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Brand content diffusion on Social Networking Sites: Exploring the triadic relationship between the brand, the individual, and the community

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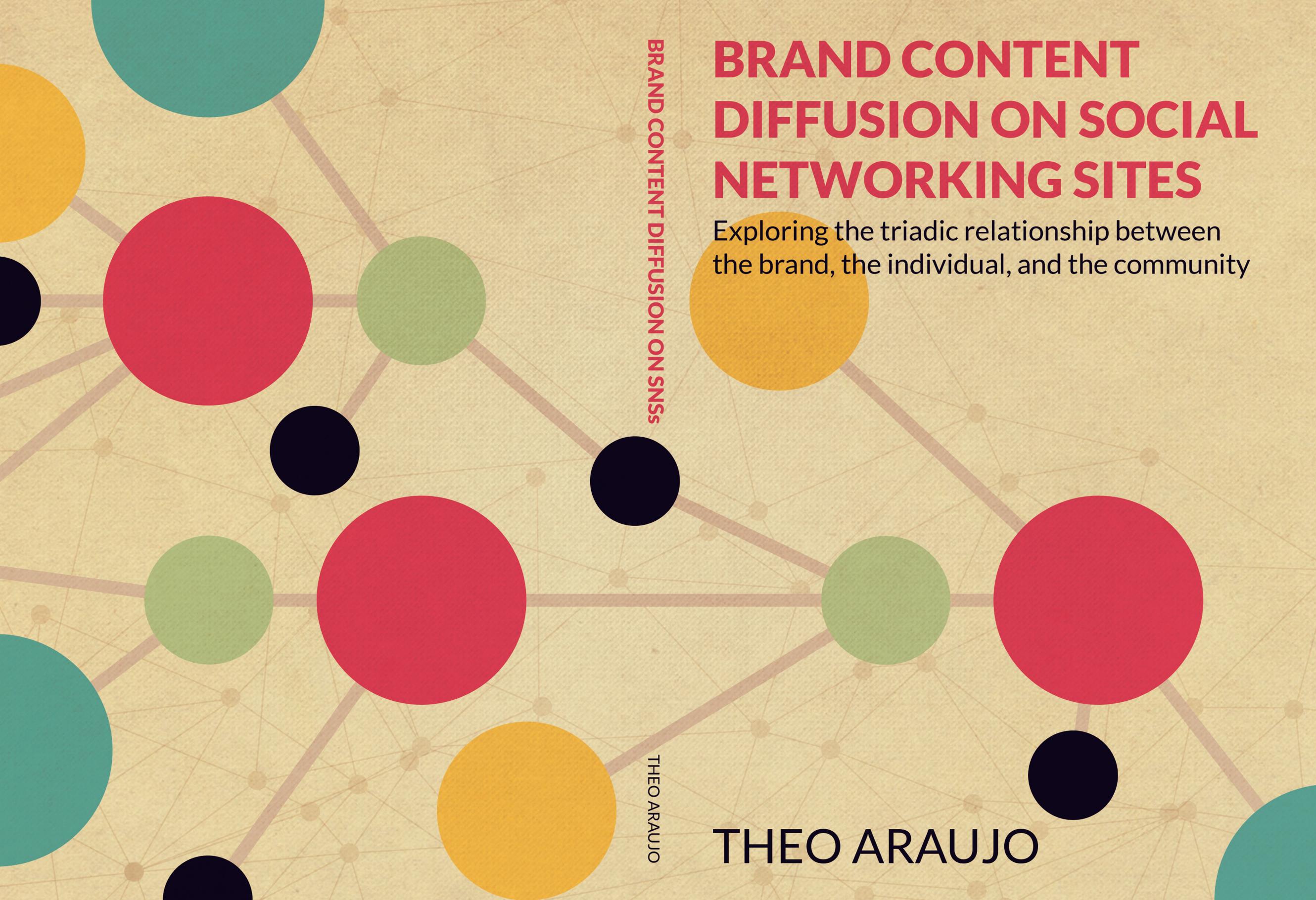
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BRAND CONTENT DIFFUSION ON SOCIAL NETWORKING SITES

Exploring the triadic relationship between
the brand, the individual, and the community

BRAND CONTENT DIFFUSION ON SNSs

THEO ARAUJO

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DIFFUSION ON SOCIAL
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Brand Content Diffusion on Social Networking Sites:
Exploring the triadic relationship between the brand,
the individual, and the community

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To Sonia, Sebastião and Alexandre

INTRODUCTION

Dissertation overview

Dissertation Overview

Social media have changed the landscape of marketing communication (Gensler, Völckner, Liu-Thompkins, & Wiertz, 2013; Hutton & Fosdick, 2011; Kaplan & Haenlein, 2010), as evidenced by the increased importance of blogs (Kozinets, De Valck, Wojnicki, & Wilner, 2010), online forums (J. Brown, Broderick, & Lee, 2007), and online consumer reviews (Willemsen, Neijens, Bronner, & de Ridder, 2011), and by the emergence of webcare as an important tool for brand reputation management (van Noort & Willemsen, 2012). Unlike traditional media, where most brand communication takes place via advertisements, social media enable consumers to be more active and take control of the communication about, and the interaction with, the brand. This is seen, for example, by how social media users not only consume brand content, but also actively contribute to it, and create it (Muntinga, Moorman, & Smit, 2011).

A case in point is the emergence of Social Networking Sites (SNSs), such as Facebook or Twitter. These websites offer a space where users can create their own profiles or establish connections with other users (Boyd & Ellison, 2007), and they are increasingly used as a source of news (Mitchel & Page, 2013) and for brand-related activities. On average, Twitter users follow on five or more brands (Schreiner, 2013) and frequently mention brands in their own messages (Jansen, Zhang, Sobel, & Chowdury, 2009; Nagy & Midha, 2014). SNS users seek not only incentives, such as promotions or rewards, but also information about brands, as well as social interaction with their favorite

brands and with the community of brand followers (Kwon, Kim, Sung, & Yoo, 2015).

The relevance of SNSs for brand communication continues to grow as the popularity of these websites increases. For example, in 2005 about 8% of the online population in the United States used SNSs. Just nine years later, 73% of all the online population, and 90% of those in the 18-29 age group, were active SNS users (Pew Research Center, 2015). Brands and companies respond to this trend by integrating SNSs into their communication strategies, including the creation and promotion of SNS profiles (Araujo & Neijens, 2012). When publishing content on SNSs, brands often provide information about the company or its products (Kwon & Sung, 2011), and frequently adopt strategies that aim to establish a dialogue with stakeholders (Rybalko & Seltzer, 2010). Users who subscribe to receive content from brands on SNSs not only read the content or write comments about it, but also have the ability to pass it along to their own friends or contacts on the SNS via mechanisms of information diffusion such as retweeting (on Twitter) or sharing (on Facebook).

When retweeting or sharing a message, a user generally passes the complete message along to his or her network of contacts on the SNS. This process usually happens in a public and non-targeted manner. In other words, the user who retweets or shares the brand message usually passes it along to all of his or her contacts, with the message also being highlighted on the user's own profile page on the SNS. Retweeting emerged almost spontaneously on Twitter, with users manually copying messages written by others and indicating that they were retweets (Boyd, Golder, & Lotan, 2010). Twitter then turned this into an official process, including it as an option on its own user interface. Facebook deployed the option for sharing content, similar to retweeting, soon afterward. By making these mechanisms part of their user interfaces, Twitter

and Facebook helped accelerate information diffusion as an even larger share of SNS users could make use of them by simply clicking a button.

While these mechanisms for information diffusion may be considered structurally equivalent to email forwarding, they also lead to different communication practices, due to their more public nature, and also considering that they are used as a way to “validate messages and engage with others” (Boyd et al., 2010, p. 1). This validation is evidenced by the manner in which the message being retweeted or shared appears to the receiver: The receiver sees not only the message and the name of the user who (or the brand that) originally created it, but also information about which person in the receiver’s network retweeted or shared the message, and how often the message has been shared or retweeted by other SNS users. This information could potentially make the brand message more credible when compared to, for example, an advertisement.

While these mechanisms of information diffusion can be of particular importance to both brands and consumers, academic research on their antecedents and consequences is still scarce. The following section outlines the focus of this dissertation, and why understanding this process is important to both academic research and practice.

FOCUS AND RELEVANCE OF THIS DISSERTATION

This dissertation advances academic research by presenting an investigation of the antecedents and the consequences of brand content diffusion on SNSs. The focus of the dissertation is not, therefore, on why consumers decide to talk *about* brands online (i.e. user generated content), but rather on why they decide to pass along messages *created by* brands via sharing or retweeting without additional incentives from the brand. This is an important distinction, as consumers who decide to pass along messages

created by brands using these processes are, for the most part, endorsing the message and the brand in a public manner.

Because an SNS user is passing along a message to a network of contacts on the SNS, we propose a conceptual model that investigates how the characteristics of the message, of the network and of the user influence brand content diffusion. This conceptual model is comparable to the idea proposed by viral marketing researchers of a triadic relationship between the brand (or in our case, the message created by the brand), the consumer, and the community to which the consumer belongs (Algesheimer, Dholakia, & Herrmann, 2005; Palmer & Koenig-Lewis, 2009). We investigate these aspects both as antecedents and consequences of brand content diffusion. In other words, we explore what motivates SNS users to decide to pass along brand messages in the first place, and also how receiving these messages passed along by others influences the receiver's attitudes towards the brand, and towards the message itself.

Understanding the antecedents and consequences of brand content diffusion on SNSs via these mechanisms for information diffusion is important from both an academic and a practical perspective. From an academic perspective, investigating this topic helps advance viral marketing research, which aims to “influence consumers to pass along commercial messages to other consumers” (Petrescu & Korgaonkar, 2011, p. 211) in order to maximize the brand's reach and influence. Considering the extremely large share of the online population using SNSs, and how frequently SNS users pass along content to others, retweeting and sharing are arguably ideal information diffusion mechanisms for viral marketing. Yet, despite their potential to viral marketing, research is still scarce on how these mechanisms of information diffusion are used in the context of brand content.

The importance of exploring these mechanisms of information diffusion goes beyond, however, merely the fact that they are frequently used.

The lower complexity to pass along information brought on by SNSs also changes the dynamics of information diffusion when compared to other environments (Bakshy, Rosenn, Marlow, & Adamic, 2012). We argue that these new dynamics also influence how viral marketing processes take place online, which calls for further investigation. Moreover, social media (and SNSs) empower consumers in their relationship with brands, and challenge the “one-to-many” premise of brand communication held by traditional advertisement (Gensler et al., 2013). We propose that these mechanisms of information diffusion also empower consumers in their relationships with the brand, as consumers can not only create their own content *about* brands, but also take an active role in passing along content *from* brands. Exploring this process, therefore, fills a critical gap in our understanding of how the brand-consumer relationship is changed by social media.

We fill these gaps in the literature by exploring the antecedents and consequences of this process to brands and to SNS users. In order to advance viral marketing literature, we draw from two similar, yet separate, lines of research: electronic word-of-mouth (eWOM) research and viral advertising research. eWOM research explores why consumers talk about brands online, and is traditionally defined as a consumer-to-consumer process, based on messages created by consumers (Petrescu & Korgaonkar, 2011). This line of research can contribute with important insights into the motivations for, and the personality characteristics and the influence of, brand-related activity on social media in general, and SNSs in particular. However, as we explore a process in which the message is created by a brand and not by a user, it is then particularly important to understand how findings from eWOM are applicable in this context. More specifically, it is not yet clear whether what would motivate a user to express her or his opinion online, or pass along the opinions of other consumers, would be as relevant, or even as applicable, to the decision to publicly endorse a brand message by passing it along.

Moreover, eWOM can be positive or negative in tone (Arndt, 1967; Petrescu & Korgaonkar, 2011). For example, consumers engage in eWOM to help the brand, as well as to express their dissatisfaction with negative experiences (Bronner & de Hoog, 2010; Hennig-Thurau, Gwinner, Walsh, & Gremler, 2004). We focus specifically on the positive aspect of eWOM, and investigate the process of passing along brand messages as a way to (positively) help extend the reach of the brand message. The possibility of an SNS user adding negative comments to a message while passing it along certainly exists both on Facebook and on Twitter, however we expect it to follow processes and motivations that are different from the ones explored in this dissertation.

Viral advertising research investigates the diffusion of “business or user generated advertisements from consumer to consumer, based on ad content likeability, entertainment, and controversial characteristics” (Petrescu & Korgaonkar, 2011, p. 211). Such research can bring therefore important findings regarding message characteristics that would motivate consumers to retweet or share brand content on SNSs. However, these findings need to be validated, for two reasons. Firstly, viral advertising research has mostly focused on the targeted diffusion of brand advertising, especially via email or with viral SNS campaigns. Consumers who decide to pass along brand messages by retweeting or sharing do so in a much more public and less targeted way, as the message will appear to all their SNS contacts and on their SNS profile page, instead of only to the people that they selected to send an email or to invite for an SNS campaign. Secondly, viral advertisement research focuses on ads, which are frequently videos, interactive advertisements or games. We argue, however, that brand messages on SNSs may not be fully comparable to advertisements as (1) consumers choose to receive them on an ongoing basis and, more importantly, (2) brands communicate information in these messages that may go beyond traditional advertising (Kwon & Sung, 2011). Moreover, viral advertising has highlighted the usage of emotional, funny, and even

BRAND CONTENT DIFFUSION ON SNSs

controversial content in viral ads aimed at stimulating pass-along behavior (e.g., Porter & Golan, 2006). It remains to be seen, however, whether and, if so, how these findings are applicable in this new context, especially considering the differences in content (i.e., interactive advertisements versus brand messages) and in the diffusion mechanism (i.e., mostly private and targeted, versus mostly public and untargeted).

The findings presented in this dissertation are not only relevant to viral marketing, but they also help extend emerging research on SNS in general, both on information diffusion and on self-disclosure and image management. Information diffusion research on SNSs, and especially that on Twitter, has so far investigated the diffusion of all types of messages from all types of users (e.g., Bakshy, Hofman, Mason, & Watts, 2011; Z. Liu, Liu, & Li, 2012; Suh, Hong, Pirolli, & Chi, 2010). This includes content about news events, politics, entertainment, and sports, as well as regular communication between SNS users. Such a broad focus is neither sufficient nor specific enough for research on brand communication, as the topics and the motivations for passing along these messages are not directly applicable to the consumer brand relationship. This dissertation addresses the lack of brand-related focus in previous research, and helps to better understand the influence of message, network and user characteristics that are specifically related to brand content diffusion. Moreover, emerging research also suggests that engaging in brand-related activities on SNSs is a way to articulate one's own actual or idealized self on the SNS (Hollenbeck & Kaikati, 2012). By investigating personality characteristics associated with this behavior, this dissertation helps extend self-disclosure and image management research on SNSs, shedding light on the psychological aspects of a brand-related activity in which SNS users frequently engage, yet that has hardly been investigated.

From a practical perspective, there are several reasons why these information diffusion mechanisms are of particular importance to brands.

Firstly, consumers who retweet or share brand content help extend the reach of the brand message beyond the community of users who already follows the brand on the SNS. This creates a good opportunity for brands to communicate with new audiences. Secondly, the message appears to the receivers as a regular message (i.e., not as an advertisement) and associated with the name of the user who passed it along. This may increase the message's credibility and influence, and therefore be an advantage for the brand. Thirdly, consumers who retweet brand messages demonstrate more positive attitudes towards the brand, including identification, commitment and trust, compared to those who do not retweet brand content (Kim, Sung, & Kang, 2014). Therefore, understanding in detail the factors that motivate consumers to adopt this behavior might help brands meet the expectations of their most loyal and motivated consumers. Finally, this type of information diffusion, unlike advertising, costs the brand little or nothing, as it relies on the consumer's own willingness to pass along brand messages to his or her own personal network on the SNS. Understanding this process can, therefore, help brands create messages that are more likely to be passed along, and leverage the influence of the community of brand followers on the SNS.

This dissertation explores the antecedents and consequences of brand content diffusion on SNSs, and is organized as follows. The first three chapters explore the antecedents of this process, namely how (1) message, (2) network and (3) personality characteristics influence brand content diffusion via SNSs. The concluding chapter investigates the consequences of this behavior, particularly how it influences attitudes toward the brand, and toward the message. The following sections provide an outline of each chapter.

CHAPTER 1 – THE INFLUENCE OF THE MESSAGE

Research has indicated that message characteristics influence consumers' pass-along behavior, especially in viral advertising. On the one hand, consumers tend to pass along messages the more that these messages are able to trigger certain types of emotions (e.g., Chiu, Hsieh, Kao, & Lee, 2007; Dobele et al., 2007; Eckler & Bolls, 2011; Phelps, Lewis, Mobilio, Perry, & Raman, 2004). On the other hand, consumers also privilege the informational value of the messages when deciding whether to pass them along (e.g., Chiu et al., 2007; Huang, Lin, & Lin, 2009). Moreover, emerging research on Twitter suggests that links and hashtags, among other characteristics, also increase the likelihood of pass-along behavior (Petrovic, Osborne, & Lavrenko, 2011; Suh et al., 2010). This emerging research on Twitter, however, deals with generic content, written by all types of users, including celebrities, politicians and news organizations. Its findings, therefore, still need to be validated with regards to the specific mechanisms of brand content diffusion.

The study presented in Chapter 1 extends earlier research by investigating how message characteristics influence pass-along behavior of content from top global brands on Twitter. Employing automated data extraction and natural language processing procedures, the study categorizes 19,343 brand messages, and evaluates how message characteristics such as informational, emotional, and traceability cues influence pass-along behavior via retweets. The results indicate that informational cues are predictors of higher levels of retweeting. This is particularly the case when the informational cues provided specific details about products, or have links to the brand website, to SNSs, and to photos or videos. And although emotional cues do not motivate retweeting on their own, they do reinforce the effects of informational cues and hashtags when they appear in the same message. These results indicate, therefore, that Twitter users are especially interested in

messages that are rich in informational content, and are more likely to pass such messages along. These findings are particularly important to practice, considering that the way in which a message is written and the information that it contains are arguably the characteristics that are most under the brand's control.

CHAPTER 2 – THE INFLUENCE OF THE NETWORK

Diffusion literature has discussed at length the prominent role of interpersonal networks in processes of information or innovation diffusion, including the role of opinion leaders (for an extensive overview, see Rogers, 2003). Emerging research on Twitter draws from diffusion literature to investigate whether, and if so, how certain types of users are able to stimulate pass-along behavior for generic (i.e., not brand-specific) content. The results are mixed. Some studies found that a minority of users on the SNS indeed hold “significant influence over a variety of topics” and have a “disproportionate amount of influence” (Cha, Haddadi, Benevenuto, & Gummadi, 2010, p. 17). Other studies, however, found that most of the information diffusion is done by users who have average or below average influence, but are able to connect two otherwise poorly connected groups (Bakshy et al., 2011). Until now, empirical research has not explored in detail how these interpersonal network characteristics influence pass-along behavior of brand content.

The study presented in Chapter 2 investigates the influence of specific types of users on brand content diffusion, by following the diffusion cascade of brand messages on Twitter and identifying which users motivated others to retweet brand content. In total, the study analyzed data from 30 top global brand profiles and from about 46,000 users who had retweeted brand content, identifying which users they followed (26 million) and which users followed

them (87 million) in order to investigate network characteristics. Based on these network characteristics, the study categorized users as (a) influentials – individuals who have above average influence, including celebrities and public figures; (b) information brokers – individuals that connect groups that otherwise would have weak or no ties; or (c) strong ties – individuals that influence other individuals because of they have a strong connection.

The results indicate that influentials and information brokers are associated with higher levels of retweeting for brand content. In addition, although information brokers have a larger overall influence on retweeting, they are more likely to do so when influentials are mentioned in the brand tweet. This provides support to the strategy of connecting the brand with influential users, such as celebrities or public figures. Strong ties, however, were not found to be associated with higher levels of retweeting. This study extends earlier research by directly investigating, for the first time, how network characteristics and certain types of users influence the diffusion of brand messages via retweeting.

CHAPTER 3 – THE INFLUENCE OF PERSONALITY

Retweeting and sharing brand messages on SNSs happen in a mostly public manner, and may not only be influenced by message characteristics or interpersonal networks, but also by factors internal to the SNS user. SNSs are seen as spaces for self-presentation (Boyd & Ellison, 2007) and where users create their profiles as taste performances (H. Liu, 2007). Personality characteristics have been proposed as important factors that explain why people use SNSs in different ways, as well as how they articulate their identities, or how much they disclose about themselves (e.g., Amichai-Hamburger & Vinitzky, 2010; Hughes, Rowe, Batey, & Lee, 2012; Ryan & Xenos, 2011; Utz, Tanis, & Vermeulen, 2012). Until now, however, personality

characteristics have not been explored in the context of brand content diffusion, especially to understand why someone decides to publicly associate his or her image with a brand, by passing along brand messages.

The study included in Chapter 3 investigates how personality characteristics are associated with the decision to pass along brand messages on SNSs, drawing from earlier research on self-disclosure and self-presentation. Using a survey among active SNS users, this study explores the association between passing along brand messages and personality characteristics such as the Big Five personality traits and Need for Popularity. The study also contributes to the emerging literature on the differences between Facebook and Twitter usage, by investigating which personality characteristics are associated with preferring to pass along brand messages on one of the SNSs instead of on the other.

The results show that passing along brand content on SNSs is more prevalent among people who are more friendly and warm towards others (agreeableness) and who enjoy social exchange (extraversion). This suggests a strong linkage between passing along brand messages and the desire to engage with and help others, which is aligned with some of the most important motivators for eWOM (Bronner & de Hoog, 2010; Hennig-Thurau et al., 2004). The people who have a strong desire to be popular (need for popularity), however, are the most likely to pass along brand content. This indicates that this behavior is not only done for altruistic reasons, but is also very much associated with image management, which reinforces the idea of SNS behavior being a taste performances and self-presentation (Boyd & Ellison, 2007; H. Liu, 2007), and the association with brands being part of an overall strategy that SNS users adopt to articulate their idealized self online (Hollenbeck & Kaikati, 2012).

When it comes to differences between Facebook and Twitter, extroverts prefer to share brand messages on Facebook, while people who are

more self-disciplined and results-oriented (conscientiousness) are more likely to prefer to retweet brand messages on Twitter. A potential reason for this might be the differences between these SNSs. Twitter, on the one hand, is a space where activities are mostly public and the idea of an audience (of followers) is more pronounced, and where users try to balance their need for self-expression with the desire to create a personal brand (Marwick & Boyd, 2011a). This may lead to a more results oriented usage of the SNS, including for passing along brand content. Facebook, on the other hand, places a strong emphasis on the idea of friendship groups, and interaction with friends. This may lead to Facebook being preferred by people who are more social (Hughes et al., 2012).

CHAPTER 4 – CONSEQUENCES OF BRAND CONTENT DIFFUSION

The studies presented in the first three chapters of this dissertation fill gaps in the literature by exploring the antecedents of brand content diffusion on SNSs, namely how message, network and personality characteristics motivate users to pass along brand messages. Although some previous studies focus on the effects of brand-related activity on SNSs, research focusing specifically on the actual effects of receiving brand messages passed along by SNS users is still scarce. Studies have focused on, for example, the influence of celebrities tweets on purchase intentions (Jin & Phua, 2014) and the influence of viral SNS campaigns with online games (Okazaki & Yagüe, 2012; van Noort, Antheunis, & van Reijmersdal, 2012). Although these studies provide important findings for online brand communication on SNSs, an important gap still exists in the literature, namely a lack of research into the effects of reading a regular message (i.e., not a viral campaign or advertisement) written originally by a brand (rather than by a consumer or a celebrity) and passed along by SNS users via retweeting or sharing.

The study presented in Chapter 4 aims to fill this gap in the literature. The study used a survey among active social media users to evaluate the influence of three aspects of the communication process: the message, the sender and the receiver. When it comes to the message, this study tests whether perceiving the brand message as entertaining or informative influences the receiver's willingness to pass it along further, and also his or her attitudes towards the brand. When it comes to the sender, this study investigates the nature of the relationship between the person who shared or retweeted the brand content in the first place, and the receiver of the message. Finally, this study evaluates how the receiver's own levels of opinion leadership and engagement in consumer-to-consumer eWOM influence his or her willingness to pass along brand-generated messages, as well as attitudes towards the brand.

The results indicate that message evaluation, the relationship with the sender and the receiver's own opinion leadership and opinion-seeking levels influence both willingness to pass along the message further and brand attitudes. More specifically, the more informative and entertaining that the receiver finds the message to be, the more willing he or she is to pass it along, and the better his or her attitudes toward the brand. Moreover, opinion leaders, who engage regularly in consumer-to-consumer eWOM, are more willing to pass along messages created by brands. Opinion seekers, who regularly seek advice from others online, are more likely to be more positive attitudes toward the brand. Finally, receiving a message from a close friend has a positive influence on attitudes toward the brand when compared to receiving it from other sources.

KEY FINDINGS

The emergence of SNSs brings forward new mechanisms of information diffusion such as retweeting and sharing that have opened up a wide range of opportunities for brand communication. We argue that these capabilities have not only helped to accelerate eWOM, but also have enabled consumers to become gatekeepers of their own personal audiences on SNSs, by actively selecting and passing along brand messages to their friends or contacts on the SNS. The studies presented in this dissertation set out to investigate the antecedents and consequences of this behavior, exploring both the brand and the user perspective. We summarize the key findings below.

ANTECEDENTS:

WHAT STIMULATES BRAND CONTENT DIFFUSION ON SNSs?

1. INFORMATION (AND EMOTION) STIMULATE BRAND CONTENT DIFFUSION ON SNSs

First and foremost, SNS users prioritize the actual content of the message. Brand messages that contain informational and emotional cues, combined with traceability cues that make them more findable, are the ones that are passed along the most, as observed in the retweeting of actual brand messages on Twitter (Chapter 1). This conclusion is reinforced by the findings that the *perception* of a message as informative and entertaining has the greatest influence on the willingness to pass along brand content further (Chapter 4).

Not only do these findings provide clear guidelines to brands from a practical perspective, but they also provide insights to academic research. Viral advertising studies often emphasizes the importance of hedonic motivations, such as how messages that are fun and entertaining, and that trigger emotions stimulate pass-along behavior of viral campaigns (Berger & Milkman, 2012;

Dobele et al., 2007; Eckler & Bolls, 2011; Porter & Golan, 2006). While emotions and entertainment are very relevant, utilitarian motivations – namely how informative or useful a message is - also have a very strong influence on the consumer's decision to retweet or share brand messages.

This strong role of the utilitarian motivations may be related to how users construct their notion of audiences on SNSs. Earlier forms of viral advertising relied mostly on one-to-one and more private or targeted diffusion of messages, meaning that consumers were able to select who would receive their messages; therefore, the entertainment value was extremely important (Phelps et al., 2004; Porter & Golan, 2006). SNSs, however, merge different types of social groups (e.g., family, colleagues, and friends) and contexts (e.g., work and personal life) into one imagined audience, which leads SNS users to balance and self-censor their activities as for example Marwick and Boyd (2011a) found during their Twitter study. As a result, SNS users may need to also actively consider the informational value of brand messages when deciding whether to pass them along, especially because their (imagined) audience may be more diverse, and the act of retweeting or sharing on SNSs more public, than emailing a funny viral ad via to a few friends.

2. SNS USERS PASS ALONG BRAND MESSAGES TO HELP OTHERS (AND TO BOOST THEIR OWN IMAGE)

The personality characteristics associated with the brand content diffusion on SNSs (Chapter 3) paint a clear picture of what motivates users to pass along brand content. Agreeableness and extraversion are positively related to sharing brand content on Facebook and retweeting brand content on Twitter, which provides support to the idea that passing along brand content is related to a desire to engage with others and to help them. This also reinforces the connection between this type of pass-along behavior and eWOM,

considering that helping others is also a strong eWOM motivation (Bronner & de Hoog, 2010; Hennig-Thurau et al., 2004).

Passing along brand content, however, is not solely associated with altruistic reasons. Respondents who exhibited the greatest desire to be popular were also the ones more likely to share or retweet brand content. This provides support to the idea that passing along brand messages on Twitter and on Facebook might not just be related to the desire to socialize or help others, but that it is also strongly linked to social enhancement and image management. Passing along brand messages, therefore, is also used as a strategy to boost one's own image and popularity. This suggests that passing along brand messages may be part of the larger usage of SNS profile pages as taste performances (H. Liu, 2007). This also reinforces the idea that when SNS users associate themselves with brands on SNSs, they are also articulating their idealized selves (Hollenbeck & Kaikati, 2012), which is also related to the idea of social enhancement as seen, for example, in eWOM (Okazaki, 2009).

3. CELEBRITIES AND INFORMATION BROKERS HELP EXTEND THE REACH OF THE BRAND MESSAGE

That brand content diffusion has a strong social component is demonstrated not only by the personality characteristics associated with this behavior (Chapter 3), but also by the role that interpersonal networks play in stimulating further pass-along behavior (Chapter 2). As our findings show, certain types of users are able to stimulate their followers to retweet brand content. In particular, the findings provide evidence to the idea that two primary processes are at play: information brokerage (Burt, 2000) and meaning transfer (McCracken, 1989). Information brokers have the strongest overall influence when it comes to stimulating others to pass along brand messages, as they are able to connect two otherwise poorly connected groups. This reinforces the concept of how weak ties can enable information diffusion

(Granovetter, 1973), which is also seen in WOM research (J. J. Brown & Reingen, 1987). The fact that highly influential users, in particular celebrities and public figures, are also able to stimulate information diffusion on content created by brands provides evidence that the mechanism of meaning transfer (McCracken, 1989), which is often used in the context of celebrity endorsements, is also at play in brand content diffusion on SNSs.

Interestingly, the observational data do not indicate a significant influence of strong ties on pass-along behavior, at least when strong ties are operationalized as a large number of friends in common. This is unexpected considering earlier findings from viral advertising research, and may be due to earlier studies focusing on the diffusion of viral campaigns via mechanisms such as email (e.g., Chiu et al., 2007) or invites via SNSs (van Noort et al., 2012). This distinction may be important for several reasons. Firstly, SNSs need to be considered as a different space, with different rules, when compared to email. On SNSs, users select who they want to be part of their networks. On Facebook, users approve all friendships, and on Twitter they select from whom they want to receive updates (i.e., who they will follow). The fact that the network is therefore under the control of the user may reduce the relevance of knowing the sender closely, as is the case with forwarding email, or reading forwarded email. Secondly, information diffusion via retweeting or sharing is much less targeted when compared to actively deciding whom to forward an email, or whom to invite to an online game or viral campaign. When retweeting, and usually when sharing, the user passes the message along to all his or her contacts on the SNS. Finally, and perhaps more importantly, the great importance of information and of the utilitarian dimension for this process (as indicated in Chapters 1 and 4), may also help explain these differences, as information brokers, because of their ability to connect groups that would otherwise be disconnected (Burt, 2000), may help facilitate the diffusion of information that is new to the group, and is therefore more useful

and more entertaining. Strong ties, on the other hand, although very important for the formation of brand attitudes (Chapter 4), might not have the same importance when it comes to stimulating others to pass along the messages further via retweeting or sharing.

CONSEQUENCES: HOW DOES BRAND CONTENT DIFFUSION INFLUENCE BRAND ATTITUDES?

4. INFORMATION AND EMOTION IN MESSAGES ALSO INFLUENCE BRAND ATTITUDES

The more that SNS users *perceive* the brand message as informative and entertaining, the more positive their attitudes toward the brand (Chapter 4). This indicates that these mechanisms of information diffusion go beyond just extending the reach of the brand message. When brand messages that are being passed along by retweeting and sharing are considered to be entertaining and informative, they influence how the receiver perceives the brand. More importantly, perceiving the message as informative and entertaining has a stronger influence on brand attitudes when compared to sender and receiver characteristics. This is a clear indication to brands that, by focusing on providing useful and entertaining content, they can ensure not only that SNS users will pass along the brand message, but also that the users (and the receivers of the messages) will have a more positive attitude toward the brand.

5. STRONG TIES INFLUENCE BRAND ATTITUDES WHEN THEY PASS ALONG BRAND MESSAGES

Strong ties do play an important role when it comes to the effects of reading brand messages shared by others (Chapter 4). Respondents who saw brand messages retweeted or shared by close friends displayed more positive brand attitudes when compared to other types of users. This reinforces earlier

research that indicated that the strength of the relationship influences the persuasiveness of viral SNS campaigns (van Noort et al., 2012), and is also in line with eWOM research findings that indicate that strong ties are important for decision making (J. J. Brown & Reingen, 1987). It also provides more details about how different types of users, or network characteristics, influence the process. Although information brokers and celebrities have the most influence in regard to stimulating others to retweet brand content (Chapter 2), close friends, or strong ties, have the most impact when it comes to the receiver's attitude towards the brand.

6. BRAND CONTENT DIFFUSION ENGAGES USERS WHO ARE ACTIVE IN EWOM

Finally, our findings indicate that SNS users who regularly engage in eWOM activities are the most influenced by this process. On the one hand, the more that an SNS user is an opinion leader, providing advice and sharing with other users his or her own experiences with brands and products, the more willing he or she will be to pass along brand messages after receiving them from others. On the other hand, the more that a user seeks advice from others in eWOM, the more positive he or she is about the brand when receiving brand messages shared or retweeted by others. This is of particular importance to brands, as it shows that opinion leaders are able and willing to engage with brands on SNSs, passing along brand content the more that they consider it relevant, and that opinion seekers also consider brand messages credible and influential when receiving them from others.

CONCLUSION

This dissertation explored brand content diffusion on SNSs, providing insights into the antecedents and consequences of pass-along behavior of brand messages by consumers via retweeting on Twitter, and sharing on Facebook. The research reported in it adopted a conceptual model that was used to investigate message, network and user characteristics and, in summary, found that this process is driven primarily by the perceived value of the message, happens most often when information is being transmitted between different social groups, and is performed by users who are highly conscious of their (public) audience and of their own image. The more a received message is perceived as informative and entertaining, the more potential it has to lead to more positive brand attitudes, and to more willingness to continue the diffusion cascade.

These findings help extend viral marketing research by integrating findings from eWOM and viral advertising research to explore a process that seems to be in the boundaries between these lines of research. Consumers pass along messages created by brands to their own audiences on the SNS, privileging aspects of the message that have been proposed by viral advertising such as entertainment and information, for the same reasons that consumers engage in eWOM. Moreover, the more that the SNS user participates in consumer-to-consumer eWOM, the more that likely she or he is to pass along brand messages on SNSs. This dissertation also helps advance information diffusion research on SNSs, by extending, specifically for brand content, earlier findings about the diffusion of general content. Finally, this dissertation also contributes to emerging research on SNS usage, by demonstrating a linkage between passing along brand messages on SNSs and image management and self-presentation.

OVERALL LIMITATIONS

While the studies in this dissertation provide important insights for online brand communication, advancing research on SNS and information diffusion, some overall limitations need to be considered. Firstly, the studies focused specifically on brand messages that were published as regular SNS content, and that were passed along by consumers primarily via retweeting (all chapters) but also by sharing (Chapters 3 and 4). Whereas this focus allowed the exploration of brand content diffusion by consumers on SNSs, future studies could compare the effects of brand messages passed along by consumers with both traditional online advertising and consumer-to-consumer eWOM.

Secondly, the exploratory nature of the studies included in this dissertation meant that brand content diffusion was investigated in general, combining all types of (mostly consumer) market segments with a particular focus on top brands. This provides a strong set of overall findings that help explain the process in general. Future research could refine these findings by focusing on how pass-along behavior differs across market segments, larger and smaller brands, or cultures and languages. This will not only provide even more detailed and actionable insights to practice, but will also help explore this process at a more granular level, for example by investigating message characteristics that are more specific to one market segment, or understanding how expectations about the informational or entertainment value of messages vary across cultures. Moreover, future research should also evaluate how pre-existing brand attitudes and identification, either positive or negative, may influence both the consequences and the antecedents of this process.

Finally, these studies explored brand content diffusion based on mechanisms of information diffusion that are at present available to all users, namely retweeting and sharing. Twitter and Facebook, however, continuously

evolve their platforms, and now allow users to include additional comments when sharing or retweeting messages, which may also be used for negative, rather than just positive, eWOM. Both SNSs also regularly deploy new ways for brands to advertise their products to consumers. For example, Facebook and Twitter enable brands to promote their content prominently on users' timelines with native advertising, also displaying how many of the user's contacts have liked an ad. Future research should also investigate these new mechanisms, and how they also influence the receivers of brand communication on SNSs.

Notwithstanding the limitations discussed above, this dissertation provides relevant and useful insights that will help researchers in their quest to understand how new capabilities created by social media are disrupting and changing the consumer-brand relationship.

CHAPTER 1

The influence of the message

Chapter 1: The influence of the message

This chapter has been accepted for publication as:

Araujo, T., Neijens, P.C., & Vliegenthart, R. (2015). What Motivates Consumers to Re-Tweet Brand Content? The Impact of Information, Emotion, and Traceability On Pass-Along Behavior. *Journal of Advertising Research*.

The version presented here has been adapted to follow the overall standards and terminology included in the other chapters of the dissertation.

ABSTRACT

This study investigated how informational, emotional and traceability cues influence pass-along behavior of brand messages on Twitter. Analyzing 19,343 messages from 65 top global brands, the results indicate that informational cues are predictors of higher levels of retweeting, particularly when these informational cues are about product information and links to the brand website, to Social Networking Sites (SNSs), and to photos or videos. While emotional cues do not influence retweeting on their own, they reinforce the effects of informational and traceability cues when combined in the same message. The results indicate that consumers are especially interested in informational messages on Twitter, and are more likely to pass such messages along. Furthermore, the findings of this study suggest that type of communication (one-to-one versus one-to-many) and type of information (generic information versus brand information) influence pass-along behavior on SNSs. The paper also discusses the theoretical implications, as well as practical implications for marketing managers.

The influence of the message

Consumers increasingly use Social Networking Sites (SNSs) to engage in brand-related activity. This activity includes consuming and creating content about brands (Muntinga et al., 2011), as well as spreading messages about or from the brand (Jansen et al., 2009). Brands stimulate this type of activity, often inviting customers to share information with their friends (Araujo & Neijens, 2012). For brands, one of the key advantages of this phenomenon is being able to stimulate positive word-of-mouth and extend the reach of the brand message (comScore, 2011) while benefiting from the higher credibility that messages from consumers or validated by them have, compared to advertising (Goldsmith & Horowitz, 2006).

Consumers do not use all SNSs the same way. Brands are more central to consumers' activities on Twitter than on other SNSs (Smith, Fischer, & Yongjian, 2012), with up to 80% of the Twitter users involved in a recent study habitually mentioning brands in their tweets (Nagy & Midha, 2014). One of the characteristics of Twitter that may explain this behavior is the concept of retweeting. Retweeting emerged as a key mechanism for information diffusion (Boyd et al., 2010; Suh et al., 2010), and happens when a user decides to republish a message created by either an individual or a company. By republishing the message, the user passes it along to her/his own followers on Twitter. It is still unclear what influences pass-along

behavior, in particular what influences consumers to pass on brand content on Twitter.

Although marketers cannot control how brand information is disseminated by word-of-mouth (De Bruyn & Lilien, 2008), earlier research on Electronic Referral Marketing (ERM) and viral advertising suggests that the manner in which messages are designed can influence consumers' disposition to pass them along. The emotional tone or the presence of emotional cues in the message can stimulate pass-along behavior by creating an emotional connection between the consumer and the message (Dobele et al., 2007; Eckler & Bolls, 2011). The informational value of a message can also stimulate pass-along behavior, as consumers are more likely to pass along information they find useful (Chiu et al., 2007). Emerging research on the diffusion of general information (i.e. not brand specific) on Twitter also indicates that elements such as hashtags that make the message more findable or traceable are related to higher levels of retweeting (Suh et al., 2010). However, we still do not fully understand how these message characteristics influence pass-along behavior, specifically for brand messages on Twitter. This is a particularly pressing gap, since message characteristics are arguably one of the few elements that marketers can control to stimulate pass-along behavior.

The present study will:

- Review reasons for online pass-along behavior identified by ERM and viral advertising literature, as well as emerging research on information diffusion via Twitter, identifying message characteristics that may help stimulate pass-along behavior.
- Extend ERM and viral advertising literature by testing whether earlier findings are applicable to Twitter content.

In particular, this study will test the influence of emotional, traceability and informational cues on pass-along behavior of brand content on Twitter.

- Advance emerging literature on diffusion of information via Twitter by specifically investigating brand messages and their diffusion processes. The influence of message characteristics on pass-along behavior will be studied using a sample composed exclusively of messages created by brands, instead of general messages.
- Present recommendations for marketers on how to extend the reach of brand messages on Twitter.

THEORETICAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

The present study draws on this earlier research – in particular ERM and viral advertising studies – to identify some of the key message characteristics related to brand content that may induce consumers to pass along information. We also include additional insights from emerging literature on Twitter information diffusion into specific characteristics of Twitter that may influence pass-along behavior.

THE ROLE OF EMOTION

Research on ERM has found that messages triggering emotions tend to be passed along the most by consumers (Dobele et al., 2007; Phelps et al., 2004); these triggers are frequently used in viral advertising, especially in online videos (Golan & Zaidner, 2008; Porter & Golan, 2006). These studies propose that only content that is

somehow extraordinary (Porter & Golan, 2006) and that links emotion to the message (Dobele et al., 2007) will capture the attention of consumers enough to be subsequently passed along. Likewise, the presence of emotions or different types of emotional tone in email messages (Eckler & Bolls, 2011) significantly influences pass-along behavior, especially when these messages are more hedonic in nature (Chiu et al., 2007).

In line with earlier research, our study determines whether emotional cues influence pass-along behavior of Twitter messages. This is primarily necessary for two reasons:

- Twitter messages are mainly composed of short texts. Viral advertising studies have, however, mostly focused on online videos. It is unclear whether emotional cues exert the same influence when the type of content is changed.
- ERM and viral advertising studies have mostly focused on pass-along behavior via email, which allows consumers to target who they want to see a given message. When a consumer decides to pass-along brand messages by retweeting, he or she passes the message to all his or her followers on Twitter – usually in a public manner.

We therefore propose the following hypothesis:

H1: Messages with emotional cues will be retweeted more often than messages that do not contain emotional cues.

THE ROLE OF INFORMATION

ERM research has indicated that people are more likely to pass along email based on their ability to evaluate the message as valuable or helpful (Huang et al., 2009) and when the message contains useful content (Chiu et al., 2007). Research on Twitter also indicates that users actively consider whether the content will be useful to their audience when retweeting (Boyd et al., 2010).

The question then becomes, what would be considered useful content in the context of brand messages? Previous studies have indicated that providing information about the product or brand is one of the reasons ERM and viral advertising are used (Golan & Zaidner, 2008; Porter & Golan, 2006). Earlier studies (Kwon & Sung, 2011) identified informational cues in the majority of the global-top brand messages on Twitter, distinguishing between brand names, product-related cues, and company-related cues in the message content. We define information as an announcement made by the brand, either about the brand itself (or the company that owns the brand), or about products from the brand, and propose the following hypotheses:

H2: Messages with brand information cues will be retweeted more often than messages that do not contain brand information cues.

H3: Messages with product information cues will be retweeted more often than messages that do not contain product information cues.

Links may be considered “redirecting informational cues” (Kwon & Sung, 2011, p. 12), as they provide additional information. Research on the diffusion of general information on Twitter has found that the presence of links is a predictor of increased levels of

pass-along behavior (Petrovic et al., 2011; Suh et al., 2010). Moreover, Twitter messages linking to different types of websites have been associated with varying levels of retweets (Suh et al., 2010). Since we do not know which types of links lead to higher numbers of retweets, we propose the following set of four sub-hypotheses regarding types of links related to brand activity on Twitter:

H4a: Messages that contain links to the brand website will be retweeted more often than messages that do not contain links to the brand website.

H4b: Brand messages that contain links to the photos or videos will be retweeted more often than messages that do not contain links to photos or videos.

H4c: Brand messages that contain links to SNSs will be retweeted more often than messages that do not contain links to SNSs.

H4d: Brand messages that contain links to news media will be retweeted more often than messages that do not contain links to news media.

THE ROLE OF TRACEABILITY

Research on Twitter indicates that elements related to how messages are displayed – and how easily they can be found –also affect pass-along behavior. One element that increases the traceability of Twitter messages is the usage of hashtags (#) to indicate the topic of the message (Boyd et al., 2010). Twitter converts these tags into links, which makes it easier to find other messages on the same topic, and also makes the message itself more findable (Suh et al., 2010). Hashtags have been found to be predictors of higher levels of pass-

along behavior in general (Suh et al., 2010), which leads to the following hypothesis:

H5: Brand messages that contain hashtags will be retweeted more often than messages that do not contain hashtags.

INTERACTION EFFECTS

Even though Twitter messages are brief, they can combine more than one message characteristic. Marketers can, for example, create informational messages containing product cues and links, while at the same time including emotional cues and making the message more traceable by using hashtags.

In line with our hypotheses, we expect that combining these characteristics (linearly) reinforces pass-along behavior. However, it is possible that these combinations also create interaction or synergy effects. In other words, we do not always expect that the combination of two characteristics would simply add main effects. One possible interaction effect is that a characteristic (for example, emotional cues) only has a significant effect when in combination with another characteristic (for example, product information cue).

These interaction effects have, however, seldom been investigated, as most ERM and viral advertising studies have focused either on emotional or on informational cues, and not on their combination. Considering the lack of earlier literature, we propose the following research question to explore this topic:

RQ: How does the combination of different message characteristics influence brand message pass-along behavior on Twitter?

METHODS

SAMPLE

This study uses brand messages (tweets) from the top 100 global brands (based on the 2011 Interbrand ranking) to investigate the influence of message characteristics on pass-along behavior. This set of brands covers a wide range of markets, customer segments and brand characteristics, thus increasing the generalizability of the results. The data collection followed two steps, summarized in Figure 1.

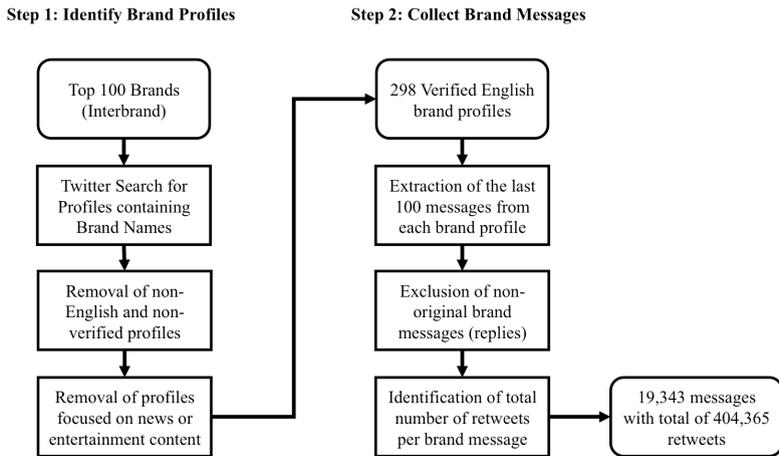


Figure 1. Data Collection Summary

The first step of the data collection was to determine which of the 100 top brands were actually present on Twitter. Brands can have multiple profiles on Twitter, so a search was conducted for the first 100 Twitter profiles that matched each brand name. These searches covered both the brand names as well as alternative names by which the brand is known. For example, for American Express, we also

searched for “Amex”. We kept only profiles in English that had a special verification of genuineness from Twitter (“Verified Profile”).

Next, brand profiles that focused on general news or entertainment were removed; since their emphasis was not on brand content, they were not relevant to the pass-along behavior that this study is investigating. Examples of profiles that were eliminated include MTV, with its primary focus on entertainment news, but also brands dedicated to republishing news from other sources, such as Google News or Yahoo! Finance. Out of 100 top brands, 65 had one or more profiles on Twitter that matched our criteria, resulting in a total of 298 profiles for analysis.

The second step of the data collection was to extract the last 100 Twitter messages from each brand profile. This was done for each of the 298 profiles included in the sample, and resulted in 27,846 individual messages (not all brand profiles had 100 messages or more). The study then collected the retweets from each of the 27,846 brand messages.

Of these messages, 31% were replies from the brand to other users. In some cases, the majority of messages consisted of replies (i.e., not original brand content). This was the case for Barclays and Pizza Hut (98% of the messages were replies), HTC (89%), Kellogg’s (88%), and Gap (85%). Other brands, including 3M, Accenture, Burberry, Louis Vuitton and Nintendo, did not have any replies to other users among their 100 latest messages.

Replies were removed from the analysis for several reasons. First, from a theoretical standpoint, it can be argued that replies are a discussion between one user and the brand. This implies, by definition, that even if brands write a public reply, this would be less interesting to the general public than original brand messages. Second,

reinforcing the first point, the sample showed a significantly higher level of retweets for original brand messages ($M = 20.9$ retweets per message, $SD = 96.01$) than for replies to users ($M = 0.45$ retweets per message, $SD = 3.22$). Third, certain message characteristics are strongly and significantly correlated to the type of message (original message or reply), in particular the presence of links ($Pbi = 0.60, p < 0.001$) and hashtags ($Pbi = 0.31, p < 0.001$). The 8,503 replies from brands to other users were removed from the sample, and only the 19,343 original brand messages were kept – i.e., the messages that brands actually create for all consumers to read.

UNIT OF ANALYSIS, DEPENDENT AND INDEPENDENT VARIABLES

The unit of analysis of this study was the individual brand message (tweet), and the dependent variable was the number of retweets each brand message received. Each of the 19,343 brand messages (tweets) was coded to determine which of the characteristics mentioned in the hypotheses was present. This coding was done using automated content analysis with the Natural Language Processing toolkit from Python (Bird, Klein, & Loper, 2009). The independent variables were operationalized as follows:

Emotional Cues: Emotional cues in the context of brand content were operationalized by messages with humorous, informal, or entertaining language. Because emotional cues always depend on the context, we employed two strategies to maximize the accuracy of the automated content analysis. First, we used the WordNet-Affect 1.0 domain (Strapparava & Valitutti, 2004) to identify texts containing

nouns, adjectives or verbs that are associated with emotion in the English language. Second, we also identified messages that contained emoticons, or punctuation (such as exclamation marks) associated with emotions, in line with earlier research on blog texts (Aman & Szpakowicz, 2007).

Informational Cues: We followed Kwon and Sung's (2011) investigation of the content that brands post on Twitter, and adopted two types of informational content cues: Brand and Product Cues.

- **Brand Cues:** Brand Cues combined two categories from Kwon and Sung's (2011) study, namely whether the brand or the company that owns the brand was mentioned in the message. The automated content analysis procedure searched for the name or acronym of the brand in the text of the message. If the brand name was found (e.g., "Ford"), the procedure checked whether a product cue (see below) was also present in the same sentence (e.g., "Ford Focus").
- **Product Cues:** This variable indicated whether information about the products or services from the brand was also mentioned in the tweet. We built a custom vocabulary of product names employing two strategies. First, natural language analysis procedures were adopted to determine the most frequent combinations of words starting with brand names in all the messages (e.g., "Google Apps", "Nissan Leaf"). Second, all the sentences in the sample were compared to an annotated corpus of English texts. Words that were not part of the general English vocabulary were selected for further inspection, as product names are often non-standard (e.g., "CS6" for Adobe or "VW Beetle" for

Volkswagen). Words whose function in the phrase was not clear were also selected for further inspection, as product names are sometimes made of English words (e.g., “Windows” for Microsoft). All these words were then reviewed so that product names could be identified and included in the custom vocabulary associated to specific brands. This custom vocabulary was then used to determine which messages had at least one product cue.

Presence of links: Each message was automatically analyzed to determine if there was a link in the text. When a link was found, the study employed an automated procedure to follow the link to its target destination, and then extract the main domain of the page (e.g., “youtube.com”, “disney.com”). The main domain was then categorized using a custom dictionary to determine whether the website belonged to the brand, to a SNS (e.g., Facebook), to a video or photo sharing site (e.g. YouTube, Flickr, Vimeo), or to news media (e.g., Huffington Post, NYT). Certain sites were categorized differently depending on which brand referred to it (e.g., Flickr was considered a brand website for Yahoo, which owns it, but a photo or video sharing site for Disney). The variable was first operationalized generically, namely whether the message had any links at all, and then specifically by type of link (brand website, SNS, photo or video, news media).

Traceability cues: This variable was operationalized as the occurrence of at least one hashtag (#) in the message. Automated content analysis was used to identify the hashtags.

BRAND CONTENT DIFFUSION ON SNSs

Four control variables were introduced:

- **Brand equity:** Interbrand's (2011) brand valuation was used as a measure of brand equity. The brand valuation included aspects such as customer loyalty, financial performance, and role of the brand on the purchase-decision process.
- The **number of followers** of each brand profile was introduced as a control variable for two reasons:
First, there was a large variance in terms of number of followers in the final sample depending on the specific brand profile ($M = 151,488$; $SD = 406,860$).
Second, the number of followers indicates the number of Twitter users who tend to see the brand message first, and therefore impacts the absolute number of potential retweets, as has been pointed out in earlier studies on general content (Petrovic et al., 2011; Suh et al., 2010).
- The **day of the week** was included in the analysis to alleviate concerns about possible differences in Twitter audience size during the week. Sunday was used as the reference category.
- **Message age:** The amount of time between the original post and the subsequent message posted by the brand, measured in minutes. The log version of the variable was used, in line with earlier findings indicating diminished returns after a certain period of time (van Liere, 2010). The average age for messages of the same brand was used for the latest message, since this would not have a subsequent message.

The descriptive statistics are presented in Table 1.

THE INFLUENCE OF THE MESSAGE

Table 1
Dependent and Independent Variables (N = 19,343)

Variables	M	SD	Range
Number of Retweets	20.90	96.01	0 – 5,986
Emotional Cues	27.69%	0.45	0 – 1
Brand Information Cues	21.30%	0.41	0 – 1
Product Information Cues	24.89%	0.43	0 – 1
Links to:			
Brand Website	35.39%		
SNS	9.22%		
News Media	5.25%		
Photo or Video	8.47%		
Hashtag Presence	48.15%		
Followers	155,633.6	432,901.6	172 – 4,461,628
Brand Equity	27,693.52	20,062.5	3,512-71,861
Day of the Week:			
Monday	14.42%		
Tuesday	19.35%		
Wednesday	19.47%		
Thursday	19.06%		
Friday	16.95%		
Saturday	6.13%		
Sunday	4.59%		
Message Age	35.24	52.91	0 – 1,295

BRAND CONTENT DIFFUSION ON SNSs

All 19,343 messages were categorized using the automated procedures. To determine the reliability of the automated procedures, four independent coders and the first author manually coded a random subsample of 400 messages. Each independent coder reviewed 100 messages, and the first author reviewed all the 400 messages in the subsample. Reliability was calculated following procedures adopted by Aman and Szpakowicz (2007). First, intercoder reliability was calculated using the kappa statistic to determine the reliability of the coding (Fleiss, Levin, & Paik, 2003). After the manual categorization, the level of accuracy of the automated content analysis was measured by comparing its outcome with the messages for which there was intercoder agreement. The automated analysis had agreement levels of 72% for emotional cues, 84% for brand information cues, and 75% for product information cues (Cohen's Kappa were: 0.35, 0.40 and 0.47); this agreement can be considered acceptable, especially when taking into account the exploratory nature of the study and the diversity of brands included in the sample. The other variables – links to additional content, message age, and hashtag presence – were not subject to manual coding as they could be extracted directly from the message without interpretation or processing.

ANALYSIS

The data were analyzed using a multilevel modeling approach with the brand responsible for the message being set as the contextual level, and the number of followers for each brand profile set as the random slope. This approach was selected due to its ability to isolate the individual characteristics of each message from potential effects

coming from the brands themselves, for example, that a more popular or appealing brand may elicit more retweets than other brands. While the individual characteristics of the message appear as standard regression results in such models, the variance in the dependent variable due to group characteristics (contextual level) is shown as an index, *r²_{ho}* (Rabe-Hesketh & Skrondal, 2008). This strategy also allows to control whether variations in number of followers at the contextual level would impact the effect of some variables at the individual level. In the case of the models included in this study, this index, *r²_{ho}*, indicates the variance of the dependent variable explained by the group level (brand).

To further understand how the combination of different characteristics influences the number of retweets, we also created a predictive model, where:

- All control variables (e.g., number of followers, brand equity, message age) not included in the interaction were set at their means.
- A prediction of the dependent variable was calculated for each potential combination of the independent variables included in the interaction.

RESULTS

The analysis of the 19,343 messages from 65 top global brands showed that each brand message received 20.9 retweets on average ($SD = 96.01$), with 83% of the messages receiving at least one retweet. First, we tested the relationship between the dependent variable and each type of cue – emotional, informational, traceability. A full model was then created, including all types of cues and all the

BRAND CONTENT DIFFUSION ON SNSs

control variables. Table 2 shows the number of retweets that each message characteristic would add to a brand message. For example, the presence of product cues adds 11.16 retweets to brand content.

The results provide substantial evidence that informational cues influence the number of retweets a brand message receives. In particular, the presence of product cues is positively associated to the number of retweets, thus providing full support for Hypothesis 3. Links to additional content on the brand website, on SNS and to photos or videos also positively influenced the number of retweets, providing support for Hypotheses 4a, 4b and 4c. Links to news media, however, did not yield significant results, thus not providing support to Hypothesis 4d. Brand cues did not yield significant results, thus not providing support for Hypothesis 2. The remaining hypotheses found little support in the results. Emotional cues did not yield significant results (Hypothesis 1), nor did hashtag presence (Hypothesis 5).

INTERACTION EFFECTS

We proceeded to explore the effect of combinations of the informational, emotional and traceability cues on the number of retweets. Brand messages often combine more than one cue. For example, the tweet from Google “People are excited about #GalaxyNexus. So are Ninjas <http://t.co/flunMFpu> Ninja Unboxing 3: play the game & unlock the power of #GalaxyNexus” has emotional cues, product cues, a link to the brand website, and hashtag presence.

THE INFLUENCE OF THE MESSAGE

Table 2
Multilevel Models for Number of Retweets and Type of Cues (n= 19,343)

Parameter	Model 1:	Model 2:	Model 3:	Full Model
	Emotional Cues	Informational Cues	Traceability Cues	
Fixed Effects				
Intercept	-5.97 (3.81)	-8.32 (3.87)	-6.90 (3.88)	-9.86 (4.01)
Emotional Cues				
Emotional Cues	1.84 (1.45)			2.11 (1.46)
Informational Cues				
Brand Cues		0.43 (1.70)		0.50 (1.70)
Product Cues		11.30 (1.63)**		11.16 (1.65)**
Links to:				
Brand Website		4.58 (1.54)*		4.83 (1.54)*
SNS		5.21 (2.38)*		5.17 (2.38)*
Photo or Video		6.29 (2.48)*		6.28 (2.48)*
News Media		-2.87 (3.00)		-2.33 (3.01)
Traceability Cues				
Hashtag Presence			2.48 (1.36)	1.31 (1.37)
Random Parameters				
Var (u _i)	28.09 (9.98)	30.07 (10.62)	29.39 (10.29)	30.98 (10.90)
Var (intercept e _{0j})	7,865 (80.09)	7,837 (79.82)	7,864 (80.09)	7,836 (79.81)
Cov	-0.0002 (0.0001)	-0.0001 (0.0001)	-0.0002 (0.0001)	-0.0001 (0.0001)
Rho	0.0036	0.0038	0.0037	0.0039
-2*log likelihood	228,513	228,445	228,511	228,442

Notes: Standard errors are in parentheses. Var (u_i) indicates the standard deviation at the group level (brand), whereas Var (intercept e_{0j}) indicates the standard deviation at the individual level (message). Rho indicates the percentage of the variance explained by the group level (brand). Control variables included in the model but not reported. * p < .05, ** p < 0.01

BRAND CONTENT DIFFUSION ON SNSs

We decided to include message characteristics that did not yield significant results in the full model, e.g. emotional cues and hashtags. This was done specifically to check whether significant interaction effects would occur with other variables, leading to higher volumes of retweets. When including interaction terms in a model, it is necessary to also include the main variables.

The results (see Table 3) indicate that the combination of the three characteristics (informational, emotional and traceability cues) creates an interaction effect on retweeting. In particular, messages have significantly more retweets when product cues are combined with emotional cues, links to the brand website, and hashtags. Combining these four message characteristics in the same message increased the number of retweets by 37.2. However, one particular combination – hashtags, product cues and emotional cues – yielded significantly fewer retweets in the model analyzing the effects of links to the brand website.

To further understand how the combination of different characteristics influences the number of retweets, we also created a predictive model for combinations of cues with links to the brand website. The highest number of predicted retweets is achieved when product cues, emotional cues, links to the brand website and hashtags are combined in the same message: 64.07 retweets if the combination is present, versus 20.02 retweets when product cues, emotional cues, links to the brand website and hashtags are not present in the message. Table 4 shows the predicted number of retweets for each combination of message characteristics.

THE INFLUENCE OF THE MESSAGE

Table 3
Combination of Cues by Type of Link (n = 19,343)

Parameter	Brand Website	Photo or Video	SNS	News
Fixed Effects				
Intercept	-5.45 (4.08)	-6.41 (4.01)	-7.27 (4.01)	-6.24 (4)
Emotional Cues	-0.71 (2.8)	-0.42 (2.29)	-1.55 (2.32)	-0.61 (2.26)
Product Cues	2.82 (3.64)	6.93 (2.72)*	7.23 (2.74)**	6.91 (2.77)*
Link	-0.25 (2.48)	0.88 (4.9)	6.85 (4.36)	-3.85 (4.45)
Hashtag Presence	-0.93 (2.2)	-0.95 (1.88)	-0.56 (1.89)	-0.57 (1.85)
Prod * Emo	13.99 (6.42)*	9.55 (5.21)	12.55 (5.29)*	11.15 (5.21)*
Prod * Hashtag	6.78 (4.7)	5.55 (3.69)	6.88 (3.67)	6.07 (3.67)
Prod * Link	8.15 (5.27)	-7.15 (12.26)	-7.51 (10.67)	-2.97 (9.57)
Emo * Link	0.39 (4.54)	-2.82 (9.04)	10.18 (7.8)	3.29 (3.37)
Emo * Hashtag	2.66 (3.97)	3 (3.48)	5.52 (3.53)	-3.42 (11.85)
Hashtag * Link	1.65 (3.76)	6.08 (6.37)	0.81 (6.04)	2.86 (7.64)
Prod * Emo * Hashtag	-23.43 (8.38)**	-9.53 (7.06)	-12.47 (7.1)	-11.53 (6.92)
Prod * Emo * Link	-6.37 (10.51)	26.36 (23.79)	-20.2 (18.96)	-13.24 (25.32)
Prod * Hashtag * Link	-0.73 (7.2)	7.62 (14.29)	-11.65 (13.9)	-4.17 (14.68)
Emo * Hashtag * Link	2.8 (7.44)	3.08 (11.99)	-21.32 (10.68)*	-0.72 (20.7)
Prod * Hashtag * Emo * Link	37.2 (14.44)*	-27.84 (27.74)	16.96 (24.27)	12.84 (37.41)
Random Parameters				
Var (u _i)	32.47 (11.31)	32.43 (11.25)	31.83 (11.08)	31.60 (11.09)
Var (intercept e _{0j})	7,821 (79.65)	7,838 (79.83)	7,831 (79.76)	7,839 (79.84)
Cov	-0.0001 (0.0001)	-0.0001 (0.0001)	-0.0001 (0.0001)	-0.0001 (0.0001)
Rho	0.0041	0.0041	0.0040	0.0040
-2*log likelihood	228,408	228,447	228,433	228,450

Notes: Standard errors are in parentheses. Control variables included in the model but not reported. Var (u_i) indicates the standard deviation at the group level (brand), whereas Var (intercept e_{0j}) indicates the standard deviation at the individual level (message). Rho indicates the percentage of the variance explained by the group level (brand). * p < .05, ** p < 0.01

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Table 4
Predictions of Retweets for Interactions with Links to the Brand Website

Product cues	Emotional cues	Hashtag	URL to the brand website	Predicted number of Retweets	95% Confidence Interval
No	No	No	No	20.02 (2.85)	14.44 – 25.61
Yes	No	No	No	22.85 (4.08)	14.85 – 30.85
No	Yes	No	No	19.32 (3.35)	12.75 – 25.89
No	No	Yes	No	19.09 (2.85)	13.50 – 24.68
No	No	No	Yes	19.78 (3.08)	13.74 – 25.81
Yes	Yes	No	No	36.13 (5.39)	25.55 – 46.70
Yes	No	Yes	No	28.70 (3.51)	21.81 – 35.58
Yes	No	No	Yes	30.76 (4.22)	22.49 – 39.02
No	Yes	Yes	No	21.05 (3.37)	14.44 – 27.65
No	Yes	No	Yes	19.46 (3.97)	11.69 – 27.24
No	No	Yes	Yes	20.50 (3.39)	13.85 – 27.14
Yes	Yes	Yes	No	21.21 (4.54)	12.31 – 30.12
Yes	Yes	No	Yes	38.06 (7.29)	23.78 – 52.35
Yes	No	Yes	Yes	37.53 (3.96)	29.77 – 45.29
No	Yes	Yes	Yes	25.65 (5.18)	15.50 – 35.80
Yes	Yes	Yes	Yes	64.07 (6.23)	51.87 – 76.28

Note: Standard errors are in parentheses.

DISCUSSION

The present study aimed to understand how emotional, informational and traceability cues can influence pass-along behavior of content published by brands on Twitter. We tested findings or assumptions drawn from earlier ERM and viral advertising research, as well as from studies on pass-along behavior of general (non-brand specific) messages on Twitter. We used a large sample of messages from top global brands, a sampling strategy with the advantage of measuring retweeting behavior of brand content on Twitter in an actual setting. This complements earlier studies, which, particularly in ERM, have mostly been based on experiments or surveys inquiring about potential behavior.

Our first important finding is that Twitter users are highly focused on informational cues when deciding whether to retweet brand messages. This extends earlier findings on ERM, reinforcing that pass-along behavior is highly dependent on utilitarian reasons. While this was previously known for one-to-one e-mail communications, this is now also confirmed for one-to-many communication of brand messages on Twitter. Twitter users are, however, not motivated by all kinds of brand information. A message simply about the brand, containing brand cues, is not more likely to be retweeted by users. Only messages that specifically contained information about products from the brand were associated with higher levels of retweeting, indicating that consumers have a high level of expectation about the brand message's content.

Links, also considered informational cues (Kwon & Sung, 2011), were found to predict higher levels of retweeting as well. Not all links, however, are predictors of retweeting: For original brand

messages (i.e., not replies to other users), only links to the brand website, to SNSs or to photos or videos were associated with higher levels of retweeting. These findings add to the existing empirical research on generic Twitter content (e.g. Petrovic et al., 2011; Suh et al., 2010), clarifying which types of links influence retweeting specifically for brand content. Moreover, these findings also point to a methodological contribution by highlighting the importance of explicitly investigating pass-along behavior only for original brand messages and not including replies. Considering that replies are associated both with lower levels of retweeting and lower frequency of links, including replies in the sample would have artificially increased the effects of any type of link in pass-along behavior because of their correlation with original brand messages, that attract more retweets.

Interestingly, emotional cues were not associated with higher levels of retweeting. This is not in line with expectations from earlier research on ERM and viral advertising. Earlier studies indicated that fun, entertainment, or emotional tone or content in messages stimulate pass-along behavior (Chiu et al., 2007; Golan & Zaidner, 2008; Porter & Golan, 2006). This may be because studies on ERM have generally focused on one-to-one communication like email, while communication within SNSs is generally one-to-many, with retweets aimed at a larger audience (Boyd et al., 2010). This may also be partially because earlier studies have focused on online videos instead of text-based content such as Twitter; in addition, users may have different expectations of content on Twitter, especially brand content, compared to online video websites. Also unlike earlier research, hashtags were not found to be predictors of retweeting – probably because only original brand messages were analyzed, with replies excluded from the sample.

However, emotional cues and hashtags yield significant positive influence on the number of retweets when combined with product information, and links to the brand website. This finding not only reinforces the idea that information usefulness is an important factor for pass-along behavior on Twitter, but also indicates that messages with high informational value benefit from the presence of emotional cues, and by the use of hashtags to make the message more findable.

At the same time, however, messages containing just product information, hashtags and emotional cues but without a link to the brand website are associated with significantly lower levels of retweeting. Further analysis indicated that such a negative influence leads only to a slightly different number of predicted retweets when compared to messages without this combination. Future research should not only investigate in more detail the role of hashtag use on brand content but, given the findings of this study, investigate in more detail the role of interaction effects.

In summary, our results strongly suggest that the type of communication (one-to-one versus one-to-many), modality (video versus text) and type of information (generic information versus brand content) influence pass-along behavior on SNSs. When passing along brand messages to many followers on a public manner, and when this message is mostly composed of short texts with links, consumers prefer rich information content about the brand and its products. Future research should investigate this further, and in particular compare brand message characteristics and their influence on pass-along behavior across different types of SNSs.

MANAGERIAL IMPLICATIONS

The current study provides some clear warnings for brands when creating content for Twitter, among them:

- Twitter users seem to be highly aware that their actions happen in a public or semi-public manner, so they retweet brand messages more for their informational value than for other reasons.
- To fully leverage the pass-along behavior and see their messages spread, brands should consider SNS users not only as targets for brand messages, but also as gatekeepers of personal networks. As gatekeepers, they decide, based on the message characteristics, whether they want to associate themselves publicly with the brand message. Providing relevant, specific and information-rich messages therefore becomes one important manner through which brands can stimulate pass-along behavior of their content on Twitter.
- Emotional tone or cues can stimulate pass-along behavior when supporting or complementing informational content.

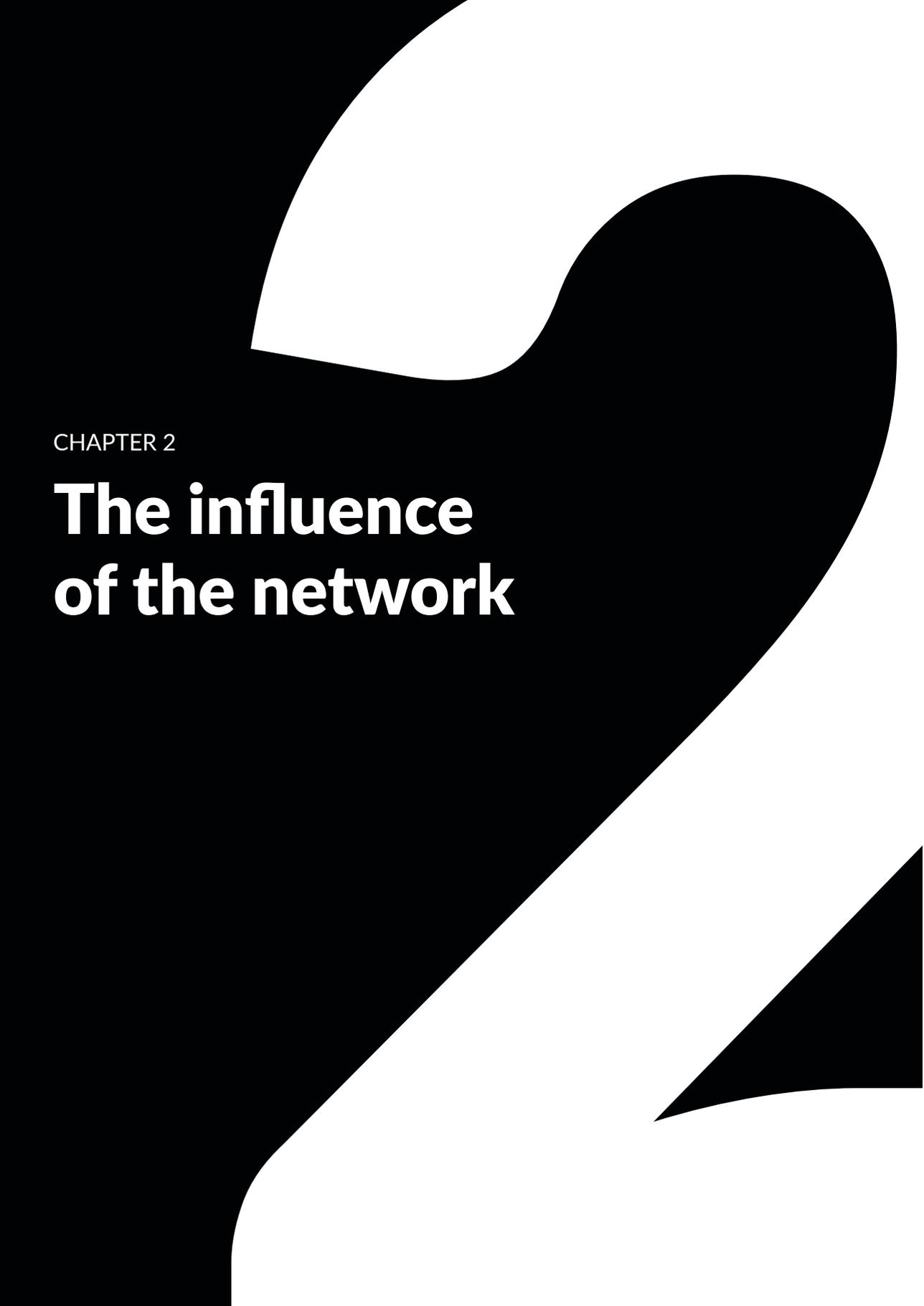
LIMITATIONS

While this study contributes to research with several important findings that help shed light on brand content pass-along behavior, certain limitations need to be considered. First, even though we used real life data of top global brands, and measured actual consumer behavior, the sample did not include all brands that are active on Twitter. Second, while the study analyzed some message characteristics that are more relevant and more specific to brand communication than earlier studies, these characteristics were still generic because of the diversity of brands and market segments in the study. Also, we did not include all message characteristics found in brand activity on Twitter, and about 1600 brand messages (8% of the sample) did not have any of the characteristics included in this study. Future research could build upon these findings to further investigate how message characteristics specific to a given segment (e.g., specific types of product information cues for one specific segment) may influence pass-along behavior, and investigate on a deeper level the role of interaction effects based on the results of this study. Third, this study investigated the role of emotions by assessing the effects of the presence of emotional cues in the brand Tweets. Future studies could investigate whether tweets that trigger emotional *responses* in consumers using more than just emotional cues in the text would have similar or even stronger effects. Finally, the automated content analysis required some of the independent variables to be operationalized as binary variables, which may have reduced the precision of the results.

Notwithstanding these limitations, this study has provided a strong set of findings, relevant and specific to brand content pass-

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along behavior on Twitter. These findings not only update and advance earlier research in brand content pass-along behavior, but also provide a baseline that can be used by future studies to continue investigating the increasingly strong use that both brands and consumers make of SNSs for their communication activities.

The background features a large, abstract black shape that resembles a stylized letter 'S' or a thick, curved line. This shape is set against a white background. The black shape starts at the top left, curves down and to the right, then loops back up and to the left, ending at the bottom left. There is also a smaller, solid black triangle in the bottom right corner.

CHAPTER 2

The influence of the network

Chapter 2: The influence of the network

This chapter has been submitted as:

Araujo, T., Neijens, P.C., & Vliegenthart, R. Brand Content Diffusion on Twitter: The Role of Influentials, Information Brokers and Strong Ties in Retweeting.

The version presented here has been adapted to follow the overall standards and terminology included in the other chapters of the dissertation.

ABSTRACT

Using a sample of over 5,300 tweets from top global brands, this study investigated how different types of users can influence brand content diffusion via retweets. Twitter users who influenced followers to retweet brand content were categorized as (a) influentials, because of their above average ability to influence others to retweet their tweets (in general), (b) information brokers, because of their position connecting groups of users or (c) having strong ties, because of their high percentage of friends in common and a mutual friend–follower relationship with the influenced follower. The results indicate that influentials and information brokers are associated with larger number of retweets for brand content. In addition, although information brokers have a larger overall influence on retweeting, they are more prone to do so when influentials are mentioned in the brand tweet, providing support for the strategy that aims to associate the brand with influential users.

The influence of the network

While targeting influential members or opinion leaders is not new within marketing communication, the emergence of social media and large-scale data collection and analysis capabilities – i.e. ‘big data’ – has led to much discussion on renewed opportunities for this aspect of viral marketing. On Twitter, for example, marketers are now able to collect information about user behavior, monitor interactions between consumers and analyze the messages that consumers write about brands. All these data could be used to identify and target influential users, who in turn could help maximize the diffusion of brand-generated information.

Twitter may be considered an ideal space for brands to explore the opportunities afforded by viral marketing, as users actively talk about brands (Jansen et al., 2009) and subscribe to updates from an average of five or more brands (Schreiner, 2013). Moreover, one of the key mechanisms of information diffusion on Twitter is the process of retweeting, by which a user passes along a message written by someone else (Boyd et al., 2010). Brands can monitor the process of retweeting, and identify not only how many times a given message was retweeted, but also the users who have the highest levels of influence on brand content diffusion.

Understanding how certain users can influence brand content diffusion on Twitter is a particularly pressing subject for several

reasons. Firstly, the use of Twitter (and of social media in general) continues to grow. In the USA, for example, 23% of online adults use Twitter (Pew Research Center, 2015). Secondly, an increasing amount of word-of-mouth is taking place online, with over 70% of social media users discussing experiences of products (Nielsen, 2012). Thirdly, consumers who retweet brand messages demonstrate more positive brand attitudes such as identification, commitment, trust or community membership intention compared to those who do not retweet brand content (Kim et al., 2014). Finally, and perhaps most importantly, when consumers decide to retweet the brand content, they help expose the brand message to users who do not receive direct updates from the brand on Twitter and they also associate themselves with the brand message. This association may also increase the credibility of the brand message.

Emerging research on the topic is yet to provide conclusive results on whether and, if so, how marketers can identify influential users who could accelerate the diffusion of brand content via retweets. Although practitioner studies suggest that brands should identify and target influential individuals on social media (e.g. Bughin, Doogan, & Vetvik, 2010; Harrysson, Metayer, & Sarrazin, 2012), they often do not clarify how the concept of influential users is defined or measured. These studies are also not clear whether such an influence is consistent across time, topics or brands. Academic researchers have also begun to investigate the role of influential users on information diffusion on Twitter (Bakshy et al., 2011; Cha et al., 2010; Kwak, Lee, Park, & Moon, 2010; Petrovic et al., 2011; Weng, Lim, Jiang, & He, 2010), but they usually analyze all types of messages from all types of users, including news organizations, politicians, celebrities and conversations between regular Twitter users. Such a diverse sample is

not specific enough to draw conclusions focused on brand content. Moreover, earlier research generally does not clearly distinguish the scope of influence. Being able to stimulate others to retweet your own message is one thing; being able to stimulate others to retweet a message created by a third party, for example a brand, is another matter. It remains to be seen whether these influential users are actually able to transfer their influence to brand content, and stimulate others to retweet messages created by brands.

The present study investigated whether certain types of users can influence the diffusion of brand content on Twitter, and if so, how. For the purposes of our study, we defined 'brand content diffusion' as the process of retweeting a message created by a brand, and 'influence' as the ability of a user to stimulate someone else to retweet a message created by a brand. The objectives and scope of this study fill a series of important gaps in earlier research. Firstly, we focused specifically on the diffusion, via retweets, of messages created by brands, rather than on all messages created by all types of users. This focus allowed us to draw conclusions specifically for brand and marketing communication. Secondly, we tested whether one's own influence on Twitter is actually transferable to brand content. This is important, as it can help brands focus their efforts on the users who can actually help extend the reach of the brand message. Finally, drawing from electronic word-of-mouth (eWOM) and opinion leadership literature, we distinguished between three types of influence processes, namely: (1) the ability of highly influential users, such as celebrities, to transfer their influence to a brand and stimulate their followers to retweet brand messages; (2) the ability that information brokers have to connect groups and bring novel information to users who may be interested in brand content but do not follow the brand;

and (3) the ability that users may have to stimulate close friends to retweet brand content. This advances earlier findings by testing which of the influence processes actually contributes to brand content diffusion via retweets.

LITERATURE REVIEW AND THEORETICAL BACKGROUND

BRAND-RELATED ACTIVITIES ON TWITTER

Brands often establish a presence in social media, creating online profiles and promoting them on the brand website (Araujo & Neijens, 2012). They engage with consumers on Twitter (Kwon & Sung, 2011), with most Fortune 500 companies employing strategies that aim to establish a dialogue with consumers and stakeholders on their activities (Rybalko & Seltzer, 2010). Brand-related information, links and, to a lesser extent, product-related information are the most common types of information that brands publish on Twitter (Kwon & Sung, 2011).

Brand-related activities on Twitter are initiated not only by brands. Consumers also create, share and contribute to brand-related content in social media (Muntinga et al., 2011). Consumers seek social interaction, incentives and information from their preferred brands (Kwon et al., 2015) and often mention brands in their messages (Jansen et al., 2009).

Consumers not only create messages about brands on Twitter, but also retweet messages created by brands. This process of brand content diffusion helps extend the reach of the brand, as consumers expose the brand message to new audiences. Research has shown that message characteristics influence the retweeting of brand messages:

when a brand message is highly informational and combined with emotion, consumers are more likely to retweet it (Araujo, Neijens, & Vliegenthart, 2015). Our study advanced this line of research by investigating whether certain types of users are also able to stimulate others to retweet messages created by brands.

WORD-OF-MOUTH AND OPINION LEADERSHIP PROCESSES

Viral marketing is based on the premise that targeting influential members of networks can trigger higher levels of information diffusion and product adoption (Kempe, Kleinberg, & Tardos, 2003). One of the earliest studies to deal with the concept of interpersonal influence and its relevance to information diffusion was conducted by Katz and Lazarsfeld (2006; originally published in 1955). The study identifies the existence of opinion leaders, positioning them as information brokers between the mass media and the general population, and as active participants in word-of-mouth (WOM) processes. Opinion leaders influence others because they have expertise (Brooks, 1957) and a strategic social location within the community (Katz, 1957).

The role of strategic social location is also found in innovation diffusion research (for a comprehensive overview, see Rogers, 2003), the aim of which is to explain why certain new products or ideas are adopted quicker or more widely than others. Influencers or opinion leaders have generally been described in diffusion literature as people who are able to influence others because of their central position in communication networks (Rogers, 2003). This line of research not only discusses the individual characteristics that may turn someone into an opinion leader, but also highlights the

importance of communication networks, and their use by opinion leaders, in influencing someone's decision to adopt an innovation or new idea.

Moving to online environments, several studies have investigated the role of opinion leaders or communication networks in eWOM, information diffusion and product purchase. Research has explored network characteristics and influence processes either by using computer simulations to investigate eWOM diffusion (Goldenberg, Libai, & Muller, 2001; Watts & Dodds, 2007) or by analyzing empirical data from discussions in online communities (Huffaker, 2010) and email networks (Iribarren & Moro, 2011; Leskovec, Adamic, & Huberman, 2007).

Our study extended earlier research by testing how different types of users influence others to retweet brand content. Drawing from eWOM and emerging research on Twitter general information diffusion, we proposed three types of users who may influence the diffusion of brand content via retweeting: (1) influentials, (2) information brokers and (3) users with strong ties. These users are discussed below.

MEANING TRANSFER AND THE ROLE OF INFLUENTIALS

Brands associate themselves with other people, places, events or experiences via marketing communications (Keller, 2009). These associations help establish brand image, which is defined as the consumer's perceptions of a brand reflected by the brand associations in the consumer's memory (Keller, 1993). One common way to build brand image and differentiate the brand is to use endorsements by celebrities or public figures (Erdogan, 1999). Celebrities or public

figures acquire powerful symbolic meanings from their roles – in show business, military, sports or other careers – and transfer these meanings when they endorse products or brands through the process of meaning transfer (McCracken, 1989).

Research has shown that celebrities can influence purchase intention, brand attitudes and attitudes towards an advertisement depending on their level of trustworthiness, expertise and attractiveness (Amos, Holmes, & Strutton, 2008). Moreover, celebrity endorsements in advertisements also influence WOM intentions, for example with sports brands (Bush, Martin, & Bush, 2004). Recent research into Twitter indicates that celebrities with a large number of followers can influence consumer's purchase intentions and brand attitudes when they tweet about brands (Jin & Phua, 2014).

For Twitter in particular, a stream of empirical studies also suggests that a small number of users have an extraordinary amount of influence and are able to stimulate several others to retweet content by endorsing that content (e.g. Cha et al., 2010; Kwak et al., 2010). These highly influential users are often news media, celebrities or public figures (Cha et al., 2010), and they select links or content that they recommend to their followers – often by retweeting – to 'provide value to their fan base and to emphasize commonalities between the practitioner and his or her followers' (Marwick & Boyd, 2011b, p. 147).

Drawing from these earlier findings, we adopted the term 'influentials' to categorize people with extraordinary influence, such as public figures or celebrities, and proposed that, due to their status, they are able to influence others to retweet brand content. We also proposed that someone could be influenced by influentials in two separate processes on Twitter: by receiving a brand message (1)

retweeted by an influential or (2) in which an influential is mentioned. In the first process, the influential retweets the brand message, effectively endorsing it. In the second process, the brand makes a reference to the influential by mentioning him or her in the brand message itself. In both cases, the followers of the influential attach meaning to the brand message in accordance with the image of the endorser, and are more likely to retweet the brand message. We proposed two hypotheses to test these processes:

H1: The greater the number of influentials who retweet the brand content, the greater the number of retweets the brand content receives.

H2: Brand messages that mention influentials are associated with a higher number of retweets compared to other brand messages.

BRIDGING INFLUENCE AND THE ROLE OF INFORMATION BROKERS

A second type of influence comes from users who are characterized not by their status as celebrities, but by their position in the network and their ability to act as information brokers between two groups. In summary, structural holes appear when members of one group are generally not connected to members of another group (Burt, 2000). Because of these structural holes, people in these two groups have access to different types of information and circulate different types of ideas. Information brokers have relationships with members of both groups and are able to bridge the structural hole between both groups and enable the circulation of information. This bridging influence does not necessarily stem from their unique or

exceptional interpersonal influence or credibility, but rather from their unique position in the network (Bakshy et al., 2012).

Studies into Twitter (Bakshy et al., 2011; van Liere, 2010) and YouTube (Liu-Thompkins & Rogerson, 2012) argue that information brokers are the most important type of user for information diffusion in social media. Even if an information broker has average or below average influence, targeting a large set of users in a bridging position allows information to reach larger sets of people (Bakshy et al., 2011). We adopted the term ‘information brokers’ for individuals who facilitate information diffusion by their ability to connect two groups in the network, and proposed the following hypothesis:

H3: The greater the number of information brokers who retweet the brand content, the greater the number of retweets the brand content receives.

THE ROLE OF STRONG TIES

Empirical research into social media has also suggested that the strength of the relationship between two users may influence information diffusion or the adoption of new behavior (Bakshy, Karrer, & Adamic, 2009; Bakshy et al., 2012). On Facebook, for example, people are more likely to be influenced to share content by individuals with whom they have stronger ties – defined as a high number of friends in common and a high frequency of contacts – although such an influence happens less often on SNSs because weak ties are more frequent (Bakshy et al., 2012). This is aligned with earlier findings from WOM research that indicate that people with whom one has strong ties are more influential in decision making (J. J. Brown

& Reingen, 1987). Moreover, earlier research on viral advertising indicates that consumers are more willing to open and disseminate email messages (Chiu et al., 2007; Phelps et al., 2004), and are more influenced by viral SNS campaigns (van Noort et al., 2012) when they come from close personal sources.

The effect of opinion leadership processes due to tie strength between users had not yet been tested for retweeting brand content on Twitter, so we adopted the term ‘strong ties’ to define individuals who influence other users with whom they have strong relationships, and proposed the following hypothesis:

H4: The greater the number of individuals with strong ties who retweet the brand content, the greater the number of retweets the brand content receives.

The different types of opinion leadership processes are summarized in Figure 1.

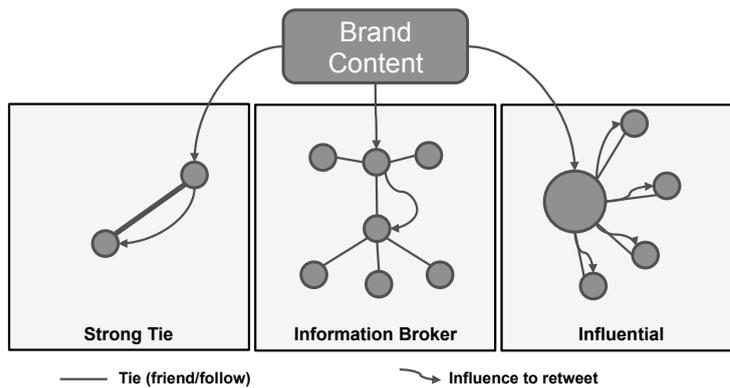


Figure 1. Types of influence

METHODS

SAMPLE

We selected 30 top global brands according to an annual brand ranking¹ and covered 10 market segments (three brands per market segment). This sampling strategy was adopted to allow for the investigation of influence processes across various market segments and thus provide more generalizable results. The selection of top brands ensured similar levels of brand equity in the sample, minimizing the effects of consumers' knowledge of the brand or of drastic variations in brand equity. The brands are shown in Table 1.

We analyzed the messages posted by the main official profile of each brand. When a brand had more than one profile, we selected the profile that (a) had just the brand name (rather than the name of a product from the brand), (b) had the largest number of followers compared to the brand's other profiles and (c) was preferably a verified profile (i.e. had a confirmation from Twitter that it belonged to the brand). Brands not on Twitter were replaced by the next top brand in the same segment to ensure each segment had three brands. We selected brand profiles in the English language. While there was no focus on a particular country, most data came from the United States.

1 Forbes World's Most Powerful Brands 2012, <http://www.forbes.com/powerful-brands/list/>, accessed on 8 February 2013.

THE INFLUENCE OF THE NETWORK

Table 1

Brands included in the sample

Brand	Segment	Brand	Segment
Adidas	Apparel	McDonald's	Restaurants
American Express	Financial Services	Mercedes Benz	Automotive
BMW	Automotive	Microsoft	Technology
Coach	Luxury	Nescafé	Beverages
Coca-Cola	Beverages	Nestlé	Cons. Packaged Goods
General Electric	Diversified	Nike	Apparel
Gillette	Cons. Packaged Goods	Pepsi	Beverages
Google	Technology	Philips	Diversified
Gucci	Luxury	Ralph Lauren	Apparel
H&M	Retailing	Siemens	Diversified
IBM	Technology	Starbucks	Restaurants
Ikea	Retailing	Subway	Restaurants
L'Oreal Paris	Cons. Packaged Goods	Toyota	Automotive
Louis Vuitton	Luxury	Visa	Financial Services
MasterCard	Financial Services	Walmart	Retailing

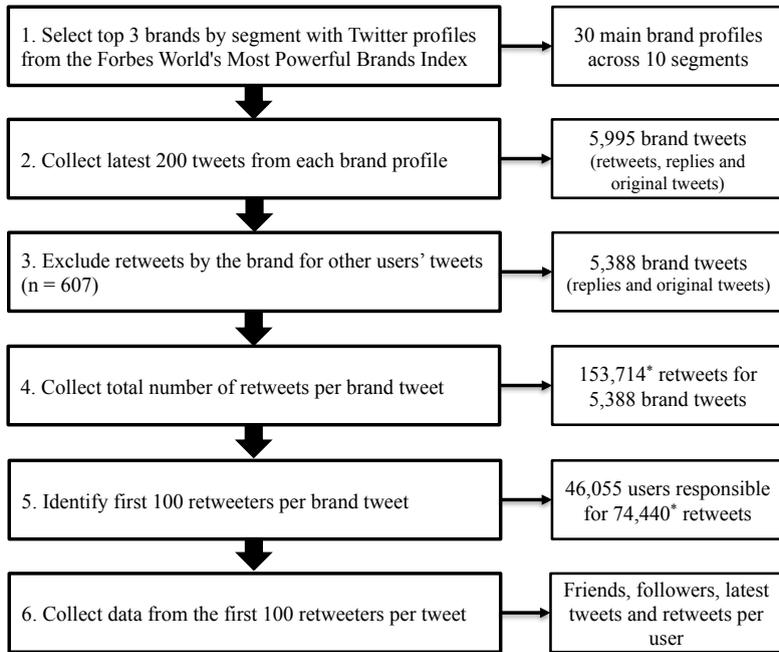
BRAND CONTENT DIFFUSION ON SNSs

The sample consisted of the latest 200 tweets published from each brand profile. Because not all brand profiles had 200 tweets, the total sample was 5,995 tweets. From those tweets, 607 were messages that the brands had retweeted from other users, that is, not messages written by the brand itself. These 607 messages were removed from the sample, leading to 5,388 unique messages. The oldest tweet collected was from 31 August 2011 and the most recent was from 19 February 2013. For each tweet, we collected the number of retweets, along with additional information such as date posted, whether it was a reply to another user or an original message, etc. Finally, we collected data on each user who had retweeted each brand tweet. Twitter limits this data to the first 100 users who retweeted each tweet. In total, we identified 46,055 Twitter users, of which data could be retrieved for 45,810 users. The data included the latest tweets from the user, along with the number of retweets, who followed the user and who the user followed on Twitter. The data collection steps are summarized in Figure 2.

DEPENDENT VARIABLE

The dependent variable was the number of retweets each brand tweet received. We collected this number when extracting the last 200 messages from the brand on Twitter, and updated it two weeks after the initial data collection. This ensured that all brand tweets, even the most recent, had an accurate number of retweets.

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* The 5,388 brand tweets received a total of 153,714 retweets. Twitter however only makes available personal data of the first 100 retweeters per tweet that had public profiles. This limitation allowed the study to identify 46,055 users responsible for a total of 74,440 retweets. Only 5% of the 5,388 brand tweets had over 100 retweets and would therefore be affected by the limitation.

Figure 2. Data collection process

INDEPENDENT VARIABLES

The main model of this study included, as independent variables, the number of influentials, information brokers and strong ties who retweeted each brand tweet, and whether the brand tweet mentioned an influential.² We removed all advertising agencies and other profiles of the brand on Twitter from the list of users.

The first step was to identify the influentials. In line with earlier research, we defined influentials as users with above average ability to stimulate retweets to their own messages (Cha et al., 2010; Kwak et al., 2010). A user was considered influential if the average number of retweets of his or her own tweets was three standard deviations above the mean number of retweets of all other users in the sample who had been able to influence someone else to retweet brand content. The mean retweets per post from each user who had at least one follower retweeting brand content was 2.32 ($SD = 17.23$). Seventeen users were considered influentials.

Of the 17 influentials, 82% had verified accounts, indicating that they are famous enough to receive a special verification from Twitter. Most of the users could be considered celebrities, as they were associated with sports (4), acting and modeling (3), music (2) or television shows (2). The accounts of the White House, a Japanese astronaut, two social media applications and two non-verified regular users completed this group. This led to the first independent variable, namely the number of influentials. This variable measured the number of influentials who retweeted a brand tweet, and was used for H1.

² To be considered an influential, information broker or strong ties, at least one follower of the user must have retweeted the brand content after the user, and this follower must not have been a follower of the brand.

We identified a second group of influentials by extracting every user mention made by the brands in their tweets. Of the 2,897 users mentioned in brand tweets, 77 met the same criteria used for the first group of influentials. This led to the second independent variable: mentions of influentials. This variable indicates which of the brand tweets mentions influentials in the text, and was used for H2.

The next step was to identify information brokers and users with strong ties. Information brokers were defined as users who connect the group of the influenced follower with another group of users, and strong ties were defined as users who have the majority of their friends in common with the influenced follower. While the identification of influentials focused on the intrinsic characteristic of someone being able to generate a lot of retweets of their own content, the analysis for strong ties or information brokers focused on the relationship between the user and the follower who was influenced. This means that a user can be an information broker with one influenced follower, and have strong ties with another influenced follower. In other words, the same user could have influenced follower A because of strong ties, and follower B because of information brokerage.

We considered a user to have strong ties with an influenced follower if: (a) the user had mutual ties with the follower (i.e. the user also subscribed to updates from the follower on Twitter) and (b) the percentage of friends in common with the follower was above 50%. A total of 66 users met the criteria of having strong ties with at least one of their followers. User–follower relationships that did not meet these criteria were then tested to check whether they belonged to the information brokers category.

BRAND CONTENT DIFFUSION ON SNSs

Information brokerage was measured by creating a network containing all the friends and followers of both the user and the influenced follower, and measuring the betweenness centrality of the user. Betweenness centrality is a measure that is often used to identify brokerage in social networks, as it indicates how often a given person is in the shortest path connecting two other users (Bruggeman, 2008). We used the NetworkX package (Hagberg, Schult, & Swart, 2008) from Python to perform the analysis, and selected only users who had betweenness centrality measures two standard deviations above the mean of all other users.³ A total of 669 users qualified as information brokers in relation to at least one of their followers.

CONTROL VARIABLES

We controlled for the presence of links or hashtags in the brand message, to account for differences in message characteristics that also influence retweeting behavior (Araujo et al., 2015; Suh et al., 2010). We also included the number of followers and the brand value of each brand as control variables, to account for the possibility that brands may have a higher number of retweets simply because their audience is larger or because they have higher brand equity.

³ The criterion of two standard deviations was selected to ensure that only users with higher levels of betweenness centrality would be considered information brokers, without however being too restrictive. If three standard deviations above the mean had been selected, only one user would have been considered an information broker.

TYPES OF BRAND TWEETS

Brand tweets were divided into two groups: original tweets (messages created by the brand aimed at all Twitter users) and replies (public responses from the brand to specific users). We analyzed original tweets and replies separately because of the large differences in the number of retweets that each type of message received. Original tweets were retweeted, on average, 40.74 times ($SD = 70.77$), while replies were retweeted, on average, 0.54 times ($SD = 1.97$). Table 2 shows the descriptive statistics for the main variables.

Table 2
Dependent and Independent Variables

Variable	Only Original Tweets ($N = 2,623$)	Only Replies ($N = 2,757$)
<i>Retweets</i> per brand tweet	40.74 (70.77)	0.54 (1.97)
<i>Influentials</i> per brand tweet	0.01 (0.11)	0.0004 (0.02)
Information Brokers per brand tweet	0.25 (1.24)	0.02 (0.2)
<i>Strong Ties</i> per brand tweet	0.03 (0.26)	0.002 (0.07)
Mentions of <i>Influentials</i>	5.49%	1.27%
Brand tweets with Hashtag	56%	23%
Brand tweets with URL	81%	17%
Brand Profile Followers	660,029 (1,368,599)	657,872 (885,667)
Brand Equity (USD, billions)	20.11 (13.53)	18.58 (12.82)

Notes: Standard Deviations in parentheses. A total of 8 brand tweets were considered outliers as they had over 1,090 retweets (3 standard deviations above the mean retweets from the sample), and were removed from the analysis. The numbers of *influentials*, *information brokers* or *strong ties* shown above are the average number of each of these users that retweeted each tweet. Brand Equity measured as the brand value indicated by the ranking of the world's most valuable brands used for this study.

ANALYTICAL STRATEGY

To summarize, our unit of analysis was the brand tweet. The dependent variable was the number of retweets each brand tweet received, and the independent variables were the number of times that (a) an influential, (b) an information broker and (c) a user with strong ties had retweeted the brand tweet, and whether the message (d) mentioned an influential. For each brand tweet, we also included the (e) number of followers of the brand profile, (f) the brand equity and whether the brand tweet contained (g) hashtags and (h) links.

We used a multilevel modeling approach to analyze the data (Rabe-Hesketh & Skrondal, 2008). We set the brand as the contextual level. We selected multilevel models to ensure brand differences would be controlled for, given their ability to split the variance of the dependent variable between (a) the individual characteristics of each tweet – namely the number of influentials, information brokers and strong ties, along with the control variables – and (b) group characteristics (contextual level), in this case differences among brands.

Because of the differences in the number of retweets, the data were analyzed in two models: the first model considered only original tweets from the brand, and the second model only considered replies from the brand to other users.

We were able to retrieve the total number of retweets that each brand tweet received but, because of Twitter restrictions, we were only able to gather data on the first 100 retweeters of each brand tweet. To ensure our results were consistent, we performed an additional check by re-running all the models with brand tweets that had received 100 or fewer retweets ($n = 5,100$) and found the same relationships between the independent and dependent variables.

Finally, we also investigated whether influentials had any additional influence on the retweeting behavior of information brokers. To do so, we conducted an ANCOVA with the number of retweets by information brokers as the dependent variable, and tested the differences between brand tweets that mentioned influentials and brand tweets that did not mention influentials. We included as covariates the number of retweets by influentials as well as the control variables (number of followers, brand equity, presence of URL and presence of hashtags).

RESULTS

The outcome of the analysis, which is summarized in Table 3, supports or partially supports the hypotheses associated with influentials. Hypothesis 1 was fully supported by the data: influentials (individuals with above average ability to trigger higher levels of retweeting of their own tweets) were also found to have the same influence as regards retweeting brand content, both for original brand tweets and for replies from the brand to other users. This means, for example, that each influential that retweeted an original tweet was associated with 20.25 additional overall retweets for the same tweet. Hypothesis 2 – namely that mentioning influentials in the brand message leads to higher levels of retweeting – was supported only in the case of replies.

Hypothesis 3 – that information brokers are associated with higher levels of retweeting – was also supported by the data. For example, each information broker who retweeted an original tweet was associated with 13.12 additional overall retweets for the same tweet. Hypothesis 4, however, was not supported: users with strong

ties were not significantly associated with higher levels of retweeting of original tweets, and actually seemed to be associated with significantly lower levels of overall retweeting of replies (where the brand is having a conversation with another user).

We also investigated which type of user had the strongest overall effect on levels of retweeting. While both influentials and information brokers were associated with higher levels of retweeting, it was important to establish which of these two types of users has the strongest influence on brand content diffusion. We therefore standardized the number of influentials, information brokers and users with strong ties, as well as mentions of influentials,⁴ and ran a new model, as shown in Table 4. The results indicate that information brokers are relatively more important to the diffusion of brand content than influentials. For original tweets, for example, the increase of information brokers by one standard deviation is associated with 11.85 additional retweets, versus 1.53 for influentials.

Finally, we investigated whether information brokers and influentials might somehow be connected, considering that both groups were found to significantly influence the number of overall retweets of brand tweets. The ANCOVA results (between-subjects factor: mention of influentials (present or not present); covariates: retweets by influentials, number of followers, brand equity, presence of URL and presence of hashtags) confirmed that original brand tweets that mention an influential were retweeted by significantly more information brokers compared to tweets that do not mention an influential, even when considering the covariates. The mean number

⁴ Each case value was subtracted from the mean of the original variable, and then divided by one standard deviation of the original variable.

of retweets by information brokers is significantly higher when influentials are mentioned in an original brand tweet ($M = 1.01$, $SD = 2.99$) compared to when an influential is not mentioned ($M = 0.21$, $SD = 1.04$), $F(1,2616) = 48.81$, $p < 0.001$. Among the covariates, there were no significant effects for retweets by influentials ($F(1,2616) = 0.37$, $p = 0.544$), brand equity ($F(1,2616) = 2.10$, $p = 0.147$) and presence of URL ($F(1,2616) = 0.47$, $p = 0.492$). All other covariates, including number of followers ($F(1,2616) = 36.33$, $p < 0.001$) and presence of hashtags ($F(1,2616) = 6.53$, $p < 0.05$), had significant effects on the number of retweets by information brokers on original brand tweets.

DISCUSSION

Our study investigated how different types of users can influence brand content diffusion via retweets. Drawing from research on information diffusion and eWOM, as well as from emerging literature on Twitter, we tested which types of users are actually able to stimulate others to retweet messages created by brands. One of the key strengths of our study is that we investigated the diffusion of real brand messages by actual consumers. We collected and analyzed data on over 5,300 messages from 30 top global brands across 10 market segments, and then reviewed the details of about 46,000 users who retweeted these brand messages. We set strict criteria to investigate this process as, unlike most earlier research, we focused only on messages created by brands and only considered cases when people who do not follow the brand were influenced to retweet by a certain user. These criteria distinguish our study from earlier studies on general content diffusion, as they ensure that the results are relevant to and valid for brand content diffusion.

BRAND CONTENT DIFFUSION ON SNSs

Table 3
Multilevel Model for Influence Type and Number of Retweets

	Only Original Tweets (N = 2,623)	Only Replies (N = 2,757)
Fixed effects		
Intercept	26.52 (19.79)	2.49 (1.85)
Number of Influentials	20.25* (10.04)	3.37* (1.57)
Mentions of <i>Influentials</i>	-1.64 (4.83)	1.4** (0.27)
Number of Information Brokers	13.12** (1.03)	3.77** (0.18)
Number of Strong Ties	-4.39 (4.89)	-2.89** (0.5)
Presence of Hashtag	0.97 (2.59)	0.11 (0.08)
Presence of URL	3.87 (2.98)	0.39** (0.09)
Brand Profile Followers	0.00004** (0)	0 (0)
Brand Equity	-0.24 (0.82)	-0.05 (0.07)
Random parameters		
Var (intercept e_{0i})	53.5(0.74)	1.52(0.02)
Var (u_i)	58.21(8.6)	5.01(0.73)
Rho	0.54(0.07)	0.92(0.02)
-2*log likelihood	28,446.26	10,287.18

Notes: Standard errors are in parentheses. A total of 8 brand tweets were considered outliers as they had over 1,090 retweets (3 standard deviations above the mean retweets from the sample), and were removed. Negative Binomial Multilevel Models were also ran and showed the same types of relationships between the dependent and independent variables. Multilevel Regression Models were selected because of their ease of interpretation. * $p < .05$, ** $p < 0.01$

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Table 4
Multilevel Model for Influence Type and Number of Retweets (Standardized Variables)^A

	Only Original Tweets (N = 2,623)	Only Replies (N = 2,757)
Fixed effects		
Intercept	28.29 (19.79)	3.02 (1.85)
Influentials (Standardized)	1.53* (0.76)	0.26* (0.12)
Mentions of Influentials (Standardized)	-0.29 (0.87)	0.25** (0.05)
Information Brokers (Standardized)	11.85** (0.92)	3.4** (0.16)
Strong Ties (Standardized)	-0.83 (0.92)	-0.54** (0.09)
Presence of Hashtag	0.97 (2.59)	0.11 (0.08)
Presence of URL	3.87 (2.98)	0.39** (0.09)
Brand Profile Followers	0.00004** (0)	0 (0)
Brand Equity	-0.24 (0.82)	-0.05 (0.07)
Random parameters		
Var (intercept e_{0i})	53.5(0.74)	1.52(0.02)
Var (u_i)	58.21(8.6)	5.01(0.73)
Rho	0.54(0.07)	0.92(0.02)
-2*log likelihood	28,446.26	10,287.18

Notes: Standard errors are in parentheses. A total of 8 brand tweets were considered outliers as they had over 1,090 retweets (3 standard deviations above the mean retweets from the sample), and were removed. * $p < .05$, ** $p < 0.01$ ^A Influentials, Information Brokers and Strong Ties were standardized. Each case value was subtracted from the mean, and then divided by one standard deviation of the original variable.

Our results indicate that certain types of users are able to stimulate others to retweet messages created by brands. In particular, the greater the number of influentials who retweet the brand content, the greater the number of retweets this content receives from other users. This was found for both original tweets and replies. These results demonstrate that highly influential users, who so far have been identified by their above average ability to trigger retweets of messages that they themselves created, are also able to stimulate retweets of messages created by brands. Moreover, the mere mention of an influential in the brand tweet triggered higher levels of retweeting in the case of replies.

Furthermore, the results indicate that information brokers are also associated with higher levels of retweeting of brand content. Even though one information broker may have average or below average ability to trigger retweets of his or her own tweets, all information brokers combined stimulate more users to retweet brand content than influentials.

It is striking, however, that influentials exert a dual type of influence when it comes to brand content. Firstly, influentials are associated with higher levels of overall retweeting when they retweet brand content. Secondly, information brokers retweet brand tweets more frequently when the brand tweets mention an influential. These findings shed a different light on the diffusion processes on Twitter for brand content. When an influential retweets a brand tweet, this content is associated with higher levels of overall retweeting. When a brand mentions an influential in its tweet, this content is associated with higher numbers of information brokers retweeting, which in turn is associated with higher levels of overall retweeting.

Finally, contrary to our hypothesis, users with strong ties were not found to be associated with higher levels of retweeting. If anything, these users were associated with significantly lower levels of retweeting of replies from the brand to other users. This indicates that information diffusion via retweets might not follow the same mechanism that it does on Facebook, where strong ties are also predictors of information sharing for general content (Bakshy et al., 2012), or for viral SNS campaigns (van Noort et al., 2012). One explanation may be that users assume that all their friends will have seen the brand message when a very close friend has already retweeted, and therefore decide not to retweet the message again. Even though our hypothesis was not supported, this finding is relevant to future research on the influence of homophily and strong ties on information diffusion, and also to brands wanting to prioritize their marketing communication strategies on Twitter. Further research should also investigate why strong ties are associated with lower numbers of retweets in the case of replies, and also consider other measures for identifying strong ties, beyond the ones used in this study.

THEORETICAL IMPLICATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

Our findings validate and extend earlier research on eWOM and marketing communications. The results provide evidence that an association with influentials, such as celebrities or public figures, can stimulate brand content diffusion on Twitter. This extends earlier research on advertising, specifically on celebrity endorsement, by demonstrating how the association with celebrities can also provide

benefits for the brand regarding eWOM and brand content diffusion. These findings also extend emerging literature on brand-related activities on Twitter: not only do celebrities influence brand attitudes when they tweet about brands (Jin & Phua, 2014), but they also stimulate brand content diffusion simply by retweeting the brand message or by being mentioned by the brand. Future research should investigate this mechanism further, especially to understand how consumers perceive the celebrity who is retweeting the brand message, the impact on brand attitudes of seeing the retweet, and whether consumers consider this activity a paid advertisement or simply a recommendation from the celebrity or public figure.

Our findings also confirm that the concept of bridging influence, as proposed by Burt (1999, 2000) and Granovetter (1973), is a relevant mechanism for brand content diffusion on Twitter via retweets. Information brokers are also responsible for most of the influence on brand content diffusion on Twitter, which corroborates earlier results on the diffusion of general content (Bakshy et al., 2011). Our findings validate and also extend current research, by demonstrating a linkage between influentials and information brokers: information brokers are more likely to retweet a brand message when an influential is mentioned. Future studies should explore this linkage further, and especially understand the motivations that information brokers have to retweet messages that mention influentials.

Finally, our study makes methodological contributions to advertising and marketing communication research. As demonstrated by our study, data extracted directly from social media such as Twitter can provide new and relevant insights for research on advertising and marketing communication. Brand content diffusion can now be measured and observed, and therefore be investigated in greater detail,

complementing and validating data that so far were only available from experiments and surveys. Large-scale data collection and analysis processes are now within reach of academic research. Our study, for example, not only collected data from brand profiles and about 46,000 users who retweeted brand content, but also identified which users they followed (26 million) and which users followed them (87 million). Future studies should consider these capabilities when investigating brand content diffusion, advertising and marketing communication, and use these capabilities to investigate how brand content diffusion may differ across cultures, languages or types of brands.

MANAGERIAL IMPLICATIONS

Some of the largest brands have millions of followers on Twitter, and these followers receive updates and messages from the brand. While this community of followers already provides a powerful space to communicate with consumers, brands should also consider the potential that certain types of users have to extend the reach of the brand message beyond the limits of this community. As indicated by our results, brands can achieve this in various ways. Firstly, they can identify and target influentials. These influentials can be celebrities or public figures, who acquire symbolic meaning through their roles in society, or they can be highly influential Twitter users who create content that is also often retweeted. Secondly, brands can also interact with the fan base of celebrities or public figures by mentioning them in brand messages, and thus draw the attention of users who do not belong to the brand community on Twitter. Finally, brands can continuously measure and analyze brand content diffusion on Twitter and determine which type of brand-specific information is retweeted

the most by information brokers, and prioritize these types of messages in future marketing communications on Twitter.

LIMITATIONS

The restrictions imposed by Twitter restricted the data collection to the first 100 retweeters of each brand tweet, therefore limiting the generalizability of these results. Even though the same relationships between the independent and dependent variables were found when running an additional analysis with brand tweets that had received 100 or fewer retweets, future studies could devise additional data collection procedures to overcome Twitter's limitations and gather all the retweeters from brand tweets and further investigate the complete retweeting cascade. For example, it would be interesting to understand whether the distance between the user and the brand (measured by the number of people unconnected to the brand who had retweeted the brand tweet before it reached the user) influences the user's decision to continue the cascade and retweet the brand tweet. Secondly, the sample was restricted to the top three global brands for each market segment. While this helped reduce concerns about differences in brand equity or brand awareness affecting the results at a general level, future studies could compare smaller with larger brands to determine whether these processes vary depending on brand equity or awareness factors.

Finally, this study used real brand tweets to measure retweeting behavior. While this in itself is an advantage due to the usage of observational data, it was not possible to ask retweeters why they retweeted the brand tweet, or how much influentials, information

brokers or strong ties influenced their decision to retweet. Future studies should investigate this further using experiments or surveys.

Notwithstanding these limitations, this study provided a strong set of findings about the relative importance of three different influence processes to brand content diffusion on Twitter. By investigating these processes specifically for brand content diffusion on Twitter, these findings also extend earlier literature and provide insights based on the actual retweeting of brand content.



CHAPTER 3

The influence of personality

Chapter 3: The influence of personality

This chapter has been submitted as:

Araujo, T., Neijens, P.C., & Vliegenthart, R. Helping others (and boosting my own image): How the Big Five and Need for Popularity influence brand content diffusion on Facebook and Twitter.

The version presented here has been adapted to follow the overall standards and terminology included in the other chapters of the dissertation.

ABSTRACT

Users of Social Networking Sites (SNSs) frequently engage in brand-related activities, including passing along brand messages to friends via retweets on Twitter and sharing on Facebook. The present study investigates how the Big Five personality traits and Need for Popularity are associated with passing along brand messages on Facebook and Twitter. Results from a survey of 410 SNS users show that this behavior is more prevalent among people with higher scores for Agreeableness, Extraversion and Need for Popularity. This suggests a strong linkage between passing along brand messages and the desire for social exchange, as well as image management. Moreover, the results indicate that extroverts prefer to share brand messages on Facebook, while people with higher scores for Conscientiousness are more likely to retweet brand messages on Twitter.

The influence of personality

Users of Social Networking Sites (SNSs) frequently engage in brand-related activities (Muntinga et al., 2011), such as discussing their favorite brands (Jansen et al., 2009) and “liking” (de Vries, Gensler, & Leeﬂang, 2012) or passing along (Araujo et al., 2015) messages created by brands on Facebook and Twitter. Twitter users, for example, frequently mentions brands on their messages (Jansen et al., 2009; Nagy & Midha, 2014), and follow five brands or more on average (Schreiner, 2013). Passing along brand messages via retweets (on Twitter) or sharing (on Facebook) is advantageous for brands, as SNS users forward these messages to friends or contacts on the SNS, thus exposing them to new audiences (comScore, 2011).

Research has begun to explore this process, mainly from a brand perspective, by addressing how to maximize pass-along behavior. For example, earlier studies have shown that message characteristics influence the likelihood of a brand message being retweeted on Twitter (Araujo et al., 2015) or liked on Facebook (de Vries et al., 2012). Moreover, research focusing on general content (Bakshy et al., 2011, 2012; Suh et al., 2010) and brand messages (Araujo, Neijens, & Vliegenthart, forthcoming) has also explored the role of network characteristics and influences on information diffusion.

Less attention, however, has been paid to the user’s perspective. We know, for example, that SNS users who pass along

brand messages on Twitter rank higher on brand identification and brand trust than other consumers (Kim et al., 2014). Nevertheless, there has been little research on how personality characteristics are associated with the decision to pass along brand messages on SNSs. This is a particularly pressing gap in the literature, as much discussion is taking place on the question of how brands can make use of SNSs to expand the reach of their messages (e.g. Araujo et al., 2015; Liu, Liu, & Li, 2012; Suh et al., 2010). Yet, if little is known about the personality characteristics that are associated with the decision to endorse publicly a message that has been written by a brand, and to pass that message along to friends or contacts, this question cannot be answered convincingly.

Our study aims to fill this gap in the literature by investigating the relationship between personality characteristics and the decision to pass along brand messages. Understanding this relationship not only advances marketing communication research, but it also sheds light on the psychological aspects of a process in which SNS users frequently engage, yet that has hardly been investigated in academic research. Moreover, our study contributes to the emerging literature on how personality characteristics are associated with different uses of Facebook and Twitter (e.g. Davenport, Bergman, Bergman, & Fearington, 2014; Hughes, Rowe, Batey, & Lee, 2012; Panek, Nardis, & Konrath, 2013; Petrocchi, Asnaani, Martinez, Nadkarni, & Hofmann, 2014; Smith, Fischer, & Yongjian, 2012). Within this line of research, few studies have covered how brand-related activity differs between the two SNSs. Furthermore, the emphasis has been on user-generated content (Smith et al., 2012). We develop this research by exploring the relationship between personality characteristics and

having a preference for using either Facebook or Twitter to pass along messages produced by brands.

THEORETICAL BACKGROUND

Personality characteristics are defined in social psychology research as relatively stable dispositions that influence a multitude of social behaviors (Ajzen, 1987). These characteristics can be viewed as a system through which the “individual selects, construes, and processes social information and generates social behavior” (Mischel & Shoda, 1995, p. 246), with some studies going so far as to suggest that they influence social relationships, but not the other way round (Asendorpf & Wilpers, 1998).

In line with this, previous research indicates that given the strongly social nature of the Internet, personality characteristics partially determine online behavior (Amichai-Hamburger, 2002). A range of personality characteristics has been used to explore behavior on the Internet in general (Amichai-Hamburger, 2002; Mark & Ganzach, 2014), on online games (Park, Song, & Teng, 2011) and, in particular, on SNSs (Amichai-Hamburger & Vinitzky, 2010; Hughes et al., 2012; Ryan & Xenos, 2011; Utz et al., 2012).

Of all personality characteristics, the Big Five (Agreeableness, Conscientiousness, Extraversion, Openness to Experience and Neuroticism), also known as the Five Factor Model, have been extensively investigated as predictors of a broad range of SNS-related behavior (Amichai-Hamburger & Vinitzky, 2010; Hollenbaugh & Ferris, 2014; Hughes et al., 2012; Ross et al., 2009; Ryan & Xenos, 2011; Utz et al., 2012; J.-L. Wang, Jackson, Zhang, & Su, 2012). Studies exploring the influence of the Big Five have, for example,

investigated how often people use SNSs, the types of features they use the most, and how much they disclose about themselves.

This emphasis on the Big Five may be attributed to the encompassing nature of these characteristics and their strong influence on how individuals establish social relationships and perceive the external world (Costa & McCrae, 1992). However, the focus on the Big Five has also been criticized from a theoretical perspective (Block, 2010), as well as with regard to whether it is able to explain fully all types of SNS-related behavior. Recent research suggests that Need for Popularity (NfP) (Christofides, Muise, & Desmarais, 2009; Utz et al., 2012) is also strongly associated with self-disclosure and other SNS-related behavior. In addition to the Big Five, we therefore also explore how NfP is associated with passing along brand messages on SNSs.

GENERAL MOTIVATIONS FOR PASSING ALONG BRAND MESSAGES

Existing studies on electronic word-of-mouth communication (eWOM) suggest that the desire to engage with and help others (e.g. Bronner & de Hoog, 2010; Hennig-Thurau, Gwinner, Walsh, & Gremler, 2004) is one of the key motivations for engaging in brand-related activities online. Research also highlights social enhancement as an important motivation for eWOM (Okazaki, 2009), as well as the notion of articulating one's own idealized self on the SNS by engaging in brand-related activities (Hollenbeck & Kaikati, 2012). Although this line of research tends to focus on the reasons why people talk about brands online, we would expect that similar motivations would also be relevant for passing along messages from brands. In view of these motivations, we would expect Agreeableness, Extraversion and NfP

to be associated with the decision to pass along brand messages on SNSs, and that they would have the same type of influence on Facebook and on Twitter.

People with high scores for Agreeableness are associated with higher levels of friendliness and warmth towards others (Costa & McCrae, 1992). Unsurprisingly, this personality trait has been found to influence social behavior on SNSs, in particular with regard to commenting on posts by others (J.-L. Wang et al., 2012) and sharing experiences on Facebook (S. S. Wang, 2013). We would expect people with higher levels of Agreeableness to pass along brand messages because of their strong desire to help others (friends or the brand itself), and thus propose the following hypothesis:

H1: SNS users with higher levels of Agreeableness will be more likely to pass along brand content.

Extraverts have been found to be more sociable and open, and enjoy social exchange with others (Costa & McCrae, 1992). Extraversion has been associated with higher number of friends on Facebook (Amichai-Hamburger & Vinitzky, 2010), the usage of Facebook to socialize (Ryan & Xenos, 2011), share personal experiences (S. S. Wang, 2013) and search for information (Hughes et al., 2012). Considering that passing along brand messages may be related to the same desire for social exchange, we propose the following hypothesis:

H2: SNS users with higher levels of Extraversion will be more likely to pass along brand content.

NfP has been found to be strongly associated with self-disclosure on Facebook (Christofides et al., 2009), and to be a strong predictor of profile enhancement, the adoption of self-presentation strategies and the disclosure of feelings on SNSs (Utz et al., 2012).

Earlier research also indicates that online gossipers, who tend to focus on their own status or fame, are more willing to engage in eWOM on SNSs (Okazaki, Rubio, & Campo, 2013). Considering that passing along brand messages may also be associated with self-presentation and social enhancement on SNSs, we propose the following hypothesis:

H3: SNS users with higher levels of NfP will be more likely to pass along brand content.

The Big Five covers three additional traits: Conscientiousness, Neuroticism and Openness to Experience. Conscientiousness, associated with being thorough, orderly and having a high level of self-discipline (Costa & McCrae, 1992), has been related to the use of Twitter for informational or practical purposes (Hughes et al., 2012). People who score higher on Neuroticism tend to worry and have a low level of emotional stability (Costa & McCrae, 1992), and have been associated with using the Internet (Amichai-Hamburger & Ben-Artzi, 2003) and Facebook (Hughes et al., 2012; Ryan & Xenos, 2011) to overcome loneliness and to socialize. Openness to Experience, associated with interest in new ideas and curiosity in general (Costa & McCrae, 1992), has been found to be a predictor of Facebook use for both social (Amichai-Hamburger & Vinitzky, 2010; Hollenbaugh & Ferris, 2014) and informational reasons (Hughes et al., 2012), and also for engaging in a wide range of SNS-related activities (Gosling, Augustine, Vazire, Holtzman, & Gaddis, 2011; Utz et al., 2012). We will not propose hypotheses for these three factors, as they are not clearly related to the reasons proposed above for passing along brand messages. However, in view of the exploratory nature of this study, we will test empirically whether they are associated with passing along brand content.

SNS PREFERENCES

Finally, in view of key differences between the two SNSs, we would expect certain users to prefer to pass along brand content on Facebook and others to prefer Twitter. Most notably, Twitter activities are usually public (unless the user decides to make their profile private), while Facebook has stricter privacy settings by default. Whilst Twitter allows for pseudonyms on user profiles, Facebook requires the use of real names. Facebook friendships require both users to approve the relationship, whereas the following/follower relationship on Twitter does not. This preference might be influenced by personality characteristics, which we will investigate with the following research question:

RQ: Which personality characteristics are associated with a SNS user's preference for using either Twitter or Facebook to pass along brand messages?

METHODS

PARTICIPANTS

A panel research company coordinated the data collection for the study, with panel members based in the United States that were active on Twitter and/or Facebook in December 2014. Complete responses were provided by a total of 410 participants, each with an account on Twitter and/or on Facebook. The mean age of the participants was 39.07 years ($SD = 13.95$) and 51% of them were female, thereby meeting quotas for gender and age groups aligned with the Twitter user base in the US (Duggan & Smith, 2014).

PROCEDURE

The participants completed an online questionnaire that included questions about their Facebook and Twitter usage, as well as personality characteristics. The participants then read two fictitious brand messages. They were asked to imagine that the messages had been written by their favorite brands, and to indicate whether they would share the messages on Facebook and retweet them on Twitter.

MEASURES

The dependent variables for this study were the extent to which the respondent agreed with the statements that he or she would (a) retweet the message on Twitter and (b) share it on Facebook. Participants answered the questions using a 7-point scale, ranging from “Strongly Disagree” to “Strongly Agree”. To evaluate whether personality characteristics are associated with a preference for a particular SNS to pass along brand messages, we created a third dependent variable – SNS preference – by subtracting the answer for “sharing on Facebook” from the answer for “retweeting on Twitter”. This third variable allows us to understand which SNS the user would be more likely to use to pass along the brand message, with positive values indicating a preference for Facebook and negative values for Twitter.

The independent variables were the abovementioned personality characteristics. The Big Five personality traits were measured using the Mini-IPIP 20-item questionnaire (Donnellan, Oswald, Baird, & Lucas, 2006), measured on a 5-point scale (all α 's > .66). NfP was measured using a 12-item questionnaire (Santor,

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Messervey, & Kusumakar, 2000) on a 7-point scale ($\alpha = .96$). We included age (measured in years) and gender as control variables, in line with findings from earlier research (Amichai-Hamburger & Vinitzky, 2010; Hollenbaugh & Ferris, 2014). Table 1 shows the descriptive statistics for all dependent and independent variables, as well as their correlations.

ANALYSIS

We explored the extent to which the Big Five and NfP are associated with the decision to share or retweet brand content using Ordinary Least Squares regression models. We first built individual models for sharing brand messages on Facebook and retweeting brand messages on Twitter, and then created a third model that evaluates the preference for one SNS over the other, with the score for “sharing on Facebook” subtracted from the score for “retweeting on Twitter”.

RESULTS

Agreeableness, Extraversion and NfP have a positive association with both sharing brand messages on Facebook and retweeting these messages on Twitter, as indicated in Table 2. This provides support for hypotheses 1, 2 and 3. Of all these traits, NfP has the strongest association with both sharing and retweeting brand messages, in view of the standardized regression results.

From the remaining Big Five personality traits, Neuroticism has a negative relationship with retweeting on Twitter, but it is not significantly associated with sharing brand messages on Facebook. Openness to Experience has a negative association with both sharing

and retweeting brand content, and Conscientiousness has a positive association with retweeting.

When it comes to comparing how personality characteristics might influence someone's preference for a particular SNS, the results indicate that people with high scores for Conscientiousness are more likely to prefer retweeting on Twitter to sharing on Facebook, while extraverts prefer sharing over retweeting. The other personality traits did not show any significant association with an SNS preference.

DISCUSSION

Our study aimed to explore how internal factors such as personality characteristics are associated with brand content diffusion by SNS users on Twitter and on Facebook. Using responses from 410 active SNS users, we tested how the Big Five personality traits and NfP influence the likelihood of passing along brand messages on Twitter and on Facebook. In addition, we investigated which personality traits might influence a person's preference for a particular SNS. Our results not only extend the findings of previous studies on the usage and production of user-generated information on SNSs in relation to passing along information produced by brands, but they also extend this research in several ways.

Table 1

Descriptive Statistics and Correlations^a

Variables	M	SD	1	2	3	4	5	6	7	8	9	10
1. Agreeableness	3.82	.80										
2. Conscientiousness	3.59	.85	.28**									
3. Extraversion	3.05	.98	.40**	.24**								
4. Neuroticism	2.58	.88	-.22**	-.40**	-.36**							
5. Openness	3.82	.88	.46**	.31**	.30**	-.33**						
6. NFP	2.92	1.51	-.28**	-.28**	.02	.30**	-.48**					
7. Age	39.07	13.95	.19**	.26**	.01	-.14**	.07	-.29**				
8. Gender (Female)	51%		.24**	.04**	.01	.07*	.07*	-.21**	.20**			
9. Sharing (Facebook)	3.83	2.09	.09*	.01	.23**	-.03	-.11**	.32**	-.09**	-.09**		
10. Retweeting (Twitter)	3.71	2.08	.07*	.03	.21**	-.05	-.13**	.35**	-.13**	-.10**	.88**	
11. SNS Preference (Facebook over Twitter)	.12	1.01	.03	-.05	.05	.02	.03	-.05	.07*	.02	.26**	-.23**

^aN = 820 (each of the participants evaluated two messages). * p < 0.05, ** p < 0.01

Table 2
Standardized Regression Results ^a

Variables	Sharing on Facebook			Retweeting on Twitter			SNS Preference (Facebook over Twitter)		
	B	SE B	β	B	SE B	β	B	SE B	β
Agreeableness	0.39	0.10	0.15**	0.40	0.10	0.15**	-0.01	0.05	-0.01
Conscientiousness	0.09	0.09	0.04	0.21	0.09	0.08*	-0.11	0.05	-0.09*
Extraversion	0.37	0.08	0.17**	0.28	0.08	0.13**	0.09	0.04	0.09*
Neuroticism	-0.13	0.09	-0.06	-0.20	0.09	-0.09*	0.07	0.05	0.06
Openness	-0.25	0.1	-0.11*	-0.28	0.10	-0.12**	0.03	0.05	0.03
NFP	0.44	0.06	0.31**	0.48	0.06	0.35**	-0.05	0.03	-0.07
Age	-0.01	0.01	-0.03	-0.01	0.01	-0.08*	0.01	0.00	0.08*
Gender (female)	-0.21	0.14	-0.05	-0.18	0.14	-0.04	-0.03	0.08	-0.02
Constant	1.20	0.68		1.30	0.67		-0.10	0.36	
Adj. R ²									0.01

^aN = 820 (each of the participants evaluated two messages). * p < 0.05, ** p < 0.01

One key finding is that of the Big Five personality traits, Agreeableness and Extraversion are positively related to sharing brand content on Facebook and retweeting brand content on Twitter. This finding provides evidence for the idea that passing along brand content is related to a desire to engage with others and to help them. Moreover, these results validate earlier research that indicates that people with higher scores for Agreeableness are more likely to engage in conversations and share more personal information (S. S. Wang, 2013) on Facebook. Along the same lines, earlier research has also found that extraverts are likely to use Facebook for informational purposes (Hughes et al., 2012), a factor that may also influence the decision to pass along brand content.

NfP was positively associated with both sharing and retweeting brand content, which not only validates the relevance of this trait for Facebook usage (Christofides et al., 2009), but also indicates that NfP is relevant for Twitter as well. Moreover, NfP had the strongest direct effect on both sharing and retweeting brand content, a finding that reinforces the idea that this trait is a strong predictor for SNS-related behavior (Utz et al., 2012). The respondents that exhibited the greatest desire to be popular were also more likely to share or retweet brand content. This provides evidence for the idea that passing along brand messages on Twitter and on Facebook may not just be related to the desire to socialize or help others, but that it is also strongly linked to image management and social enhancement, which reinforces findings from earlier research regarding eWOM *about* brands (e.g. Okazaki, 2009).

We also tested how Neuroticism, Openness to Experience and Conscientiousness were associated with sharing and retweeting. One important finding is that Neuroticism is related to retweeting, but

not to sharing. People with lower levels of Neuroticism are more likely to retweet brand messages, which suggests that only people with higher levels of emotional stability feel comfortable retweeting brand content in a public manner, as is the case on Twitter. On Facebook, where privacy settings are somewhat stricter and people have to approve the members of their network, this seems to be a less relevant issue. Conscientiousness is also associated with retweeting.

Considering that people with higher scores for this trait use Twitter for informational purposes (Hughes et al., 2012), this may indicate that retweeting brand content is also associated with the desire to inform others.

Interestingly, Openness to Experience is negatively associated with passing along brand content. This is unexpected, considering that people scoring higher for Openness to Experience are associated with being interested in new ideas or experiences and curiosity in general. One could speculate that this finding may indicate that passing along brand content is an activity preferred by people who are less willing to adopt new ideas and who may thus associate themselves with brand content in order to reinforce their own point of view. This finding should be further investigated by future research.

Finally, we tested which personality characteristics might be associated with the decision to use one SNS rather than the other to pass along brand messages. Only Extraversion and Conscientiousness were found to have significant effects in this case. The findings indicate that extraverts prefer Facebook for sharing brand content, whilst people that score higher on Conscientiousness prefer Twitter. These findings provide further insight into the differences in SNS usage: people with a higher desire for social exchange prefer to share

brand content on Facebook, while people who are more self-disciplined and results-oriented prefer Twitter.

Although this study has extended the existing literature on communication and the use of SNSs by exploring how personality characteristics are associated with brand content diffusion on Twitter and on Facebook, it is not without its limitations. First, while this study explores the relationship between passing along brand messages and personality characteristics, further research should explore the motivations for sharing or retweeting brand content. Second, although this study used a sample of active SNS-users with ages and gender in line with the Twitter user base, and therefore overcame some of the concerns associated with the use of student samples, we should note that what was measured was the intention to share or to retweet fictitious messages. Future studies could combine an investigation of personality characteristics with observational data on SNS usage by the respondents, to measure whether they had shared or retweeted actual brand messages. Finally, the model for SNS preference had an overall low explained variance; future studies should thus continue to research the topic in order to expand these findings. Notwithstanding these limitations, this study provides a strong set of findings on how personality characteristics are associated with sharing and retweeting brand content, and lays the foundations for future studies to continue to explore a phenomenon that is not only important for brands, but also for SNS users themselves.

CHAPTER 4

Consequences of the process



Chapter 4: Consequences of the process

This chapter has been submitted as:

Araujo, T. The impact of sharing brand messages: How message, sender, and receiver characteristics influence brand attitudes and information diffusion on Social Networking Sites.

The version presented here has been adapted to follow the overall standards and terminology included in the other chapters of the dissertation.

ABSTRACT

Social Networking Sites (SNSs) not only enable users to read or create content about brands, but also to easily pass along this content using information diffusion mechanisms such as retweeting or sharing. Little is known, however, about how reading brand messages passed along by SNS contacts influences online brand communication outcomes. Responses from active SNS users ($n = 410$) indicate that (1) message evaluation, (2) the relationship with the sender, and (3) the receiver's opinion leadership and opinion-seeking levels influence not only the receiver's intention to pass along the message further, but also his or her attitude towards the brand.

Consequences of the process

The emergence of social media in general, and of Social Networking Sites (SNSs) such as Facebook and Twitter in particular, has drastically changed the relationship between consumers and brands (Gensler et al., 2013; Hutton & Fosdick, 2011). Brands, on the one hand, now establish relationships with consumers that go beyond advertising by, for example, stimulating users to follow brand activities and to share brand messages on SNSs (Araujo & Neijens, 2012; Kwon & Sung, 2011). SNS users, on the other hand, now have access to platforms where they can quickly and easily communicate, publish content, and follow updates from their friends as well as from their favorite brands. Users can then not only consume brand-related information, but also contribute to and create their own brand-related content (Muntinga et al., 2011). SNSs also enable users to easily pass along messages created by others by retweeting the messages on Twitter or sharing them on Facebook. This mechanism for information diffusion is particularly relevant for brands, as consumers can help extend the reach of the brand message beyond the community of users already receiving updates from the brand (Araujo et al., 2015; Jansen et al., 2009).

Academic research has begun to explore what influences this type of information diffusion, focusing on how source, message, or network characteristics influence pass-along behavior for general (i.e. not brand-specific) content on SNSs (Bakshy et al., 2011; Z. Liu et al., 2012; Petrovic et al., 2011; Suh et al., 2010). Research specifically

investigating the diffusion of brand content on SNSs has explored how the presence of information and emotion in brand messages (Araujo et al., 2015), and positive attitudes towards the brand (Kim et al., 2014) stimulate pass-along behavior. This line of research has generally focused on the relationship between the SNS user who has written the message, be it a person or a brand, and the follower who has read that message and may decide to retweet it or share it.

Some studies also investigate the effects that receiving brand-related information on SNSs. Research has focused, for example, on the influence of celebrities' tweets on purchase intentions (Jin & Phua, 2014) or on the persuasiveness of viral SNS campaigns with online games (Okazaki & Yagüe, 2012; van Noort et al., 2012). While these studies provide important findings for online brand communication on SNSs, a critical gap still exists in the literature. Research is yet to investigate the effects of receiving regular messages (i.e. not viral campaigns or advertisement) created by brands (instead of by other users) via retweeting or sharing. This is an important distinction not only because the type or source of the message may be different, but also because of how the information is passed along. Retweeting a brand message on Twitter or sharing it on Facebook generally means that the user is passing it along to all of his or her friends in the network at once in a mostly public manner, something arguably different from sending the message only to a selected group of contacts for an email, or viral campaign.

Investigating brand content information diffusion via these new capabilities brought on by SNSs is a particularly pressing topic for several reasons. Firstly, SNSs have achieved extremely high levels of usage, with over 71% of the US online population across all age groups and up to 90% of the online population aged between 18 and

34 years using them regularly (Pew Research Center, 2015). Secondly, although SNS users mention brands or pass along brand messages frequently (Jansen et al., 2009; Nagy & Midha, 2014), research about the actual effects of this behavior is still scarce. Thirdly, and perhaps more importantly, SNSs have arguably lowered the complexity of passing along messages to a network of friends or contacts in a much more public and much less targeted manner than email or viral campaigns. This calls for a deeper understanding of how these new capabilities brought on by SNSs influence the outcomes of the online brand communication process.

In order to fill this gap in the literature, this study extends electronic word-of-mouth (eWOM) and viral advertising research, and evaluates the influence of three aspects of the communication process: the message, the sender, and the receiver. When it comes to the message, this study extends earlier research on viral advertising and tests whether perceiving the brand message as entertaining or informative influences the receiver's willingness to pass it along further, and also how he or she perceives the brand. When it comes to the sender, this study investigates the nature of the relationship between the person who shared or retweeted the brand content in the first place, and the receiver of the message. Finally, this study evaluates how the receiver's own levels of opinion leadership and engagement in consumer-to-consumer eWOM are associated with the willingness to pass along brand-generated messages, as well as with the formation of brand attitudes.

ONLINE COMMUNICATION AND SNSs

Online communication has brought drastic changes to how brands and consumers interact, as evidenced, for example, by the increased importance of blogs (Kozinets et al., 2010), online consumer reviews (Willemsen et al., 2011), online forums (J. Brown et al., 2007), and by the emergence of webcare as an important tool for brand reputation management (van Noort & Willemsen, 2012). With these changes, discussions that consumers may have had with friends or acquaintances about brands and products in the past – i.e. offline word-of-mouth – also take place in online environments. Brands are frequently mentioned, for example, in Twitter messages (Jansen et al., 2009; Nagy & Midha, 2014), and a large proportion of users discuss their experiences with products by means of social media (Nielsen, 2012).

The amount and diversity of brand-related discussion taking place online have grown together with the prevalence of the internet as a communication medium, as indicated by the evolution of online reviews (Chen, Fay, & Wang, 2011). This change is not relevant just because of the increasing amount of brand-related discussions online. The nature of the discussions is also changing. Because eWOM is written, it is less transient and more findable by opinion seekers (Kimmel & Kitchen, 2014). Opinion leaders can now disseminate their opinions more easily, and to more people (Sun, Youn, Wu, & Kuntaraporn, 2006), even to those who they do not know offline.

SNSs provide an additional set of capabilities to enable eWOM and participation online. A case in point is retweeting, a mechanism for information diffusion that has emerged almost spontaneously on Twitter, enabling users to pass along messages

written by others. Initially, users would copy a message from someone else themselves and manually indicate that it was a retweet (Boyd et al., 2010). Twitter then included this capability directly in its interface, making it not only simpler and more structured to use, but also prominently displaying how many retweets each message had received on the SNS. Facebook added a similar capability, the share option, soon afterward. These capabilities made it much more convenient for SNS users to pass along messages created by someone else, including messages created by brands. Another important aspect for brands is that messages passed along by means of these capabilities appear in the receivers' timelines as regular messages (i.e. not advertisements), and are associated with the name of the person in the receivers' network that shared or retweeted the message.

This study draws upon earlier research on information diffusion and online brand communication to investigate the consequences of reading a brand message passed along by someone else on SNSs via sharing or retweeting. Findings from eWOM research, which explores why consumers engage in consumer-to-consumer discussions about brands online, as well as from viral advertising research, are briefly reviewed below in order to create hypotheses for the effects of message, receiver, and sender characteristics on brand content diffusion on SNSs.

HYPOTHESES DEVELOPMENT

THE INFLUENCE OF THE MESSAGE

Earlier research highlights the importance of utilitarian and hedonic motivations for engaging in WOM (Mikalef, Pateli, &

Giannakos, 2013) and for other brand-related interactions, such as the shopping experience (Babin, Darden, & Griffin, 1994). Utilitarian motivations are more results-oriented, rational, and therefore associated with information and utility, while hedonic motivations are more spontaneous in nature, and associated with entertainment, fun, and pleasure (Babin et al., 1994). Viral advertising and eWOM research uses these two motivations to explain why consumers engage in brand-related discussions and pass along messages created by other consumers or by brands.

The desire to help and inform others is an important motivation for eWOM (Bronner & de Hoog, 2010; Hennig-Thurau et al., 2004; Okazaki, 2008, 2009), and is usually associated with the utilitarian dimension. People who desire to help others tend to prioritize messages that are useful and rich in information (Chiu et al., 2007) the more that they perceive themselves as able to judge the usefulness of the message to the receiver (Huang et al., 2009). The influence of utilitarian motivations and the level of information in messages is also seen on Twitter, where brand messages rich in information cues, such as product information and links to the brand website, are more likely to be retweeted (Araujo et al., 2015).

The utilitarian dimension is not the only motivation for eWOM or for passing along brand messages: SNS users also engage in eWOM because exchanging information is enjoyable, or fun (Okazaki, 2008, 2009). Viral advertising frequently resorts to messages that are entertaining or that trigger emotional responses, with the assumption that the content needs to be somehow perceived as extraordinary to be passed along (Porter & Golan, 2006). Several studies validate this assumption, and show that consumers tend to pass along emails or online content for hedonic reasons (Chiu et al., 2007; Phelps et al.,

2004), particularly when these messages trigger emotional responses (Berger & Milkman, 2012; Dobele et al., 2007; Eckler & Bolls, 2011). Research also indicates that the presence of emotional cues on brand messages increases the likelihood that informational brand messages will be passed along on Twitter (Araujo et al., 2015).

The findings above indicate a strong link between how the receiver evaluates a brand message and his or her willingness to pass it along further, leading to the following hypotheses:

H1: The more that receivers consider a message to be informative, the more likely they will be to pass it along.

H2: The more that receivers consider a message to be entertaining, the more likely they will be to pass it along.

As indicated by H1 and H2, brand messages perceived as informative and entertaining are expected to lead to higher willingness to pass along these messages further. Marketing communication research also establishes that attitude towards the advertisement, or how the advertisement is perceived, influences attitudes towards the brand (MacKenzie, Lutz, & Belch, 1986; MacInnis & Jaworski, 1989). The same can be expected with regard to brand messages on SNSs. In the context of this study, the evaluation of the brand message, i.e. its level of information and entertainment, will contribute to the attitude that the receiver has toward the brand. This leads to H3 and H4:

H3: The more that the receiver considers a brand message to be informative, the more positive her or his attitude will be toward the brand.

H4: The more that the receiver considers a brand message to be entertaining, the more positive her or his attitude will be toward the brand.

THE INFLUENCE OF THE SENDER

Innovation diffusion research suggests that the relationship between the people taking part in WOM processes plays an important role in determining whether innovations or new ideas will be accepted or not (Rogers, 2003). One of the key concepts in this line of research is the strength of the relationship between the sender and the receiver of the message. The strength of this relationship, or tie strength, is defined as the combination of the emotional intensity, time spent, and intimacy between two people, and has been measured, for example, by the degree of overlap between friendship networks (Granovetter, 1973).

Earlier research has established that, in general, strong ties have more influence on decision-making than weak ties (J. J. Brown & Reingen, 1987). Research on SNSs, for example, indicates that strong ties influence the adoption of new behavior (Bakshy et al., 2012) as well as the persuasiveness of viral campaigns (van Noort et al., 2012). This can be explained not only by how consumers see close friends and family as more credible and trustworthy than other sources in general, but also by the expectation that messages sent by strong ties are more relevant and targeted to their needs (Chiu et al., 2007; Phelps et al., 2004; van Noort et al., 2012).

Research also indicates that weak ties contribute to information diffusion by enabling information to circulate among different groups (J. J. Brown & Reingen, 1987). This is related to the concept of information brokerage, where certain people – information brokers – are able to connect groups of people that would otherwise be disconnected (Burt, 2000), and thus enable the information flow between these groups. Studies on Twitter indicate that information

brokers are responsible for most of the diffusion of information (Bakshy et al., 2011), including the diffusion of brand messages via retweets (Araujo et al., forthcoming).

Consumers can receive brand messages not only from close friends or information brokers, but also from celebrities or public figures. SNSs are frequently used by celebrities to communicate with their fan bases (Marwick & Boyd, 2011b). When celebrities discuss brands – for example on Twitter – consumers who identify with them display stronger product involvement and buying intention (Jin & Phua, 2014). Moreover, highly influential users – including celebrities and public figures – have been found to stimulate their followers to pass along messages created by brands when they retweet or are mentioned in these messages (Araujo et al., forthcoming).

The findings above indicate that the type of sender should influence the willingness to pass along the brand message further. Considering findings already available on Twitter indicating that information brokers as well as celebrities stimulate information diffusion via retweets, this study hypothesizes that:

H5: Receivers will be more likely to pass along the brand message further when they receive it from an information broker or from a celebrity (as compared to receiving it from close friends).

The findings from earlier research discussed above also provide clear indications that (a) the stronger the tie, the stronger the persuasive influence of the sender (e.g. van Noort et al., 2012) and (b) that celebrities are able to influence product involvement and willingness to purchase products when they are associated with brands on SNSs (e.g. Jin & Phua, 2014). This leads to the following hypothesis:

H6: Receivers will have a more positive brand attitude when they receive the brand message from a close friend than from other types of senders (information brokers or celebrities).

THE INFLUENCE OF THE RECEIVER

Not everyone is equally likely to be influenced by WOM, or to initiate it. Earlier research on WOM (Flynn, Goldsmith, & Eastman, 1996) makes a distinction between opinion leaders and opinion seekers. On the one hand, opinion leaders influence others not only by their central position in communication networks, but also by their expertise on the topic (Brooks, 1957) and their standing in the community (Katz, 1957). In online environments, they demonstrate higher levels of innovativeness and consider themselves to be more knowledgeable than non-leaders (Lyons & Henderson, 2005). On the other hand, opinion seekers are the ones who frequently look towards others to make a decision (Flynn et al., 1996). Research indicates that opinion seekers are more likely to be affected by WOM, especially when they perceive a certain decision as being likely to involve a higher risk (Arndt, 1967).

Opinion leaders and opinion seekers are not mutually exclusive categories, as opinion leaders are also influenced by others (Myers & Robertson, 1972). When it comes to eWOM, opinion leaders are more likely to participate in eWOM groups (Okazaki, 2009), and both opinion seekers and opinion leaders are positively associated with processes of diffusion of information online (Sun et al., 2006). Given these findings, opinion leaders would be expected to engage in pass-along behavior of brand messages, and opinion seekers would be expected to be more susceptible to influence in brand

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attitudes when receiving these messages. This leads to the following hypotheses:

H7: The receiver's online opinion leadership levels will be positively related to his or her likelihood of passing along brand messages via retweeting or sharing.

H8: The receiver's online opinion-seeking levels will be positively related to his or her brand attitudes when receiving brand messages passed along via retweeting or sharing.

METHODS

SAMPLE

Members of a US panel who were active social media users participated in the study. A total of 410 respondents completed the questionnaire in December 2014. The respondents' mean age was 39.07 years ($SD = 13.95$), and 51% were females, which met quotas for gender and age groups aligned with the Twitter user base in the US (Duggan & Smith, 2014). Most respondents were active SNS users, accessing Facebook and Twitter at least once a week (Facebook: 89%, Twitter: 62%). Also, 48% of the participants indicated that they shared brand messages on Facebook at least once a week, while 40% retweeted brand content on Twitter as often.

PROCEDURE

Respondents participated in an online survey in which they were presented fictitious brand messages, and had to evaluate (a) whether they would pass a particular message along to their friends on

the SNS via retweets or sharing and (b) how informational and entertaining they considered the message to be. All messages contained an indication that either a close friend, a celebrity or public figure they admired or an acquaintance had passed along that message to them on an SNS. In order to provide more general results, each respondent evaluated two sets of three messages: one set for a known brand and another set for an unknown brand. The fictitious brand messages were designed to vary in levels of information and entertainment, and the evaluation used in the analysis was the one made by the respondent, given the level of subjectivity of this assessment.

MEASURES

Willingness to pass along the brand message

Participants rated the extent to which they agreed with the statement that they would pass along the message in question on Twitter or Facebook via retweeting or sharing. The responses were given on a 7-point scale, ranging from “Strongly Disagree” to “Strongly Agree” ($M = 4.07$, $SD = 1.93$).

Brand attitude

Respondents evaluated their attitude towards each of the fictitious brands that had originally written each of the messages by responding to three questions measuring brand affect (Sengupta & Johar, 2002). The responses were on a 7-point scale, ranging from “Strongly Disagree” to “Strongly Agree” (Cronbach’s $\alpha = 0.95$, $M = 4.51$, $SD = 1.61$).

Type of sender

Each message was shown together with information on who had retweeted or shared that message (sender). The respondents were instructed to consider the sender to be (1) a celebrity or public figure that they admired, (2) a very close friend, or (3) an acquaintance, but not a friend (used as a proxy for information broker). The type of sender was randomly associated with each message, and shown in similar proportions (of the messages shown to each respondent, 33% were said to be passed along by a celebrity, 33% by a close friend and 33% by an acquaintance).

Message evaluation

Each respondent evaluated each message for its entertainment and informational levels. Starting from an earlier scale measuring hedonic and utilitarian consumer attitudes (Voss, Spangenberg, & Grohmann, 2003), a specific measure was developed to evaluate the entertainment (hedonic) and informational (utilitarian) levels of a message. For the entertainment level, respondents rated the extent to which they agreed that the message was fun, exciting and entertaining on a 7-point scale ranging from “Strongly Disagree” to “Strong Agree” (Cronbach’s $\alpha = 0.95$, $M = 4.28$, $SD = 1.65$). For the informational level, respondents evaluated the extent to which the message was practical, informative, and helpful, also on a 7-point scale (Cronbach’s $\alpha = 0.93$, $M = 4.78$, $SD = 1.54$). Confirmatory Factor Analysis was run to validate the existence of two latent variables in the message evaluations – entertainment and informational levels –, considering the adaptations made to the original scale. Using guidelines for identification of models with measurement errors (Kline, 2011) and allowing for covariance between error terms, the

model indicated good fit (RMSEA = 0.045, range 0.032 – 0.060, CFI = 0.998, SRMR = 0.006). The predicted latent variables were used in the analysis.

Online Opinion Leadership and Opinion-seeking levels

An adapted version of the scale from (Sun et al., 2006) was used to measure online opinion leadership and opinion-seeking levels. The questions were also asked on a 7-point scale ranging from “Strongly Disagree” to “Strongly Agree”, with online opinion leadership (Cronbach’s $\alpha = 0.94$, $M = 4.47$, $SD = 1.45$) and online opinion seeking (Cronbach’s $\alpha = 0.88$, $M = 4.70$, $SD = 1.21$) being measured with 8 questions each. Considering each scale was also adapted, Confirmatory Factor Analysis was run. Models correcting for covariance between error terms indicated good fit for both opinion leadership (RMSEA = 0.036, range 0.000 to 0.063, CFI = 0.997, SRMR = 0.014) and opinion seeking (RMSEA = 0.038, range 0.000 to 0.071, CFI = 0.996, SRMR = 0.016). The predicted latent variables were used in the analysis.

Control variables

Age ($M = 39.07$, $SD = 13.93$) and gender (51% females) were included in the analysis as control variables, as earlier research shows that they influence SNS-related behavior (Amichai-Hamburger & Vinitzky, 2010; Hollenbaugh & Ferris, 2014). Another control variable was whether the message indicated that the brand was known or unknown to the respondent (50% of the messages shown to each respondent were associated with a known brand, and 50% with an unknown brand).

ANALYTICAL STRATEGY

Multilevel regression models for each dependent variable were built to test the hypotheses and answer the research question of this study. The unit of analysis was each message evaluation done by each respondent ($n = 2460$). The data were analyzed using multilevel regression with cross-classified models, considering that each respondent ($n = 410$) evaluated more than one message ($n = 6$). Each model had two contextual levels: messages (6 groups, one per message) and respondents (410 groups, one per respondent). This strategy ensured that any unexplained variance associated with internal characteristics of the respondent or of the message was isolated at the contextual level (Fielding & Goldstein, 2006; Goldstein, 1994). Finally, a new set of models was created with the standardized version of the variables to allow for the comparison of their influence on the dependent variables. The inclusion of binary variables (e.g. type of sender, gender), however, posed a challenge to the standardization, as standardized versions of binary variables cannot be directly interpreted. We therefore standardized all non-binary variables by dividing the inputs by two standard deviations, in line with recommendations from the literature (Gelman, 2008). This strategy ensures that the standardized variables have a standard deviation of 0.5, which leaves them in a scale that is directly comparable with the (unstandardized) binary variables.

RESULTS

The results, shown in Table 1, indicate that message evaluation influences the willingness for pass-along behavior. This

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provides support to both H1 and H2. In line with H1, the more that receivers consider brand messages to be informational, the more likely they are to pass them along, with each increase in the level of message evaluation raising the willingness to pass along the brand message by 0.35. In line with H2, the more that respondents perceive brand messages to be entertaining, the more likely they are to pass them along, with each increase in entertainment levels also increasing pass-along behavior by 0.52.

The results also provide support to H3 and H4, which associated message evaluation with influence on brand attitudes. As proposed by H3, the more that receivers perceive the message to be informative, the better their attitude towards the brand, with each increase in informational level improving brand attitudes by 0.48. Likewise, and as proposed by H4, perceived entertainment levels of a message also improve brand attitudes, by 0.37.

The results do not show significant differences between the influences of types of sender and willingness for pass-along behavior. Therefore, this does not provide support to H5, which indicated that receiving brand messages passed along by information brokers or celebrities would lead to higher likelihood of pass-along behavior than when the messages were passed along by close friends. The type of sender, however, influences brand attitudes positively in the case of close friends but does not show a significant effect in the case of celebrities. This provides partial support to H6.

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Table 1
Results of Cross-Classified Multilevel Models (n = 2460)

	Willingness to Pass Along		Brand Attitude	
	b	SE	b	SE
Message				
Information Level	0.35**	0.03	0.48**	0.02
Entertainment Level	0.52**	0.03	0.37**	0.02
Sender				
Acquaintance	-0.08	0.04	(base category)	
Celebrity	-0.03	0.04	-0.06	0.03
Close friend	(base category)		0.13**	0.03
Receiver				
Opinion Leadership Level	0.2**	0.04	0.05*	0.03
Opinion-seeking Level	0.03	0.07	0.17**	0.05
Control Variables				
Age	0	0	0	0
Female	-0.2*	0.09	-0.13*	0.06
Known Brand	0.06	0.08	-0.01	0.06
Intercept	4.1	0.14	4.54	0.1
Contextual Level Variance				
Variance				
Message group	0.01	0.01	0.004	0.003
Respondent	0.62	0.05	0.26	0.02
Residual	0.73	0.02	0.45	0.01
Intraclass Correlation				
Message Group	0.01		0.02	
Respondent	0.63		0.58	
Residual	0.36		0.40	
-2*Log likelihood	6960.29		5639.25	

**p<.01; *p<.05

CONSEQUENCES OF THE PROCESS

Table 2
Results of Cross-Classified Multilevel Models with Standardized Variables (n = 2460)

	Willingness to Pass Along		Brand Attitude	
	b	SE	b	SE
Message				
Informational Level	0.99**	0.08	1.37**	0.06
Entertainment Level	1.55**	0.09	1.12**	0.07
Sender				
Acquaintance	-0.08	0.04	(base category)	
Celebrity	-0.03	0.04	-0.06	0.03
Close friend	(base category)		0.13**	0.03
Receiver				
Opinion Leadership Level	0.6**	0.12	0.15*	0.08
Opinion Seeking Level	0.05	0.12	0.29**	0.08
Control Variables				
Age	0.04	0.09	-0.03	0.06
Female	-0.2*	0.09	-0.13*	0.06
Known Brand	0.06	0.08	-0.01	0.06
Intercept	4.18	0.09	4.55	0.06
Contextual Level Variance				
Variance				
Message group	0.01	0.01	0.004	0.003
Respondent	0.62	0.05	0.26	0.02
Residual	0.73	0.02	0.45	0.01
Intraclass Correlation				
Message Group	0.01		0.02	
Respondent	0.63		0.58	
Residual	0.36		0.40	
-2*Log likelihood	6960.29		5639.25	

**p<.01; *p<.05

When it comes to the receiver, both H7 and H8 are supported. Receivers that have higher opinion leadership levels and participate more often in eWOM to provide recommendations and help others are also more likely to pass along brand messages on SNSs. This provides support to H7. Receivers with higher online opinion-seeking levels, who rely on eWOM to take decisions, displayed higher brand attitudes after reading a brand message passed along by others than receivers with lower levels of online opinion seeking, which supports H8.

It remains to be seen, however, how the influence of each variable compares to the others. The models with the standardized versions of the variables, shown in Table 2, enable this comparison, and indicate that message evaluation has the highest influence over both willingness to pass along and brand attitudes when compared to the sender and to receiver characteristics. In particular, the perceived entertainment level of a message has a higher influence than the informational level on willingness to pass the message along. When it comes to brand attitudes, however, the importance is reversed: the perceived informational level of a message has a higher influence on brand attitudes as compared to the perceived entertainment level.

Receiver characteristics are the second most important group both for willingness to pass along and for brand attitudes, as indicated by the standardized results from opinion leadership and opinion-seeking levels. Finally, sender characteristics, in particular receiving the message from a close friend, only have a significant influence on brand attitudes. This influence, however, is smaller than message and receiver characteristics.

DISCUSSION

This study aimed to fill a gap in the online communication literature by exploring the impact of reading brand messages on SNSs that were passed along by others. The first key finding is the importance of the message evaluation for pass-along behavior. Receivers are more likely to pass along a brand message further when they perceive it to be informational and entertaining. This extends earlier research on Twitter (Araujo et al., 2015) by demonstrating that the way that the receivers *perceive* the message, more than just how the message is written, is important. These findings also confirm that utilitarian and hedonic reasons for pass-along behavior, identified in viral advertising research (Chiu et al., 2007; Phelps et al., 2004), are also relevant in the context of brand content diffusion on SNSs via retweeting or sharing. Moreover, message evaluation has the strongest effect on willingness to pass along brand messages as compared to sender or receiver characteristics, with the entertainment (hedonic) dimension having a slightly stronger influence than the informational (utilitarian) dimension. This indicates that receivers tend to place slightly more emphasis on the entertainment value of the brand message when deciding whether to share or retweet it to their own friends on the SNS.

Message evaluation influences not only the willingness to pass along the message, but also the receiver's attitude towards the brand. The more the message is perceived as being informational and entertaining, the more positive the attitude the receiver will have of the brand. Moreover, message evaluation also has a stronger effect on brand attitudes than receiver or sender characteristics. And, unlike for willingness for pass-along behavior, the informational (utilitarian)

dimension has a much stronger effect on brand attitudes than the entertainment (hedonic) dimension. This suggests that receivers prioritize the level of information and usefulness of a brand message when they are forming their opinions about a brand.

Another aspect of the communication process investigated by this study was the influence of the sender or, in other words, the person who had passed along the brand message to the receiver. Three different types of sender were investigated: celebrities, information brokers, and close friends. Interestingly, there was no significant difference between the three types of sender included in this study when it came to their ability to stimulate pass-along behavior. The lack of significant results does not provide support to the hypothesis indicating that information brokers, operationalized in this study as acquaintances, and celebrities would be more likely to stimulate pass-along behavior than close friends. One potential reason for this might be that the receiver, when evaluating their intention to pass the message along, does so based solely on how entertaining or informational the message is, rather than actively considering who passed it along in the first place. Considering that earlier studies indicate that information brokers are responsible for most of the information diffusion on Twitter (Araujo et al., forthcoming; Bakshy et al., 2011), it could be argued that their influence is exerted by their ability to bring new information from groups with whom the receiver has little contact. Future studies should investigate this topic further, by adopting other designs to simulate information brokerage, combining survey with observational data, and evaluating how information novelty may also influence this process. Another potential reason for these findings, specifically for celebrities, is that the brand messages in our study were generic (i.e. did not include any celebrity-

specific information), which may then make them less relevant for celebrity endorsements.

Nevertheless, the results indicate that tie strength influences brand attitudes. When receivers read a brand message passed along by a close friend, they were more likely to have higher brand attitudes than when they received the same message from an acquaintance. This is in line with the idea that strong ties are more important for decision making than weak ties (J. J. Brown & Reingen, 1987), and validates earlier findings on viral campaigns (van Noort et al., 2012).

Interestingly, contrary to what we hypothesized, reading a brand message passed along by a celebrity did not yield stronger brand attitudes. This is unexpected, considering that celebrity endorsements have been shown to influence consumer attitudes in advertising (Amos et al., 2008) and influence purchase intentions and brand attitudes when celebrities tweet *about* brands (Jin & Phua, 2014). Future studies should investigate this further and explore whether consumers differentiate between instances where the celebrity is simply passing along a message from a brand, and when the celebrity is taking a more active role in the communication.

The final aspect of the communication process evaluated by this study was the receiver. The findings indicate that people who display general online opinion leadership behavior online, and are consulted by others when making purchase decisions, are more likely to pass along brand messages further. This indicates that the mechanisms for information diffusion on Facebook and Twitter are also used by opinion leaders, and are relevant for consumer-to-consumer eWOM processes even when these processes are for the diffusion of messages created by brands. Along the same lines, the results also indicate that online opinion seekers, who generally ask for

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advice online from other users before making decisions, are more likely to have better brand attitudes when reading brand messages passed along by other users.

LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

While this study provides important findings regarding the effects of brand content diffusion on SNSs, some limitations need to be considered. Firstly, the online survey asked respondents about their intention to pass along fictitious brand messages. While this provides important results, future research should combine observational data and also consider ways to integrate the respondent's own activities on SNSs and the brands that he or she follows as well as other SNS users with whom they interact into the design. This should also help evaluate how different levels of identification with a brand may influence the process. Secondly, this study focused only on brand messages created on SNSs as regular content (i.e. a tweet or a status update) passed along by other users. Future studies should compare the effects of seeing brand messages passed along by other users with seeing brand messages displayed as advertisements on the SNS. Thirdly, the relationship with the sender was operationalized with binary variables, which may have reduced the granularity of the results. Additional research should investigate the strength of ties with continuous measures in particular. Finally, this study investigates the information diffusion for consumer brands in general. Future research should evaluate how the influences of sender, message, and receiver characteristics differ depending on other criteria relevant to marketing communication, such as differences between market segments, brand awareness, or across cultures.

CONCLUSION

Notwithstanding these limitations, this study offers important insights regarding online brand communication and the influence of brand content diffusion on SNSs enabled by information diffusion mechanisms such as retweeting or sharing. The implications to brands are clear, as demonstrated by the key findings from this study. The more informative and entertaining that brand messages are, the more that they will be passed along to other SNS users, and the higher their influence on brand attitudes. Moreover, online opinion leaders not only engage in consumer-to-consumer eWOM, but also are also willing to pass along brand messages. This presents an important opportunity for brands to engage with these types of influential users, and maximize the reach of the brand message. People who often make decisions or seek advice by engaging in consumer-to-consumer eWOM are also influenced by brand messages passed along by these mechanisms of information diffusion, which reinforces their relevance to online brand communication. These findings, however, provide more than just practical implications to brands. They demonstrate how these new capabilities brought on by SNSs and social media change the balance of the brand-consumer relationship, turning consumers into active participants, able to promote their favorite brand messages and influence their own audience on the SNS in the process.

The background features a large, bold, white letter 'A' on a black background. The letter is composed of several geometric shapes: a large black triangle on the left, a white triangle on the right, and a black trapezoid at the bottom right. The text 'Author contributions' is written in white, bold, sans-serif font on the black background to the left of the 'A'.

Author contributions

Author contributions

This dissertation is based on four articles submitted for publication. The co-authors of each article are Theo Araujo (TA), Peter Neijens (PN) and Rens Vliegenthart (RV), and their contributions are listed below.

CHAPTER 1 – THE INFLUENCE OF THE MESSAGE (AUTHORS: TA, PN AND RV)

TA designed the study and was responsible for the data collection process, as well as the manual and automated content analysis, including the coordination of coders, and the data analysis. PN provided valuable insights on the research design and theoretical framework. RV provided guidance to the data analysis. Both PN and RV reviewed several versions of the manuscript throughout the peer review process, contributing to its development and to the final text.

CHAPTER 2 – THE INFLUENCE OF THE NETWORK (AUTHORS: TA, PN AND RV)

TA designed the study and was responsible for the data collection process, as well as the automated content analysis, network analysis and data analysis. PN and RV provided valuable insights on the research design, theoretical framework and data analysis. PN and

RV reviewed several versions of the manuscript throughout the peer review process, contributing to its overall development and the final text.

CHAPTER 3 – THE INFLUENCE OF PERSONALITY

(AUTHORS: TA, PN AND RV)

TA designed the study and was responsible for the data collection, working together with a panel research company. PN and RV provided valuable insights on the survey development, theoretical framework and data analysis. PN and RV reviewed several versions of the manuscript prior to submission, contributing to its overall development and the final text.

CHAPTER 4 – CONSEQUENCES OF THE PROCESS

(AUTHOR: TA)

TA was responsible for the data collection and overall manuscript development. PN and RV provided high-level feedback on the final version of the manuscript.

The image features a high-contrast, abstract graphic design. The background is solid black. Large, organic, white shapes are layered on top, creating a sense of depth and movement. One prominent white shape is a large, rounded form that curves from the top right towards the center. Another white shape is a smaller, more complex form located in the upper right quadrant. The overall composition is minimalist and modern, with a focus on bold, geometric forms.

Summary

Brand content diffusion on Social Networking Sites

This dissertation explores the antecedents and consequences of brand content diffusion on Social Networking Sites (SNSs), by investigating what influences SNS users to pass along messages created by brands via retweeting on Twitter, and sharing on Facebook. The dissertation is organized in four chapters. The first three chapters explore the antecedents of this process, namely how (1) message, (2) network and (3) personality characteristics influence SNS users to retweet or share brand messages. The concluding chapter (4) investigates the consequences of this behavior, particularly how it influences attitudes towards the brand, and towards the message. The *Dissertation Overview* summarizes the theoretical and practical implications from the overall findings of this dissertation.

CHAPTER 1 – THE INFLUENCE OF THE MESSAGE

The study included in Chapter 1 investigates how message characteristics influence pass-along behavior of content from top global brands on Twitter. Employing automated data extraction and natural language processing procedures, the study categorizes 19,343 brand messages, and evaluates how message characteristics such as informational, emotional and traceability cues influence pass-along behavior via retweets. The results indicate that informational cues are predictors of higher levels of retweeting. This particularly is the case when the information cues provided specific details about products, or has links to the brand website, to SNSs, and to photos or videos. And, although emotional cues do not influence retweeting on their

own, they reinforce the effects of informational cues and hashtags when combined in the same message. These results indicate, therefore, that Twitter users are especially interested in messages that are rich in informational content, and are more likely to pass such messages along. These findings are particularly important to practice, considering that the way in which a message is written and the information that it contains are arguably the characteristics that are most under the brand's control.

CHAPTER 2 – THE INFLUENCE OF THE NETWORK

Chapter 2 investigates the influence of specific types of users on brand content diffusion, by following the diffusion cascade of brand messages on Twitter and identifying which users influenced others to retweet brand content. In total, the study analyzed data from 30 top global brand profiles and from over 46,000 users who retweeted brand content, identifying which users they followed and which users followed them in order to investigate network characteristics. Based on these network characteristics, the study categorized users as (a) influentials – individuals who have above average influence, including celebrities and public figures -, (b) information brokers – individuals that connect groups that otherwise would have weak or no ties, and (c) strong ties – individuals that have of a strong personal connection. The results indicate that influentials and information brokers are associated with higher levels of retweeting for brand content. In addition, although information brokers have a larger overall influence on retweeting, they are more prone to do so when influentials are mentioned on the brand tweet.

This provides support to the strategy of connecting the brand with influential users, such as celebrities or public figures.

CHAPTER 3 – THE INFLUENCE OF PERSONALITY

The study included in Chapter 3 investigates how personality characteristics are associated with the decision to pass along brand messages on SNSs, drawing from earlier research on self-disclosure and self-presentation. Using a survey with active SNS users, this study explores the association between passing along brand messages and personality characteristics such as the Big Five Personality Traits and Need for Popularity. The results show that passing along brand content on SNSs is more prevalent among people that are more friendly and warm towards others (Agreeableness) and who enjoy social exchange (Extraversion). The people who have a strong desire to be popular (Need for Popularity), however, are the ones most likely to pass along brand content. When it comes to differences between Facebook and Twitter, extroverts prefer to share brand messages on Facebook, while people who are more self-disciplined and results-oriented (Conscientiousness) are more likely to prefer to retweet brand messages on Twitter.

CHAPTER 4 – CONSEQUENCES OF BRAND CONTENT DIFFUSION

The study presented in Chapter 4, using a survey with active social media users, evaluates the influence over brand attitudes and willingness to pass along brand messages from three aspects of the communication process: the message, the sender and the receiver. The results indicate that message evaluation, the relationship with the

sender and the receiver's own opinion leadership and opinion-seeking levels influence both willingness to pass along the message further and brand attitudes. More specifically, the more informative and entertaining that the receiver finds the message to be, the more he or she will be willing to pass it along, and the better his or her attitudes towards the brand. Moreover, opinion leaders, who engage regularly in consumer-to-consumer electronic Word-of-Mouth, are more willing to pass along messages created by brands. Opinion seekers, who regularly seek advice from others online, are more likely to have more positive attitudes towards the brand. Finally, receiving a message from a close friend has a positive influence on attitudes towards the brand when compared to receiving it from other sources.

The image features a high-contrast, abstract graphic design. The background is solid black. Large, organic white shapes are layered on top, creating a sense of depth and movement. One prominent white shape is a large, rounded form that curves from the top right towards the center. Another white shape is a smaller, more defined form located in the upper right quadrant. The overall composition is minimalist and modern, with a focus on bold, geometric forms.

Samenvatting

De verspreiding van merkcontent op Sociale Netwerksites

In deze dissertatie wordt onderzocht welke factoren van invloed zijn op de verspreiding van merkcontent op sociale netwerksites (SNS's) en welke effecten deze berichten hebben op de ontvangers. Het onderzoek richt zich op de verspreiding van merkberichten -berichten die een merk verspreidt- door middel van 'retweets' op Twitter en 'delen' op Facebook. De dissertatie bestaat uit vier hoofdstukken. De eerste drie hoofdstukken behandelen de antecedenten van dit proces, namelijk in hoeverre (1) het bericht, (2) het netwerk en (3) persoonlijkheidskenmerken van invloed zijn op de keuze van SNS-gebruikers om merkberichten te retweeten of te delen. In het afsluitende hoofdstuk (4) worden de gevolgen van dit gedrag onderzocht en dan met name in hoeverre de houding ten opzichte van zowel het merk (de merkattitude) als ten opzichte van het bericht wordt beïnvloed. In de *Dissertation Overview* zijn de theoretische en praktische implicaties van de bevindingen van het proefschrift samengevat.

HOOFDSTUK 1 – DE INVLOED VAN HET BERICHT

In het onderzoek van hoofdstuk 1 wordt onderzocht in hoeverre de kenmerken van een bericht van invloed zijn op het retweeten van berichten van wereldwijde topmerken. Aan de hand van geautomatiseerde gegevensverzameling en middels computergestuurde inhoudsanalyse ("natural language processing") werden 19.343

merkberichten gecategoriseerd. Vervolgens werd onderzocht in hoeverre berichtkenmerken, zoals de aanwezigheid van informatieve, emotionele en traceerbaarheids cues van invloed zijn op het retweeten van de berichten. De resultaten laten zien dat berichten die feitelijke informatie bevatten vaker worden geretweet. Dit is met name het geval als die informatie over producten gaat of er koppelingen gemaakt worden naar de website van het merk, naar SNS's en naar foto's of video's. Hoewel emotionele kenmerken op zichzelf niet van invloed zijn op retweet-gedrag, versterken ze wel de effecten van informatieve signalen en hashtags in hetzelfde bericht. Deze resultaten duiden er op dat Twitter-gebruikers vooral geïnteresseerd zijn in berichten die informatieve content bevatten en dat ze eerder geneigd zijn om dergelijke berichten door te sturen. Deze bevindingen zijn van belang voor de praktijk, omdat de wijze waarop een bericht is geschreven en de informatie die het bevat kenmerken zijn waarover het merk daadwerkelijk controle heeft.

HOOFDSTUK 2 – DE INVLOED VAN HET NETWERK

In hoofdstuk 2 wordt de invloed van de Twitter-gebruikers op de verspreiding van merkcontent behandeld. De verspreiding van merkberichten op Twitter wordt gevolgd waarbij gekeken wordt welke gebruikers anderen beïnvloeden om merkcontent te retweeten. In totaal zijn in het onderzoek de gegevens geanalyseerd van dertig internationale topmerken en van meer dan 46.000 gebruikers die merkcontent hebben geretweet. Voor het onderzoek werd de positie van de gebruiker in het netwerk van Twitter-gebruikers vastgesteld: welke gebruikers zij volgden en door welke gebruikers zij zelf werden gevolgd. Op basis van deze netwerkeigenschappen zijn drie typen

gebruikers geïdentificeerd: (a) invloedrijke personen – personen die een bovengemiddelde invloed hebben op het retweeten van berichten door hun volgers, zoals beroemdheden en publieke figuren; (b) informatiemakelaars – personen die groepen met elkaar verbinden die anders niet of nauwelijks met elkaar in aanraking zouden komen; en (c) hechte contacten – personen die een sterke onderlinge band hebben. De resultaten duiden erop dat invloedrijke personen en informatiemakelaars sterke invloed hebben op het retweeten van merkcontent: als zij een merkbericht retweeten is de kans groot dat ook hun volgers het bericht verder retweeten. Bovendien bleek uit het onderzoek dat als invloedrijke personen worden genoemd in de tweet van een merk de kans nog groter is dat informatiemakelaars het merk retweeten. Dit bevestigt de effectiviteit van een strategie waarbij merken invloedrijke personen, zoals beroemdheden en publieke figuren, aan zich binden.

HOOFDSTUK 3 – DE INVLOED VAN DE PERSOONLIJKHEID

In hoofdstuk 3 wordt onderzocht in hoeverre persoonlijkheidskenmerken van invloed zijn op het besluit om merkberichten door te sturen, waarbij gebruik wordt gemaakt van resultaten uit eerder onderzoek naar ‘self-disclosure’ en ‘self-presentation’. Aan de hand van een survey onder actieve SNS-gebruikers is onderzocht wat het verband is tussen het doorgeven van merkberichten en persoonlijkheidskenmerken, zoals de Big Five van persoonlijkheidsdimensies en de behoefte aan populariteit. De resultaten laten zien dat het doorgeven van merkcontent op SNS's

vaker voorkomt bij mensen die vriendelijker en warmer naar anderen zijn (mildheid) en die het leuk vinden om informatie uit te wisselen op sociale media (extraversie). Bij mensen die heel graag populair willen zijn (behoefte aan populariteit) is de kans echter het grootst dat ze merkberichten doorgeven. Wat betreft de verschillen tussen Facebook en Twitter delen extraverte mensen merkberichten liever op Facebook, terwijl mensen met meer zelfdiscipline en resultaatgerichtheid (ordelijkheid) eerder geneigd zijn om merkberichten op Twitter te retweeten.

HOOFDSTUK 4 – GEVOLGEN VAN DE VERSPREIDING VAN MERKCONTENT

In hoofdstuk 4 wordt onderzocht wat de invloed is van merkberichten op de merkattitude en de bereidheid om merkberichten door te sturen is, aan de hand van een survey onder actieve gebruikers van sociale media. Hierbij wordt gekeken naar drie aspecten van het communicatieproces: het bericht, de zender en de ontvanger. De resultaten duiden erop dat de beoordeling van het bericht, de relatie met de zender en het opinieleiderschap en mate van opiniezoekgedrag van de ontvanger van invloed zijn op de bereidheid om een bericht door te sturen en tevens de merkattitude te veranderen. Meer specifiek betekent dit dat hoe informatiever en onderhoudender de ontvanger het bericht vindt, des te meer hij of zij bereid is om dit door te sturen en des te positiever zijn of haar merkattitude is na het lezen van het merkbericht. Bovendien zijn opinieleiders, personen die regelmatig deelnemen aan elektronische ‘Word-of-Mouth’ met andere

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consumenten, meer bereid om berichten van merken door te geven. De merkattitude van opinievollers, personen die regelmatig online advies vragen aan anderen, wordt vaker positief beïnvloed door merkberichten die ze ontvangen. Ten slotte heeft een bericht dat is ontvangen van een goede vriend een sterker effect op de merkattitude dan een bericht dat van andere bronnen afkomstig is.

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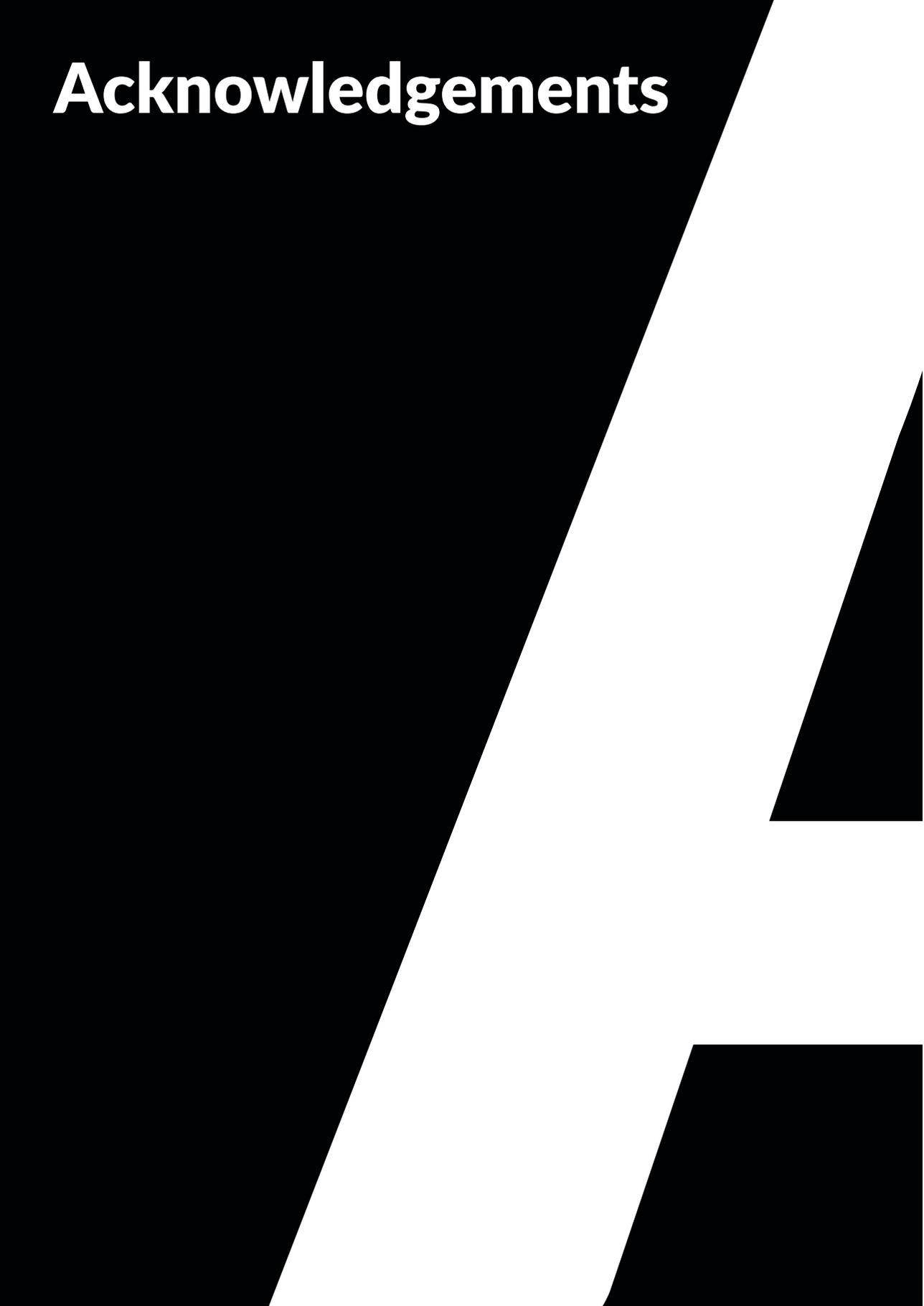
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Acknowledgements

The background features a large, bold, white letter 'A' on a black background. The 'A' is composed of two thick, black diagonal strokes that meet at a point at the top right. The negative space of the 'A' is white. There are also several solid black geometric shapes: a triangle on the right side, a trapezoid at the bottom right, and a small triangle at the top right.

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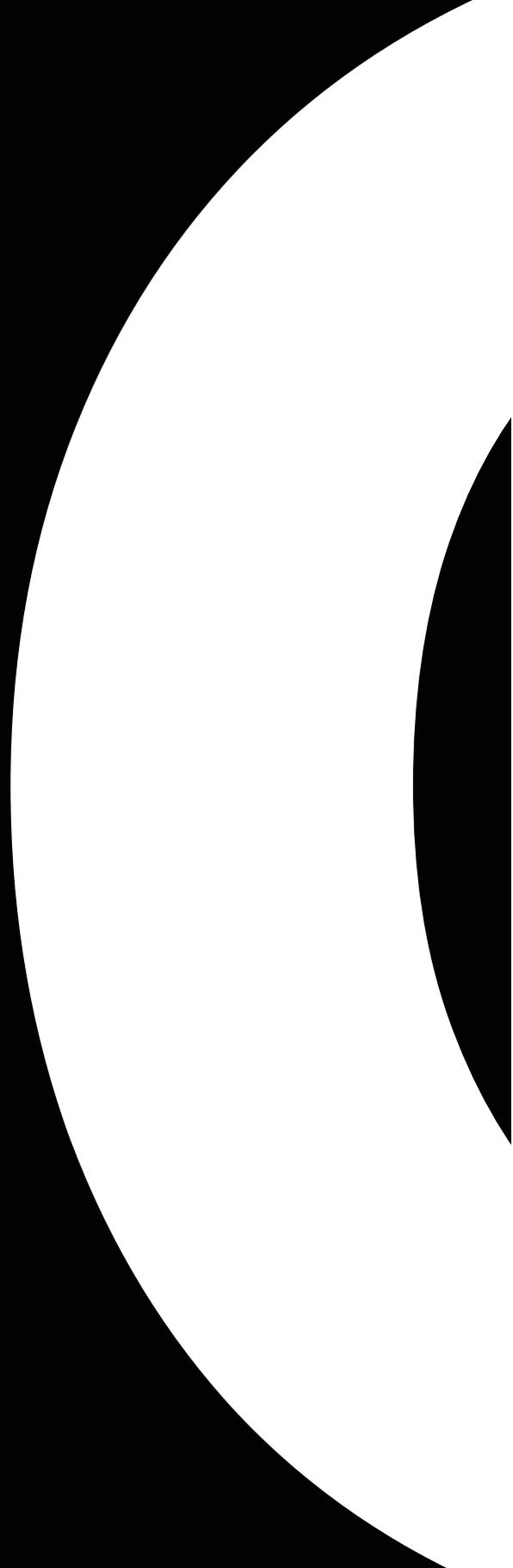
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Curriculum vitae



Curriculum Vitae

Theo Araujo was born on August 5, 1980 in São Paulo. He completed a Research Master in Communication Science (cum laude) at the University of Amsterdam, and has worked at the Amsterdam School of Communication Research (ASCoR) to finish his dissertation on brand content diffusion on Social Networking Sites. Before coming to the Netherlands, he received a bachelor's degree in Social Communication with major in Journalism from the Universidade de São Paulo (USP), and an Executive MBA with major in Marketing from the Escola Superior de Propaganda e Marketing (ESPM) in Brazil. He has worked for about five years at the online portal Terra Networks Brazil in several roles, including reporter, editor and manager, and for about ten years for Hewlett-Packard in Brazil and in the Netherlands. At Hewlett-Packard, he held a variety of regional and global program management functions, and his last role was of senior manager of the Localisation Services Team for PPS Support. He now works as Assistant Professor in Corporate Communication at the University of Amsterdam.