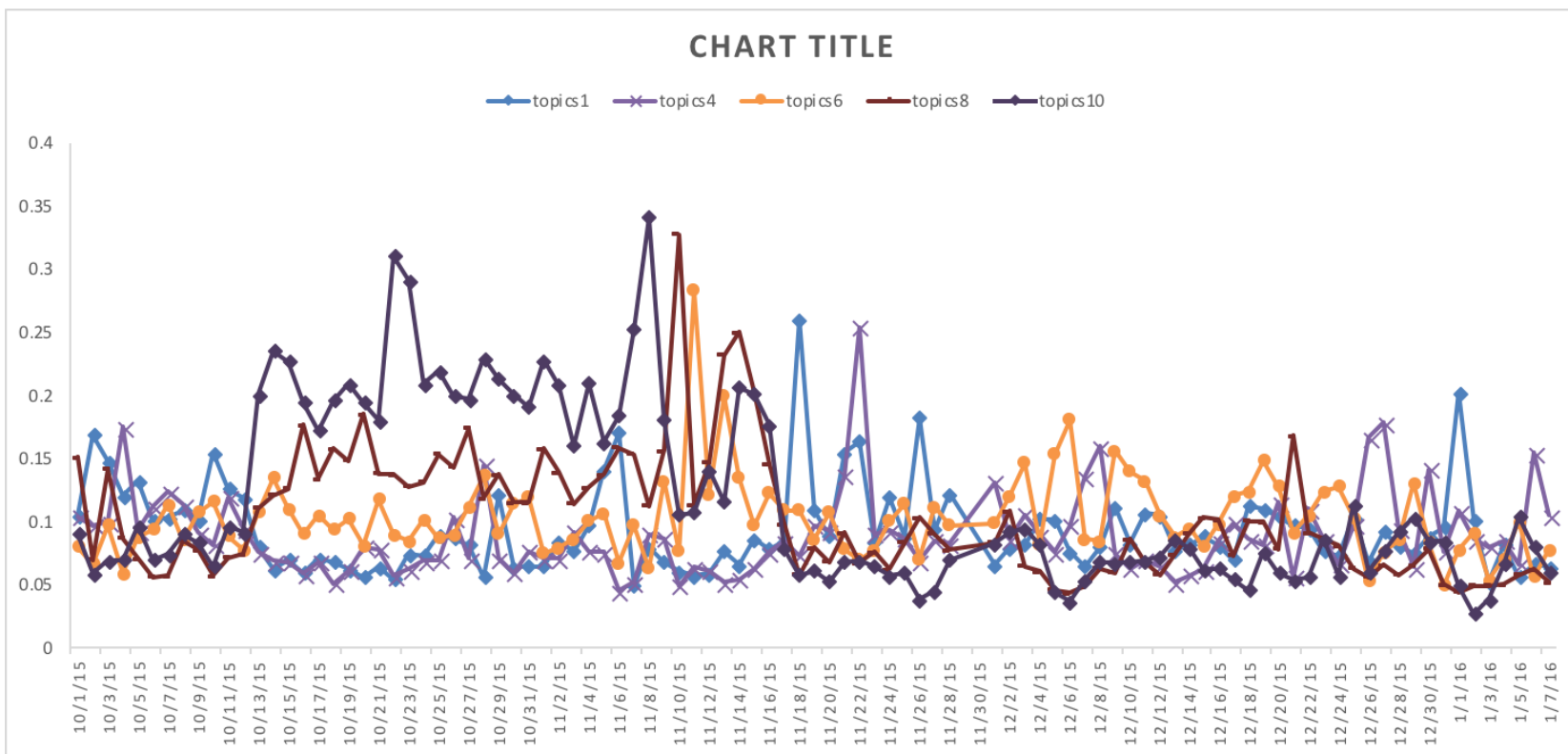
Note. The x-axis shows days from October 1st 2015 to January 7th, 2016. The y-axis represents the topic distributions (percentage).

Themes of the identified latent topics

After examining the popular words in each identified topic and their relevant examples[1], I assigned themes for several topics, as shown in Table 5. For example, Topic 1, topic components include popular bi-grams including "greg hardy," "dallas cowboys," "cowboys rumors," "charges expunged," "fined players," and "rumors greg." After carefully investigating the Tweets examples under Topic 1, I identify that the majority of bi-grams under Topic 1 cover news contents about domestic violence and famous people Greg Hardy in the field of sports. Therefore, I assign Topic 1 a theme of "*Greg Hardy Domestic Violence Case*."

Topic 6 is assigned the theme "Double standard & Ronda Rousey" because Topic 6 focuses on the news event of the UFC fighter Ronda Rousey who used violent behaviors against her ex-boyfriend, MMA fighter Timothy DiGorrio in November 2015. Topic 6 has a distribution of 28.3% among all identified 10 topics, which suggests that the news event of Ronda Rousey was a salient news event and discussed widely among Twitter users on November 11th 2015.

Table 5. Tweets examples and themes for several domestic violence topics

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[1] We only presented 1 or 2 examples under several identified topics.

Topic	Tweets example	Theme
1	1) 'Dallas Cowboys Rumors: Greg Hardy's Domestic Violence Charges Expunged In Spite Of Common... htt' 2) 'Greg Hardy's domestic violence-related charges have been expunged from criminal record'	Greg Hardy domestic violence case
3	1) 'Thank for wearing purple shoes to mark DVAM2015 despite the NFL fine' 2) 'Take a Stand Against Domestic Violence Fundraiser: Through our sporting and community groups we can s... netball'	DVAM (domestic violence awareness month)
4	1) William Gay's mother killed in act of domestic violence. Last two Octobers, worn purple cleats to bring attention to DV	William Gay fights domestic violence
5	1) 'Philadelphia mayor says domestic gun violence is also terrorism' 2) 'I'm a domestic gun violence survivor I'm alive today because of 2A rights & my Beretta.'	Gun violence
6	1) 'Ronda Rousey Domestic Violence: 'Rowdy' Benefits From Double Standard [VIDEO]' 2) 'Ronda Rousey responds to domestic violence accusations'	Double standard & Ronda Rousey

7	1) 'Stand up against??DomesticViolence. Help??HopeLine??collect 1 million phones by donating your old one at??'	Donating phones to support domestic violence
8	1) Jose Reyes could become the first player subject to domestic violence policy	Jose Reyes domestic violence case
10	1) To those in abusive situations - you are not alone. Call the National Domestic Violence Hotline at 1-800-799-7233 #AZWearPurple	Domestic violence hotline
Note: For anonymous protections, we deleted several words in the tweet examples.		

Distribution and frequency of bi-grams across latent topics

Within each identified popular topic, I ran the analyses on the distribution of each bi-grams. I present the results of the common bi-grams under each latent topic in Table 6, and also compare the distribution of popular bi-grams across different latent topics. For example, "greg hardy" has a distribution of 1.17% within Topic 1, ranked top 2 followed by "domestic violence" (2.62%). "Greg hardy" also comprises 0.59% under Topic 2, 0.13% under Topic 5, 0.21% under Topic 7, 0.39% under Topic 8 and 1.32% under Topic 9. Even though the percentage is small, it is relatively and comparatively higher compared to all other bi-grams in the dataset (n=630,407). The popular bi-gram "greg hardy" ranks at the top of the popular pairs of words that are more likely to co-occur together under 4 topics, which suggest that the news event Greg Hardy is identified as a

high profile domestic violence news broadcast on Twitter from October to November 2015.

Table 6. Bi-grams distributions under topics (top 5 presented, "domestic violence" excluded)

Topic	Topic components	Component distribution
1	greg hardy	1.17%
	hardy domestic	1.03%
	violence charges	0.92%
	dallas cowboys	0.82%
	charges expunged	0.82%
2	Intimate partner	2.00%
	Partner violence	1.58%
	Greg hardy	0.59%
	victims domestic	0.28%
	sexual assault	0.26%
3	domestic abuse	0.33%
	wearing purple	0.22%
	purple shoes	0.21%

	mark dvam2015	0.20%
	shoes mark	0.20%
4	bring attention	0.47%
	william gay	0.46%
	act domestic	0.44%
	mother killed	0.44%
	purple cleats	0.42%
5	violence domestic	0.39%
	domestic terrorism	0.37%
	day elimination	0.34%
	gun violence	0.28%
	international day	0.26%
6	ronda rousey	1.39%
	rousey domestic	0.68%
	violence women	0.67%
	double standard	0.66%
	violence rowdy	0.57%

7	violence awareness	0.82%
	support domestic	0.79%
	help support	0.70%
	add twibbon	0.58%
	awareness speak	0.58%
8	stop domestic	1.35%
	jose reyes	0.85%
	arrested domestic	0.77%
	reyes arrested	0.63%
	report jose	0.52%
9	greg hardy	1.32%
	alleged domestic	1.15%
	violence incident	1.05%
	photos greg	0.99%
	hardy girlfriend	0.94%
10	violence awareness	2.21%
	awareness month	1.46%

	hardy domestic	0.59%
	greg hardy	0.56%
	women men	0.50%

Summary

Chapter 6 utilized unsupervised machine learning methods to classify 461,668 tweets. I located the most popular unigram and bigrams among the tweets and identified the high frequency co-occurrence words that shared common topics. Results showed that high-profile sports figure Greg Hardy and his domestic violence case was frequently tweeted or retweeted. Another sports figure Ronda Rousey and her violent behavior against her partner was also widely discussed among Twitter users. Even though I did not use Kingdon's framework of three streams to directly code the tweets, the model guides the discussions and understandings of the findings. I found the unsupervised classification of these 461,668 tweets revealed that Twitter reflects the agenda setting of "problem recognition," and more specifically "focusing events." On the other hand, tweets' contents did not reflect the agenda setting of policy ideas or politics. Thus, based on the results from my sample, Twitter does reveal a coupling of Kingdon's three streams or window of opportunities for policy changes.

CHAPTER 7: Results III: Using Kingdon's Framework to Examine the Use of

Social Media as a Means of Agenda-setting of IPV

Descriptive statistics

From the total of 3 million tweets, I randomly sampled a total of 900 tweets (300 tweets each month of October, November and December in 2015) from 900 users to conduct content analysis. The table below shows the descriptive statistics of the sample. The randomly selected 900 Twitter users posted 548 original tweets and 352 retweets, and 620 of them used a link/URL in their tweets messages. The number of favorites these users had ranged from 0 to 641,393 with a mean of 5,852.69 (SD=27570.41), ranging from a minimum of 0 to 641,393. The average numbers of followers and friends that these users had are 6,893.98 (SD=46300.32), and 3,173.95 (SD=10412.82) respectively. The average number of retweets of these 900 users are 59.46 (SD=489.78), ranging from 0 to 11,353. There is a big variation among the randomly selected 900 Twitter users since their numbers of friends, followers, and retweets all ranged from 0 to tens of thousands, indicating there are high profile accounts or organization accounts in the sample. I removed duplicate original tweets (posted more than one time in different dates by the same user or any re-posted or retweeted tweets that used "RT@username") to prevent popular posts from saturating the sample.

After the training and coding the pilot dataset, I added the categories of "defining problem," "self-revelation," and "promoting self-help" under the theme *Problem*. The

category of "movement and grassroots" under the theme *Politics* was divided into several sub-categories including "event," "fund raising," "recruitment," "lobby/advocacy," and "raising public awareness". The coding reliability (kappa) between two coders was 0.85 which achieved a reliable level (>.7), and I finalized the codebook provided in Chapter 4.

Table 1. Descriptive statistics of the sample (N=900)

Variable	N	Mean (SD)	Min	Max
Message type	900	.391	0	1
Original tweet	548	(.488)		
Retweet	352			
Link/URL included	900	.689	0	1
Yes	620	(.463)		
No	280			
Number of favourites	900	5852.69 (27570.4)	0	6413 93
Number of followers	900	6893.98	0	1293

		(46300.3)		373
Number of friends	900	3173.95	0	7166
		(10412.8)		6
Number of retweets	900	59.46	0	1135
		(489.8)		3

Problem recognition of agenda-setting of IPV

RQ3 asks about whether and how the tweets with defined hashtags relevant to IPV are constructed as social problems in order to engage in agenda-setting of IPV. To answer the study's *Research Questions 3a-3g,* I ran the frequencies of the sampled tweets that were coded as 1 for the categories under *Problem Recognition*. The majority of the sample tweets (73.44%, n=661), reflect the problem recognition contents, shown in Table 2.

Defining problems. RQ3a asks about what the level of "defining problems" of IPV are occurring on Twitter. Results show that 11% (n=99) of the sampled tweets mentioned the definition, nature and consequences of the social problem of IPV. These messages were exemplified by

"Domestic violence is a Men's issue …" (Tweeter 1)

"Women who are victims of domestic violence are more likely to have a stroke, heart disease, asthma ..." (Tweeter 2)

"Signs of domestic violence http://t.co/jj4tfR805A #immigration …" (Tweeter 3)

"Average cost of emergency medical care per #DV incident for women: $948 http://t.co/AiQRmSQywl #Safety4Heath ..." (Tweeter 4)

"Domestic violence is a crime of power & control. Housing helps ..." (Tweeter 5)

"Domestic violence is a alive & well in the LGBT community ..." (Tweeter 6)

"VICE says #rape is just an occupational hazard in the business of being a woman who chooses to leave her house …" (Tweeter 7)

"Intimate partner violence that is often disguised as love ..." (Tweeter 8)

"We all know domestic violence is wrong no matter the gender …" (Tweeter 9)

"RT@Evey, guns help turn #domesitviolence into murder. October is domestic violence awareness month. #DVAM2015 https://t.co/BRNHwsR ..." (Tweeter 10)

We also ran the weights of each unigram from the 11% (n=99) coded tweets. The outputs of word cloud reveal the visualization of the word frequency of these messages. The larger the font size, the higher of the frequency of the words. The most frequent word is 'violence' (n=57), followed by 'domestic' (n=37), 'domesticviolence' (n=15), 'partner' and 'women' (n=12), 'intimate' (n=11), "domestic violence' and 'abuse' (n=9),

'intimate' (n=7), 'victim', 'know' (n=6), 'DVAM2015', 'issue', 'love', 'just', 'Rape' and 'HIV' (n=5).

Figure 2[1]. Word cloud of messages coded as *Defining problem* under the *Problem Recognition* theme
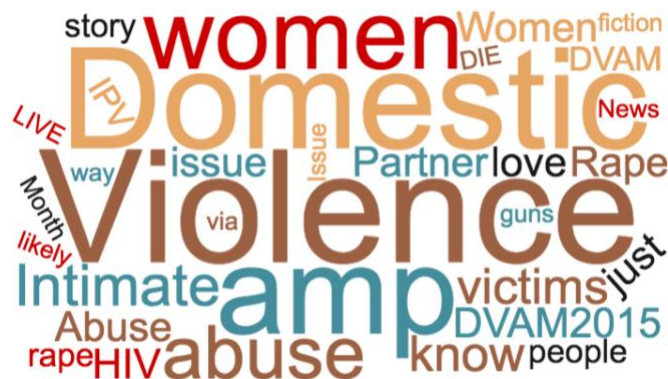
Indicators. RQ3b asks about what the indicators are (i.e. statistical data that indicate the occurrence) of IPV occurring on Twitter. Results show that 52.11% (n=469) of the sampled tweets used statistical data to reveal the prevalence and seriousness of the social problem of IPV. The messages were exemplified by

"#DomesticAbuse #VAW 'Reverse domestic violence funds cuts': One in five Irish women are victims... https://t.co/w6LNEo3dsy #DomesticViolence" (Tweeter 1)

"52% women have experienced physical or sexual violence at some time since the age of 15 https://t.co/ekCUfZ0MRR" (Tweeter 2)

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[1] Generated by https://www.wordclouds.com/

"Domestic violence cuts across all socio-economic strata. #CAturnspurple #DVAM2015 #takeastand https://t.co/LOWA0pLSpi" (Tweeter 3)

"RT @vj44: 1/5: In America, one in four women are affected by domestic violence. #StopGunViolence" (Tweeter 4)

"RT @HTXNOW: More than 40% of intimate partner violence is UNREPORTED! Stop the silence. #TakeAStand http://t.co/pJu5TcChup" (Tweeter 5)

"RT @mpdva: Oct. 5: Between 21-60% of victims of intimate partner violence lose their jobs due to reasons stemming from the abuse. (APA) #DV" (Tweeter 6)

"RT @AXOMockRock2015: Of female murder victims in 2008, 35% were killed by an intimate partner #DVAM #day6" (Tweeter 7)

"10 Percent Of Rape Victims Are Men. Hear Their Stories Here https://t.co/fAHTEyvhr6 #News #Rape #Violence #Sexualabuse #Stats #Crime" (Tweeter 8)

"RT @MACAIDSFund: Women are 55% more likely to be HIV+ if they have experienced intimate partner violence. More access to #HIV prevention …." (Tweeter 9)

"RT 40% of homes with police in them have reported domestic violence. The national average is 10%NFL average is 6%...." (Tweeter 10)

We also ran the weights of each unigram from the 52.11% (n=469) coded tweets. The outputs of word cloud reveal the visualization of the word frequency of these messages. The larger the font size, the higher of the frequency of the words. The most

frequent word is 'violence' (n=40), followed by 'domestic' (n=37), 'women' (n=26), 'intimate' (n=20), 'partner' (n=13), 'victim' (n=12), 'domesticviolence' (n=15), 'abuse' (n=13), 'Rape' (n=4), 'experienced', 'experience', 'epidemic' 'people' 'cases', 'gun' 'HIV' and 'report' (n=3).

Figure 3. Word cloud of messages coded as *Indicators* under the *Problem recognition* theme

Focusing events. RQ3c asks about what the "focusing events" of IPV are occurring on Twitter. Focusing events is a prominent feature of tweets, with an estimate of 18.67% (n=168) of the sampled tweets including the IPV news reports with a URL or hashtags directing to the news events. The messages were exemplified by

"RT @FeministaJones: Baby survives after 26-year-old pregnant woman stabbed to death #NotAWeekGoesBy #3ADay http://t.co/4oWHqV6TL5 …" (Tweeter 1)

"RT @shawnpwilliams: Tonight is the start of the end of Domestic Violence in Dallas. ~ @mike_rawlings #BigDEndsDV https://t.co/GkQeVBbChN..." (Tweeter 2)

"RT @FeministaJones: Baby survives after 26-year-old pregnant woman stabbed to death #NotAWeekGoesBy #3ADay http://t.co/4oWHqV6TL5...." (Tweeter 3)

"RT @BuzzFeedNews: The NFL Fined A Player For Wearing Purple Cleats To Raise Domestic Violence Awareness https://t.co/FdiEOvNRZk ……" (Tweeter 4)

"RT @jawnes12: William Gay wears purple cleats to support Domestic Violence Awareness Month & gets fined. Greg Hardy gets called a team lead …" (Tweeter 5)

"RT @johnspatricc: NRL great Hazem El Masri charged with domestic violence https://t.co/pzjLfmarCt …" (Tweeter 6)

"RT @Steel_Curtain4: William Gay admits he broke the NFL's rule, but hopes they donate the fine to a Domestic Violence Charity. #Steelers…" (Tweeter 7)

"RT @Steel_Curtain4: William Gay has been fined by the NFL $5,787 for wearing purple cleats for Domestic Violence Awareness to honor his …" (Tweeter 8)

"The NFL fined a player for trying to raise awareness of domestic violence https://t.co/wabhVp9O9W …" (Tweeter 9)

"RT @JoeGiglioSports: William Gay was fined by the NFL for wearing purple shoes for Domestic Violence Awareness. Greg Hardy will make over …" (Tweeter 10)

We also ran the weights of each unigram from the 18.67% (n=168) coded tweets. The outputs of word cloud reveal the visualization of the word frequency of these messages. The larger the font size, the higher of the frequency of the words. The most frequent word is 'violence' (n=89), followed by 'domestic' (n=87), 'domesticviolence' (n=41), 'greg' (n=23), 'hardy' (n=21), 'VAW' and 'women' (n=18), 'amp' (n=14), 'NFL' (n=13), 'rape' (n=14), 'UniteBlue' and 'via' (n=10), 'photos' (n=8), 'DomesticAbuse', 'incident', 'arrested', and 'abuse' (n=7).

Figure 4. Word cloud of messages coded as *Focusing events* under the *Problem recognition* theme

Feedback mechanism. RQ3d asks about if there is a feedback mechanism for tweets related to IPV on Twitter. Under the theme of problem recognition, 52.11% (n=469) of the sampled tweets used reply (@username) function, indicating a feedback mechanism.

Self-revelations. RQ3e asks about what the victims' self-revelations are occurring on Twitter. Results show that there were 4.56% (n=41) of the sampled tweets reveal victims' own domestic violence experience. The messages were exemplified by

"RAND pays #CharlesAGoldman. He pays his lover, my rapist #GaryLReisch. He pays my stalker. See the money chain #RAND #rape #taxfraud" (Tweeter 1)

"RT @Carolin74464142: @cleflore23 @RepMaloney I'm a domestic gun violence survivor I'm alive today because of #2A rights & my Beretta" (Tweeter 2)

"I AM PREGNANT!! I WAS RAPED!!! https://t.co/RHkxfIXjWj @YouTube. Please support my hardship #Supergirl #OPTOUTSIDE #GIRLS #PREGANCY #RAPE" (Tweeter 3)

"RT @ReneeMcDowell: Coming from someone who's been physically abused, this may possibly be one of the best articles ever written …" (Tweeter 4)

"You wasted my time, broke my heart, and tried to ruin my life #domesticviolence.website #domesticabuse …" (Tweeter 5)

"During my pregnancy, he sat on my stomach at 6 months and beat me. I'd be carrying my youngest son and he'd be hitting me #domesticviolence" (Tweeter 6)

"There is only me, the floor the dust and my tears I'm a broken woman. #DomesticViolence #Inspirational…" (Tweeter 7)

"Summer 1972 Mom tried hard but dad beat her #stopabuse #childabuse #domesticviolence https://t.co/SZXPkvD53r ..." (Tweeter 8)

"I Had Everything. Money. Corporate Job. And Boyfriends Who Abused Me https://t.co/C2J4QiTvoY #News #Domesticviolence #Dv #Relationships…" (Tweeter 9)

"The abuse started the day I met him': Police in England and Wales… https://t.co/H03ehZXac7 #DomesticViolence…" (Tweeter 10)

We also ran the weights of each unigram from the 4.56% (n=41) coded tweets. The outputs of word cloud reveal the visualization of the word frequency of these messages. The larger the font size, the higher of the frequency of the words. The most frequent word is 'violence' (n=17), followed by 'domestic' (n=16), 'domesticviolence' (n=10), 'story' (n=6) 'survivor', 'life', 'rape', and 'now'(n=5), 'BestTalkRadio', 'Nation', 'Parent', and 'Live News' (n=4).

Figure 5. Word cloud of messages coded as *Self-revelation* under the *Problem recognition* theme

Promoting self-helps. RQ3f asks about what the promoting self-helps are occurring on Twitter. There are only 3.89% (n=35) of the coded tweets contains tweets contents related to self-help. The messages were exemplified by

"RT @FabFitFun: Could you or someone you know be in an abusive relationship @darlingmag tells us how to recognize domestic violence …" (Tweeter 1)

"RT @12News: To those in abusive situations - you are not alone. Call the National Domestic Violence Hotline at 1-800-799-7233 #AZWearPurple …" (Tweeter 2)

"RT @DiscoveryID: Does your partner ever isolate you 10 Warning Signs Of Domestic Abuse http://t.co/sEsx9Fzjbv #InspireADifference …" (Tweeter 3)

"Signs of Domestic Violence https://t.co/jj4tfR805A #immigration @ImmigrationAdvo …" (Tweeter 4)

"RT @WestEndResNYC: A safety plan can help you stay safe even before you leave:https://t.co/JdUKEnBT4E via @womenshealth #DVAM …" (Tweeter 5)

"Ex-victim aims to end domestic violence: Self-defense instructor Michelle Winder of Carlsbad has invented a product https://t.co/vGP7oAt7C9 …" (Tweeter 6)

"RT @USICHgov: Five Resources You Should Know About on Domestic Violence https://t.co/RNfa3Dz1U2 #DVAM2015 …" (Tweeter 7)

"RT @NYCMayorsFund: If you are in need of help, you can always call @NYCagainstabuse's Domestic Violence hotline at 1-800-621-4673. #NYCGoPu …" (Tweeter 8)

"RT @RAINN01: If someone is pressuring you to do something you don't want to do, see @RAINN01's tips for how to respond: https://t.co/Fl3WlA …" (Tweeter 9)

"Fighting domestic violence through early education http://t.co/xcVXBJgREd

@thageckobrothas speak out on domestic violence. Check out Love Yourself

https://t.co/2qIVk0exrz #staygecko ..." (Tweeter 10)

We also ran the weights of each unigram from the 3.89% (n=35) coded tweets.

The outputs of word cloud reveal the visualization of the word frequency of these

messages. The larger the font size, the higher of the frequency of the words. The most

frequent word is 'domesticviolence' (n=40), followed by 'violence' (n=27), 'domestic'

(n=26), 'relationship', 'abusive' (n=15), 'listen' (n=13), 'information', 'TalkRadio',

'living', and 'find' (n=12), 'help', 'survivors', 'victims', and 'DVAM' (n=6).

Figure 6. Word cloud of messages coded as *Promoting self-helps* under the

Problem recognition theme

Advocates' experiences. RQ3g asks about what the advocates' experiences are

occurring on Twitter. There were 8.89% (n=80) of the coded tweets are about advocates'

own domestic violence experience. The messages were exemplified by

"Learn how @WEAVEinc is working to end #domesticviolence in #Sacramento in this interview with @BethHassett: https://t.co/XfYZidSDqq #DVAM …" (Tweeter 1)

"RT @forWomanity: Young Men Working Towards Gender Equality, a positive story with @Promundo_US @Promundo_Brasil @AbaadMENA …" (Tweeter 2)

"RT @_Ayudos: Childhood domestic violence survivor launches #GoFundMe campaign for eyesight restoration... https://t.co/LsY10zLTUI #crowdfun …" (Tweeter 3)

"My #Experiences With Domestic Violence Inspired Me to Help Others https://t.co/uTkhVO6geP https://t.co/LYWQrJUIOB …" (Tweeter 4)

"RT @UNDP: #16Days -16 stories from women asking you to take a stand against #domesticviolence: https://t.co/o8hBqy0SQG https://t.co/szZEcG3..." (Tweeter 5)

We also ran the weights of each unigram from the 8.89% (n=80) coded tweets. The outputs of word cloud reveal the visualization of the word frequency of these messages. The larger the font size, the higher of the frequency of the words. The most frequent word is 'domesticviolence' (n=21), followed by 'violence' (n=12), 'domestic' (n=12), 'BestTalkRadio', 'Parent', 'Nation', 'life', 'Live', 'now', and 'find' (n=7), 'story' (n=4), 'Experiences', 'stories', and 'VAW' (n=3).

Figure 7. Word cloud of messages coded as *Advocates' experiences* under the *Problem recognition* theme

Policy formation of agenda-setting of IPV

RQ4 asks about how tweets with defined hashtags relevant to IPV on Twitter reflect policy formation and agenda-setting of IPV. To answer the study's *Research Questions 4a-4b,* I ran the frequencies of the sampled tweets that were coded as 1 for the category of *Policy formation*. Seventeen percent (17.33%, n=157) of the tweets reflect the policy in the contents. Regarding the theme policy ideas, only 8.22% (n=74) of the sample tweets contained information about existing IPV policies, programs or services, and 13.67% (n=123) reflect policy communities such as interest groups, non-government organizations, or academic groups.

Policy ideas. RQ4a asks about what the characteristics of policy ideas about IPV are posted on Twitter. There were 8.22% (n=74) of the coded tweets contains information about IPV-related policies or regulations. The messages were exemplified by

"RT @UN_Women: Andorra has adopted a law to eradicate gender&domestic violence #1325at15 …" (Tweeter 1)

"@NicolaSturgeon is on a mission to redefine domestic violence: http://t.co/8yAb0Yi1st #WITW London Summit http://t.co/OEx3CWmrXV …"(Tweeter 2)

"#DomesticViolence :(Law reform spotlight on self-defence in domestic violence cases: The ... http://t.co/9lrvq69CGk #UniteBlue #VAW :-(" (Tweeter 3)

"denver domestic violence attorney: #Denver Domestic Violence Claims Active Defense Against... https://t.co/ayf1Kl9TNR #alaska #insurance" (Tweeter 4)

"RT @RapSheet: Joseph Randle faces a 1- or 2-game suspension for the incident. He didn't violate domestic violence policy. It's firearm & co" (Tweeter 5)

"Why #Rape Was Impossible: A Look at Terrifying Medical Logic of 18th Century Law http://t.co/nzHN4A6trY MT @Jezebel http://t.co/6xZo0hvy9e" (Tweeter 6)

"Michigan House passes bills to strengthen domestic violence laws http://t.co/Dkc8y99Olm" (Tweeter 7)

"Billions spent to prevent foreign terrorism but what about domestic terrorism via gun violence. #GOPdebate" (Tweeter 8)

"RT @dissident_tract: I think America's love affair with gum violence come from feelings of anonymity: Giffords launches gun control effort" (Tweeter 9)

We also ran the weights of each unigram from the 8.89% (n=80) coded tweets. The outputs of word cloud reveal the visualization of the word frequency of these messages. The larger the font size, the higher of the frequency of the words. The most

frequent word is 'violence' (n=48), followed by 'domestic' (n=40), 'DomesticViolence' (n=15), 'VAW' (n=9), 'amp' (n=6), 'rape', 'gun' (n=5), 'DomesticAbuse', 'terrorism', 'laws', 'via', 'law', and 'get' (n=4).

Figure 8. Word cloud of messages coded as *Policy ideas* under the *Policy* theme

Policy community. RQ4b asks about who are the "policy communities" (principle users) on Twitter that post tweets mentioning the selected hashtags relevant to IPV (i.e. individuals, interest groups, NGO/NPO, academic groups, or news media). Results showed that 13.67% (n=123) of the coded tweets mentioned policy communities. The messages were exemplified by

"RT @12News: To those in abusive situations - you are not alone. Call the National Domestic Violence Hotline at 1-800-799-7233 #AZWearPurple" (Tweeter 1)

"RT @JenMellon: DC Startup offers pro-bono PI services to survivors of domestic violence https://t.co/uVh91zNP8g @Trustify @BeckysFund #DVmo" (Tweeter 2)

"@NationalDVAM AWI's Mary Lou Randour, PhD. will be tweeting for @AWIOnline today from DC! #DVAM2015" (Tweeter 3)

"Marie Bernard: #NIH #PreventElderAbuse The first time NIH has convened experts in child abuse, intimate partner violence and elder abuse" (Tweeter 4)

"Amazing how little the NFL has improved on domestic violence. As @ninamandell writes, it's about about $$ in Dallas. https://t.co/AwY5biZljh" (Tweeter 5)

"Denver domestic violence attorney: #Denver Domestic Violence Claims Active Defense Against... https://t.co/ayf1Kl9TNR #alaska #insurance" (Tweeter 6)

"State Senator Patty Ritchie is marking Domestic Violence Awareness Month by announcing she has delivered $116,000... http://t.co/wnPnNZTInd" (Tweeter 7)

"City Hall went purple last night in support of Domestic Violence Awareness Month. #DVAMVigil #DVAM2015 https://t.co/xcU1ejoiPG" (Tweeter 8)

"Michigan House passes bills to strengthen domestic violence laws http://t.co/Dkc8y99Olm" (Tweeter 9)

"RT @teamtrace: Gov. Chris Christie has vetoed bill that would have required domestic abusers to immediately surrender firearms" (Tweeter 10)

We also ran the weights of each unigram from the 13.67% (n=123) coded tweets. The outputs of word cloud reveal the visualization of the word frequency of these messages. The larger the font size, the higher of the frequency of the words. The most frequent word is 'violence' (n=73), followed by 'domestic' (n=66), 'domesticviolence' (n=29), 'NFL' (n=15), 'VAW' (n=14), 'abuse' and 'women' (n=8), 'domesticabuse', 'DVAM2015', 'victims', 'Hardy', 'Greg' (n=6), 'UniteBlue', 'Awareness', 'terrorism' (n=5), and 'awareness', 'intimate', 'partner', 'prevent', 'DVAM', 'help', and 'kids' (n=4).

Figure 9. Word cloud of messages coded as *Policy community* under the *Policy* theme

Politics of agenda-setting of IPV

RQ5 asks about how tweets with defined hashtags relevant to IPV on Twitter reflect politics and agenda-setting of IPV. To answer the study's *Research Questions 5a-*

g, I ran the frequencies of the sampled tweets that were coded as 1 for the category of *Politics.* There are 27.67% (n=249) of the tweets reflect the politics theme.

RQ5a asks about how social movements or grassroots activities use tweets to facilitate promotion and mobilizations for IPV on Twitter. There are 26.11% (n=235) of the sampled tweets reflect the social movements activities. The examples of tweet messages under this category were presented separately in the following paragraphs.

Event promotions. RQ5b asks about what event promotions are occurring on Twitter. Twelve percent (12.33%, n=111) of the sample tweets promoted an IPV related event using their tweets. The messages were exemplified by

"RT @NCADV: Join us in 1 HOUR for our twitterstorm with @YWCAUSA and others to #EndDVNow #DVAM2015 #STANDwithNCADV https://t.co/t3eDi0qgk3" (Tweeter 1)

"Saturday, Texas #LULAC District 2 & LULAC New Braunfels council will host a Domestic Violence Workshop. Check it outhttps://t.co/KnB2ccYWC8" (Tweeter 2)

"Join us Saturday Oct 24th Walk Away from Domestic Violence. 8 am Santa Monica Pier...Wear Purple if possible. https://t.co/Tk2T8fULsx" (Tweeter 3)

"This was awesome tonight! #DVAM speaking for the CASA St. Petersburg Gala.   I'm exhausted!! but... https://t.co/VaJckHGypU" (Tweeter 4)

"Our #CaseManager Pre-Service Training Class is creating awareness for #domesticviolence today! #DVAM #WearPurple https://t.co/SC7xWbEMXj" (Tweeter 5)

"Bring Awareness to Domestic Violence with Art this Friday 5-7 @ Graffiti Gallery in Oil City. http://t.co/IG5oGRBFq2 http://t.co/pv6LkWP2Cj" (Tweeter 6)

"Come out today from 12:30-1:30 in the Student Lounge for the Panel on Domestic Violence! @mcnyedu #mymcny #DVAM2015 https://t.co/5LcNxW9hLt" (Tweeter 7)

We also ran the weights of each unigram from the 12.33% (n=111) coded tweets. The outputs of word cloud reveal the visualization of the word frequency of these messages. The larger the font size, the higher of the frequency of the words. The most frequent word is 'BestTalkRadio' and 'listen' (n=48), followed by 'domesticviolence' (n=47), 'second' (n=45), 'aware', 'wind', 'kids', and 'now' (n=45), 'violence' (n=36), 'domestic' (n=31), 'Join' (n=19), 'DVAM' (n=17), 'awareness' (n=16), 'DVAM2015' (n=8), 'support' (n=6), 'purple', 'help' (n=5).

Figure 10. Word cloud of messages coded as *Event promotion* under the *Politics* theme

Fundraising. RQ5c asks about what fund raising occurring on Twitter. Only 1.89% (n=17) of the sampled tweets contain contents about raising funds for the DV or sexual assault related organizations. The messages were exemplified by

"#MakeYourDonation Domestic Violence Awareness Month (DVAM) evolved from the Day of Unity held in October 1981... http://t.co/KI5xxwRLhM" (Tweeter 1)

"Help us bring awareness to Domestic Violence by supporting our film. https://t.co/sKXkMHG4uA @desireefilm7 @bdckool …" (Tweeter 2)

"Real Advice For The Newlywed to donate 10% of royalties to NoMore during Domestic Violence Awareness Month#DomesticViolenceAwarenessMonth" (Tweeter 3)

"Supporting Domestic Violence Awareness month! http://t.co/JE15aZ8sov" (Tweeter 4)

"WallaceGeorge7 : Cherdara HELP VICTIMS OF DOMESTIC VIOLENCE IN SERBIA! Please DONATE and https://t.co/NjEr3ikXgs https://t.co/AEeeDvhCQa" (Tweeter 5)

"Sycamore Soccer raised money for CODA on Domestic Violence Awareness Night STORY -- http://t.co/wqjaI85IEW" (Tweeter 6)

"RT @optimistic_mama: Support Domestic Violence Awareness when you Go Purple & donate used phones 2 #HopeLine" (Tweeter 7)

"RT @URI_NYC: THANK YOU @Everybodys_Home for yr generous donation of pet food & supplies to families in our #URIPALS #DV shelters!" (Tweeter 8)

We also ran the weights of each unigram from the 1.89% (n=17) coded tweets. The outputs of word cloud reveal the visualization of the word frequency of these messages. The larger the font size, the higher of the frequency of the words. The most frequent word is 'violence' and 'domestic' (n=11), followed by 'awareness' (n=6), 'donate' (n=4), 'donating' (n=3), 'Please' (n=3), 'mission', 'support', 'month', 'today', and 'help' (n=2). All other words just appear once in the messages.

Figure 11. Word cloud of messages coded as *Fundraising* under the *Politics* theme

Volunteer recruitment. RQ5d asks about what volunteer recruitment on Twitter. Results show that only 0.33% (n=3) of tweets recruiting a staff or ask for volunteers. The only three messages out of 900 coded messages included

"Come help support domestic violence awareness month http://t.co/gHcUWagfSV" (Tweeter 1)

"Let's all band together and help out a worth cause like putting an end to Domestic Violence. Join the Bluefield... http://t.co/to113UQjOo" (Tweeter 2)

"MOMA's house is looking forward to reaching even more women in 2016. Join us in our journey! #sextrafficking #volunteer #domesticviolence" (Tweeter 3)

Lobby and advocacy. RQ5e asks about lobbying and advocacy activities are occurring on Twitter. Results show that only 6.56% (n=59) were posting tweets about grassroots lobbying to influence legislation or activists' actions to bring social or political changes. The messages were exemplified by

"There is still time for Congress to act and #ProtectAllWomen during #DVAM2015. Will they https://t.co/i79UrxlYuQ https://t.co/TfqnofsDNT" (Tweeter 1)

"wow, talk about a powerful campaign. domestic violence. https://t.co/xmewHC6Dxb" (Tweeter 2)

"A city councilman wants the NYPD to publicly report incidents of domestic violence at public housing developments: http://t.co/H7Gs65ZCB6" (Tweeter 3)

"RT @NOMOREorg: Thank YOU @USA_Network & @nbcsvu for recognizing #DVAM. Take the pledge & help stop domestic violence & rape" (Tweeter 4)

"RT @_Ayudos: Childhood domestic violence survivor launches #GoFundMe campaign for eyesight restoration... https://t.co/LsY10zLTUI #crowdfun" (Tweeter 5)

"RT @heavenlysins66: I support #WhiteRibbonDay Let's all say NO to #domesticviolence   #LoveChangesPeople" (Tweeter 6)

"RT @santoshskcp: Today let's take a stand n make a change with #16Days of Activism. No #VAW (Violence against women). Let's #OrangeTheWorl" (Tweeter 7)

"VISTA Member Impacts the Community through Domestic ViolenceAwareness https://t.co/QiI7mhueDY https://t.co/N8ogeeErDB " (Tweeter 8)

"RT @evietmcduff: You are beautiful :) Join the movement -> https://t.co/oLWQpZwUgs #RRBC #Book #DomesticViolence…" (Tweeter 10)

We also ran the weights of each unigram from the 6.56% (n=59) coded tweets. The outputs of word cloud reveal the visualization of the word frequency of these messages. The larger the font size, the higher of the frequency of the words. The most frequent word is 'violence' (n=26), followed by 'domesticviolence' (n=25), 'domestic' (n=24), 'campaign' (n=7), 'stop' (n=6), 'stand' and 'VAW' (n=5), 'DVAM2015' (n=4), 'powerful', 'please', 'women', 'help', 'talk', and 'wow' (n=4).

Figure 12. Word cloud of messages coded as *Lobby and advocacy* under the *Politics* theme

Public awareness. RQ5f asks about what the raising public awareness are occurring on Twitter. Seven percent (7.56%, n=68) of the tweets raised public's awareness about IPV. The messages were exemplified by

"RT @iMinstreI: October is domestic violence awareness month ... don't let a violent bully destroy your life or the lives of your children." (Tweeter 1)

"Let's all band together and help out a worth cause like putting an end to Domestic Violence. Join the Bluefield... http://t.co/to113UQjOo" (Tweeter 2)

"I'm going purple to raise awareness, support survivors, & take a stand against domestic violence. #PurpleThursday …" (Tweeter 3)

"RT @RVAwonk: What every woman needs to know about #GunViolence... #ViolenceAgainstWomen #StopGunViolence …" (Tweeter 4)

"RT @WithoutViolence: Join us in thanking @terrybradshaw for making an important stand against #DV! Sign the card: https://t.co/k0c4ZBF0p9 h …" (Tweeter 5)

"Help us bring awareness to Domestic Violence by supporting our film. https://t.co/sKXkMHG4uA @desireefilm7 @bdckool https://t.co/c86D0pWmGQ …" (Tweeter 6)

"RT @HTXNOW: More than 40% of intimate partner violence is UNREPORTED! Stop the silence. #TakeAStand http://t.co/pJu5TcChup …" (Tweeter 7)

"@xmasape The NFL is already raising awareness of domestic violence by letting Greg Hardy play." (Tweeter 8)

"RT @BrandonEvrs: Sex workers deserve respect and a safe environment for them to work free of harassment, assault and domestic violence …" (Tweeter 9)

"RT @RoseMCosta72: Use your voice... Shout your message... Someone's life could depend on how loud you are. #DVAM #RestInLove …" (Tweeter 10)

We also ran the weights of each unigram from the 7.56% (n=68) coded tweets. The outputs of word cloud reveal the visualization of the word frequency of these

messages. The larger the font size, the higher of the frequency of the words. The most

frequent word is 'violence' (n=42), followed by 'domestic' (n=37), 'awareness' (n=24),

'DVAM' (n=10), 'domesticviolence' (n=9), 'October' (n=8), 'help', 'support', 'month',

'watch', 'take', 'join', and 'VAW' (n=5).

Figure 13. Word cloud of messages coded as *Public awareness* under the *Politics* theme

Political. RQ5g asks about the characteristics of "political" tweets about IPV that

are posted on Twitter. Results reveal that only 1.89% (n=17) of the tweets included

comments on government responses, or information about government responses

referring to IPV. The messages were exemplified by

"This designation ensures that #WMass residents will have enhanced access to

SANE services in a safe, medically appropriate environment #DVAM" (Tweeter 1)

"#VAW #World #Women Prosecutor's Office to Participate in the Break the

Silence Conference... http://t.co/9eXGCSLjGJ ViolenceagainstWomen" (Tweeter 2)

"Matt Gray is crowdrising for Wyoming Coalition Against Domestic Violence And Sexual Assault: https://t.co/kYC4KzcN27 #donate" (Tweeter 3)

"State Senator Patty Ritchie is marking Domestic Violence Awareness Month by announcing she has delivered $116,000... http://t.co/wnPnNZTInd " (Tweeter 4)

"Michigan House passes bills to strengthen domestic violence laws http://t.co/Dkc8y99Olm" (Tweeter 5)

"Billions spent to prevent foreign terrorism but what about domestic terrorism via gun violence. #GOPdebate" (Tweeter 6)

"RT @HuffingtonPost: Congressman wants to review NFL domestic violence policies in wake of Greg Hardy photos https://t.co/ffPjoxs0D3" (Tweeter 7)

"RT @coinabs: #SWEDEN Opened Its Doors To #MUSLIM IMMIGRATION Today, SWEDEN is The #RAPE Capital Of The West https://t.co/f7HE0dRhyX" (Tweeter 8)

"RT @KatiePavlich: Why does @HillaryClinton think domestic violence is hilarious https://t.co/gNVmKGcvHs" (Tweeter 9)

"RT @teamtrace: Gov. Chris Christie has vetoed bill that would have required domestic abusers to immediately surrender firearms" (Tweeter 10)

We also ran the weights of each unigram from the 1.89% (n=17) coded tweets. The outputs of word cloud reveal the visualization of the word frequency of these messages. The larger the font size, the higher of the frequency of the words. The most

frequent word is 'violence' and 'domestic' (n=11), followed by 'Christie' (n=4), McKittrick', 'terrorism', 'Protect', 'SWEDEN', 'Gov', and 'VAW' (n=2).

Figure 14. Word cloud of messages coded as *Political* under the *Politics* theme

Coupling and windows of agenda-setting for IPV. RQ6 asked about if there are "coupling and windows" of agenda-setting for IPV on Twitter. Results reveal that only 2.11% (n=19) of the coded tweets reveal three themes *problem, policy,* and *politics* on one single tweet message. The messages were exemplified by

"This designation ensures that #WMass residents will have enhanced access to SANE services in a safe, medically appropriate environment #DVAM" (Tweeter 1).

This message included information of "have access to services in a safe environment" which was coded as "Promoting self-help (Problem)". It also indicated the policy ideas "SANE services" and also reveal a positive politics atmosphere by saying "designation".

"RT @ENDtoDV: The @MeatheadMovers give us a template for how companies can address #domesticviolence. https://t.co/KTexoqywX6" (Tweeter 2)

This message included feedback mechanism by using the Twitter's "@" function. It also contained policy ideas "template with a link" and advocacy information regarding how companies deal with DV issue.

"@xmasape The NFL is already raising awareness of domestic violence by letting Greg Hardy play." (Tweeter 3)

This message included the feedback mechanism by using Twitter's "@" function and focusing event "Greg Hardy". It also included the policy community NFL which was indicated as an interest group. Using "raising awareness", this message also reveals the political theme.

We also ran the weights of each unigram from the 2.11% (n=19) coded tweets. The outputs of word cloud reveal the visualization of the word frequency of these messages. The larger the font size, the higher of the frequency of the words. The most frequent word is 'violence' and 'domestic' (n=12), followed by 'NFL' (n=3), 'Christie' (n=4), McKittrick', 'community', 'Protect', 'awareness', 'Gov', 'greg', and 'hardy' (n=2).

Figure 15. Word cloud of messages coded as *coupling and windows*

Summary

I should add several sub-categories after pilot coding under the themes of "Problem recognition," "policy formation," and "politics" in order to code the contents of all 900 tweets. The added sub-categories were "defining problem," "self-revelation," "promoting self-help," "event promotion," "fund raising," "recruitment of staff/volunteers," "lobby/advocacy," and "raising public awareness." The majority of the tweets (73%) focused on identifying IPV as a social problem under Kingdon's framework. However, fewer tweets contained information about the existing polices, programs, or services (17%) and social movement/political atmosphere (28%). In addition, I did not see the coupling of the three streams on Twitter. The qualitative content analyses of the Tweets in Chapter 7 suggest that Twitter only reflects the agenda setting of problem recognition rather than policy ideas, which means Twitter does not reflect a coupling or window for policy changes for the agenda setting of IPV from my sampled tweets.

CHAPTER 8: Discussion and Conclusion

The goal of this study was to investigate how Twitter reflects the current agenda-setting of IPV in the United States. Using Kingdon's framework, Chapter 5 analyzes the transformation of IPV from a private trouble to a social policy issue in the United States. Chapter 6 and 7 show the results of how Tweet messages reflect the agenda-setting of IPV in the U.S. The following sections discuss the findings from Chapters 6 and 7 focusing on the questions of whether the identified topics and thematic structure reflect the agenda setting of intimate partner violence, followed by the limitations, implications, and conclusion of the study.

Problem recognition stream and Twitter

Results from Chapter 6 and 7 indicate that Twitter posts mostly reflect the problem recognition of IPV. In Chapter 6, unsupervised machine learning allows us to extract and classify IPV-related information on Twitter. Topic modeling techniques produce clusters of words, allowing us to organize large collections of unstructured texts on social media, which offers insights and understanding of the messages. During the time frame I sampled, I identify several patterns in the postings. The postings can be grouped under the general themes of:

Victimization. I find that the word "victims" appears often on social media in contexts such as "victims domestic," "help victims," "violence survivors," "violence victims," and "male victims." In contrast, terms such as "abuser," "batterer," "perpetrator," "perp," or "offender" are used far less frequently. Instead, the abusers'

names (e.g., Greg Hardy) are directly posted to indicate specific instances of domestic violence. This reveals a trend on social media that online IPV-related topics focus on protection and support of victims, rather than intervention against abusers. Research shows that media representation of domestic violence impacts individual behaviors as well as public policy responses because the portrayals influence people's understanding of a social problem, including the causes or consequences of an incident (Sotirovic, 2003). Thus, the media depictions of domestic violence are important in terms of creating a social climate to support victims. My study informs policy advocates and practitioners regarding utilizing social media as a venue to empower victims. Future researchers may conduct content analyses of the tweets related to victims to develop strategies for how to create a social environment on social media to empower victims.

Focusing event: high profiles cases of domestic violence—in particular sports figures who committed domestic violence. Results show that most topics are classified as high-profile sports-related domestic violence topics, including Greg Hardy and his team, the Dallas Cowboy. Other sports figures mentioned in tweets include: William Gay (an advocate, not an offender), Jose Reyes, and Ronda Rousey. During the time frame I collected Tweets, there was a significant use of high profile cases of athletes assaulting partners that was designed to enhance problem recognition. (Webb, 2011). Male athletes such as Ray Rice, and his videotaped assault of his fiancé, generated a national conversation about the interplay of domestic violence and sports, and the need for change (Martin, 2017). In 2014, the Ray Rice's assault event was a publicized focusing event for domestic violence. Ray Rice's assault against his fiancé is still discussed on social media

four years later. However, my study suggests that the Rice case is now replaced by contemporaneous cases of IPV among athletes and politicians. It is hardly surprising since old news tends to fade from public awareness. Instead of being constructed as an understanding of domestic violence by journalists in traditional media outlets including newspapers, my findings represent the public understandings and perceptions of domestic violence and sports (and now politics). The sports-related domestic violence feeds are promoted by real time events in a timely manner.

In Chapter 7, qualitative content analyses indicate that IPV-related tweets engage in the agenda-setting of IPV in terms of recognizing IPV as a social problem. From the randomly coded 900 tweets, 73% (n=661) reflect at least one sub-category under the theme of *Problem Recognition*, including "definition" (i.e. nature, scope and consequences of IPV), "indicators" (i.e. statistical data), "focusing events" (i.e. news report), "feedback mechanism" (i.e. use of @mention), "self-revelation" (i.e. disclosure of personal IPV experience as victims), "promoting self-helps" (i.e. identification of IPV in daily life such as signs of DV), and "advocates' experience" (i.e. witness of IPV and survivors' story). Among the sub-categories, 52% (n=469) of the coded tweets use the "@mention" function, revealing a feedback mechanism, as defined in the codebook in Chapter 4. According to Kingdon (1984), feedback mechanism refers to the feedback about the operation of existing programs by governmental officials through channels of systematic monitoring, complaints and casework, and bureaucratic experience. In the present study, Twitter makes the investigation of this interaction possible because we can recognize the interactions between the public and policymakers, DV organizations, mass

media or other individuals by observing their use of hashtags or @mentions. However, I did not assess the differences between the use of "@mentions" between organizations and individuals, which involves the identifications of the specific names. In addition, I did not investigate the conversation structure of the sampled tweets, such as the correlations between original tweets and their related comments, replies and retweets. These functions can form a conversational ecology in which public voices can interplay. Future studies could further examine the correlations between original tweets and their replies and retweets.

Focusing events made up 18% (n=168) of the coded tweets, while 11% (n=99) of the coded tweets reflect defining problems. The content analyses echo the findings from topic modelling in Chapter 6, and also provide further evidence about what I found from unsupervised machine learning results. For example, 99 tweets reflect defining problems, and I also found "victimization" as a salient theme in Chapter 6. For example, I found 168 out of 900 tweets mention focusing events, and I also find high profile cases as a salient topic from Chapter 6.

Fewer than 100 out of 900 coded tweets contained information about either "indicator" (n=58), "personal revelation" (n=41), "advocate experience" (n=35), or "promoting self-help" (n=80). The coded tweets can reflect the theme "*Problem recognition,*" but there are variations in terms of the percentages. Taking "indicator" as an example, only 58 tweets mention the statistics of IPV. It is possible that the public is well aware of the prevalence of IPV; therefore, there is no need to reinforce that IPV is a serious social problem by posting the statistics. It is also possible that the public does not

know about the statistics because such data are only relevant to the academic, policy, and non-profit organizations communities. Future studies could further investigate the reasons why only a small portion of tweets mention the statistics. Advocates might want to advance the policy agenda by posting the prevalence of IPV in society on social media to inform the public and attract the policy makers' attention about the social problem of IPV.

Policy formation stream and Twitter

I did not find salient topics that reflect the agenda setting of policy formation of IPV. However, I found that Tweet messages do reflect policy formation to some degree following Kingdon's guided codebook. There are 17% (n=157) of sampled tweets that reflect the agenda setting of IPV in terms of policy formation. Only 8% (n=74) of the sample tweets contain information about existing IPV policies, programs or services, and 14% (n=123) reflect policy communities such as interest groups, non-government organizations, or academic groups. Kingdon defines policy communities as specialists in a given policy area who are scattered both through and outside the government. In terms of interactions, they know each other's ideas, research, or proposals. In the present study, tweets inform us that a number of IPV advocacy organizations are using Twitter for their advocacy work, making Twitter a source of opinions from advocacy groups in addition to individual opinions. The content analyses in Chapter 7 reveal several IPV-related organizations such as "@UN_Women," "@Andorra," "@NicolaSturgeon," "Michigan house," "#GOPdebate," "Giffords," "Natioanl Domesic Violence Hotline," "@NationalDVAM," "#NIH," "NFL," and "State Senator Patty Ritchie." The content

analysis results indicate that the organizations or interest groups tweet about existing programs or policies, such as "adopted a law to eradicate gender violence," "law reform," "1 or 2 game suspension," "passes bills," "delivered $116,000 …" and "vetoed bill that would have required domestic abusers to immediately surrender firearms …." But I did not find that the advocacy groups and organizations are using Twitter as an important platform to frame their own agenda.

The politics stream and Twitter

Compared to problem recognition, fewer tweets tweet cover the theme of politics. I did not find salient topics that reflect the agenda setting of politics by using topic modelling from Chapter 6. Using Kingdon's guided codebook, content analyses in Chapter 7 indicates that 28% (n=249) of the sampled tweets reflect the politics stream in the agenda setting of IPV. According to Kingdon (1984), the political stream consists of public mood, pressure groups, campaigns, election results, partisan or ideological distributions in Congress, changes of administration, and the development of the political stream. More specifically, under the theme of politics, "promoting an event" ranks top, as 12% (n=111) of sampled tweets containing information about promoting an event, followed by "raising awareness" (8%, n=68), "lobby or advocacy" (7%, n=59), "fundraising" (2%, n=17), and "recruitment of volunteer and staff" (0.3%, n=3).

Coupling and Twitter

My hypothesis and analysis about the Tweets' contents inform us that social media reflect the current stage of IPV policy making in the United States. Since the

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Violence Against Women Act of 1994 (Pub.L. 103–322) passed in 1994 many IPV-related policy and intervention programs have been established in the United States. My study found that Twitter has the potential to reflect the coupling of the three streams of agenda setting (problem recognition, policy formation and politics). However, at the moment, tweet messages on Twitter mostly reflect the social problem agenda-setting of IPV, with less attention to policy and politics agenda-setting of IPV. Beyond problem recognition, Tweets seem to focus on social support system for victims in the society reflected in the Tweet messages.

More specifically, I expect to see a balance in terms of the percentage of tweets between problem recognition, policy formation, and politics in this study. For example, Twitter users could mention/tweet/post local services, national hotlines, existing intervention programs, or other resources for victims for help. However, results from Chapter 6 and 7 indicate that there is a cluster of words that focus on problem recognition in the agenda setting of IPV, but less than one fifth of the tweets reflect the policy ideas and policy community for the agenda setting of IPV.

My results show that the levels of the public perception regarding the agenda setting of IPV still stay on the level of *Problem Recognition*, since approximately three quarters of tweets are address either "focusing events," "personal stories," or the "expressions of high-profiles cases." Only one tenth of the tweets reveals "promoting self-help," which indicates an advanced level of public perceptions and awareness to the social problem of IPV. Therefore, this study suggests to advocates and organization groups that in order to set the policy agenda for IPV through Twitter or other social

media platforms, social media-oriented strategies should be used to provide information and knowledge to the public about where and how to find resources to support victims and public bystanders, rather than simply posting problems-related Tweet messages.

Implications

This is the first research study that employs topic modeling to explore intimate partner violence-related topics on Twitter. The study contributes to knowledge base on intimate partner violence by providing a novel methodology for violence research and is innovative by using "Bid data" from Twitter. The study promotes the collaboration between social science and computer science by providing insight of using machine learning techniques for social justice research, practice, and policy issues.

Implications for research

The study innovatively demonstrates how Kingdon's model can be applied in the new social media environment. Kingdon proposed the model in 1984 and revised it in 1995, long before the "social media age." More specifically, this study updates Kingdon's model by adding a significant number of tweets that are related to agenda-setting in Kingdon's model. In addition, the study adds components to the model-based on the qualitative analysis of the Tweet contents. In order to examine the role of social media Kingdon's agenda-setting model needs to be updated by adding additional components, such as "defining problems," "donations," "self-revelation," and "recruitment of volunteer and staff online".

My study is innovative in the use of social media data from Twitter and provides insights for researchers and scholars in public health and violence research by using machine-learning methods. The study demonstrates that Twitter is an untapped and potentially valuable data source to explore the issue of domestic violence. My study reveals that Twitter is a promising venue for exploring how the majority of online Twitter users talk about the public health issue of domestic violence. It provides insights into the undiscovered health contents on which Twitter users focus. Further studies can employ the same methodology to investigate domestic violence-related contents on social media during other times of the year and track the changes of the levels of agenda-setting across different months.

Implications for advocacy and intervention

My study has implications for advocacy and intervention. More specifically, Twitter holds potential for use by advocacy groups to join in and provide context and information to those on Twitter. Non-profit organizations providing services online might be able to add information for the victims who seek assistance for themselves or their friends and families. My study finds that sports-related high-profile cases are often the most tweeting or retweeting pairs of words and latent topics on Twitter. Here is a potential opportunity for advocates to contribute advocacy information to the social media discussions about domestic violence. My findings inform advocacy groups as well as researchers that online communities (e.g., advocacy, public) are talking about IPV cases, but they are not messaging about actual or available intervention/prevention strategies. I did not identify a dialogue or conversation pattern from Twitter messages
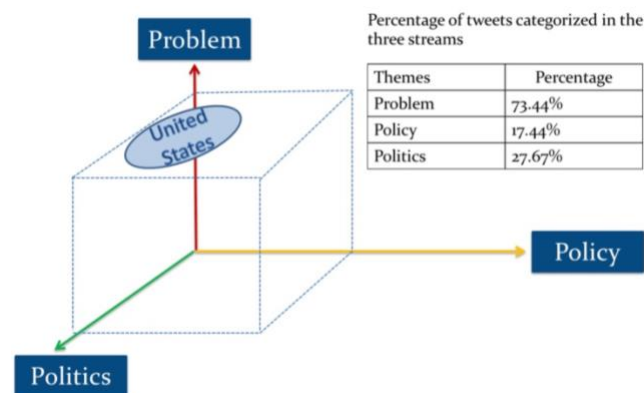
that symbolizes that the majority of online domestic violence communities are tweeting as a "talker" rather than a "doer." Thus, the study offers an insight to the advocacy community to develop social media-based strategies, for instance, tweeting about existing programs and social services in their messages to support victims.

In addition, advocacy organizations might have a large potential audience on Twitter if they can capitalize on the 140 characters format. It is possible that 140-character limits the probability of making advocacy-related words as common ones on Twitter. When people tweet or retweet about a message, the 140-character limits reduces the likelihood of adding more advocacy/victim assistance related words following a high profile domestic violence case message. Thus, my findings provide insights for advocacy groups to better use the tweets messages to promote health communication about violence preventions.

Implications for policy

By analyzing Tweet messages, this study has implications for policy making for intimate partner violence. For example, this study reflects the current stage of policy making of IPV in the U.S. indicated by Twitter users' perceptions. In the three-dimensional graph (Figure 16), the red arrow pointing to the 'Problem' represents a high concentration of cluster of tweets that mention problem recognition of IPV. The yellow arrow pointing to the right means a high concentration of tweets contents that mention policy programs of IPV. The green arrow pointing to the politics means a higher concentration of tweets contents that mention politics. Results on the percentage of

tweets categorized in the three streams show that 73.44% of the tweets reveal "problem recognition," and 17.44% of the tweets reveal "policy formation," and 27.67% of the tweets reveal "politics." Compared to the tweets mentioning the problem component, fewer tweets mention existing policy programs and politics for IPV. Therefore, I do not see a balance or a coupling of the three components. If the tweet messages could mention the problem agenda-setting of IPV on Twitter, and also contain policy solutions, social services or organizations for support, it would achieve social media's potential in terms of advancing public knowledge and an advanced level of understandings about how to deal with IPV. However, in my study, I find that tweets' contents are still about IPV incidents, and the public and organizations do not tweet much about the policy solutions and social services, which reflects that the public may not know how to solve this problem, at least indicated from Twitter contents.

Percentage of tweets categorized in the three streams

Themes	Percentage
Problem	73.44%
Policy	17.44%
Politics	27.67%

Researchers may ask the question: What is the post-2015 agenda and post-2018 agenda for IPV? The study has implications for agenda setting and policy making as

researchers and policy makers can track the policy-making trajectory and track the changes. My study provides a baseline and direction for future studies. In 5 or 10 years, I expect the reflection of agenda setting for IPV and levels of public perceptions on social media will shift. It is likely that the focus will be how to solve the problem of IPV rather than simply recognizing IPV as a serious social problem. It is also likely that social media reveal new types of IPV in the U.S. (as occurred with the #MeToo movement in 2017-2018) and new solutions are proposed on social media. Future studies can track the trajectory of public understandings of intimate partner violence by tracking the shift and changes of the tweets.

Limitations

There are a few significant limitations in the study. It is important to note that the sample employed for this study is a specific, self-selected population. Twitter posters are a defined population who can access to the Internet and post messages on Twitter through computers or smart phones. One limitation is the self-presented contents from tweets, because the users may not provide accurate profile information of themselves and the completeness of information also varies from person to person.

Another limitation is the approach of data collection by using selected hashtags. The study may miss many tweets related to the topic of intimate partner violence by restricting the research terms to specific hashtags. For example, I might not have collected tweets that contain keywords such as "intimate partner violence" without using the hashtags of "#intimatepartnerviolence." Data collection using broader key terms is

expected to present a more complete picture of the topics related to this phenomenon on Twitter. For example, the results show overlaps between the topics, which suggests that they are drawn to close together due to the specific filtering term that we used in the study. However, a broader search strategy will generate unrelated tweets. The present method of using hashtag search forms obtain results more relevant to the issue of intimate partner violence.

Third, one limitation is that I use social media data in the present study. Social statistical research is nascent using big data (Williams, 2017). In this study, I do not collect or estimate the information about the gender, demographic information the Twitter users, which limits the generalization of my study findings to a general population. However, Twitter still provides us a valuable source to collect information about the hidden population who are hard to reach offline and enable social scientists to analyze real time social problems in a cost-effective way.

Fourth, the data collection lasts from October to December 2015 for a period of three months. October is the National Domestic Violence Awareness month, in which we expect to see more advocacy relevant tweets than other months in the year. Future studies that cover Tweets for a longer period of time may produce different topics and themes. My study suggests that *advocacy* is not a salient topic that is neither intensively nor extensively discussed on Twitter during the National DV Awareness month. I suggest that DV advocacy organizations could better leverage Twitter as a broadcast tool to raise awareness and engage public discussions.

Conclusion

This dissertation examined agenda-setting and social policy in the case of intimate partner violence. I investigated the role of Twitter in the United States as a means of agenda-setting. Using the agenda-setting framework developed by Kingdon, which includes "problem recognition," "policy formation," and "politics" streams, the study investigated the transformation of IPV from a private trouble into a social policy issue in the United States. Results show that Twitter reveals the current agenda-setting of IPV in the United States, with an emphasis on problem recognition, rather than existing policy, and regulations, and supporting resources. In order to set the policy agenda of IPV on social media, advocates and IPV organizations should focus on more about the tweets contents related to existing policy, programs, and supporting systems to increase public awareness of IPV and inform policymakers. This study informs researchers, policy makers, and NGO advocates that "Enough about recognizing IPV as a serious social problem; it is time to utilize social media as a strategy to promote social services and programs, and policy advocacy".

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Jia's research focuses on intimate and sexual violence, dating violence in young adulthood, child abuse, and gender-based violence in international and cross-cultural contexts. She applies innovative methodologies to study violence, and more specifically, she employs computational and big data approaches to examine various facets of intimate and sexual assault.

Currently, Jia holds a pre-doctoral fellowship (2016 to present) as a research fellow at the John F. Kennedy School of Government at Harvard University. She was an adjunct faculty member at Smith College in the Summer of 2017. She is an adjunct faculty member at Rutgers University School of Social Work, teaching Research Methods (online) and Program Evaluation (Camden campus).

She will be joining both the faculties of Factor-Inwentash Faculty of Social Work (51%) and the Faculty of Information (49%) as an Assistant Professor at University of Toronto in 2018. This is a newly formed position in Big Data and Social Justice.

APPENDIX

Appendix 1. Data Collection Results (Raw numbers of messages collected)

Twitter	
Hashtags	**# of Tweets collected**
#dv	69,999
#domesticviolence	120,238
#ipv	4,152
#intimatepartnerviolence	362
#dating violence	565
Total:	195,316