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We Love or Hate When Celebrities Speak Up about Climate Change: Receptivity to Celebrity Involvement in Environmental Campaigns

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This study investigates public receptivity to celebrity's climate change advocacy on YouTube through a semantic network analysis. The results of this study suggest that the YouTube video generated a number of viewers' responses. Celebrity endorsement not only leaded public voices on climate change issue, but also their opinions on the celebrity endorser. This study found that most of viewers were polarized in their judgment and attitude toward the celebrity advocate either positively or negatively. This study offers an exploratory examination of the perceived star power and the role of celebrities as spokespersons for social causes. This study contributes to the theoretical foundation of the role of celebrity advocacy using social media. In addition, this study offers methodological insights into how to detect public perceptions and attitudes toward celebrity endorsement of social causes by analyzing public comments.

Keywords: climate change, social media, celebrity advocacy, semantic network analysis, environmental campaigns

Introduction

Given the growing natural climate variability and the need for public engagement on global climate management, diverse social actors advocate for climate action to mobilize public action and engagement. Celebrities become increasingly involved in climate change advocacy as spokespersons and endorsers (Boykoff & Goodman, 2009). Scholars have begun to study the role of celebrities in championing climate change mitigation (Corner & Pels, 2003; Street, 2004). The previous debate on the role of celebrities in climate advocacy generated two competing positions. An optimistic view believes that celebrity engagement leads to greater public awareness, participation, and discussion on the politics of climate change and it has positive effects on shaping pro-environmental attitudes and behaviors. On the contrary, a skeptical view

argues that celebrity interventions for climate change adaptation can overshadow the essential issue by distracting the public attention (e.g., Weiskel, 2005). The camp also points out that celebrity involvement is rather effective in strengthening the celebrity images or green persona than attitudinal and behavioral changes (Boykoff & Goodman, 2009).

In the past decade, celebrities have increasingly employing social media to voice climate change issues. On social media, celebrities interact with their fans on a daily basis and they spread messages about their lifestyle and values, which are often environmentally-oriented (Alexander, 2013). However, little is known about the role of celebrities' climate change advocacy using social media and how celebrity advocacy is received by audiences. Moreover, very few studies have considered YouTube videos that address the climate change issue although YouTube is an effective social media channel to diffuse social issues globally (Park, Lim & Park, 2015).

To fill this research gap, this study investigates the role of a popular celebrity's climate advocacy on YouTube by analyzing public comments using a semantic network analysis. More specifically, this study addresses an unanswered question of "does celebrity advocacy for climate action on YouTube lead the public attention and comments which is relevant to addressing climate change and how does the public perceive celebrity involvement in climate advocacy?" A case of Leonardo DiCaprio's 2014 UN Climate Summit speech delivered on YouTube, the most popular video in terms of the number of views under the climate change fact category, was selected for this study. This study not only contributes to the theoretical foundation of the role of celebrity advocacy, but also provides methodological insights into analyzing textual data on social media.

The Role of Celebrities in Environmental Advocacy

Scholars on media effects, social movement, and cultural politics have conceptualized celebrity activists. Celebrity activists have been conceptualized in various ways. Street's (2004) definition of 'celebrity politicians' has been widely used among scholars. He provides two typologies of celebrity politicians: The first type of celebrity politician as "the traditional politician – the legitimately elected representative (or the one who aspires to be so) – who engages with the world of popular culture in order to enhance or advance their pre-established political functions and goals" (Street, 2004; p. 238). The second type of celebrity politician refers to an 'entertainer who pronounces on politics and claims the right to represent people and causes, but who does so without seeking or acquiring elected office' (Street, 2004; p. 248). McCurdy (2013) extended his definition and provides a general categories of celebrity activists in relation to their social status: An entertainer or other prominent media figure who uses their notorious status to undertake activism and an individual who becomes a celebrity by gaining a publicity as a result of an activism.

Other scholars have further conceptualized celebrity activist more in detail. For instance, Boykoff and Goodman (2009) provide six main categories of celebrity activist types in terms of their occupation: celebrity business people (e.g., Richard Branson), celebrity musicians (e.g.,

Sheryl Crow, Coldplay), celebrity politicians (e.g., Arnold Schwarzenegger), celebrity actors (e.g., Leonardo DiCaprio), celebrity athletes/sports figures (e.g., David James), and celebrity public intellectuals (e.g., Michael Crichton, George Monbiot).

On the other hand, t'Hart and Tindall (2009) defined celebrity activists in terms of their engagement in politics, suggesting four main types: celebrity advocates (e.g., Bono, Angelina Jolie), celebrity endorsers (e.g., Oprah Winfrey, members of the royal family), celebrity politicians (e.g., Arnold Schwarzenegger, Ronald Reagan), and politicians turned celebrity. In recent days, 'eco-celebrities' or 'green celebrities' have been highlighted in the media landscape. They are characterized as celebrities who promote environmentalism in the public sphere or adopt an environmental-friendly lifestyle (White & Duram, 2012).

A key driver of celebrity activists in engaging socio-political, or environmental activism is to gain more positive reputation from the public by presenting themselves as socially conscious or responsible people (Anderson, 2011; Boykoff & Goodman, 2009). Eco-celebrities can be recognized as agents who have adopted a green lifestyle (White & Duram, 2012).

From the previous literature in media and cultural studies, celebrities have potential in promoting social causes such as health and environmental issues (t'Hart & Tindall, 2009). Celebrities are influential in increasing public attention, interests, and shaping behaviors. Fans are likely to imitate or adopt celebrities' beliefs, values, and behaviors to maintain a desired relationship with them (Brown, Basil, & Bocarnea, 2003; Kelman, 1961). Celebrity spokespersons can lead to greater public awareness, participation, discussion on climate change, and promote pro-environmental attitudes and behaviors to mitigate climate change (Boykoff & Goodman, 2009). However, a skeptical view argues overshadow effects in which celebrity involvement in climate advocacy may only expand their celebrity status while the issue become superficial (Weiskel, 2005).

Social Media Use of Celebrities and its potential for Environmental Advocacy

Traditional media have been biased in covering environmental issues because of journalists' professional norms of objectivity and balance and the government intervention (Boykoff & Boykoff, 2007; Thrall et al., 2008). There is a concern that the number of news stories addressing scientific topics has gradually declined, whereas the stories of political topics have expanded in major newspapers (Kirilenko & Stepchenkova, 2012). Internet serves as an alternative news outlets and advocacy arena where individuals easily voice their thoughts and opinions and share them with others. This implies the necessity of considering popular social media as an alternative public discourse platform in the context of environmental communication. Though existing studies have more paid attention on how celebrity environmental involvement is represented in mainstream media, few studies have examined this phenomenon in new media settings such as the internet and social media (Thrall et al., 2008).

Scholars have highlighted the advantage of the internet, particularly for social media, in issue dissemination and opinion formation in socio-political issues (Hsu, Park, & Park, 2013). With the ease of use, the advantage of high mobility, and the ability to reach a wide number of audiences, social media can serve as alternative communication channels against mainstream media and a new public discourse arena in environmental communication contexts. Moreover, interactive media technologies enable to create richer storytelling based on everyday life and this is useful in mobilizing diverse individuals (Smith, 2005).

Previous studies have noted the potential of social media in diffusing social issues and encouraging public engagement (Drezner & Farrell, 2008; Tumasjan et al., 2010). Among them, in particular, YouTube is useful to discuss newsworthy events of public interest (Park, Lim & Park, 2015). Scholars in the field of environmental managements have drawn attention to influential news providers or brokers who disclose, represent, and disseminate environment-related information. For instance, Boykoff (2011) discovered that advocacy groups are more influential in shaping the attitudes of audiences rather than news media. If celebrities use social media, the potential of advocacy can be multiplied.

The technological advantage of social media due to its high capability of social networking with the public provides celebrities with powerful tools to not only disseminate ideas, but also to build, manage, and strengthen their positive image. Indeed, by utilizing social media celebrities can effectively attract public attention and mobilize collective action on social issues (Alexander, 2013). On the other hand, considering that individuals increasingly seek personalized and entertainment-oriented information on the internet, celebrities' advocacy via social media has potential as information resources for a wide range of individuals (Thrall et al., 2008). The discussions above imply that if celebrities employ social media to promote pro-environmental behaviors and mobilize the public to support the value of environmentalism, the synergy effect is likely to occur.

While previous studies have emphasized the potential role of YouTube videos in influencing public views on climate change (e.g., Boykoff & Boykoff, 2007), little empirical research has been conducted to support or reject this argument. This study, thus, offers an exploratory examination of how celebrity's climate advocacy delivered by YouTube shapes viewers' dialogue around climate change and public perception toward a celebrity as a climate messenger.

The Current Study

This study investigates the role of celebrity advocacy in generating meaningful discussion on climate change issues and public receptivity on celebrity endorsement by mapping public comments on YouTube. A case of Leonardo DiCaprio's 2014 UN Climate Summit Speech delivered on YouTube was selected for this study. In this regard, two research questions are proposed:

RQ1: What are the main concerns and themes addressed in public comments on celebrity climate advocacy via YouTube?

RQ2: How does the public perceive celebrity spokespersons on climate change?

Method

Data Collection.

This study selected Leonardo DiCaprio's 2014 UN Climate summit speech posted on YouTube as this case is the most popular celebrity activity in promoting climate change action and received extensive public attention in terms of the number of comments as of March, 2015. Leonardo DiCaprio is a world-renowned celebrity advocate for climate change. The video was published on Sep 23, 2014 by the United Nations (UN). There were 2,008 comments about the video clip with 1,910,867 video views, 9,937 likes, and 348 unlikes at the time of data collection on March, 2015.

The most recent set of 1,000 comments posted to the video of Leonardo DiCaprio's 2014 UN Climate Summit speech (https://www.youtube.com/watch?v=vTyLSr_VCcg) was downloaded using the API-based analysis program Webometric Analyst 2.0 (Thelwall, 2012). A final sample yields 972 valid comments generated by 900 users. Among the 972 comments, the top 100 frequently used key words that appeared more than 29 times were identified by employing TextSTAT (Hüning, 2005).

Analysis.

Semantic Network Analysis of Comments.

To identify the key concerns and themes in the viewers' comments toward the celebrity advocacy, the semantic network analysis is applied. A semantic network analysis was conducted for 972 comments and the top 100 key words by employing *Full Text*. *Full Text* is a content analysis software package based on network algorithms for classifying frequently used keywords and co-occurrences from large blocks of text (Leydesdorff & Hellsten, 2006). For instance, the words *mass* and *communication* form the concept of "mass communication" when combined together in the same sentence (Chung & Park, 2010). The method reflects a meaning-centered network approach, which is useful to reveal the relationship between textual components in communication contents (Hsu, Park & Park, 2013). A CONCOR (CONvergence of iterated CORrelations) analysis was also conducted to reveal key themes and framing patterns in the viewers' comments. This technique is particularly useful for identifying relevant sub-topics from large amounts of texts (Diesner & Carley, 2011).

Results

RQ1 addresses the main concerns and themes addressed in YouTube viewers' responses to the celebrity advocacy. Table 1 shows the top 10 frequently used key words in the viewers'

comments and Figure 1 represents the semantic network of the comments. In the network map, node size refers to word frequency such that the bigger the node, the more frequent the keyword. The line between two keywords indicates their connections, suggesting co-occurrences.

Table 1

The List of Top Keywords

Words	Frequency
You	369
I	342
We	321
He	298
Climate	238
All	227
Change	209
They	167
Our	154
People	154
His	149
World	143
DiCaprio	141
Can	133
Leonardo	129
Do	125
If	120
Who	116
More	110
Leo	101
Their	100
Like	97
Fuck	95
Us	94
How	92
No	91
Speech	91
Your	88
Out	86
Good	81
Up	80
Because	78
Them	78
Make	70
Only	68
Earth	66
Now	66
Get	65
Global	64
There	64
Planet	63
Great	61
Know	59
Should	59
Carbon	57

My	55
Need	55
Peace	53
Much	52
See	52
Time	52
Many	51
Man	50
Warming	50
Money	49
Oscar	49
Energy	48
Give	47
Most	47
Way	47
Why	47
Well	45
Me	44
Messenger	44
Stop	44
Really	43
Take	43
Years	42
Look	41
Oil	41
Other	41
Think	41
Actor	40
Shit	40
Him	39
Power	38
Very	38
Real	37
Over	36
Right	36
Say	36
Something	36
Go	35
Private	35
Own	34
Science	34
Still	34
Believe	33
Everyone	33
Made	33
Those	33
Want	33
Save	32
Off	31
2014	30
Going	30
Nothing	30
Please	30
Things	30
Use	30

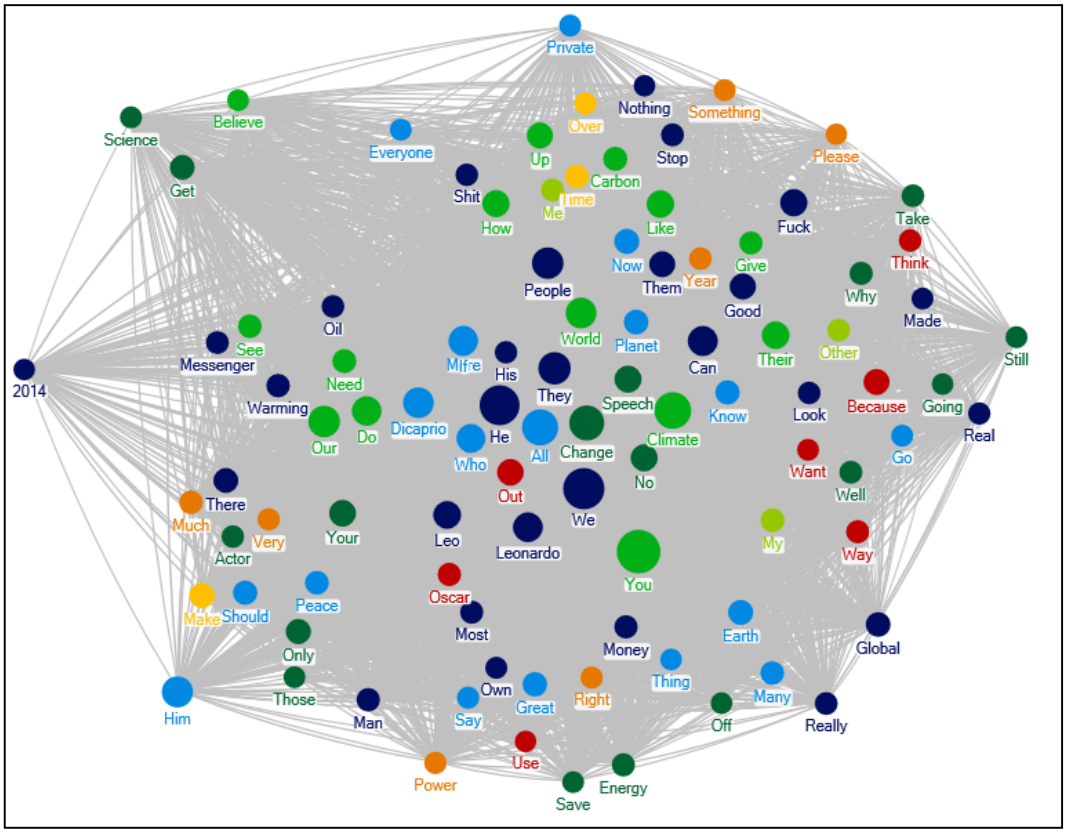

Figure 1. The Semantic Network of Comments on Celebrity Climate Advocacy

According to the semantic network analysis, terms, referring to the climate change issue and the natural and human environment such as “climate” (238), “change” (209), “world’ (143), “earth” (66), “global” (64), “planet” (63), “warming” (50) were frequently used. Collective action-oriented terms such as “we” (321), “our” (154), “people” (154), and “everyone” (33) were also frequently observed.

To reveal the viewers’ responses to the climate change issue, an eco-network of the climate change issue was constructed (see Figure 2). The ego-network displays which words were connected to the climate change-related terms (e.g., “climate,” “change,” “global,” and “warming.”

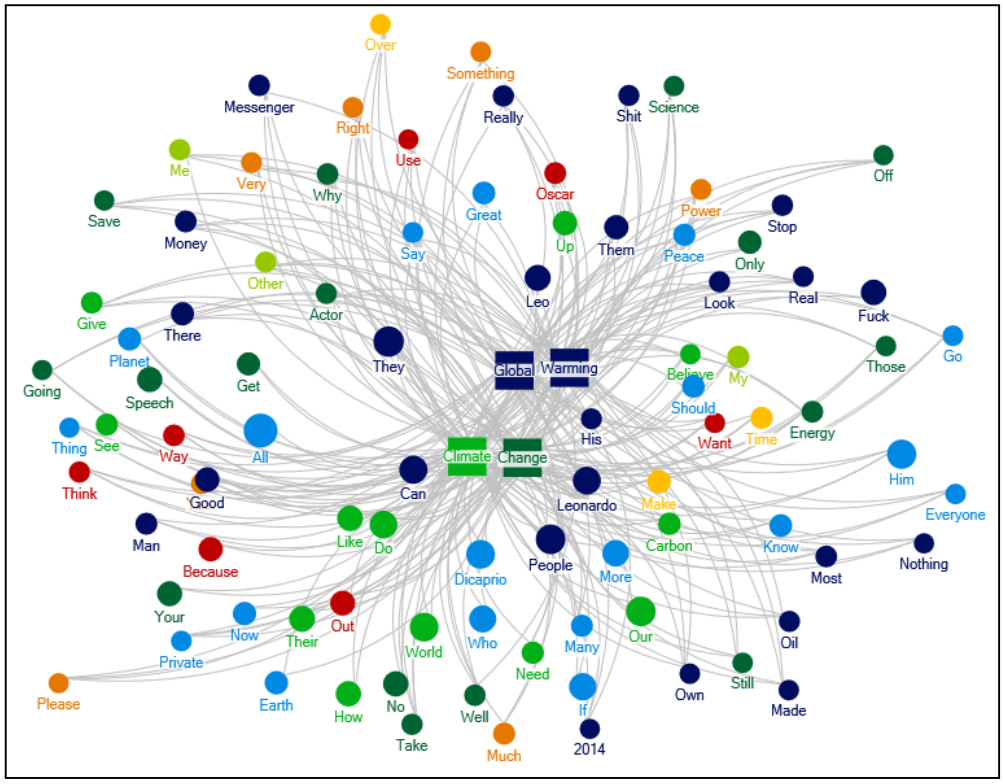

Figure 2. The Ego Network of "Climate Change" and "Global Warming"

According to the eco-network of climate change, terms, calling DiCaprio (e.g., "Leo," "Leonardo," "DiCaprio," and "him") and words, referring to his personal characteristics and activities (e.g., "actor," "Oscar," and "look") were associated to the concepts of climate change. Science-oriented issues such as "science," "energy" and "carbon" were often connected to the concepts of climate change. The terms, referring to practical concerns such as "money," "time," and "way" were also linked to the focal notes.

RQ2 addresses how the public perceives celebrity climate change spokespersons. To reveal the viewers' receptivity to the celebrity advocacy and attitude toward Leonardo DiCaprio as a UN messenger of Peace, the eco-network of the word Leonardo DiCaprio was constructed (see Figure 3). The ego-network displays the connection of concepts based on co-occurrence especially around his name (e.g., "Leo," "Leonardo," and "DiCaprio").

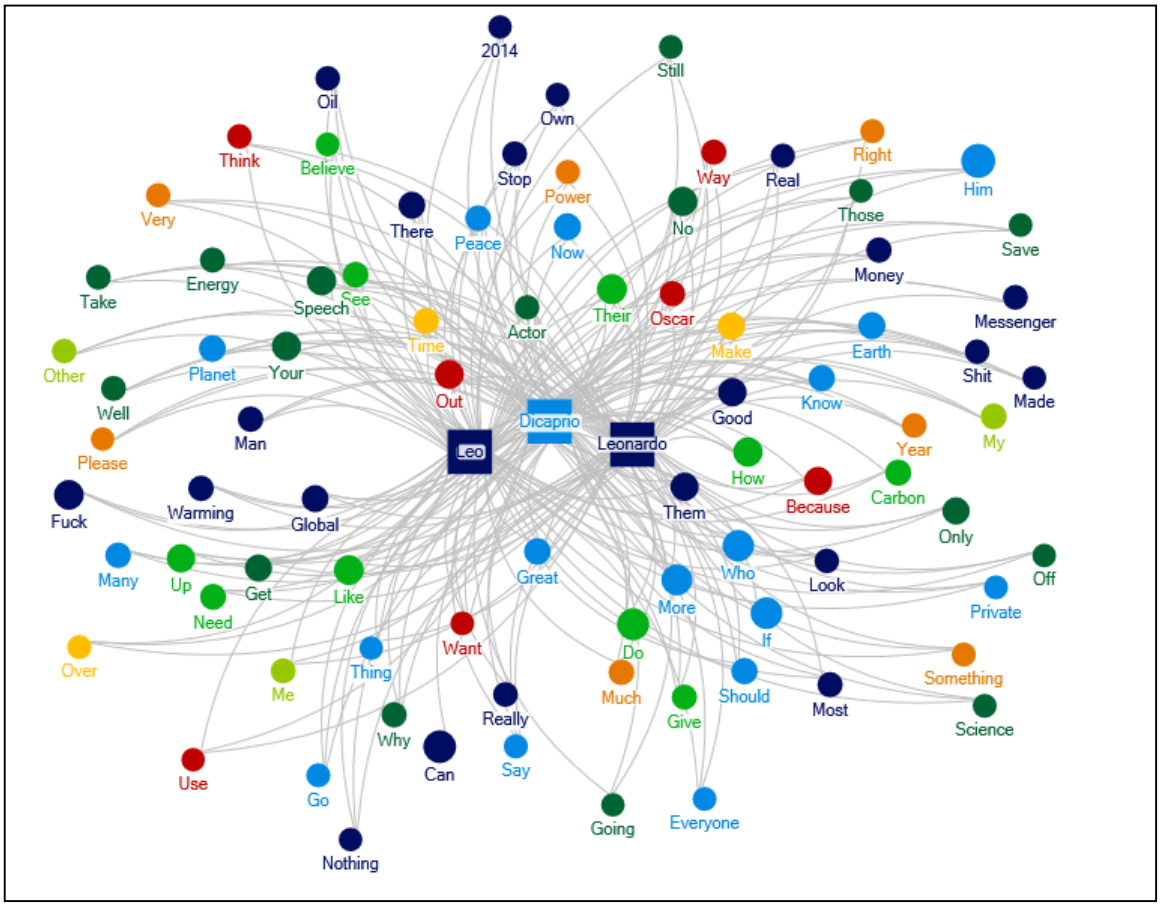

Figure 3. The Ego Network of "Leonardo DiCaprio"

The ego-network suggests that words evaluating his speech were often associated with his name. Noteworthy is that these words were polarized. They were either positive or negative. The positive words were "good," "great," and "well," and the negative words were "fuck," "shit," "nothing," "no," and "out." Not surprisingly, terms, representing his celebrity status as an actor were also connected to his name (e.g., "actor," "look," and "power").

The results of the CONCOR analysis revealed the following eight themes in public comments regarding the celebrity advocacy: "concerns on human-being, including themselves and others," "skeptics on stopping global warming," "the importance of protecting the earth and planet," "human right and power to change the policies," "need to mitigate climate change," "critical comments on celebrity advocacy who is a non-scientist," "the way DiCaprio present the issue," and "low trust on Hollywood star's advocacy."

Discussions and Conclusions

This study investigates public receptivity to celebrity's climate advocacy messages. This study also examines how the public perceives a celebrity as an environmental spokesperson by analyzing the viewers' comments to the celebrity's climate change advocacy video on YouTube through a semantic network analysis.

This study contributes to the theoretical foundation of the role of celebrity advocacy using social media (Alexander, 2013). The results of this study suggest that the celebrity endorsement generated a number of public responses over time. Celebrity climate advocacy did not only result in extensive public attention and voices on the climate change issues, but also leaded science-oriented conversations such as causes and effects of global warming. This finding implies the benefits of using celebrity spokespersons to increase awareness and lead meaningful conversation on the climate change issue. This result refutes the skeptical perspective about the role of celebrity in climate advocacy, which argues the possible unintended distraction (Boykoff & Goodman, 2009). This study also found that most viewers were polarized in their judgment and attitude toward the celebrity advocate. They perceive the celebrity source either positively or negatively. These contrasting views suggest both potential advantages and barriers in using celebrity endorsement for complex environmental issues that is in line with the contrasting view from existing studies (Corner & Pels, 2003; Street, 2004; Weiskel, 2005).

The previous literature on celebrity endorsement and involvement on social causes such as health and environmental issues has mainly focused on the effect of celebrities on rising awareness, education, as well as attitudinal and behavioral change (Hanna et al., 2018). However, there is a dearth of empirical research on perceived star power in environmental advocacy. This study offers an exploratory examination of the role of celebrities in shaping dialogue among the publics on social media and how climate advocacy delivered by a Hollywood star is perceived by audiences.

This study also offers methodological insights into how to analyze unstructured public responses on social media by adapting semantic network analysis. This computer-assisted text analysis is useful to reveal emerging topical trends, themes, and frames from a large unstructured set of social media comments. Given the nature of comments on YouTube is very short, semantic network analysis is particularly useful to detect subtle aspects of framing patterns (Kwon, Barnett, Chen, 2009). Semantic network analysis is also advantageous for exploratory studies when a priori coding scheme was not easily established due to lack of empirical studies (Rice & Danowski, 1993).

The limitation of the present study is that it only analyzed public comments to one advocacy video. This makes difficult to generalize the study results. One other limitation is that the semantic network analysis may not capture the nuanced comments of the public. Qualitative content analysis of public responses needs to be conducted in future analysis to more systemically categorize various reactions of the public.

Star power may also depend on cultural contexts. Celebrity-endorsed advertisements were more prevalent and effective in collectivistic cultures than individualistic cultures (Choi, Lee & Kim, 2005; Choi & Lewis, 2017). According to Hofstede's cultural dimensions, individuals in collectivistic cultures such as South Korea are more likely to follow group norms than those in individualistic culture as they value interdependence, well-being, and conformity (Hofstede, 1984). Like purchase behaviors of products, the effectiveness of celebrity endorsement in environmental messages on adoption of pro-environmental behavior may be different across cultures. This calls future studies on a cross-cultural analysis of public receptivity to climate campaigns and celebrity advocacy.

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