Women's Right to Drive: Spillover of Brokers, Mobilization, and Cyberactivism

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Abstract. The advent of modern forms of information and communication technologies (ICTs), such as social media, have modified the ways people communicate, connect, and diffuse information. Social media has played an unprecedented role in coordinating and mobilization of social movements. Further, cross-influence among social movements has been observed during the 2011 Arab Spring, ongoing Saudi Women's movements against inequitable gender laws, and other social movements. Moreover, this has been a topic of research in the social movement spillover literature, where resource sharing, spillover of activists, supporters, and coalitions within social movements have been the focus of these studies. However, much of the work published in this area dates back to the 1960s. It is crucial to re-evaluate traditional theories of spillover in the modern ICT landscape. The evolution of Internet-driven collective actions triggered the examination and discovery of some essential factors of spillover remaining theoretically underdeveloped and call for innovative fundamental research that can provide observations in reconceptualizing spillover effects in online environments. In this research, we examine three campaigns during 2013 of the ongoing women's right to drive movement, namely the 'October 26 Driving Campaign', the 'November 31 Driving Campaign', and the 'December 28 Driving Campaign'. By analyzing the Twitter data on the networks of the three campaigns, we identify the factors that help us study spillover between the campaigns. We aim to assess social movement spillover effects by identifying – (1) common activists and supporters, (2) the inter-campaign brokers/coalitions, and (3) the diffusion of hashtags and other resources. We envision the findings of this study to shed insights on information diffusion and mutual influence across movements and provide a deeper understanding of interconnected social movements.

Keywords: Collective action · Social movement · Spillover · Social media · Hashtag diffusion · Women's right to drive · Twitter · Methodology · Resource sharing · Coalition

1   Introduction

The prevalence of contemporary forms of information and communications technologies (ICTs), such as social media, have transformed the ways people interact, commu-

nicate, and share information. As evident in the mass protests during the Arab Spring, the Occupy and other recent movements, social media platforms helped the protesters to instantly spread messages, organize, and mobilize support for their campaigns. This has been a topic of research in the social movement spillover literature, where resource sharing, spillover of activists, supporters, and coalitions within social movements have been the focus of these studies. Contemporary movements are especially affected by "spillover" because the Internet increases the speed and effectiveness with which allied social movements reach out to one another's activists. Social movement spillover is the most basic type of inter-movement interdependency. Movements may be sequenced such that one movement is clearly the "initiator" and the other a "spinoff". Social movements must be considered in terms of their connections to past, contemporaneous, and upcoming social movements. However, much of the work published in this area dates back to the 1960s. It is crucial to re-evaluate traditional theories of spillover within the modern ICT landscape. The evolution of Internet-driven collective actions triggered the examination and discovery of some essential factors of spillover remaining theoretically underdeveloped and call for innovative fundamental research that can provide observations in reconceptualizing spillover effects in online environments. In this research, we examine three campaigns during 2013 of the ongoing Saudi women's right to drive movement, namely the 'October 26 Driving Campaign', the 'November 31 Driving Campaign', and the 'December 28 Driving Campaign'. By analyzing the Twitter data on the networks of three campaigns, we identify the factors that help us study spillover between the campaigns. We are looking for answers for the following questions including: "Who are the bridging nodes in the networks and how does their brokerage give direction to the diffusion of ideas through interrelated social movements?" and "How does the interaction of networks and coalitions trigger the spillover effect and helps to shape the evolution of future social movements?". We aim to assess social movement spillover effects by identifying – (1) common activists and supporters, (2) the inter-campaign brokers/coalitions, and (3) the diffusion of hashtags and other resources. We envision the findings of this study to shed insights on information diffusion and mutual influence across movements and provide a deeper understanding of interconnected social movements.

2   Women's Right to Drive Movements

Saudi women face some of the most inequitable laws and practices when compared to international standards, including the prohibition of driving motorized vehicles. Saudi Arabia is the only country worldwide with this type of ban in effect. Although there is no official ban, due to social and cultural restrictions there are no women drivers in the Kingdom (United Nations 2007). In order to create awareness about these inequitable laws and practices, Saudi women have organized several campaigns as part of a bigger movement. The origin of 'Women's Right to Drive', a movement that emerged to address this issue, can be traced to the November 6, 1990 event in which 47 Riyadh women staged a protest and drove in a Riyadh parking lot in resistance to this ban. More than a decade later, on International Women's Day in 2008, the YouTube video

of Wajeha al-Huwaider driving had garnered the interest of social media sites and women across the world making her protest international news [1]. Following the al-Huwaider protest, in 2011, a group of women led by Manal al-Sharif, started the Facebook campaign supporting women's driving rights in Saudi Arabia, 'Women to Drive.' As the movement evolved over time, naturally there are various online platforms used for the same cause. Until recently, the most active participation in this movement has been predominantly from female Muslim bloggers who use blogs as primary means to converse. However since 2013, with the Oct26Driving campaign, Twitter became one of the most widely used platforms to coordinate and mobilize protests around the right to drive movement. The platform has been used to extend the campaign network and gain additional traction. The Oct26Driving campaign is considered as one of the most successful campaigns in the history of Saudi Arabia led entirely via social media, especially Twitter. The Oct26Drving campaign is a part of the Women's Right to Drive movement in order to create awareness about inequitable laws and practices, especially the ban on driving. Our earlier studies [2, 3, 4, and 5] have analyzed these campaigns to understand various aspects of online collective action. Known as "The 26th October Campaign", it quickly gained momentum with its online petition garnering more than 16,000 signatures (according to the official campaign website) despite the Kingdom's restrictions on protests. The campaign website was hacked on October 9, 2013 leading to a surge in Twitter activity. The October 26th campaign is a grassroots campaign with the participation of the women and men of Saudi Arabia and aims to revive the demand to lift the ban on women driving. Although King Abdullah bin Abdulaziz, now deceased, left this matter to society, the government's reaction makes it very clear that this is not a societal decision but a political decision. The next day of "mass" driving is November 31, 2013. The ban on women driving in Saudi Arabia has become a symbol of a far wider lack of gender equality in the conservative Islamic Kingdom, where women must have permission from a male guardian to travel. Eventually, a new hashtag emerged on Twitter: #Nov31Driving. Close to October 26, 2013, activists and supporters started swapping and/or combining the original hashtag dedicated to Oct26Driving campaign with hashtags dedicated to a newly forming campaign, named as Nov31Driving campaign, with a date that does not exist, i.e. the date is only symbolic, and it is intended to continue indefinitely. Although it could cause confusion since November only has 30 days, various tweets explain it as a way to make the campaign continuing and open-ended. However, the campaign was extended to increasingly challenge the law ahead of a new nationwide day of defiance on December 28, 2013. A Saudi female activist, Nasima al-Sada, has called on other women to get behind the wheel again on December 28, where the call for action is a "reminder of the right so it is not forgotten". Women activists are now driving weekly and documenting their confrontations with law enforcement on social media to increase pressure on the conservative country and keep the issue in the public eye. The campaign aims to revive the demand to lift the ban on women driving while stressing that the initiative has no anti-Islamic or political agenda. As mentioned earlier, the Oct26Driving campaign is considered as one of the most successful campaigns in the history of Saudi Arabia when compared to previous and subsequent Women's Right to Drive campaigns.
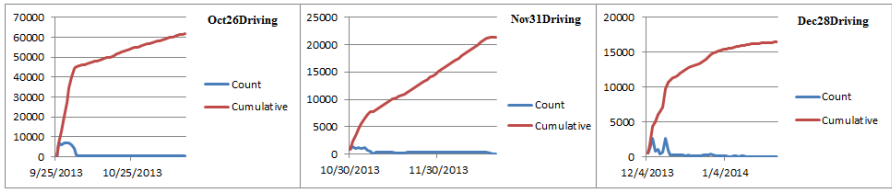
Fig. 1. Tweet activity for Oct26Driving, Nov31Driving, and Dec28Driving campaigns

As shown in Figure 1 above, we observe a decline in participation of members of Nov31Driving and Dec28Driving campaigns, when comparing the tweet volume of Nov31Driving and Dec28Driving campaigns to that of Oct26Driving campaign. Though activists were encouraging women, the Saudi government toughened the ban on female drivers by increasing the arrests and flogging punishments after the success of the Oct26Driving campaign. It is an inevitable fact that daunts the Saudi Women's courage and voluntarism in participation.

3   Literature Review

There has been a recent increase in the literature on the influence of Twitter in political contestations in the Middle East and North Africa (MENA) region, starting with #iranelection in 2009 that attempted to position popular demonstrations as the "Twitter Revolution" [6]. More recent literature has turned to the "Arab Spring" uprisings. According to Skinner, "Hashtags are used both to coordinate planning for certain events or to tie one's tweets with a larger discussion on the subject" [7]. The Saudi women's driving campaign used the Twitter network in both capacities. Hashtag diffusion in different languages has been linked to drawing local collective action into the transnational Twittersphere networks through bridging mechanisms [6], which contribute to transnational support for localized movements. The shifts in popularity of hashtags, in the case of the Egyptian revolution, was related to the growth of an elite group of Twitter users, elsewhere referred to as "key actor types" [8], who were most influential in orienting discourses on the uprisings [6]. These shifts are important in gauging not only key actors but also how movements spread on Twitter. Lerman and Ghosh (2010) [9] outline the importance of users in information cascades, which rely on a triad of network-retweets-followers in the Twittersphere. We are interested in identifying key actors, information cascades, and transnational bridges within Twitter supporting the Saudi women's driving campaign.

While the "Arab Spring" on-the-ground tweets were largely unstructured real-time reporting of events, leading to the dissemination of information and mobilization efforts under various hashtags, our paper investigates a loosely organized grassroots example of collective action, which manifested itself on Twitter as @Oct26driving, so there were fewer possibilities of sub-clusters formulating under divergent hashtags. In other words, since @Oct26driving was established as a Twitter profile, Twits interested in finding out about the movement and sharing information had a central platform to engage with the campaign. However, since the Saudi women's driving

movement was disseminated by two hashtags in Arabic and English, the development of these hashtags were locally and transnationally positioned to mobilize linked clusters within the larger movement.

3.1   Social Movement Spillover

The concept of spillover is observationally built on a case study of the interaction between the women's and the peace movement in the United States and theoretically refers to political process approaches and to the New Social Movement Theory [10, p. 278]. Contemporary movements are specifically influenced by spillover because the Internet raises the speed and efficiency with which ideologically connected social movements reach out to one another's activists [11, 12, and 13]. Meyer and Whittier's analysis of "social movement spillover" is the process of mutual influence and support between two or more allied movements. The Social Movement Spillover Theory is mostly focused around the perception that people frequently exchange their support and participation from group to group and points to two ways a movement can impact subsequent movements. Movements can affect subsequent movements, first, by passing information about public actions and their effects on organizational responses to collective action, and identifying potential strengths and vulnerabilities in the political structure or affecting changes in the external environment that restructure political opportunities, and, second, by altering the people, groups, and standards within the movement itself [10, p. 279]. Different movements and organizations within movements share individuals, and these shared individuals can move from one group to another or cooperate across groups (interorganizational support). In the context of these women's rights movements our focus is on the spillover of supporters, activists, and resources within the movements. Movements embrace and diffuse between one another by adopting a range of movement characteristics including frames (organizational structures), collective identities, tactics, and movement culture.

3.2   Computational Analysis of Events

Most of the existing research in computational analysis of events examines events in isolation. These analysis consider events as having discrete boundaries, with almost zero interaction between events. Our work differs in the sense that we consider interaction, exchange, and spillover between events in terms of actors, ties, resources, and networks. Next, we briefly review the computational studies literature on event analysis. User-generated data from various social media platforms, related to real-life events, have been studied to perform wide range of analysis. Socio-political inferences are drawn by studying sentiments and opinions of people towards public and political events from Twitter [14], as well as blogs [15]. Twitter has been extensively used as a source for analyzing information circulated during natural disasters and crisis situations [16], [17]. Tweets related to events have been extracted, summarized and visualized, in order to have a deeper understanding of the events [18], [19]. Event related contents have been found leveraging the tagging and location information associated with the photos shared in Flickr [20]. Becker et al. [21], studied how to identify events and high quality sources related to them from Twitter. User-generated

data from various social media platforms, related to real-life events, have been studied to perform a wide range of analyses. Platforms like TwitterStand [22], Twitris [23], TwitInfo [18] and TweetXplorer [24] have developed techniques to provide analytics, and visualizations related to different real-life events. Similar tools have been used for tracking earthquakes, providing humanitarian aid during the time of crisis, and analyzing political campaigns. Most of the event analysis frameworks rely on finding relevant keywords and networks between the content producers in order to analyze events.

4 Methodology

Across the board, social movement researchers have addressed the study of social networks in ways that highlight only particular forms of connections which limits the exploration of particular challenges that have concerned scholars of social movements for decades. These challenges include questions about: diffusion of social movement performances or activities, identities, and organizational forms; certain activists and organizations' positions in movements both as 'brokers' of information, ideas, or resources, and as leaders or focal points of power and prestige; the role of social networks in engaging a movement's members; the framework of movement organizations and coalitions. In this research, we examine three campaigns during 2013 of the ongoing women's right to drive movement, namely the 'October 26 Driving Campaign', the 'November 31 Driving Campaign', and the 'December 28 Driving Campaign'. The main focus of this research is to analyze data to demonstrate and reveal information about how ideas diffused and generated a mutual influence and support between several congruent social movements. By analyzing the Twitter data on the networks of three campaigns, we identify the factors that help us study spillover between the campaigns. We aim to assess social movement spillover effects by identifying – (1) common activists and supporters, (2) the inter-campaign brokers/coalitions, and (3) the diffusion of hashtags and other resources. For this purpose, we are seeking answers for the following questions: (1) "Who are the bridging nodes in the networks and how does their brokerage give direction to the diffusion of ideas through interrelated social movements?" – (2) "How does the interaction of networks and coalitions trigger the spillover effect and help to shape the evolution of future social movements?"

4.1 Data Collection for the Campaigns

The content from 116,565 tweets was collected (Oct26Driving: 83,433 tweets, Nov31Driving: 22,466 tweets, and Dec28Driving:10,666 tweets) using the Scraper-Wiki (www.scraperwiki.com) program. Tweets are collected based on if they include dominant hashtags dedicated to the three campaigns, viz. '#oct26driving', '#قيادة_26اكتوبر' , '#نوفمبر31قيادة' , 'Nov31Driving', '#ديسمبر28قيادة' and 'Dec28Driving'. Other available information, such as language, name, retweeted user name (RT), and other included hashtags, is also collected. Since these tweets are updated with frequencies varying between hundred to thousands of tweets per day, a crawler (viz., ScraperWiki), was configured with the above mentioned dominant hashtags running constantly to systematically collect, parse, and index the data.

4.2   Tweet Classification and Overlap Detection

The indexed tweets were filtered based on their hashtag usage, particularly '#oct26driving' and '#قيادة_26اكتوبر' hashtags for Oct26Driving campaign, '#نوفمبر31قيادة' and 'Nov31Driving' hashtags for Nov31Driving campaign, and 'قيادة28ديسمبر#' and 'Dec28Driving' hashtags for Dec28Driving campaign. The tweets were further grouped based on if they used either or all the hashtags. Our first aim was to focus on the cumulative traffic of the tweets and track the flow of common activists and supporters through these three campaigns to identify the social movement spillover. Tweet-retweet networks are created during the time periods corresponding to the formation of campaigns. Tweet-retweet networks helped us track the inter-campaign brokers and coalitions to able to identify the spillover effect across the campaigns. To study the social movement spillover effect, as a second filtering process, we created hashtag and resource networks for each campaign and studied the role of hashtag and resource sharing in social movement spillover. The networks of each campaign were compared to identify the overlap(s) between these networks.

5   Analysis and Results

5.1   Diffusion of Activists and Supporters

As discussed earlier, Meyer and Whittier's analysis of "social movement spillover" is the process of mutual influence and support between two or more allied movements. In the content of the Women's Right to Drive movements the focus is on the spillover of supporters, activists, and resources within the movements. In order to be able to identify and track the formation of the spillover of activists and supporters among three campaigns, we compared the user and re-tweet networks of each campaign and detected the overlap between them as shown in Figure 2.
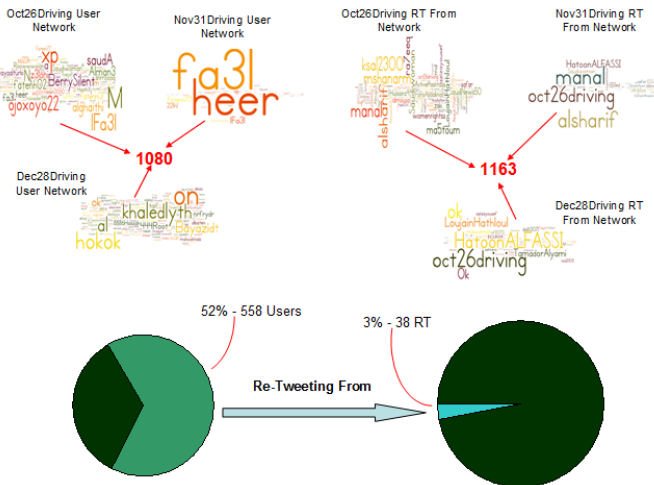

Fig. 2. Identification of common activists and supporters

Out of 45,276 distinct members of the three campaigns, we identified 1,080 users, who participated in all three campaigns to support the Women's Right to Drive movement. The result indicates that there is a strong presence of inter-campaign collaboration among the three campaigns. In addition to this collaboration, to emphasize the spillover effect, we further analyzed our data to identify the common activists who act as brokers in bridging three overlapping networks. From the retweet (RT) network, our results indicate that 1,163 activists out of 9,319 activists are common to the three campaigns. When we compare these two separate overlapping networks, we discover the important fact that 52% of the shared users are retweeting from 38 activists common to all three campaigns. As hypothesized earlier, there is an obvious interaction and cooperation between three campaigns that help us to identify the social movement spillover among them.
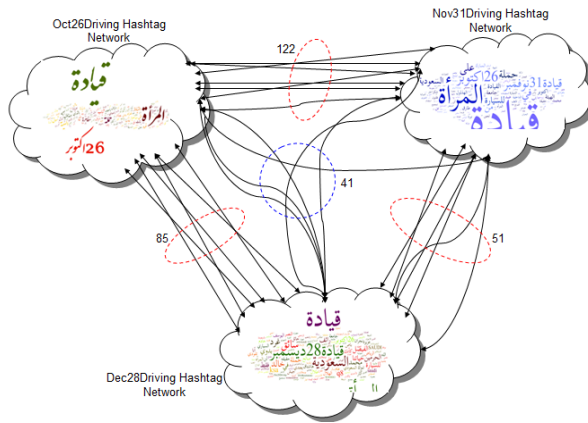

Fig. 3. Hashtag diffusion of Oct26Driving, Nov31Driving, and Dec28Driving campaigns

5.2   Diffusion of Hashtags and Other Resources

Given the definitive nature of hashtags, we investigated the diffusion of hashtag usage among three campaigns to identify and track the formation of the social movement spillover. For this purpose, we created a hashtag network for each campaign and compared each individual network with each other to identify overlap and diffusion. Figure 3 shows the number of hashtags that diffused from one campaign to the subsequent. As hypothesized earlier, increased co-occurrence of the hashtags between campaign networks result in formation of the social movement spillover among three campaigns.

As mentioned above, to identify the social movement spillover we analyze the resource sharing in terms of spillover of media platforms including Twitter, YouTube, and other media channels. We analyze our data to track the diffusion of YouTube videos (www.youtube.com/watch?v=xiuOY5xM_So&feature=youtube_gdata_player) and audio (cdn.top4top.net/d_4628b8faa42.mp3) recordings. We found shared audio and video recordings common to the three campaigns. This illustrates the spillover of resources shared on social media platforms to help campaign organization efforts and raising awareness. Figure 4 illustrates the relation of the user interaction network and

the social media interaction network. The user interaction network depicts those users who supported the movement through Twitter by tweeting about the campaigns.

As evident in the Figure 4, there are users who have supported multiple campaigns depicted by the overlapping set of nodes in the network. For instance, users who support the Oct26Driving campaign and the Nov 31Driving campaign have an orange and a blue edge. Users who are supporting all the three campaigns are connected by orange, blue, and green edges. The social media interaction network depicts the social media platforms used by the supporters of the campaigns. As evident in the figure, there are media platforms such as YouTube and Top4toP that are common to all the campaigns, meaning the supporters have used these platforms to share resources across the different campaigns.
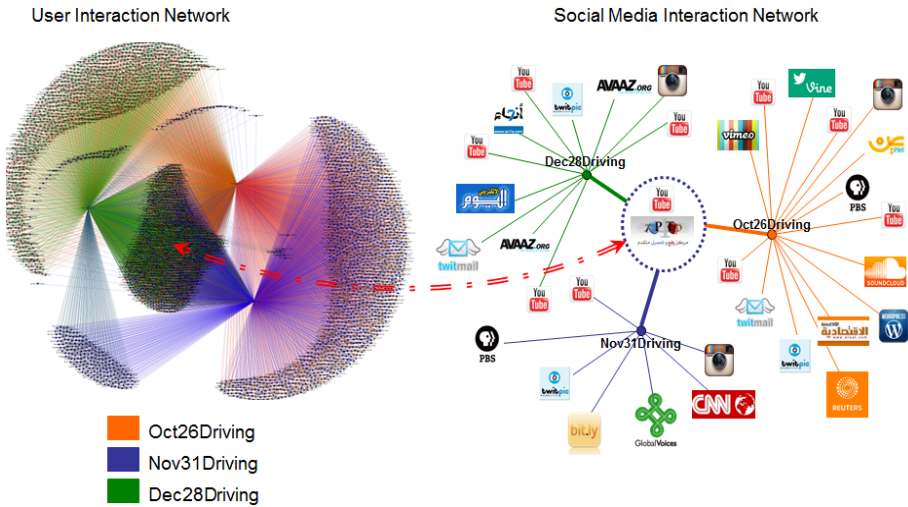

Fig. 4. Interaction between user network and YouTube video network

6   Conclusion

As evident in the mass protests during the Arab Spring, the Occupy and other recent movements, social media platforms helped the protesters to instantly spread messages, organize, and mobilize support for their campaigns. This has been a topic of research in the social movement spillover literature, where resource sharing, spillover of activists, supporters, and coalitions within social movements have been the focus of these studies. Contemporary movements are especially affected by "spillover" because the Internet increases the speed and effectiveness with which allied social movements reach out to one another's activists. The Social Movement Spillover Theory is mostly focused around the perception that people frequently exchange support and participation across movements. It further points to ways a movement can impact consequent or subsequent movements. In the context of the Women's Right to Drive movements the focus is on the spillover of supporters, activists, and resources within the movements. In this study, we examined the networks of three campaigns related to Women's Right to Drive movement viz., 'Oct26Driving', 'Nov31Driving', and 'Dec28Driving', to study the spillover effect

among them. By extracting the common supporters' and activists' networks, we discovered brokers who bridge different campaigns' networks. Further, we studied the sharing of hashtags and other resources (e.g., YouTube videos and audio recordings) among campaign networks to identify the spillover among three campaigns. Such resource sharing manifests itself into deeper and faster penetration, wider spread, and mobilization and communication costs. We envision the findings of this study to shed insights on information diffusion and mutual influence across movements and provide a deeper understanding of interconnected social movements.

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