Come On, Let's Tweet Again Like We Did Last Summer:

The Use of Twitter by Representatives

Akirav Osnat

Senior Lecturer

The Head of the Department of Political Science

at the Western Galilee College.

Abstract

Despite the existing research on how elected representatives use Twitter, there are few comparative studies and none that consider Israel, a country that differs from most democracies in its electoral system. This study has two level of analysis. The first is the country level in which we compare and explain the use of Twitter by representatives in four countries--the US, Canada, Australia and Israel—focusing on the electoral system. The second is the individual level in which we analyze how personal characteristics such as gender and age, and political characteristics such as their seniority and membership in the opposition or coalition affect the use of Twitter. Using qualitative and quantitative methods, we demonstrate how representatives use Twitter at different levels and with varying degrees of intensity. We establish that the traditional explanations about parliamentary activity and the use of ICTs are relevant to the use of Twitter. Furthermore, we validate a proposed framework for analyzing the potential use of Twitter by Israeli representatives.

Introduction

Twitter is an information network made up of 140-character messages. It is an easy way to discover the latest news related to subjects one cares about. Analyzing the use of Twitter by representatives is a new research area, however, as of 2014 there were more than 115 studies about it (e.g. Jackson and Lilleker 2011; Larsson and Moe 2012; Lee 2013; Plotkowiak and Stanoevska-Slabeva 2013). Previous studies concentrate on the use of information and communication technology (ICT) by representatives for wider citizen engagement (Ward and Lusoli 2005; Francoli 2007; Jackson and Lilleker 2011; Tenscher 2014). Even though the use of ICTs by representatives is documented (Coleman 2001; Auty 2005; Polat 2005; Tenscher 2014), the Internet is dynamic and changing, requiring continuous inquiry into its use in political life.

This study has two level of analysis. The first is the country level in which we compare and explain the use of Twitter by representatives in four countries: the US, Canada, Australia and Israel. The second is the individual level in which we analyze the potential use of Twitter by Israeli representatives based on our proposed theoretical framework. The country level analysis focuses on one of the most important political institutions – the electoral system (Schumpeter 1942; Sartori 1976). The discussion about individual representatives focuses on their personal characteristics such as gender and age and their political characteristics such as their seniority and membership in the opposition or coalition.

Most of the studies about representatives' use of Twitter are about US Congresspeople mainly during the election period (Glassman et al. 2010; Golbeck et al. 2010; Lassen and Brown 2010; Williams and Gulati 2010; Feng and Yang 2011; Hanna et al. 2011; Conway et al. 2013; Hong 2013). The remainder of the studies focus on Western democracies such as the UK (Jackson and Lilleker 2011; Panagiotopoulos and Sams 2011; Graham et al. 2013), Sweden (Larsson and Moe 2012), South Korea (Kim and Park 2011; Lee 2013), Germany (Jungherr 2012; Plotkowiak and Stanoevska-Slabeva 2013), Canada (Small 2010), the Netherlands (Vergeer et al. 2011), Australia (Grant et al. 2010; Macnamara 2011; Bruns and Highfield 2013), Finland (Strandberg 2013), Switzerland (Klinger 2013) and Italy (Vaccari and Valeriani 2013). None of them deals with Israel or discusses the topic in a comparative manner. Hence, this study is innovative in investigating the use of Twitter in a new country and comparing it with three other countries: Canada, Australia and the US. The reason for choosing these countries is because in all of them there is a parliamentary tool called the one-minute speech (OMS), which is similar in concept to the short messages of Twitter and the minimal effort needed to use it compared to other ICTs such as a personal web site or Facebook (Maltzman and Sigelman 1996; Polletta 1998; Hall 2002; Rocca 2007). Hence, at the country level we ask: What proportion of representatives is using Twitter and what are their characteristics? How often and when do representatives use Twitter? How widely are representatives' tweets followed? At the individual level we ask: What are representatives tweeting about? Are they using the full potential of Twitter? Thus, the main contribution of the study is to address the absence of a coherent theory for understanding the potential use of Twitter by representatives by developing a theoretical framework.

Representatives' roles and their use of ICTs

Previous scholars suggested that ICTs could create participatory democracy and would be able to replace the traditional connection between representatives and their voters (e.g., Rheingold 2000). To determine the veracity of this contention, we first need to go back to the question of the roles of representatives.

While there is no job description for representatives, we can identify several roles based on their actual parliamentary activities, such as scrutinizing the executive branch, enacting legislation, policy-making and representing their constituents' interests. Some scholars suggested that the constituency role is the most important and relevant to the representatives, because it is directly connected to their chances of being re-elected (Norton 1994; Searing 1994; Rush 2001). The constituency role encourages representatives to prioritize their contact with their constituents to help them identify local issues and enhance a sense of community.

If so, ICTs can strengthen or weaken the constituency role. Using the tools to create two-way communication with the voters allows representatives to listen to their voters and talk to them directly, thereby strengthening their constituency role. However, if the representatives decide not to use ICTs, the voters can use these tools to bypass the representatives and share their demands with the party or with other representatives who are willing to listen to them. Jackson (2008) claimed that some representatives use ICTs to create a discrete model of e-representation, meaning, a representation role based entirely on online ICTs. Representatives use a range of media outlets to project an appealing image of themselves to their constituents. The Web is one increasingly important outlet that they use to project their persona (Stanyer 2008). Furthermore, Coleman and Blumler (2009) argued that since relations between the voters and the representatives are in a period of transformative flux, the Internet has the potential to improve public communications and enrich democracy. In a recent study Coleman (2011) claimed that representatives had to be seen to be doing their job. Hence, they have devised elaborate strategies for the management of their own visibility using ICTs.

All of these studies emphasize that the individual representative is the main actor when it comes to using ICTs to connect to voters. Norton (2007) found a different pattern when he tested four models of political representation in the UK parliament;

each involves a different usage of the Internet. He determined that if innovative use is to be made of the Internet, it might be at the institutional level rather than at the level of the individual representative.

If we agree that representatives have multiple roles and that ICTs create a new reality for both representatives and voters, the question we need to ask is whether the representatives' roles have changed because of their use of various online tools. First, representatives worldwide do use ICTs to expand their connection with voters (Ward and Lusoli 2005; Francoli 2007; Tenscher 2014). Second, previous studies suggest that the fact that ICTs are considered cutting-edge motivates representatives to use it (Jackson 2003; Ward and Gibson 2003). Third, despite the potential of these tools to be interactive, scholars demonstrated that representatives usually use them to create a one-way, top-down monologue in the form of an electronic brochure to promote their views (Jackson 2003; Ward and Lusoli 2005). For example, Jackson (2006) found that e-newsletter communication is primarily one-way, but that if it were two-way, it might help representatives in all of their roles. And fourth, representatives vary in their choice of Internet tools, choosing among e-newsletters (Jackson 2006), weblogs (Francoli and Ward 2008), social networking sites (Jackson and Lilleker 2009) or Twitter (Jackson and Lilleker 2011).

Going back to the question of whether the representatives' roles have changed because of their use of the various applications the Internet offers, they must first start to understand the change in the context in which they are operating and then decide how to respond to that change.

Scholars have offered several explanations for the different approaches that representatives have adopted toward using ICTs. *Personal factors* such as skills and attitudes, socio-demographic characteristics such as being young and male (Bimber 2001; Norris 2001; Child 2004; Hoff 2004; Ward and Lusoli 2005; Tenscher 2014), and the growth of professionalism (Riddell 1995) account for some differences. *Parliamentary position* can affect the extent to which representatives use ICTs (Gulati 2004); backbenchers and junior members tend to be more active users of such techniques. *Opposition or coalition affiliation* can also have an effect with scholars noting that membership in the majority party is an important explanation of legislative effectiveness (Moore and Thomas 1991; Cox and Magar 1999; Miquel and Snyder

2006). When representatives are part of the majority, they are better able to advance their agenda or achieve their goals than when they are part of the opposition. *The environmental factors of the constituency* such as its marginality (Jackson 2003; Ward and Lusoli 2005; Jackson and Lilleker 2009), the growth of the constituency's service role (Searing 1994), and the technological profile of the constituency (Ward and Lusoli 2005) have an impact as well. *Party factors* such as the political party's culture (Ward et al. 2002; Norton 2007), resources, incentives and the increasing tensions between the representatives and the political party (Cowley and Stuart 2004; Hoff 2004; Ward and Lusoli 2005; Jackson and Lilleker 2009) also affect the use of ICTs. Finally, *parliamentary factors* such as the parliament's culture and formal resources (Campbell et al. 1999; Francoli 2000) play a role here as well. Ward and Lusoli (2005) posited that the extent to which representatives use ICTs is likely to be shaped by a combination of personal, constituency, party, and parliamentary factors and depends on the balance of resources, incentives, and skills available to the representative in each of these areas.

Given our claim that Twitter has similar characteristics as OMSs, are there similar explanations for the use of Twitter and OMSs? Research from the US suggests that OMSs are favored by members of Congress (MCs) who are on the margins of political activity. Those who tend to use OMSs are individualistic and institutionally disadvantaged (Morris 2001; Rocca 2007), ideologically extreme (Morris 2001; Rocca 2007), members of a minority party (Maltzman and Sigelman 1996; Morris 2001), electorally insecure, and rank low in terms of tenure, party identification and party rank (Morris 2001). Maltzman and Sigelman (1996), who were the first to study the one-minute speech, claim that it is viewed as a safety value for MCs who feel left out of the decision making process. They found that unconstrained floor time was used primarily for policy purposes and that electoral factors did not matter. Rocca (2007) maintains that MCs minimize risk by discussing issues that appeal to the voters. If taking a position might be rewarding, MCs will do so hoping that the voters will translate it into electoral gain.

Since there are no constraints on the use of Twitter, except its length, we wondered whether individualistic and institutionally disadvantaged representatives would use Twitter more often than other representatives. What about those who are ideologically extreme, members of a minority party, electorally insecure, and rank low in terms of tenure, party identification and party rank representatives? Would they use Twitter

more often than other representatives? Our second question deals with the content of the tweets relative to OMSs. Most representatives prefer to talk about issues that are close to them and the concerns of the people they were elected to represent (Polletta 1998; Hall 2002; Akirav 2014). For example, Hall (2002) investigated how MCs refer to individuals in government on the House floor. He claimed that members use symbols to send signals to their constituents and to frame the debate on public policy issues. Polletta (1998) examined how, when, and why African American legislators referred to Martin Luther King during their OMS. She argued that congressional representations of King assimilated him into a pluralist framework by presenting community service and institutional politics as the proper legacy of his activism. Are these explanations relevant for the use of Twitter as well? Are there additional explanations for the use of Twitter?

Most representatives combine various sorts of ICTS to varying degrees. The meaning of political participation has changed, because we have, as Hoffman (2012) noted, "an information-rich activity that unitizes new media technology and is intended to affect, either directly or indirectly, policy-makers, candidates, or public officials" (p. 222).

 Looking at the second side of the representation equation, there are the voters. It has never been easy for them to become informed and make their voices heard; hence the Internet offers an unprecedented opportunity for people to access useful information and engage in civic activities (Gurevitch et al. 2009). However, there are two problems with this unprecedented opportunity: too much information and uncertainty about what to trust (Couldry and Langer 2005; Dutton and Shepherd 2006).

In sum, the Internet challenges both the representatives and the voters and creates new ways of political communication. How does Twitter fit in?

Let's tweet

The use of Twitter in the political communication sphere is an evolving phenomenon. Twitter allows representatives to communicate directly with constituents and others in a potentially interactive way. For representatives and their staff, the ability to collect

and transmit real time information from constituents could be influential for policy and voting decisions.

On one hand, the research regarding the use of Twitter in political life is increasing, and researchers from many different fields are addressing questions related to Twitter's role in politics. On the other hand, as Jungherr (2014b) noted, these researchers approach the topic from different perspectives with widely divergent methods and publish their results in venues of their various fields. This leads to a fragmentation of the field; hence, there is no coherent account of the existing literature. He offered two reasons for this situation. First, the research area is rather new, so as of now, a common canon of studies identified as relevant by the community of researchers working on the topic has not yet emerged. Second, researchers from many different scientific fields are working on the role of Twitter in politics. These publications come from different theoretical perspectives, use different methods and–probably most importantly–are published in different venues. These differences make it difficult for researchers to engage productively with relevant work. Hence, the gap in the literature we are addressing is the absence of a coherent framework for understanding the potential use of Twitter by representatives. Our contribution is a theoretical framework that will be presented shortly.

In this part of the literature review we will try to organize the studies regarding the use of Twitter in a logical manner and then develop a theoretical framework based on the data we collected and analyzed. Although there is no coherent account of the existing literature, three major topics have emerged from previous studies that are similar to our research questions: *Who* are the representatives using Twitter? *How* do they use it? And *what* are representatives tweeting about?

Who are the representatives using Twitter?

The representatives who use Twitter generally share the characteristics of those who use OMSs. They tend to be non-mainstream, resource-deficient representatives, opposition members and minorities who take advantage of Twitter's potential as an alternative means of political participation and communication with the voters (Kim and Park 2011; Christensen 2013). Furthermore, those who are young and ideologically extreme are more likely to use Twitter (Chi and Yang, 2010, 2011; Golbeck et al. 2010; Grant et al. 2010; Jackson and Lilleker, 2011; Conway et al.

2013; Strandberg 2013). Studies have focused less on characteristics such as gender (Jackson and Lilleker 2011), constituency service (Jackson and Lilleker 2011) and party (Hanna et al. 2011; Jackson and Lilleker 2011; Plotkowiak and Stanoevska-Slabeva 2013), but some research does exist. For example, Plotkowiak and Stanoevska-Slabeva (2013) analyzed German representatives and their Twitter networks in the Bundestag election in 2009; they found that the majority of connections were established between members of the same party, while connections between different parties were significantly less represented.

How do representatives use Twitter?

Studies showed that interactions with other users on Twitter were very infrequent and if present, were usually directed at other politicians or journalists. However, there are studies about the networks created by representatives using Twitter (Conover et al. 2011; Kim and Park 2011; Gruzd and Roy 2014). Kim and Park (2011) examined the occurrence and co-occurrence of politicians' names in Twitter posts, and then calculated entropy values for trilateral relationships. The results suggest that the level of political deliberation, expressed in terms of the degree of balance in the communication system, is higher when politicians with different political orientations form the trilateral relationships. Conover et al. (2011) found a similar network they called the *mention* network, where users are connected if one has mentioned another in a post, including the case of tweet replies. Gruzd and Roy (2014) investigated whether or not political polarization exists in social media by using social network analysis to assess a sample of 5,918 Twitter messages posted by 1,492 users during the 2011 Canadian federal election. The results suggest that there are some pockets of political polarization on Twitter, but at the same time Twitter as a communication and social networking platform may be able to facilitate open, cross-party, and cross-ideological discourse.

There also appears to be strong imbalances in the number of followers of political actors on Twitter. A small number of politicians is followed by a large number of users, while most politicians have only very few followers (Grant et al. 2010; Conover et al. 2011; Jackson and Lilleker 2011; Aharony 2012; Kim and Park 2012; Glassman et al. 2013; Plotkowiak and Stanoevska-Slabeva 2013). Twitter offers

representatives the opportunity to distribute political content quickly and simply. Furthermore, users can link to each other quickly and simply (Conover et al. 2011). Jackson and Lilleker (2011) found clear evidence that representatives use Twitter as a tool of impression management. Constituency service is a secondary function of the use of Twitter by representatives.

What are representatives tweeting about?

Representatives tend to use Twitter predominantly to post information about their campaign activities, policy statements and links to their own web sites (Glassman et al. 2010; Golbeck et al. 2010; Jackson and Lilleker 2011; Larsson and Moe 2012). Glassman et al. (2010) found that the most frequent types of tweets were district or state tweets (24%), followed by policy tweets (23%), media tweets (14%) and position-taking tweets (14%). Larsson and Moe (2012) identified different user types based on how high-end users utilized the Twitter service. They divided the tweets into three categories: a *singleton* is a statement from a specific user, *the @ sign* is used as a marker of address and *re-tweets (RT)* refer to the practice of sending a tweet posted by another user. Conover et al. (2011) analyzed tweets during the six weeks prior to the 2010 US midterm elections. They found a *re-tweet* network, in which users are connected if one has rebroadcast content produced by another. Golbeck et al. (2010) analyzed 6,000 tweets from the accounts of US Congresspeople and found that over 80 percent of all messages link to news articles to post information, particularly links to news articles about themselves, and to their blogs posts, and to report on their daily activities.

A number of studies collected all messages using one or more topically relevant hashtags and analyzed the resulting universe of messages (Bruns and Burgess 2011; Larsson and Mo 2012). Other studies collected all messages using one or more topically relevant keywords and analyzed the resulting messages (Mustafaraj and Metaxas 2010; Hanna et al. 2013). Both approaches follow the same basic logic. They attempt to use hashtags or keywords as an indicator that a user is contributing to a given topic with his/her messages.

Hanna et al. (2011) mapped candidates for the US House of Representatives and US Senate and their followers according to their use of hashtags (keywords) and user mentions (direct mentioning of other Twitter users). They found that distinctions of

left-wing and right-wing were inadequate to describe the political behavior on Twitter. Instead, it is much more fruitful to discuss how users use Twitter in terms of actual political strategy, such as "encroaching" on others' keywords.

Glassman et al. (2010) analyzed US Congresspeople's use of Twitter during a two month period in the 111th Congress and found that the content of the tweets can be divided into eight categories: position taking, policy, district or state activity, official congressional action, personal, media, campaign activities, and other.

In sum, we can say that the content of the tweets are likely to be sharing information and reporting news. Furthermore, one-way, top-down communication is a frequent form too. Most studies found conservative patterns of using Twitter, which can be the result of the forced or lukewarm adoption of Twitter.
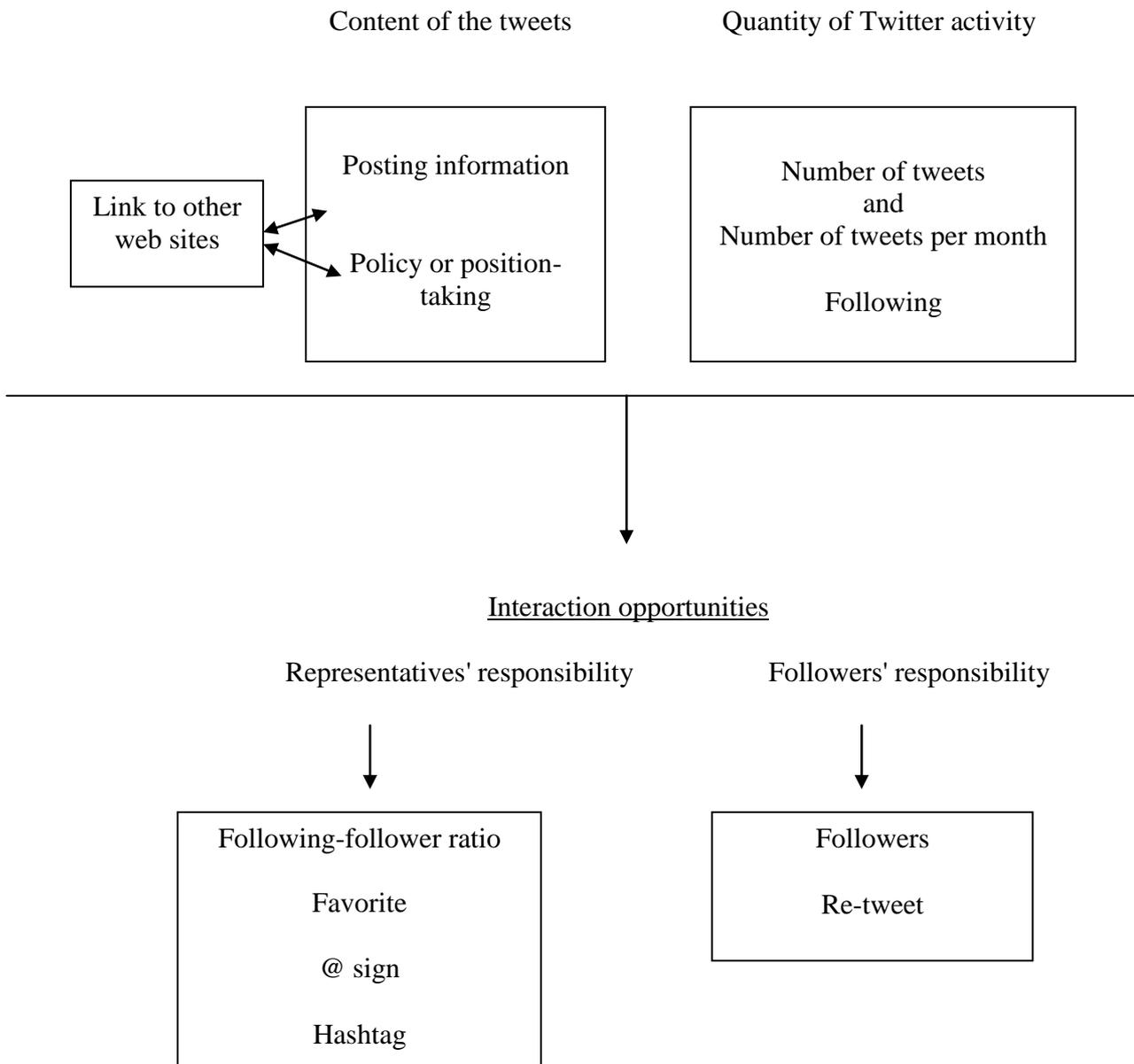
Twitter's popularity raises the question of whether representatives feel that Twitter is a cutting-edge tool they should use or whether they view Twitter as a strategic communication channel.

In spite of the abundant studies regarding the use of Twitter, Jungherr (2014b) claimed that there is no coherent account of the existing literature because of the fragmentation of the field. To address this issue, we want to offer a preliminary framework for the potential use of Twitter by representatives.

There are three facets to our framework: the *quantity* of the activity on Twitter, the *content* of the activity on Twitter and the *interaction* opportunity on Twitter. For representatives and their staff, the ability to collect and transmit real time information from constituents could be influential for policy and voting decisions. Furthermore, Twitter as a communication and social networking platform may be able to facilitate open, cross-party, and cross-ideological discourse.

Figure 1: Representatives' activity on Twitter

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Representatives' responsibility

Content of the tweets   Quantity of Twitter activity

Link to other
web sites

Posting information

Policy or position-
taking

Number of tweets
and
Number of tweets per month

Following

Interaction opportunities

Representatives' responsibility   Followers' responsibility

Following-follower ratio

Favorite

@ sign

Hashtag

Followers

Re-tweet

First, representatives need to tweet and start following users. The content of the tweet can be a start – posting information and more importantly – making policy statements or taking a position on an issue. In order to expand the content of their tweets, both information and policy representatives can link to other web sites.

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At this point, everything is in the hands of the representatives, making this one–way, top-down communication. It is a good start, necessary but not sufficient to create interaction with other users. Such interaction is in part the representatives' responsibility, and in part, their followers' responsibility. The followers can follow and re-tweet, indicating their responsiveness to the representatives' tweets. The representatives are responsible for four indicators of interactivity: following-follower ratios, favorites, @ signs and hashtags. The following-follower ratio indicates whether they are listening to their followers as opposed to talking to them or vice versa. The favorites indicate the representatives' responsiveness to the users. Both the @ sign and hashtag create a network between the users.

Our first five hypotheses are about the country-level analysis. The sixth hypothesis is about the individual level, and its goal is to valid the proposed framework. Hence, we posit that:

H1: Under-represented women will be more active on Twitter than over-represented men.

H2: Opposition representatives will be more active on Twitter than coalition representatives.

H3: First term representatives will be more active on Twitter than senior representatives.

H4: Younger representatives will be more active on Twitter than older representatives.

H5: Canadian, American and Australian representatives will be more active on Twitter than Israeli representatives.

H6: The content of the tweets will generally be a one-way, top-down monologue in the form of an electronic brochure and information oriented rather than communications designed to promote an interactive dialogue with the voters.

Methodology

Our first step is to describe the characteristics of each country compared in this study. Table 1 shows that Israel, Canada and Australia have a parliamentary regime, whereas the US has a presidential regime. However, the main difference is in their electoral systems. Canada, the US and Australia have majoritarian electoral systems with constituencies, bi-partisan party systems and two houses, whereas Israel has a proportional electoral system with one constituent, multi-partisan party system and one house. Scholars have described Israel's electoral system as the most extreme example of a consensual democracy (Lijphart 1993; Shugart 2001).

Electoral systems are one of the most important institutional variables that scholars use to explain political behavior (Norris 2001; Katz 2005, 2011; Shugart 2005; Farrell 2011). They are the link that connects the voters and their representatives. Through elections, voters can express their free will, while candidates can use their freedom of expression to introduce their ideas (Taagepera and Shugart 1989, Lijphart 1994, Rahat and Hazan 2001, Gallagher and Mitchell 2005, Samuels and Shugart 2010; Katz 2011). Hence, Hypothesis 5 is about the electoral system as an explanatory variable for understanding the differences in the representatives' activities on Twitter. Different electoral systems create different kinds of relationships between the representatives and the voters. The absence of constituencies in the Israeli political system renders the connection between the representatives and the voters irrelevant (Akirav 2013).

Table 1: Basic data about Israel, Canada, the US and Australia

Israel	Canada	The US	Australia

Regime system	Parliamentary 3.25% threshold	Parliamentary Constitutional monarchy	Presidential	Parliamentary Constitutional monarchy
Number of Houses	one	Two	two	Two
Electoral system	Proportional One district 120 seats	Majoritarian First Past the Post 304 constituencies with one representative	Majoritarian First Past the Post 435 constituencies with one representative	Majoritarian Alternative Vote 150 constituencies with one representative
Legislature's term	4 years	4 years	2 years	3 years
Party system	Multi-party	Bi-partisan	Bi-partisan	Bi-partisan
Last election	March 2015	May 2011	November 2014	September 2013
Number of parties	10	5	2	5
Population	7.8 Million	34.8 Million	319 Million	22.5 Million

In 2009, 63 UK representatives out of 650 (9.7%) used Twitter (Jackson and Lilleker 2011). The years between 2009 and 2015 changed the rules of the game, and more representatives started using Twitter. Still, there are differences between the countries. Israeli representatives make less use of Twitter: 49 representatives out of 120 (40.8%) use it, while 71 (59.2%) do not. The next in line is Australia with 99 out of 150 (66%) representatives using Twitter and 51 (34%) not. The third most extensive use of Twitter is in Canada, where 274 out of 304 (89.9%) representatives use Twitter, while just 31 (10.2%) do not. The most extensive use of Twitter is in the US, where 426 out of 435 (98%) representatives use Twitter, while just 9 (2%) do not.

Support for the findings come from a χ^2 test with country and using or not using Twitter as the variables. Israel has the fewest number of representatives using Twitter, while the US has the highest number (χ^2=270.659, Sig=0.000). How they use Twitter is a different question that we will discuss later. The absence of Israeli representatives in the Twitter arena can be explained in several ways. First, 13 representatives are ultra-Orthodox Jews, so their main channel of communication with their voters is in synagogues. Second, as mentioned previously, the electoral system in Israel contains one constituency, so most of the representatives do not have specific voters to address and work for.

In order to address the research hypotheses we used mixed research methods, both qualitative and quantitative. Previous studies about Twitter used several research methods such as digital trace data (e.g., Golbeck et al. 2010; Jackson and Lilleker 2011; Kim and Park 2012; Plotkowiak and Stanoevska-Slabeva 2013), experiments (e.g., Lee 2013; Lee and Oh 2013), interviews and descriptive case studies (Bekafigo and McBride 2013; Jungherr 2014a) and surveys (Lee and Oh 2013; Dimitrova et al. 2014; Gainous and Wagner 2014). We used both digital trace data and content analysis of case studies.

Hence, we collected the following data based on web sites listed on the official Parliament web sites[1] and provided Twitter links. In addition, we conducted a series of online searches for further information needed.

1. To identify representatives' tweeting behavior in terms of frequency of updates and their follower/followed ratio, we first identified those representatives who had signed up for Twitter (as Jackson and Lilleker 2011 did).

2. To determine the average tweets per month, we calculated the amount of time since the representative had registered for Twitter, and then calculated the tweets per month ratio (our addition).

3. To assess whether the representatives viewed Twitter as a means of broadcasting, we created a follower-following ratio, whereby we divided the number of tweeters

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[1] Australian Parliament -
http://www.aph.gov.au/Senators_and_Members/Parliamentarian_Search_Results?q=&mem=1&par=-1&gen=0&ps=0
Canadian Parliament - http://www.parl.gc.ca/parliamentarians/en/members
Israeli Parliament - http://www.knesset.gov.il/mk/heb/mkindex_current.asp

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following them by the number of tweeters they followed. This ratio should indicate whether, relative to their activity and popularity, they were only talking or also listening and even responding via Twitter (as Jackson and Lilleker 2011 did).

4. Jackson and Lilleker (2011) did not take into account the 'favorite' or 'like' opportunity on Twitter. We considered them additional indications of the representatives' activity on Twitter. The favorite feature allows users to indicate that they like a tweet and mark it as favorite, enabling the original poster to gauge the reception of the tweet. Hence, the number of favorites can indicate the responsiveness of the representative regarding the content of the tweets of those following them. In other words, it is a way for the followers (voters, colleague politicians, and journalists) to know which of their tweets were favorites for the representatives.

5. To understand which personal characteristics of the representatives (age, gender) (as Jackson and Lilleker 2011 did) and which political characteristics (party, seniority) (as Jackson and Lilleker 2011 did) drive the use of Twitter, we collected this information about the representatives.

Jackson and Lilleker (2011) defined seniority as being either a government minister or an official opposition frontbencher. In the current study, we used first term in parliament to indicate junior members and those who had served in parliament for two terms or more as having seniority. We also added the variable opposition/coalition, which we coded 1 if the member was part of the coalition and 0 if the member was part of the opposition.

6. To understand the attitude of representatives regarding their use of Twitter, we conducted an open-ended interview by email. We asked the 49 Israeli representatives who have a Twitter account: 1) What are your attitudes about using Twitter to communicate with your voters? 2) Do you use Twitter to communicate with your voters? 3) How frequently do you use Twitter? 4) Are there any other communications techniques you use to contact your voters? Nineteen out of 49 representatives responded (40%).

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All of the personal and political characteristics we gathered were considered in previous studies as explanatory independent variables for the use of Twitter and in general the activity of representatives – including OMSs.

Personal and political characteristics

Table 2: Personal and political characteristics by country

		Israel	Canada	The US	Australia
Gender	Women	29 (24.2%)	77 (25%)	85 (19.4%)	40 (26.7%)
	Men	91 (75.8%)	227 (75%)	349 (80.4%)	110 (73.3%)
Age	Average	53.22	54.15	57	51
Seniority	First term	42 (35%)	126 (41.4%)	62 (14.3%)	41 (27.3%)
	Senior	78 (65%)	178 (58.6%)	372 (85.7%)	109 (72.7%)
Opposition/coalition	Coalition	61 (50.8%)	159 (52.3%)	246 (56.7%)	89 (59.3%)
	Opposition	59 (49.2%)	145 (47.7%)	188 (43.3%)	61 (40.7%)

As Table 2 illustrates, with regard to gender, women are still under-represented and have about 25% of the seats in Israel, Canada and Australia, while in the US, the most established democracy, women have just 19.4% of the seats. Average age is also similar in Israel, Canada and Australia, about 53 years old, but in the US it is older - 57. However, the youngest ages are in Australia (25) and Canada (24), whilst in Israel it is 30, and in the US, it is 31 years old. The oldest representative is more than 70 years old in Israel, Canada and Australia, whilst in the US it is 86 years old.

Matland and Studlar (2004) analyzed turnover rates of legislators from 25 industrialized countries and found that the average incumbency return rate is 67.7.

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Looking at our four countries we can see that in Canada there is the lowest incumbency return (58.6%) while the US is the highest (85.7%).

The opposition in Israel has 49.2% of the representatives and contains five parties from the extreme right to the extreme left. The coalition in Israel contains five parties from the right wing and the Orthodox parties, which causes an unstable government. In the Canadian parliament the coalition is from one party only and four parties are in the opposition. The Australian opposition contains three parties with 40.7% of the representatives and a coalition with two parties. The majority party in the US has 56.7% of the representatives while the minority party has 43.3% of them. Whereas Canada, Australia and the US have a bi-partisan party system, Israel has a multi-partisan party system.

Based on the data in Table 2 we can see that the US representatives are much more likely to be male and old, and have more seniority than those in Israel, Canada and Australia. Nevertheless, in all four countries the split between the coalition (majority party) and opposition (minority party) is about 50:50.

How representatives use Twitter

Table 3: How representatives use Twitter by country

		Israel	Canada	The US	Australia
Tweets per month	Average	29.84	53.4	80.8	51
	S.d	38.94	64.1	154.4	65
Followers	Average	13,947	10,944	20,567	23,952
	S.d	60,472	66,310	104,423	65,722
Following	Average	181	1,219	1652	1971
	S.d	284	2993	3054	4127
Following-follower ratio	Average	221.12	27.72	46.7	31
	S.d	785.39	225.05	385	110
Favorites	Average	220	170.67	171	547
	S.d	427	422	352	1431

Table 3 depicts the representatives' use of Twitter. As the table shows, there is significant diversity in the use of Twitter. The standard deviation indicates that some of the representatives use Twitter extensively, while others use it infrequently. Previous studies substantiate this variation in usage (Grant et al. 2010; Jackson and Lilleker 2011; Kim and Park 2012; Glassman et al. 2013; Plotkowiak and Stanoevska-Slabeva 2013). Second, as mentioned previously we created a following-follower ratio to assess whether representatives viewed Twitter as a means of broadcasting or as a tool for listening and even responding to their constituents. The comparative data show that in Israel the representatives are talking more and listening less. In contrast, in Canada, the US and Australia the representatives are both talking and listening. Previous studies noted the strong imbalances in the number of followers; a small number of representatives is followed by a large number of users, while most representatives have only very few followers (Grant et al. 2010; Conover et al. 2011; Jackson and Lilleker 2011; Aharony 2012; Kim and Park 2012; Glassman et al. 2013; Plotkowiak and Stanoevska-Slabeva 2013). Third, the Australian representatives have the most favorites, while the Canadian, the Israeli and the US representatives have fewer, indicating that the Australian representatives are more responsive to the content of the tweets of their followers than in Canada, the US or Israel.

The next question we address is - what are the characteristics of the representatives using Twitter? We posited two demographic factors (gender and age) and two political factors (opposition/coalition and seniority) as variables.

Gender

Studies about parliamentary activities such as parliamentary questions, legislation and one-minute speeches (Box-Steffensmeier et. al. 2004; Salmond 2006) show that gender matters. The same is true for the use of different types of ICTs (Bimber 2001; Child 2004; Hoff 2004; Ward and Lusoli 2005; Jackson and Lilleker 2011; Tenscher 2014). Women representatives tend to be more active than male representatives. Given that in most parliaments women are under-represented, one of the characteristics of disadvantaged groups is seeking tools that allow them to be more active and involved in the decision making process.

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Our first research hypothesis posited that under-represented women would be more active on Twitter than over-represented men. Table 4 illustrates Twitter use by gender in the four countries.

Table 4: Gender and Twitter activity by country

	Israel	Canada	The US	Australia
Number of Tweets	F=9.744 Sig=0.003	F=14.783 Sig=0.000	Not significant	Not significant
Average Tweets per month	Not significant	F=7.44 Sig=0.007	Not significant	Not significant
Following	Not significant	Not significant	F=13.909 Sig=0.000	Not significant
Favorites	Not significant	F=10.074 Sig=0.0002	Not significant	Not significant

Three of Twitter's components are significant in Canada: women representatives tweet more than male representatives both in the total number of tweets and the average number of tweets per month. Furthermore, women representatives have more favorites than male representatives, so they respond more to their followers than men. In Israel, the only difference between the genders is the total number of tweets. In the US, the only difference between the genders is that women follow others much more (2613 on average) than men (1414 on average). In Australia, the gender explanation does not hold.

Coalition/opposition membership

Opposition representatives are considered institutionally disadvantaged. Furthermore, members of the opposition are also minority groups, so they tend to be more active both in parliamentary activities and in their use of ICTs (Cox and Magar 1999; Morris 2001; Miquel and Snyder 2006; Rocca 2007; Akirav 2014).

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Our second hypothesis suggested that opposition representatives would be more active on Twitter than coalition representatives. Table 5 presents the results of the data related to that question.

Table 5: Coalition/opposition membership and Twitter activity by country

	Israel	Canada	The US	Australia
Number of Tweets	F=6.1 Sig=0.017	F=2.334 Sig=0.043	Not significant	F=2.334 Sig=0.043
Average Tweets per month	Not significant	F=0.682 Sig=0.036	F=6.381 Sig=0.012	F=0.682 Sig=0.036
Following	F=5.027 Sig=0.03	Not significant	Not significant	Not significant
Followers-following ratio	F=6.988 Sig=0.011	Not significant	Not significant	Not significant
Favorites	Not significant	Not significant	F=4.229 Sig=0.04	F=22.337 Sig=0.000

Representatives from parties in the opposition tend to be more active than those in the coalition on every aspect of Twitter. They have more total number of tweets, average number of tweets per month, followings, and favorites. They also follow more users than the coalition's representatives and are more responsive to their followers, as evidenced in their use of favorites. Nevertheless, the minority party in the US has fewer tweets per month than the majority party.

However, representatives in the coalition have a higher followers-following ratio than those in the opposition (coalition=410.27, opposition=68.342), which is no surprise, because coalition representatives have more stages on which to speak up to be heard, so their followers are more interesting in hearing from them. In Canada and the US we found the opposition/coalition explanation less dominant, perhaps because the coalition contains one party, whereas in Australia it has two parties and in Israel, five parties.

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First term representatives, whom we called junior, act differently than senior representatives who have served at least two terms in the legislature. The junior representatives need to establish their name, need to be heard and remembered in order to be re-elected (Akirav 2013). Hence, previous studies found that junior representatives are more active than those with seniority in parliamentary activity and in their use of ICTs (Morris 2001; Gulati 2004; Akirav 2014).

 Our third hypothesis maintained that first term representatives would be more active on Twitter than senior representatives. Table 6 presents the data relevant to that question.

Table 6: Seniority and Twitter activity by country

	Israel	Canada	The US	Australia
ber of eets	F=4.196 Sig=0.046	Not significant	F=6.524 Sig=0.011	Not significant
e Tweets month	Not significant	F=0.903 Sig=0.027	Not significant	Not significant
wers	Not significant	Not significant	Not significant	F=3.997 Sig=0.048
wing	Not significant	Not significant	F=11.239 Sig=0.001	Not significant
rites	Not significant	F=23.97 Sig=0.003	Not significant	F=5.711 Sig=0.019

In accordance with previous studies, junior representatives are more active on some components of Twitter. In Canada junior representatives tweet more and have more favorites than seniors representatives, indicating that they are more responsive to their followers.

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However, in Israel and the US, the opposite trend is evident regarding the number of tweets. Senior representatives tweet more than junior representatives. One explanation may be that Twitter is a new technology, so senior representatives are already familiar with it, and hence, use it more, whilst junior representatives need to decide which ICT tool to use and in what manner. In Australia senior representatives have more followers than first termers, which makes sense, because those who have been in the public eye longer are more likely to have an established base of followers. In the US, senior representatives have more followings, meaning they more active in their use of Twitter.

Twitter challenges representatives. Those with experience use it differently from the way the literature predicts they would.

In addition to the data in Table 6 we ran a χ^2 test between country and seniority. Canada has the highest number of first term representatives compared to Australia, the US and Israel, while the US has the highest number of second and fourth term representatives (χ^2=71.88, Sig=0.000).

Age

Previous studies found that young representatives are more active than older representatives both in parliamentary activity and in their use of ICTs (Hoff 2004; Ward and Lusoli 2005; Tenscher 2014). Specific studies determined that young representatives are more likely to use Twitter (Chi and Yang, 2010, 2011; Golbeck et al. 2010; Jackson and Lilleker, 2011; Grant et al. 2010; Conway et al. 2013; Strandberg 2013). Hence, our fourth hypothesis posited that young representatives would be more active on Twitter than older representatives. Table 7 presents the comparative data about that question.

Table 7: Age and Twitter activity by country

	Israel	Canada	The US	Australia
Number of Tweets	Not significant	Not significant	Not significant	R=-0.25 Sig=0.011
Average Tweets per month	Not significant	Not significant	Not significant	R=-0.208 Sig=0.04
Favorites	Not significant	R=-0.135 Sig=0.036	Not significant	R=-0.265 Sig=0.008

We conducted a one-way ANOVA test between country and age. Australian representatives are younger than Canadian representatives (F=4.266, Sig=0.015). As one can see, most of Twitter's components are significant in Australia. In contrast, only one achieved significance in Canada, and none of the components was significant in Israel or the US. In the Australian parliament young representatives are more active in the total number of tweets, average tweets per month and favorites compared to older representatives.

Personal and political explanations and Twitter activity

Up until now we have looked at each explanatory variable to try to determine which representatives use Twitter most extensively by country. We established that in general women representatives and those who are young and in the opposition are more active. With regard to seniority, we found a mixed trend. Furthermore, we found that age is the most relevant factor in Australia, and seniority is the most relevant factor in the US, Canada and Australia. Membership in the coalition or opposition is most relevant in Israel and Australia, and gender is most relevant in Canada.

Our next step was to run a stepwise regression with gender, age, seniority, membership in the opposition/coalition and country as explanatory variables and Twitter activities as the dependent variables to determine which of the factors

explained a significant part of the variance in the independent variables. The country variable stands mainly for the variable of the political institution – the electoral system.

The findings showed that three Twitter activities were not significant: number of tweets, followers, and the follower-following ratio. The remainder of the Twitter activities was significant. US representatives tweeted more than all of the representatives in Israel, Australia and Canada (T=3.642, sig=0.000). US representatives followed others more than representatives from Israel. In Australia and Canada (T=2.378, Sig=0.018), senior representatives followed others more than junior representatives (T=2.182, Sig=0.029), and women representatives followed others more than men representatives (T=2.067, sig=0.039). According to the regression model of the independent variables, country, seniority and gender explain 1.9% of the variance in the following of Twitter activity. Finally, age and membership in the opposition or coalition explain the last significant Twitter activity—favorites. Young representatives marked more favorites than older representatives (T=-4.155, sig=0.000) and opposition representatives indicated more favorites than coalition representatives (T=-3.529, sig=0.000). Thus, in the regression model of the independent variables, age and membership in the opposition or coalition explain 3.7% of the variance in the number of favorites a representative with a Twitter account has.

Gender, age, seniority, opposition/coalition and country all together explain some of the Twitter activity, but in a partial way. Hence, we need to look for additional explanations. As a preliminary step we conducted an open-ended interview by email with representatives from the Israeli parliament asking about their attitude regarding the use of Twitter as a tool to communicate with their voters. We asked the 49 Israeli representatives who have a Twitter account: 1) What are your attitudes about using Twitter to communicate with your voters? 2) Do you use Twitter to communicate with your voters? 3) How frequently do you use Twitter? 4) Are there any other communications techniques you use to contact your voters? Nineteen out of 49 representatives responded (40%).

Several preliminary insights resulted. First, they realize that they cannot ignore Twitter and need to understand it. Second, some defined it as an important tool to communicate with their voters while others preferred to stay with their personal

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website and Facebook. Third, some of the Israeli representatives said that in order to communicate with young people they need to use the tools that young people use such as Twitter, while with older people they communicate using newspapers or newsletters (in their words – traditional mass communication). Fourth, in their answers, the Israeli representatives referred to the use of Twitter as an important step toward direct and transparent connections with their voters. Some of them considered the use of Twitter a mechanism for obtaining new ideas from the public by creating bidirectional communication with them. Finally, Israeli representatives use Twitter to establish a public presence and frame their positions on the issues. These findings accord with Ward and Lusoli (2005) who claim that the extent to which representatives use ICTs is likely to be shaped by a combination of personal, constituency, party, and parliamentary factors and depends on the balance of resources, incentives, and skills available to the representative in each of these areas.

In sum, we can say that the attitudes of most Israeli representatives about the use of Twitter are positive. They consider Twitter a relevant, basic, up-to-date tool that allows them to interact with the voters. These attitudes accord with previous literature that examined European parliaments (Hoff 2004; Tenscher 2014).

Twitter activity by country

To determine whether countries varied in the use of Twitter's components, we first coded each country and then conducted a one-way ANOVA. Our fifth hypothesis suggested that Canadian, American and Australian representatives would be more active on Twitter than Israeli representatives. This hypothesis is about the electoral system as an explanatory variable for understanding the differences between representatives in their activities on Twitter. As we claimed previously, different electoral systems create different kinds of relationships between the representatives and the voters. The absence of constituencies in the Israeli political system renders the connection between the representatives and the voters irrelevant (Akirav 2013). Hence, we expected differences between the Israel representatives and those of the three other countries with regard to their use of Twitter.

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Table 8: Twitter activity by country

Twitter's components	F values and Significance	Comments
Tweets per month	F=5.207, Sig=0.001	US representatives tweet more than Israeli and Canadian representatives.
Following	F=4.717, Sig=0.003	US representatives follow more than Israeli representatives. US representatives follow less than the Australian representatives
Follower-following ratio	F=4.102, Sig=0.007	Israeli representatives have a higher follower-following ratio than Australian, American and Canadian representatives.
Favorites	F=9.189, Sig=0.000	Australian representatives have more favorites than Canadian and American representatives.

With regard to two Twitter components--average tweets per month, and followers and following--the US representatives are more active than the Israeli representatives. The Australian representatives establish a strong connection with other users in that they follow more and they mark other users' tweets as favorites. Israeli representatives score higher in one area: the follower-following ratio, which means that they talk more to their followers and listen to them less.

Thus, the fifth research hypothesis is partially confirmed. There are differences between Israeli representatives and those of the other three countries. However, there are also some differences among Canadian, American and Australian representatives. Therefore, we can conclude that with regard to the use of Twitter, the electoral system matters, but there are more explanatory variables that need to be considered in understanding the variance between representatives in their Twitter activities.

The content of the tweets

Our question and hence our research hypothesis about the content of the tweets is based on previous studies claiming that the content of the tweets is a one-way, top-down monologue in the form of an electronic brochure to enable representatives to promote their views (Jackson 2003; Ward and Lusoli 2005), even though it has the potential of being a two-way forum with interactive capabilities. Hence, our last hypothesis posited that the content of the tweets would be more a one-way, top-down monologue in the form of an electronic brochure and information oriented than interactive oriented.

The indicators we chose for the content analysis are based on previous studies (Glassman et al. 2010; Bruns and Burgess 2011; Conover et al. 2011; Jackson and Lilleker 2011).

We analyzed the 10 latest tweets of the 49 representatives of the Israeli parliament who use Twitter. We divided these 490 tweets into six categories: *posting information*, *policy* or *position-taking* tweets, *links* to other web sites (Facebook, YouTube, news articles or TV channels) (Glassman et al. 2010; Jackson and Lilleker 2011), *the @ sign* and *re-tweets (RT)* (Conover et al. 2011; Larsson and Moe 2012) and *hashtags* (Bruns and Burgess 2011; Larsson and Moe 2012).
Posting information is the basic action for every representative worldwide. *Policy* or *position-taking* is the second action in which representatives make their voices heard to the voters, political colleagues and journalists. These two categories are about the content of the representatives' activities. *Links* to other web sites is a means of expanding the information or the policy/position-taking the representative posted. Using it can deepen the message to their followers.
The @ *sign* is used to mention others, so when tweeting using '@' followed by a username, it will send a message to the user the person chooses. This component can create interactivity between users regarding the tweets they have posted.
Re-tweets (RT) can indicate the popularity of the representatives' tweets, because it is the response of the followers to the tweets and the interactive component in Twitter.
Hashtags are used to create instant connections with other users. When other users use hashtags to find a particular word, they will see all of the posts containing that

hashtagged word. Hence, it is additional component to expand the content of the tweets and connect to others on Twitter. Table 9 presents the results of categorizing these 490 tweets.

Table 9: The content of the tweets

	Posting information	Policy Position-taking	Link	@	Re-tweets	Hashtag
Average	5.81	4.5	4.28	2.13	226.43	2.83
Standard deviation	2.54	2.287	3.394	2.232	1543.28	2.994
Range	1-10	1-10	1-10	1-10	1-10501	1-8

The data show us that posting information is the basic and preliminary action for Israeli representatives (5.81 average) and that policy or position-taking is the second action for representatives (4.5 average). The use of links varies, with some representatives using it extensively and other not (4.28 average, 3.394 s.d.). The representatives who use it extensively understand its potential to expand the information about their positions available to their followers. Those who do not make use of the tool may not understand its potential or do not care about it. The infrequent use of the @ sign indicates again that either the representatives do not understand its potential to connect with other users or do not care.

The re-tweet component also varies significantly (226.43 average, s.d. 1543.28). This component is largely in the hands of the followers who decide which tweet to re-tweet. However, the representatives have some say in the likelihood of re-tweets because they can phrase their tweets in a way that appeals to their followers. The potential of *hashtags* is also under utilized (2.83 average, s.d. 2.994), again for the same reasons.

Since Twitter is the newest ICT tool, we can assume that representatives and their followers do not yet know the full potential of it. As they learn more about it, we will probably see them leverage its potential.

The final step of our content analysis was to look at the subjects about which the representatives tweeted. Since Israel has only one constituency, the constituency role is less relevant. However, there are several parties that have a specific electorate: the ultra-Orthodox parties, the Orthodox party and the Arab party. So for their representatives, we do expect to see tweets regarding domestic issues.

More than 75% talked about subjects they were elected to advance (both representatives with specific voters and with general voters), mainly posting information about their activities. These findings accord with previous studies about the use of OMSs; most representatives prefer to talk about issues that are close to them, that they were elected to promote (Polletta 1998; Hall 2002). Other subjects included thank yous for being elected and holiday greetings. Since there were two main general issues on the Israeli political agenda during the time the tweets were analyzed--the agreement with Iran and gas as an energy resource--most of the Israeli representatives responded at least to one of them and stated their position about it.

So, we can say that in their tweets Israeli representatives address the daily agenda, respond to their voters and post information about their activities.

Our sixth hypothesis maintained that the content of the tweets would be a more one-way, top-down monologue in the form of an electronic brochure and information oriented than interactive oriented. The data support this contention. However, there is a small degree of interactivity evidenced in the use of the @ *sign*, *re-tweets (RT)* and *hashtag* options. These findings accord with Gruzd and Roy's (2014) study claiming that Twitter as a communication and social networking platform may be able to facilitate open, cross-party, and cross-ideological discourse.

To understand the variance in the content of the tweets, we ran a t-test for the independent variable and a correlation test for the demographic and political variables with the content of the tweets. The results in Table 10 demonstrate that in the Israeli

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parliament, gender and age do not matter, but seniority and membership in the opposition/coalition do.

Table 10: Demographic and political variables with the content of the tweets

	Posting information	Policy Position-taking	Link	@	Re-tweets	Hashtag
Gender	No sig	No sig	No sig	No sig	No sig	No sig
Age	No sig	No sig	No sig	No sig	No sig	No sig
Seniority	No sig	No sig	F=10.755 Sig=0.002	No sig	No sig	No sig
Opposition/ Coalition	No sig	No sig	F=8.884 Sig=0.005	No sig	F=4.095 Sig=0.049	F=8.963 Sig=0.04

First term representative are less likely to connect to other web sites than representatives with seniority. Their experience with different kinds of web applications allows senior representatives to use them more often and simultaneously. Most of them link to their Facebook page because Twitter allows for only short messages, while on Facebook they can expand on their positions.

As mentioned previously, opposition/coalition affiliation matters, and in the Israeli parliament even more so because of the multi-party system and the number of parties in both the opposition and the coalition.

Coalition representatives link to other web sites more than opposition representatives. Coalition representatives are re-tweeted much more often than the opposition representatives (Netanyahu, the Prime Minister, was re-tweeted 10,501 times!), while the opposition representatives use hashtags more often than coalition representatives. The use of hashtags indicates the ability of the user to connect with other users.

Framework for the potential use of Twitter by Israeli representatives

According to the first step in our framework, representatives need to tweet and to start following other users. The data show that Israeli representatives tweet on average 29.84 tweets per month and follow an average of 181 other users. Compared to Canadian and Australian representatives, these numbers are quite small. The second step in our framework is the content of the tweet – posting information and more importantly, sharing policy statements and their positions on the issues. Israeli representatives do post information (an average of 5.81 on a scale of 1 to 10) and make policy statements (an average of 4.5 on a scale of 1 to 10). We have no data to compare to Australian and Canadian representatives. However, previous studies showed that most tweets posted information, but fewer were devoted to making policy statements (Glassman et al. 2010; Golbeck et al. 2010; Jackson and Lilleker 2011; Larsson and Moe 2012). The third step suggested in the framework is linking to other web sites with the goal of expanding the content of the tweets both with regard to information and policy statements. Israeli representatives use the link option to some degree, usually connecting to their personal web site or Facebook page (average 4.25 on a scale of 1 to 10). Again, we have no data to compare to Australian and Canadian representatives.

These actions are in the hands of the representatives. They are one–way, top-down forms of communication that are a good start. However, they are not sufficient for creating interactions with other users.

That interaction involves actions that are the representatives' responsibility and their followers' responsibility. The followers can follow and re-tweet, which indicates their responsiveness to the representatives' tweets. Israeli representatives were re-tweeted

on average 226.43 times on a scale ranging from 1 to 10,501. No data is available to compare to Australian and Canadian representatives.

The representatives are responsible for four indicators of interactivity: the following-follower ratio, favorites, the @ sign and hashtags. Israeli representatives have an average following-follower ratio of 22.12, which means they are talking more than listening. In contrast, Australian and Canadian representatives listen more than talk. The number of favorites indicates the representatives' responsiveness to the users. Israeli representatives have an average of 220 favorites compared to 170.67 among the Canadian representatives and 547 among the Australian representatives. Thus, Israeli representative are more responsive to their followers than Canadian representatives but less than Australian representatives.

The last two indicators for interactivity, the @ sign and hashtag, are used less frequently. The average use of the @ sign is 2.13 on a scale of 1 to 10, and the average use of the hashtag is 2.8 on a scale of 1 to 8. Therefore, Israeli representatives have not yet learned to utilize these tools to create and deepen their networks.

The content analysis combined with the statistical analysis of the potential use of Twitter by Israeli representatives helps validate the proposed framework that can also be used to analyze the potential use of Twitter by representatives in Western democracies.

Conclusions

Twitter is the latest web application available to representatives. Has the presence of ICT tools changed the way representatives relate to the public?

To answer this question, we need to remember that representatives have several traditional roles: acting as a check on the executive branch, enacting legislation, making policy and representing their constituents. Of course, they also want to be re-elected. These factors have always been key to their work, but the context in which representatives act has changed dramatically since the introduction of web

applications. Given that relations between the voters and the representatives are in a period of transformative flux, the Internet has the potential to improve public communications and enrich democracy.

Scholars suggested that ICTs could create participatory democracy and in fact would be able to replace the traditional connection between representatives and their voters. Furthermore, representatives use ICTs to create a discrete model of e-representation, a role based entirely on online ICTs. Representatives use a range of media outlets to project an appealing image of themselves to their constituents (Rheingold 2000; Jackson 2008). They must be seen to be doing their job, so they have devised elaborate strategies for the management of their own visibility using ICTs (Coleman and Blumler 2009). And finally, as with any new technology, there is a wide range of approaches to accomplishing this goal (Jackson and Lilleker 2011).

We claim that representatives first need to learn about the new context, understand its pros and cons, and then decide if and how they want to be part of it.

Using two level of analysis—country and individual legislator--our study presents a snapshot of representatives' behavior in four legislatures with the goal of testing several hypotheses and suggesting a preliminary framework for understanding the potential use of Twitter by representatives. As our data demonstrate, they use Twitter at different levels and with varying degrees of intensity. We questioned whether the traditional explanations about parliamentary activity and the use of ICTs were relevant to the use of Twitter and established that the answer is yes.

Women representatives use Twitter more extensively than male representatives. These differences are particularly evident in Canada, somewhat in Israel and in the US, but not at all in Australia. Opposition representatives are more active on Twitter than coalition representatives, again, mostly in Australia, somewhat in Israel and even less in Canada. American minority party representatives tweet less than majority party representatives. However, in Israel, coalition members had a higher followers-following ratio than opposition members (coalition=410.27, opposition=68.342). Junior representatives were more active on Twitter than senior representatives, but in Israel and the US the opposite trend emerged regarding the number of tweets; senior representatives tweeted more than junior representatives. Young representatives were more active on Twitter than older representatives, particularly in Australia.

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Looking at all of the variables together, we found that three Twitter activities were not significant--the number of tweets, followers, and the follower-following ratio--but the rest of the Twitter activities were significant. Gender, age, opposition/coalition, age and country explain some of the variance in the use of Twitter's components, just as they explain some of the variance in the use of other parliamentary tools such as OMSs and the use of web applications. Furthermore, we found similarities and differences in the use of aspects of Twitter in different countries. The last research hypothesis was about the content of the tweets. The data shows that Israeli representatives underutilize the interactive capabilities of Twitter evident in the @ *sign*, *re-tweets (RT)* and *hashtags* options. While they have taken the initial steps toward using Twitter as a way to post information about their stances on particular issues, they still have a long way to go in establishing a real dialogue with their constituency about the issues of the day, thereby leveraging the real opportunities that Twitter affords the democratic process.

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