

First and Second Level Intermedia Agenda-Setting between International Newspapers and Twitter during the Coverage of the 266th Papal Election

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Abstract

This article's main purpose is to understand whether the intermedia agenda-setting effect occurs between the online versions of international newspapers and Twitter during the Papal election in 2013. The researchers have tracked each available country's trending topics on Twitter to understand the popularity of the subject in various countries. The researchers then followed each country available on Twitter at the time when the study was conducted, starting right after the announcement of the new Pope at the Sistine Chapel in Vatican on 12 March 2013 till 15 March 2013 for four days and collected all available data. Later, the researchers collected data from the websites of international newspapers, The New York Times, The Daily Mail, The Guardian, The Telegraph and The Wall Street Journal. Two computer-based content analysis were conducted. In order to understand the relationship amongst these media entities, the cross-lagged panel design with the Rozelle-Campbell (1969) baseline was used. In the end, researchers examined the second level agenda setting effect between media by looking into what was said about the Papal election – positive, negative, or neutral. The results supported both first and second-level agenda setting influence between media.

Keywords: Agenda-setting, intermedia agenda-setting, Papal election, Rozelle-Campbell baseline, international newspapers, Twitter.

266. Papa Seçimi Sırasında Birinci ve İkinci Aşama Medya Arası Gündem Belirleme Etkisinin Uluslararası Online Gazeteler ve Twitter Üzerinden Analizi

Özet

Bu makalenin amacı Mart 2013'te gerçekleşen 266. Papa seçimi sırasında medya arası gündem belirleme etkisinin uluslararası gazeteler ve Twitter arasında gerçekleşip gerçekleşmediğini tespit etmektir. Araştırmacılar öncelikle seçimin gerçekleştiği gün ve onu takip eden dönem olan 12-15 Mart 2013 tarihleri arasında Twitter'da bulunan tüm ülkelerin Twitter gündemlerini (trend topic) takip ederek konunun dünyanın dört bir yanındaki popülerliğini saptadılar. Ardından araştırmacılar, çalışmanın gerçekleştirildiği 12-15 Mart 2013 tarihleri aralığında, o dönemde Twitter'ın hizmet verdiği 33 ülkenin

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tamamını takip ederek sitedeki mevcut tüm verileri topladılar. Daha sonra aynı tarihler arasında beş tane uluslararası gazetenin web sitelerinden, The New York Times, The Daily Mail, The Guardian, The Telegraph and The Wall Street Journal, konuyla ilgili tüm haberler veri olarak toplandı. Uluslararası gazetelerin web sitelerine ve Twitter verilerine ayrı ayrı iki tane bilgisayar destekli içerik analizi yapıldı. Bu medya kuruluşları ve Twitter arasındaki ilişkiyi anlayabilmek için Rozelle-Campbell (1969) taban hizası dikkate alınarak çapraz zaman gecikmeli panel tasarlandı. En sonunda da araştırmacılar online medya ve Twitter arasında ikinci aşama gündem belirleme etkisini tespit edebilmek için Papa seçimi ile ilgili yazılan haber ve tweetlerin pozitif, negatif veya nötral olmak üzere tonuna odaklandı. Sonuçlar birinci ve ikinci aşama medya arası gündem belirleme etkisinin varlığını destekledi.

Anahtar Kelimeler: Gündem Belirleme, Medya Arası Gündem Belirleme, Papa Seçimi, Rozelle-Campbell Taban Hizası, Uluslararası Gazeteler, Twitter.

Introduction

International differences in news coverage and public interest are both significant in newsrooms in terms of making a decision on the content as well as customizing it for the different geographic audiences and deciding about the main stories of the day (Wilkinson & Thelwall, 2012). Social networking sites (SNS), such as Twitter, have created a platform to look into international news interests by just analyzing a particular social media instead of pursuing other traditional methods, such as surveys, interviews etc. Many studies regarding SNSs are aligned with the active user paradigm of mass communication theory, in which people actively shape the meaning from media instead of passively consuming it (Brown, Hendrickson and Littau, 2014: 2).

In this paper, researchers have expected to shed light on an agenda-setting relationship between international online news media and Twitter during the Papal election which took place between 12 and 15 March 2013. Besides, researchers have aimed to explore which countries' "Twitter public" give more or less importance to the issue according to their "trending topics". The researchers especially focused on the Papal election and its worldwide repercussion on Twitter to see whether the effect of the election differs across the world in terms of the dominant religion, political landscape and economic situation. That is already known that there are systematic international differences in news interests (Wilkinson & Thelwall, 2012). Therefore, that could be doable to delve into international differences in news interests through large-scale researches of Twitter (Wilkinson & Thelwall, 2012). That's the reason why, this study is concentrated on a certain issue, the Papal election since it is not known whether the effect of a particular international story differs in varied countries across the world on Twitter. The Catholic Church plays a significant role in international affairs as a political component of the modern world. The participation of papal representatives in this international agreement marked the crucial issue regarding the nature of the papacy as sovereignty as well as raised other queries. The story itself is international which is relevant to especially millions of Catholics across the world. However, not only Catholics but millions of non-Catholics watched and tracked this story very closely.

In the modern world that is unlikely to see another religious institution apart from Vatican that operates as both a church and a political organization which exchanges

diplomatic representatives and claims total recognition as an independent member of the community of nations (Lassa, 1955; Kunz, 1957). Consequently, researchers both looked at the first-level and second-level agenda setting between the online mainstream media and Twitter.

Agenda Setting, Second-Level Agenda Setting, and Attributes

Intermedia agenda-setting is determined by researchers as the influence of one media on another (McCombs, Lopez-Escobar, and Llamas, 2000). Agenda setting studies that were conducted after the original agenda-setting research provided strong evidence that the newspapers have agenda-setting power in the world (Gilberg et al., 1980; Golan, 2006; Reese & Danielian, 1989; Roberts et al., 2002). However, more arguably is the strong belief that the media is also effective at convincing the public on what behavior to take about relevant issues from time to time (Wanta et al., 2004). As an evidence, for instance, negative coverage of foreign nations on the US media resulted in negative public perceptions of those countries (Besova, & Cooley, 2009; Wanta et al., 2004).

Early agenda-setting studies have mainly focused on finding the actors who set the public's agenda. Currently, the agenda-setting theory is accepted in a global context (Groshek, 2008). However, recent studies concentrated on discovering who sets the media's agenda (McCombs, 1993; Kushin, 2010; Melek, 2015). For instance, a recent study proved that media coverage within one media outlet could set the agenda within another media outlet suggesting an intermedia agenda-setting (Roberts, Wanta and Dzwo, 2002: 464).

While the first-level agenda-setting was dealing with the object and whether it is being transferred, the second-level agenda-setting is interested in what is being said about (positive, negative, or neutral) this very object (McCombs, 2005). McCombs and Shaw demonstrated the theory of agenda setting in the early 1970s. The agenda-setting is one of the most influential theories on the media's political influence (Graber, 2005). They determined that the media's agenda set the public's agenda during the 1968 presidential election. The study showed us that the media is successful in telling the public on which subjects to think and talk about (McCombs & Shaw, 1972). This research gave a name for the studies that had been previously done by scholars such as Lippmann (1922) and Cohen (1963). During the 70s, Tipton, Haney and Baseheart conducted a research about the gubernatorial and mayoral election in Lexington, Kentucky in 1971 and determined a relationship between the frequency of newspaper coverage and public opinion. They also found some evidence that the participants with a high school diploma were less susceptible to influence than those with a university diploma (Tipton, Haney & Baseheart, 1975). This study was important in agenda-setting research since it brought the theory to the local level. In the end, the researcher stated, "there is a relationship between media coverage and public frequency of mention in a state campaign" (Tipton, et al., 1975:13).

Williams and Larsen (1977) brought the agenda-setting research outside an election time. They tracked three broadcast channels and had telephone interviews with 350 participants in Illinois. After the analyses were finished, the results revealed that the agenda-setting function of media was only operative for local issues (Williams and

Larsen, 1977: 749). In this study, researchers also examined the radio and concluded that the radio was also capable of setting the public agenda (1977). In the end, the researchers didn't find agenda-setting effect at the local level. However, later studies suggested that the agenda-setting occurs at the local level (Kim, Scheufele & Shanahan, 2002). Winter and Eyal (1981), conducted a research on timing and agenda-setting. They used Gallup poll data to extract the most important issues on American's mind from 1954 to 1976. In order to find out the media agenda, they looked at the front page of the New York Times. Later, they compared it with the Gallup poll data. In the end, they suggested that a strong agenda-setting effect could occur through traditional media in less than two months (1981). Coleman and Banning (2006) put it this way: "while first-level agenda setting suggests media coverage influences what we think about, second-level agenda-setting suggests media coverage influences how we think." This method is widely used in agenda-setting studies whose coding is based on nominal-level variables (Littau & Stewart, 2015; Conway, 2013; Bowe et al., 2013; Heim, 2013; Lim, 2011; Kiouisis et al., 2006).

The second-level agenda-setting is mainly about the object's attribution and the way it shapes the public's opinion (Lee, 2005). Therefore, the first level agenda-setting "tells us what to think about", while the second-level agenda-setting "tells us how to think about it" (Cohen, 1963:13; McCombs et al., 2005; Lee, 2005; McCombs and Bell, 1996). Similarly, the second-level agenda-setting deals with the way certain attributes highlighted in the media become popular in public opinion (Kiouisis et al., 2006; Lee, 2005:59). Weaver's second-level "attributes" of agenda-setting described as similar to media effects, "framing and priming", but are not exactly alike, because generally qualitative research has used "frames" to mean "problem definitions, causal interpretations, moral evaluations, and treatment recommendations, as well as key phrases, and words" (Weaver, 2007: 143). The second-level agenda-setting effects primarily focus on the attributes of those issues covered by the mass media. Many studies have shown that the second-level is effective (e.g. positive/negative tone, or level of conflict in the story), on cognitive level as it pertains to the media's critical role in framing issues in the minds of people. (Roessler, 2008).

Some studies were conducted on agenda setting through the use of Twitter (Kushin, 2010; Smock, 2010; Vargo, 2011; Melek, 2015). In 2010, Matthew Kushin examined the intermedia agenda setting between the mainstream media and the social media. For his research, he used a purposive sample and analyzed online publication of The New York Times and social networking site Twitter. The goal of the study was to see whether there was a relationship between these two media platforms and the direction of that relationship. In the end, Kushin (2010) found some evidence of agenda setting between the two media, but they weren't bi-directional: "The direction of influence between the two media under study was predominantly from social media to the news media. There were some instances in which intermedia agenda setting occurred in the opposite direction from the news media to social media" (2010: 121-122).

In 2015, Gizem Melek conducted a similar research in Turkey between the social media and mainstream media (Melek, 2015). Gizem Melek (2015) aimed at understanding the relationship between mainstream media and Twitter in a country like Turkey where conditions for media freedom continues to deteriorate for the past couple of years and press status is stated as "not free" by the Freedom House ("Freedom," 2015).

She also aimed to provide an international perspective to agenda setting through the use of Twitter. Melek (2015), also used a purposive sample and analyzed online publication of one of the most prominent newspapers in Turkey, entitled, *Hurriyet* and social networking site Twitter. She found a little evidence of agenda-setting effect, but it wasn't bi-directional as well. The intermedia agenda-setting effect was found for just one day throughout 7 days, and that was from Twitter to mainstream media. However, she still concluded that there was a clear interaction between the two media and also, she determined that Twitter seem to have similar effects on media in countries where media freedom exist and not exist, such as the US and Turkey: "This research went outside the borders of the US and found out that the relationship between Twitter and news media is similar on an international level as of now. Despite the fact that the research did not find clear intermedia agenda-setting, the influence of Twitter on news media cannot be underestimated. Results indicate the growing influence of Twitter on shaping the issues on mainstream media agenda in Turkey." (Melek, 2015: 108-109). Briefly, existing studies have indicated that trends on Twitter tend to be affiliated with the news, despite the typically quite personal content of tweets.

Twitter as a Social Media Platform

Social media broadly defined online media tools that foster social interaction and operate from a Web 2.0 approach. In social networking platforms, participation is fostered through collaborative services that are generally low-cost to maintain and free access for end users (Tapscott & Williams, 2006). Launched in October 2006, the growth in the popularity of the social network site Twitter is a short message service, or "micro-blogging" application, that allows users to broadcast real-time messages spanning a maximum of 140 characters. Twitter is the eighth most popular website in the world, with an average of nearly eleven million hits a day. As of the second quarter of 2015, the micro-blogging service averaged at 316 million monthly active users. At the beginning of 2015, 500 million tweets per day and around 200 billion tweets per year.

The messages that are created by the users are known as "tweets" in the Twitter terminology. The users who follow an account are called its "followers". A follower on Twitter receives all the tweets on her/his timeline from the person they follow (Kwak et al., 2010). Users may also retweet updates from other users. Every day, people are tweeting about a range of topics, including events of daily life, and news stories (Java, Finin, Song & Tseng, 2007). Posting tweets demonstrate responsiveness and establish a tie between users and the followers. Twitter users contribute both novel content they have found and content they found via Twitter. These tweets appear as a reflection of different cultural identities which could sometimes be artificial as well.

Topics and Trends: Agenda of Twitter

When a new topic becomes popular on Twitter, it is listed as a "trending topic" automatically, which may take the form of short phrases (Lee et al., 2011: 251). A trending topic may be a breaking news story, current events or it may be about the most recently aired episode of a TV show. The trend topic list is displayed on a user's account page and indicates the top most popular topics and hashtags from Twitter posts across all users in real time. Regarding trending topics, first study's information

sharing category and second study's real-time sharing category are most likely to be about news (Wilkinson & Thelwall, 2012; Zhang et al., 2011). However, in reality, a majority of trends in Twitter are news-related (Kwak et al., 2010). What's more, users tend to post on Twitter to comment on news stories, instead of creating them (Subašić & Berendt, 2011). Therefore, that can be anticipated to work well with mainstream media news (Farhi, 2009).

There are some studies show different usages and content that is being generated on Twitter. A small qualitative study indicates that Twitter was being used for informal interactions (Zhao & Rosson, 2009). A study later conducted with 317 users supported that suggestion claiming people needing to informally connect with others were more frequent Twitter users (Chen, 2011).

There are a tremendous amount of tweets posted, but only some of them appear on trending topics. According to a research, in April 2009 around 80% users apt to post about themselves, promote or portray their activities, meanwhile 20% produced more informational tweets (Naaman et al., 2010). That study described tweets in 9 categories: information, opinions/complaints, self-promotion, statements and random thoughts, sharing, me now, questions, presence maintenance (e.g., "I'm back"), anecdote (me), anecdote (others). Likewise, in November 2009, another study (Westman & Freund, 2010) that focused on 7040 tweets from a similar amount of people, created 5 different genres: Directed dialogue, personal updates, real-time sharing (news and information), information seeking, business broadcasting.

Research Questions and Hypotheses

Research Question 1 seeks to investigate which issues were emphasized in the online public agenda, the media agenda, and the policy agenda. The question of what constitutes the collective similarities and differences were analyzed for an analytical framework. The purpose of this study was to investigate the influence of the Twitter on the newspaper coverage of the 266th papal election. The study aims to answer the following questions:

RQ1: What are the issues emphasized in the mainstream news media and the social media (Twitter) at 4 time periods? Are there any differences between these agendas?

RQ2: How did the issue arise and draw back on the mainstream news media agenda and the social media (Twitter) agenda?

RQ3: How did the topic arise and draw back on the mainstream news media agenda and the social media (Twitter) agenda?

RQ4: What are the intermedia agenda-setting effects between mainstream news media and the social media (Twitter) at 4 time periods?

RQ5: What are the second-level agenda-setting effects between mainstream news media and the social media (Twitter) at 4 time periods?

As discussed, hypotheses derived from the research questions are stated below and shown in Figure 1:

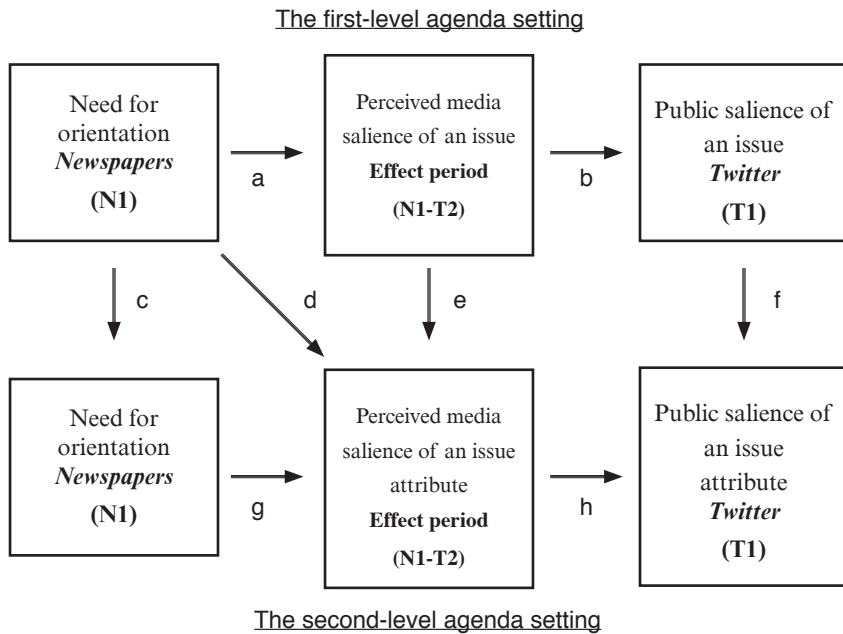
H1: There is mutual intermedia agenda-setting effect between N1 and T2 and T1 and N2.

H2: There is mutual intermedia agenda-setting effect between N2 and T3 and T2 and N3.

H3: There is mutual intermedia agenda-setting effect between N3 and T4 and T3 and N4.

H4: The salience of an issue attribute on mainstream media and Twitter has an impact on the tone of messages in both directions (second-level agenda-setting effect).

Figure 1. The Relationship Between Need For Orientation And First And Second-Level Agenda Setting



Research Methodology

The main purpose of this study is to investigate the relationship between the online version of international mainstream newspapers and Twitter within the theoretical framework of intermedia agenda-setting. In this study, two computer-based content analyses have been applied to data from online international newspapers and Twitter. Content analysis is a research method for examining information and content, in written or symbolic materials (Neuman 1997: 31). Many current text analysis methods can be an ideal technique for both qualitative and quantitative studies. Kerlinger (2000) defined content analysis as “the method of studying and analyzing communication in a systematic, objective, and quantitative manner for the purpose of measuring variables” (Wimmer and Dominick, 2006:150). In the fast-growing content analysis originated in

the social sciences and has recently expanded into the medical sciences including fields such as bioinformatics, evidence-based medicine, medical ethics, social work, public health, pharmacy, allied health, and others.

Computer-based text analysis approaches can be used to define rule-based classification, theme extraction, ontology/taxonomy modeling, topic categorization and document summarization. The qualitative data analysis programs have been developed for researchers working with very rich text-based and/or multimedia information, where deep levels of analysis on small or large volumes of data are required (Evans et al., 1996; Smith et al., 1996; Preissle, 2004; Lester, 2015; To et al., 2015). In this study, qualitative data analysis software QSR NVivo9 and SPSS were used.

This study tested the issue on the first-level agenda-setting effects, and attribute, or second-level agenda-setting effects. The exact date of each story was recorded as a numerical variable. The researchers have numbered each tweet and news story from the online global newspapers and they have coded and sorted the data using MS Excel 2010. Then a codebook was created to measure the frequency of trending topics both on the online newspaper articles and Twitter posts. The coding scheme was developed to operationalize Kent and Taylor's (2002) dialogic principles for applicability to Twitter. Tweets appearing in The New York Times, The Daily Mail, The Guardian, The Telegraph and The Wall Street Journal during five days (March 12- March 15, 2013) were selected with NVivo9 search syntax and then downloaded to a computer for examination. All data collected from Twitter were written in 22 different European languages. Therefore, all these tweets were translated to English. Then, the QSR NVivo9 qualitative software and Microsoft Excel were used for coding, exploring the themes and issues. In total, the analyzed dataset contained 37.615 public tweets and 372 news stories. All the data were examined using computer-based content analysis, and the intermedia agenda-setting was measured with cross-lagged correlation tests. The cross-lagged technique with the Rozelle-Campbell (1969) baseline has been used successfully for intermedia agenda-setting research (Du, 2012; Lopez-Escobar et al., 1998; Sikanku, 2011; McCombs et al., 2000; Sweetser et al., 2008).

Sampling

Data were collected from two types of sources: Twitter and online version of international newspapers (The New York Times, The Daily Mail, The Guardian, The Telegraph and The Wall Street Journal) during the 266th papal election. These five mainstream news media sources were selected because they are the leading online newspapers in the world, according to Alexa Internet traffic statistics (www.alexa.com) top 10 newspaper sites. Also, these elite newspapers are likely to influence the news coverage of other media. Articles in the daily newspapers were collected from Access World News. The New York Times is one of the most-examined and elite media sources in the intermedia agenda-setting literature (Ford & King, 2015; Zoch et al., 2014; Winder & Schmitt, 2014; Lihua, 2012; Shie, 2011; Fernandes et al., 2014; Maddalena & Belmonte, 2011; Kushin, 2010; McDonnell et al., 2008). The New York Times has been suggested in former studies to be a leader in terms of its prominence and influence on other media outlets. This is the reason why, it has become the focus of intermedia agenda-setting researches (Gilberg et al., 1980; Mazur, 1987; Winter & Eyal, 1981; Wallsten, 2007; Sweester et al., 2008). For the purpose of our study, to be able to show an international

perspective, The Daily Mail, The Guardian, The Telegraph and The Wall Street Journal was also included in the research along with The New York Times.

Running an online script on the Twitter API (Application Programming Interface), 37.615 tweets were captured. The trending topics were checked every 5 minutes from the Trendsmap web page which shows the latest trends on Twitter and all tweets that contain the trending topics were downloaded. From 12 March 2013 to 15 March 2013 the trending topics list on Twitter was checked in every midnight.

Two types of tweets were ruled out from 37.615 tweets: (1) Retweets, in order to avoid the duplication of classified contents and (2) URL shorteners that contained the keywords *papa* and *pope*. Tweets were crawled with Twitter's search API using an initial seed of manually compiled keywords and hashtags relevant to the 265th Pope of the Catholic Church. Specifically, tweets and the newspaper stories that included the top names among all of the papal contenders were retrieved.

Coding

First, a fundamental category list was created from the collected data. Then, a protocol for detailed coding was determined considering the category list. Both tweets and news stories were coded by two independent coders. The coders have defined the categorized tweets and news stories according to the determined time intervals. All collected data were carefully reviewed for typographical errors, misspellings, and redundant words. Many studies have shown that short time lags were more appropriate for intermedia agenda-setting research (Vliegenthart & Walgrave, 2008; Roberts et al. 2002). Therefore, each time period lasts for one day for this research. The collection of data across multiple cases yields cross-sectional comparisons over multiple time series. In this study, four time periods were chosen (Time 1, Time 2, Time 3, and Time 4).

As for the first-level, the emergent issues and patterns were identified and then collapsed into categories (Dunn, 2009). 13 themes were identified related to the issue. Topical categories used in the previous traditional intermedia agenda-setting studies were also used in the present study (Kiouisis, 2004). The articles were coded according to their main themes if they had more than one theme. In order to determine the second-level agenda-setting, attribute salience was measured. The attributes were analyzed in terms of the tone of the article. Each article was coded as positive, negative, or neutral.

Results

Each agenda issue was coded and various categories have emerged from the data when Twitter content was examined. Afterwards, the cooked data were analyzed using the IBM SPSS 20 program with the percentage, frequency, and mean statistical analysis techniques. A framework was designed, as illustrated in Figure 1, to address the research questions. In Figure 1, the paths b and h show the agenda-setting effects, the paths a and g refer to the cross-sectional effects of the online newspapers on perceived media salience, path d denotes the causal influence of the online newspapers on the perceived media salience, path e represents the autoregressive (Matthes, 2008). Table 1 presents descriptive statistics about both online newspapers and Twitter.

Table 1. Issue frequency and percentages

| Issue | Time 1 (n=2266) | | Time 2 (n=18508) | | Time 3 (n=13323) | | Time 4 (n=3890) | |
|---------------------------------|--------------------|----------|---------------------|--------|---------------------|----------|--------------------|--------|
| | Twitter | News. | Twitter | News. | Twitter | News. | Twitter | News. |
| | N (%) | N (%) | N (%) | N (%) | N (%) | N (%) | N (%) | N (%) |
| Politics | 8(0,4) | 7(7,9) | 578(3,1) | 11(10) | 456(3,5) | 5(4,1) | 126(3,3) | 0(0) |
| Economy/business | 20(0,9) | 2(2,2) | 60(0,3) | 7(6,4) | 98(0,7) | 5(4,1) | 16(0,4) | 2(4) |
| Culture and Arts | 2(0,1) | 1(1,1) | 30(0,2) | 0(0) | 24(0,2) | 3(2,4) | 14(0,4) | 0(0) |
| Social Issues | 6(0,3) | 2(2,2) | 774(4,2) | 4(3,6) | 304(2,3) | 7(5,7) | 112(2,9) | 3(6) |
| Crime/Violence | 0(0) | 4(4,5) | 238(1,3) | 9(8,2) | 138(1) | 4(3,3) | 34(0,9) | 1(2) |
| Environment, Weather and Energy | 2(0,1) | 1(1,1) | 1412(7,7) | 1(0,9) | 378(2,9) | 2(2,16) | 14(0,4) | 2(4) |
| Race and Ethnic Affairs | 5(0,2) | 5(5,6) | 644(3,5) | 7(6,4) | 312(2,4) | 15(12,2) | 94(2,4) | 2(4) |
| Education and Technology | 2(0,1) | 1(1,1) | 94(0,5) | 4(3,6) | 96(0,7) | 3(2,4) | 36(0,9) | 2(4) |
| Health care | 0(0) | 0(0) | 162(0,9) | 1(0,9) | 88(0,7) | 0(0) | 12(0,3) | 0(0) |
| Entertainment/Sports | 32(1,5) | 3(3,4) | 922(5) | 8(7,3) | 644(4,9) | 15(12,2) | 458(11,9) | 4(8) |
| Religion/Spirituality | 2090(96) | 63(70,8) | 13162(71,5) | 55(50) | 10510(79,6) | 59(48) | 2774(72,2) | 33(66) |
| Military and defense | 2(0,1) | 0(0) | 292(1,6) | 3(2,7) | 114(0,9) | 5(4,1) | 52(1,4) | 1(2) |
| Other | 8(0,4) | 0(0) | 30(0,2) | 0(0) | 38(0,3) | 0(0) | 98(2,6) | 0(0) |

Note: The values represent the frequency of the 266th papal election agenda-related tweets. The values in the parentheses show the percentage of the agenda values within each time period.

Results of Cross-Lagged Correlations

The Rozelle-Campbell baseline is “the level of correlation to be expected on the basis of the autocorrelations and synchronous correlations alone” (Lopez-Escobar, et al., 1998:322). Cross-lagged correlations are a developed technique within the agenda-setting studies for exploring the similarity between X and Y of causal relationships using time series correlational data shown in Figure 2 (Shen, 2015; Güntert & Wehner, 2015; Latvala, et al. 2014; Dunn, 2009; Sweetser et al., 2008; Kinnunen, et al. 2008; Lee et al., 2005; Burns, et al. 2003; Kivimäki, et al. 2000).

The formula for computing the Rozelle-Campbell baseline is:

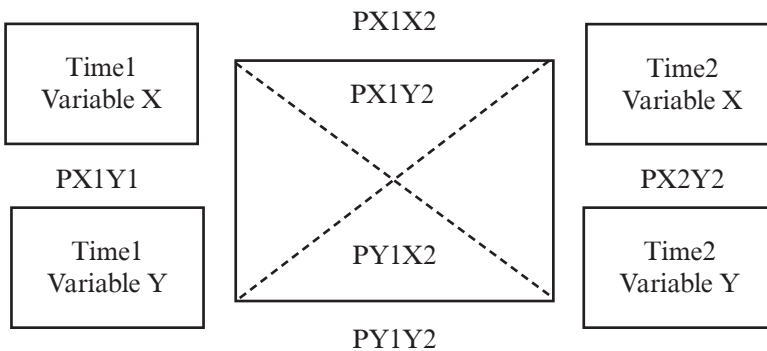
$$[(PX1Y1 + PX2Y2)/2] / [(PX1X2)^2 + (PY1Y2)^2 / 2]^{1/2}$$

The Rozelle-Campbell (1969) baseline statistic, which is computed from the other four correlations present in two variable cross-lags, was used to determine the significance of the cross-lagged correlation results. This baseline is being calculated with autocorrelations and the synchronous correlations to set a threshold and then

compares them with the cross-correlations (Lopez- Escobar, Llamas, McCombs & Lennon, 1998; Dunn, 2005).

The cross-correlations for both agenda of online newspapers to Twitter (PX1Y2) and Twitter to online newspapers (PY1X2) must exceed the Rozelle-Campbell baseline in order for researchers to conclude that there is a mutual influence between agendas. If the cross-correlations for Twitter agenda at Time 1 and online newspapers agenda at Time 2 (PY1X2) get above the baseline and the counterpart do not, this would suggest the influence of the Twitter agenda on the online newspapers agenda and vice versa. There is, however, a caveat to this analysis.

Figure 2. Cross-Lagged Correlational Analysis



According to some studies, researchers could only conclude that there is a clear intermedia agenda-setting effect if the autocorrelations in the analysis of interest fall below the baseline statistic (Dunn, 2005; Tedesco, 2005; Kushin 2010; Melek, 2015). Because, in the condition where the autocorrelation of the hypothesized effect variable is above the baseline, that indicates that the discussed variable didn't go through enough change for the hypothesized causal variable to have caused the change over time. This is considered to be a more conservative test of significance compared to other intermedia agenda-setting studies in which less conservative test of significance was accepted. Because in a fragmented media landscape like today there could be a third variable which might impact both variables presented on the panel, establishing a threshold would lead researchers to take that possible third variable into consideration and consequently avoid Type I error resulting in false positive (Dunn, 2005; Tedesco, 2005; Kushin 2010; Melek, 2015). This test of significance is considered to be a more conservative procedure compared to other intermedia agenda-setting studies in which less conservative procedure is accepted (e.g., Lee, Lancendorfer, Lee, 2005; Lopez-Escobar, Llamas, McCombs & Lennon, 1998; Roberts & McCombs, 1994). These studies determine that intermedia agenda-setting influence exists if the cross-correlation of the causal variable surpasses the baseline regardless of the effect variable's autocorrelation statistic. This very test of significance will be used in this study as well since there are quite a few number of international media outlets included in the sample of the newspapers.

Table 2. Cross-Correlational Time Series Analysis Results for the Issues

| T1 | | Twitter | | | | Newspapers | | | |
|------------|----|---------|------|--------|--------|------------|--------|--------|-------|
| | | T2 | T3 | T4 | N1 | N2 | N3 | N4 | |
| Twitter | T1 | 1 | ,319 | ,508 | ,761** | ,631* | ,600* | ,807** | ,659* |
| | T2 | | 1 | ,922** | ,503 | ,463 | ,404 | ,544 | ,650* |
| | T3 | | | 1 | ,652* | ,728** | ,699* | ,682* | ,600* |
| | T4 | | | | 1 | ,712** | ,759** | ,887** | ,596* |
| Newspapers | N1 | | | | | 1 | ,890** | ,714** | ,392 |
| | N2 | | | | | | 1 | ,693* | ,401 |
| | N3 | | | | | | | 1 | ,668* |
| | N4 | | | | | | | | 1 |

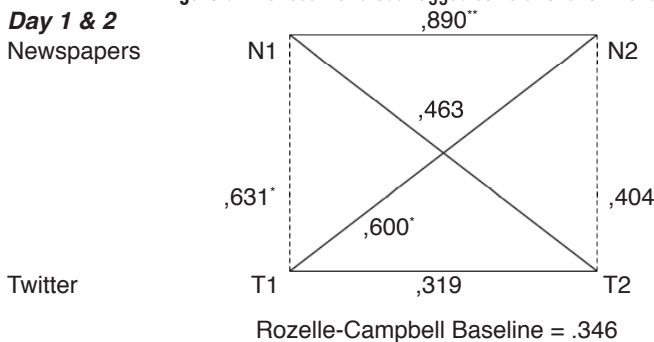
$p < .05$. ** $p < .01$.

This study chose cross-lagged correlations analysis for the issue agendas of the newspapers and Twitter with the Rozelle-Campbell baseline as its statistical analysis model. The cross-correlational results for each of the 13 issues in the analysis are shown in Tables 2. Three cross-lagged correlation analyses can be performed: Time 1- Time 2, Time 2- Time 3, and Time 3- Time 4. Time 1 is March 12, Time 2 is March 13, Time 3 is March 14 and Time 4 is March 15. Results of the cross-lagged correlational analysis for the theme agendas of newspapers stories and tweets are showed in Figure 3.

Between Day Intermedia Agenda-Setting

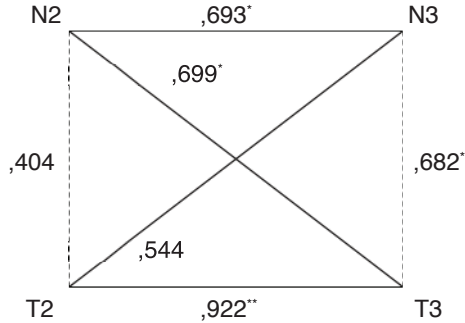
All three hypotheses predicted a mutual intermedia agenda-setting effect between the online version of international newspapers and Twitter from Time 1 to Time 4. Each hypothesis was examined by a panel. The result of the analysis could be seen in Figure 3 which shows all of the between day panels resulted in cross-correlations demonstrating clear agenda-setting between online newspapers and Twitter.

Figure 3. The result of cross-lagged correlations for the issue agenda.



Day 2 & 3

Newspapers

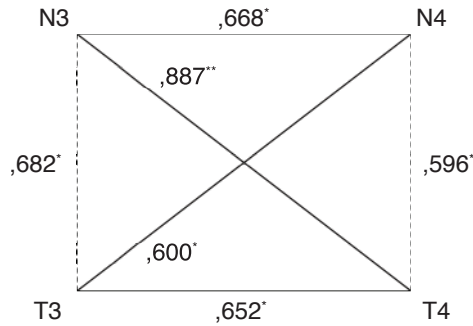


Twitter

Rozelle-Campbell Baseline = .443

Day 3 & 4

Newspapers



Twitter

Rozelle-Campbell Baseline = .422

As Figure 3 shows, evidence of intermedia agenda-setting effect was found all of the three panels. On the Day 1 & 2, the cross-correlations both from newspapers to Twitter ($r = .463$, $p = \text{NS}$) and Twitter to newspapers ($r = .600$, $p < .05$) were above the Rozelle-Campbell baseline (.346). Therefore, this indicates a clear intermedia agenda-setting influence.

Day 2 & 3 panel demonstrates significant cross-correlations between mainstream media and social media. The cross-correlation from newspapers to Twitter ($r = .699$, $p < .05$) and Twitter to newspapers ($r = .544$, $p = \text{NS}$) are both above the baseline (.443) indicating bi-directional intermedia agenda-setting effect between media.

Day 3 & 4 panel demonstrates significant cross-correlations between mainstream media and social media as well. The cross-correlation from newspapers to Twitter ($r = .887$, $p < .01$) and Twitter to newspapers ($r = .600$, $p < .05$) are both very strong and above the baseline statistics (.422) which indicates a clear intermedia agenda-setting between social media and news media.

In conclusion, the results supported the hypotheses; H1, H2, and H3. Therefore, the

first three hypotheses regarding the first-level agenda-setting effect were accepted.

Second-level Agenda-Setting Findings

In terms of the second-level agenda-setting, this study was concerned with the way the attribution of the Papal election on news media effects the perception of public opinion and vice versa. The salience of the attributes was measured for both tweets and newspapers with three separate measures: positive emotions, negative emotions, and overall effect. Table 3 shows the issue frequency for the second-level agenda-setting on Twitter. The top three positive issues on Twitter were religion/spirituality (93,7%, n=14404), entertainment/sports (2,1%, n=318), and the politics (1,7%, n=264). As for the newspapers, the top three positive issues receiving the most attention were religion/spirituality (84%, n=79), the politics (7,4%, n=7), and education and technology (4,3%, n=4). Both Twitter and the newspapers gave little attention to the arts and culture, other, economy/business, education and technology, and health care. The significant correlation for similarity was found in the tone of all tweets and the news coverage, indicating the positive versions were considered to be significantly more positive than the negative and neutral tones.

Table 3. Second-level Agenda-Setting Findings

| Affective dimension | Twitter | | | | | | Newspapers | | | | | |
|---------------------------------|----------|--------|----------|--------|---------|--------|------------|-------|----------|--------|---------|--------|
| | Positive | | Negative | | Neutral | | Positive | | Negative | | Neutral | |
| | n | % | n | % | n | % | n | % | n | % | n | % |
| Politics | 264 | (1,7) | 208 | (3,8) | 696 | (4,1) | 7 | (7,4) | 5 | (6,6) | 11 | (5,4) |
| Economy/business | 46 | (0,3) | 96 | (1,8) | 52 | (0,3) | 1 | (1,1) | 4 | (5,3) | 11 | (5,4) |
| Culture and Arts | 18 | (0,1) | 12 | (0,2) | 40 | (0,2) | 1 | (1,1) | 0 | (0) | 3 | (1,5) |
| Social Issues | 160 | (1) | 1024 | (18,8) | 12 | (0,1) | 0 | (0) | 15 | (19,7) | 1 | (0,5) |
| Crime/Violence | 20 | (0,1) | 390 | (7,2) | 0 | (0) | 0 | (0) | 16 | (21,1) | 2 | (1) |
| Environment, Weather and Energy | 78 | (0,5) | 84 | (1,5) | 1644 | (9,8) | 2 | (2,1) | 3 | (3,9) | 1 | (0,5) |
| Race and Ethnic Affairs | 7 | (0) | 692 | (12,7) | 356 | (2,1) | 0 | (0) | 1 | (1,3) | 28 | (13,9) |
| Education and Technology | 56 | (0,4) | 16 | (0,3) | 156 | (0,9) | 4 | (4,3) | 0 | (0) | 6 | (3) |
| Health care | 0 | (0) | 188 | (3,5) | 74 | (0,4) | 0 | (0) | 1 | (1,3) | 0 | (0) |
| Entertainment/Sports | 318 | (2,1) | 86 | (1,6) | 1652 | (9,8) | 0 | (0) | 0 | (0) | 30 | (14,9) |
| Religion/Spirituality | 14404 | (93,7) | 2182 | (40,2) | 11950 | (71,1) | 79 | (84) | 26 | (34,2) | 105 | (52) |
| Military and defense | 6 | (0) | 394 | (7,3) | 60 | (0,4) | 0 | (0) | 5 | (6,6) | 4 | (2) |
| Other | 0 | (0) | 62 | (1,1) | 112 | (0,7) | 0 | (0) | 0 | (0) | 0 | (0) |
| Total | 15377 | | 5434 | | 16804 | | 94 | | 76 | | 202 | |

Note: The values represent the frequency of the 266th papal election agenda-related tweets and news stories. The values in the parentheses show the percentage of the agenda values within each time period.

As for the second part of RQ 5, the correlation results showed that there was a medium correlation between the mainstream news media substantive attribute agenda and Twitter substantive attribute agenda at 4 time periods.

Pearson's correlation coefficient between the positive tones of the Twitter and the newspapers is ($r = .996, p < .001$), the negative tones is ($r = .864, p < .001$), and the neutral tones is ($r = .950, p < .001$). The role of need for orientation (NFO) has a significant moderating effect on the second-level agenda-setting effects of the mainstream news and tweets. The need for orientation (NFO) is a core concept in agenda-setting research, and its impact on media effects has been mainly investigated in previous studies (Weaver, 1980; Chaffee & Schleuder, 1986; Hugel, et al., 1989; Matthes, 2008; McCombs & Weaver, 1973; Camaj, 2014; Lee, 2015). The role of need for orientation (NFO) has statistically significant indirect effects on the second-level agenda-setting effects of the mainstream news and tweets. McCombs & Weaver (1973) mentioned the concept of "need for orientation," which describes individual differences in the desire for orienting cues and background information.

The data supported the H4 for substantive attributes and the H4 was accepted as well. The study found a highly significant correlation for similarity between the mainstream news media content and the content of Twitter in terms of their tone. This demonstrates that there was a significant second-level agenda-setting relationship between the mainstream media and Twitter.

Conclusion

The purpose of this study was to investigate the influence of Twitter and international online mainstream media on one another during the coverage of the 266th Papal election. Supporting the hypotheses, the findings of this study provided evidence for both the first and second-level agenda-setting influence.

Also known as the Supreme Pontiff, the Bishop of Rome, the Vicar of Jesus Christ, and the Servant of the servants of God, the Pope is not just the leader of more than one billion Roman Catholics worldwide, but also, plays an active role in economy, politics, military, civil, and cultural life of the Christians across the world. The resignation of one of the most powerful Christian figure, Pope Benedict XVI, in February 2013, had repercussions all over the world amongst 1.2 billion Roman Catholics and even non-Catholics, as usually, the successor comes into power after his predecessor's death. In any event, in the absence of a Pope, the Papacy's 2,000-year-old traditional convention dictates that more than 120 cardinals must gather in Rome to elect a new Pope. As a result, the unusual resignation of the Pope became a worldwide trending topic on Twitter.

There is no doubt that Twitter is a non-censored alternative news source for its users. There are a large number of people who use social networks with friends and family, to discover what's going on in the world. Twitter's users share ideas and values, discuss a variety of topics and consequently attract people's attention. Born in Argentina, Pope Francis became one of that attractions on Twitter trending topics with hashtags "Jorge Mario Bergoglio", "New Pope", "NouveauPape", "Papa", "Papa Francisco", "Pope Francis", "Pope", "Rome", "Saint-Pierre", "St Peter's Square", "Vatican", "Vaticano"

etc., between March 12 and March 15, 2013. For this particular research, all of the “trending topics” on Twitter were collected from 35 countries during Papal election.

Generally, agenda-setting studies are defined in terms of four key concepts: media agenda, public agenda, public, and NFO. The role of NFO for second-level agenda setting is still unclear. In today, agenda-setting studies focus how social media impacts people’s perception of the most important issues, knowledge and attitude. That is the reason why the first and second-level agenda setting influences between mainstream media and social media were analyzed to determine that very relationship. Different cultural/religious activities and rituals were considered, as well as, international and geographical differences. Also, in this study, all the tweet posts were given equal value. For example, a 140-word tweet carried the same weight as an online newspaper article. According to the results, at the time when the study was conducted between 12 March and 15 March, there was a clear intermedia agenda-setting influence between international newspapers and Twitter in both directions. This proves the existence of a new type of active public in the era of social networking which certainly has a growing influence on news media. Especially, having set the agenda of news media in a specific case such as Papal election, Twitter has a significant potential to set the agenda of media for other cases in the near future. In conclusion, this study proves that Twitter can be considered an agenda-setter in the world of “new” media. Consequently, traditional agenda-setting theory must be reevaluated and updated in the new media order. On the other hand, the results also show that the mainstream media is still influential on public perception in terms of the attribution of a certain issue.

Limitations and Future Research

This study has limitations in generalizability. The strong agenda-setting influence occurred on a specific case for this particular research. Therefore, it is still not clear if agenda-setting effect would occur between mainstream media and social media during a more regular time outside an election or a social movement. Also, this study was conducted with only the online version of international newspapers and Twitter. Therefore, in order to reflect the entire spectrum of media, the future agenda-setting study between mainstream media and social media should include television and radio stations, as well as other social media outlets, such as Facebook etc.

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