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Responding effectively to customer feedback on Twitter: A mixed methods study of webcare styles

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Abstract

Social media offer an unprecedented opportunity for companies to interact more closely with customers and market their products and services. But social media also present reputational risks as negative word-of-mouth can spread more quickly and widely through these platforms than ever before. This study investigates how companies respond to customer complaints on Twitter. We propose an innovative mixed methods approach (i) to identify the key features that mark the styles used by a sample of companies in their replies to customers and (ii) to determine the most effective strategies for responding to complaints. Our results reveal that an affective style, expressed through devices such as stance markers, emphatics and amplifiers, elicits the most positive response from complainants, regardless of the formality of the message. The study advances our understanding of the features and effects of corporate social media discourse. It also provides business communication practitioners with linguistically grounded insights that can inform the development of appropriate strategies for dealing with negative word-of-mouth online.

Introduction

Social media have revolutionized the way companies communicate with their audiences. Through sites such as Twitter or Facebook, organizations can reach large numbers of people worldwide quickly and efficiently. Compared to traditional mass media such as television or newspapers, these platforms facilitate a more dialogic form of communication (Kent and Taylor 2016). Companies can approach customers directly and engage in conversation with them rather than simply broadcasting commercial messages. Social media thus "blur the boundary between interpersonal and mass communication" (Schultz et al. 2011: 22) and can serve as a powerful tool for building positive relationships between organizations and their publics.

While social media offer tremendous opportunities, they also present unique challenges to companies. An important question organizations face is how to handle consumer feedback appropriately. Social media have made it easier than ever before for people to share their opinions about products and brands with others (Hennig-Thurau et al. 2010) and customers increasingly rely on this source of information for making purchase decisions (Chu and Kim 2018). As social media posts are visible to a wide audience, positive word-of-mouth can have a magnified beneficial effect on a company's image and help boost sales (East et al. 2008). For the same reason, negative feedback can have a deeper impact when delivered through social media compared to traditional, private channels (Einwiller and Steilen 2015). In some cases, complaints can lead to contagion and escalate into potentially damaging 'online firestorms' (Pfeffer et al. 2014). Monitoring and responding effectively to consumer feedback online is therefore paramount to protecting a company's reputation (Van Noort and Willemsen 2012).

Based on this premise, a growing body of research in the emerging field of *webcare* has sought to identify effective strategies for managing complaints on social media. Researchers have considered various aspects of companies' responses, including their content (Einwiller and Steilen 2015) and

timing (Istanbulluoglu 2017). A question that remains underexplored is what communication style companies should use when replying to dissatisfied customers. Will customers respond positively to an informal tone? Does it make a difference whether a tweet appears to express empathy? This study takes an innovative mixed methods approach to (i) identify communication styles of companies' responses to customer feedback on Twitter and (ii) test the effectiveness of different approaches. The study involves an exploratory and a hypothesis testing phase. In the exploratory phase, we apply a modified version of Biber's (1988) Multi-Dimensional Analysis (MDA) for short texts (Clarke and Grieve 2017) to a corpus of replies to customers posted by a sample of companies on Twitter. Our aim is to identify communication styles on the basis of patterns of co-occurring linguistic features, which we interpret functionally (Biber 1988). We then assess these communication styles empirically in an experiment designed to determine the most effective approach for handling complaints.

The study aims to provide academics and business communication practitioners with linguistically grounded insights into effective ways of dealing with negative word-of-mouth online. It also offers an original methodological contribution to the field of Corpus Linguistics. Generally, quantitative approaches in linguistics require some form of interpretation, which can be subject to dispute and so require validation (Pavalanathan et al. 2017). In our study, we propose a novel approach to MDA research where an experiment is used to validate our functional interpretation of linguistic features.

The article is organized as follows. We begin by reviewing previous work on webcare, focusing primarily on studies that have addressed the issue of communication styles. Next, we present the corpus analysis. This part comprises a description of MDA for short texts, an overview of the corpus and a discussion of findings. We then present the experiment. Here we outline our design, introduce the theoretical model that informs how we measured the effectiveness of different webcare styles, and test our hypotheses. This is followed by a discussion of the experimental results and concluding remarks.

Communication styles in webcare interventions

Given their rapid growth and widespread popularity, social media occupy an increasingly central role across all areas of business. Accordingly, research has investigated best practices in social media communication for a wide variety of domains including branding and marketing (e.g. Villarroel Ordenes et al. 2018), Corporate Social Responsibility communication (e.g. Gaither and Austin 2016) and crisis communication (e.g. Jahng and Hong 2017). The rise of social media as a crucial site of interaction with consumers combined with the reputational risks associated with the public nature of feedback online have also led to the emergence of webcare as a new area of business communication practice and research (for an overview, see Van Noort et al. 2014). Webcare refers to "the act of engaging in online interactions with (complaining) consumers" (Van Noort and Willemsen 2012: 138). These interactions may take place across a range of platforms that facilitate direct communication between companies and their customers, including product and service review websites (e.g. TripAdvisor), online marketplaces (e.g. Amazon) and social media (e.g. Twitter or Facebook). Webcare interventions typically address consumer messages that could be detrimental to the company's reputation, such as complaints and negative reviews, but may also respond to positive feedback (Schamari and Schaefers 2015) or neutral acts such as questions and requests for assistance.

Developing an effective approach to webcare is paramount to protecting a company's reputational assets. Accordingly, a number of studies have examined various factors that may influence the way customers react to companies' responses in a bid to determine what strategies work best. In a seminal paper, Van Noort and Willemsen (2012) showed that customers' brand evaluations were more positive when the company responded to online complaints than when it remained silent, suggesting that webcare interventions can indeed help mitigate the negative effects of online word-of-mouth. Einwiller and Steilen (2015) used content analysis to examine the complaint management strategies employed by a sample of companies on Facebook and Twitter. They found that asking customers to provide additional information is the most widespread strategy. However, this type of response tends to be poorly received by complainants, as evidenced by their replies. Strategies that produced more favorable consumer attitudes, such as offering corrective action or thanking the complainant, were utilized less often (Einwiller and Steilen 2015).

It is not only what is said but also how it is said that matters. There is a strand of literature that has addressed what style companies should use in their communications with customers online. Much of the debate has revolved around the issue of whether a more informal and personal communication style is more effective than a formal, institutional tone. An informal style is generally believed to be more appropriate because it meets people's expectations about communication in online environments (Park and Cameron 2014). Empirical results, however, have been mixed on this issue. Kelleher (2009), for example, finds that by exhibiting a *conversational human voice*, defined as "an engaging and natural style of organizational communication" (Kelleher 2009: 177), companies can foster consumers' trust and satisfaction. Similarly, Sung and Kim (2018) show that by adopting a conversational tone in their social media posts and responses to customer questions, companies can elicit more positive attitudes. Other studies offer a more nuanced picture. In an experiment focusing on the effects of style on purchase intentions, Barcelos et al. (2018) find that a conversational tone is more effective only in the case of low-risk purchases. Schamari and Schaefers (2015) report that a personal approach to webcare is more effective than an impersonal approach on consumer-generated platforms (e.g. online forums) but not on brand-generated platforms (e.g. a company's official Facebook page). Gretry et al. (2017) demonstrate that an informal style can backfire when individuals are unfamiliar with the brand addressing them. Steinmann et al. (2015) present evidence that in a German context a formal tone is actually considered more appropriate, pointing to the important role cultural factors may play in influencing consumers' attitudes. In sum, previous work does not offer a conclusive answer to the question of whether companies should use a formal or informal style in their interactions with customers online. In addition, the studies discussed above focus solely on the tone of corporate social media posts and replies to questions and positive feedback. To our knowledge, no previous study has tested which style works best in the specific context of a complaint episode. The face threats (Brown et al. 1987) that this type of communicative exchange can entail, both for the company and the customer, may influence perceptions of the appropriateness of stylistic choices and impose constraints that do not necessarily apply to less confrontational situations. An informal style, for instance, may be perceived as insincere and even dismissive in a context where the customer has experienced a problem and their main concern is to see it solved.

Another important limitation of the existing body of research is that it tends to rely on intuitive and rather simplistic notions of style, instead of linguistically informed conceptualizations. This is perhaps a reflection of the fact that the vast majority of previous work on webcare has originated within the fields of marketing and public relations, where attention to micro-level features of language is often lacking (Zhang and Vásquez 2014). In Steinmann et al. (2015), for example, in/formality is simply described in terms of address pronouns (*Du* vs. *Sie*) and by either including or omitting the customer's first name. Barcelos et al. (2018) operationalize *human tone* as social media communications that use the employee's avatar as opposed to the brand logo for profile picture, together with 'informal language' and expressions of emotions, first person pronouns, and first names as form of address. While these stylistic features seem to be intuitively relevant, they were not chosen on the basis of actual analysis of webcare discourse. In a number of studies, definitions of style are left implicit, with little or no indication of how they are actually expressed in language. Kelleher (2009), for example, gives no indication of what linguistic markers characterize a conversational human voice. Similarly, Sung and Kim (2018) do not specify what features were manipulated to achieve a conversational communication style in the materials presented to participants in their experiment; the authors merely state that "the messages in the conversational tone condition were developed using a more conversational style of communication" (Sung and Kim 2018: 10). One notable exception to this general tendency is Gretry et al. (2017), who draw on linguistics literature (Biber 1988; Delin 2005; Pearce 2005) to identify a set of fourteen features typical of an informal communication style, including verb contractions (e.g. *We're*), sound mimicking (e.g. *Awww*) and discourse markers (e.g. *So*). Gretry et al.'s (2017) operationalization of style is the most systematic and theoretically sound thus far adopted in the domain of corporate social media communication studies. Still, a limitation of this approach is that features of in/formality are established based on previous work on traditional genres of spoken and written discourse, rather than through the systematic analysis of authentic social media interactions. As a result, the external validity of the stylistic features considered as well as the ecological validity of the stimuli used may be limited. Further, similar to the other studies discussed above, Gretry et al. (2017) focus exclusively on the

in/formality dimension of stylistic variation and do not explore any other potentially relevant aspects of style.

Linguistic research on webcare is still in its early stages. So far it has focused on describing linguistic and structural features of companies' responses to dissatisfied customers, but the effects of these responses have not been considered. Zhang and Vásquez (2014), for example, investigate the generic structure of hotel responses to customer complaints on TripAdvisor. They find that companies tend to foreground a corporate rather than a human voice in their responses, for example through exclusive first person plural pronouns, formulaic openings and closings, and a formal tone. In a similar type of study, Ho (2017) addresses the discursive strategies used by hotel managers in their responses to negative online reviews to mitigate reputational threats and build rapport with dissatisfied customers. The study finds that hotels frequently react to complaints by denying the problem. Ho (2017) warns against such a defensive approach as it threatens the reviewer's face and ignores their interactional needs of having their problem acknowledged and finding a solution to it.

Both Zhang and Vásquez (2014) and Ho (2017) focus on webcare interventions via dedicated travel websites such as TripAdvisor. To date, the only study that explores companies' responses to customer feedback on social media from a linguistic perspective is Page (2014). The author uses a combination of corpus-based and qualitative analysis to investigate the features of corporate apologies posted on Twitter. She finds that corporate apologies often include questions and imperatives intended to encourage further interaction. This finding echoes the results of Einwiller and Steilen (2015), who show that requests for additional information are a common, albeit ineffective, feature of webcare messages. Further, Page (2014) observes that emoticons are often used by companies to express negative emotions such as regret or embarrassment in order to show empathy to customers and build rapport with them. Discourse markers such as *Oh* placed at the beginning of the apology are shown to perform a similar affective function. These findings highlight the important role played by affect in webcare, a point largely neglected in previous work. Finally, in line with Zhang and Vásquez (2014), Page (2014) shows that companies are more likely than ordinary Twitter users to include formal greetings, closings, and signatures at the end of their apology, and to address their interlocutor by their first name. The author speculates that these strategies may fail to achieve their intended rapport-enhancing functions as they violate conventions of communication via Twitter and mark social distance (Page 2014: 43). However, similarly to Zhang and Vásquez (2014) and Ho (2017), Page (2014) does not assess customers' reactions to the strategies employed by companies in their apologies. Whether the inclusion of features typical of formal discourses leads to more negative consumer attitudes therefore remains an open question.

Overall, previous work offers a number of useful insights into how organizations communicate with their audiences online and into what strategies may be most helpful in protecting and enhancing their reputation. However, it also has several limitations, which we address in the present study. First, prior research is largely based on intuitive operationalizations of style and focuses primarily on aspects related to the formality of webcare communication. In this study, we apply exploratory corpus techniques to identify communication styles in authentic webcare interactions based on linguistic features that we observe in the data. We move beyond a narrow focus on formality by adopting a multi-dimensional approach. The aim is to reveal additional facets of the communication styles used by companies in their responses to customer feedback. Second, previous work has tested the effects of stylistic choices only in response to non-threatening feedback such as questions or positive comments from customers. In this study, we assess different strategies in response to negative customer feedback. Finally, there is a paucity of reader response studies looking at the effects of linguistic choices in webcare responses, despite recent calls for increased attention to this important aspect (Page 2014; Zhang and Vásquez 2014). According to Zhang and Vásquez (2014: 62), "[u]ser perceptions of, and reactions to, authentic online business responses represents a pressing issue (and one with obvious implications for reputation management), which awaits further research". We respond to these calls by using experimental methods to empirically gauge the effectiveness of different styles of webcare. By doing so, we advance our understanding of how the style of a company's response to complaints influences customers' attitudes.

Corpus analysis

In this study, we use a combination of corpus and experimental methods. In this section, we present the corpus analysis, in which we used MDA for short texts (Clarke and Grieve 2017) to identify salient dimensions of stylistic variation in a sample of webcare interactions.

The Corpus of Webcare Interactions

We focus on responses to customer feedback on Twitter from six companies in the satellite navigation industry. The companies were chosen because of the similarities in the types of products they offer. On the 22nd November 2018 we collected the top 3,200 tweets sent from the Twitter accounts of these companies using the R package 'rtweet' (Kearney 2019). To select company tweets replying to customer feedback, we removed any tweets broadcast to the general stream of tweets and retained only the tweets that had @username in the initial position of the tweets. Table 1 presents the composition of the Corpus of Webcare Interactions (CWI), which contains 10,204 tweets in total. The table shows that some companies make up a larger percentage of the corpus, which suggests that they use Twitter for reasons other than responding to customers, such as promoting their brand. For instance, out of the top 3,200 tweets from @here only 391 respond to customer feedback, whereas most of the tweets by @AppleSupport are a response to customer feedback. This is perhaps not surprising considering that @AppleSupport is a Twitter account dedicated to providing information when customers "need it the most" (@AppleSupport bio 2019)[1].

Table 1: The Corpus of Webcare Interactions (CWI)

Corporate Twitter account	**Number of tweets**	**Proportion of CWI corpus**
Apple Support	3,197	31.33%
Google Maps	830	8.13%
here	391	3.83%
INRIX	779	7.63%
TomTom	2236	21.91%
waze	2,771	27.16%
Total	10,204	

Multi-Dimensional Analysis for short texts

To identify the major communication styles across the CWI, we applied a modified version of Biber's (1988) Multi-Dimensional Analysis (MDA). MDA is a common method in Corpus Linguistics for analyzing and comparing language varieties according to their major patterns of linguistic variation. MDA is based on the assumption that patterns of co-occurring linguistic features tend to reveal "underlying functional dimensions" (Biber 1988: 13). The approach, therefore, identifies the most common linguistic co-occurrence patterns in a corpus of texts by subjecting the relative frequencies of numerous lexico-grammatical features in each text in the corpus to factor analysis. This procedure reveals dimensions, or sets of aggregated features that tend to co-occur most frequently in the texts. These sets of features are then qualitatively interpreted to identify the underlying communication styles. Dimensions have polarity and linguistic features can be associated with either pole of each dimension.

[1] Table 1 shows that the corpus is biased towards the companies that respond to feedback most frequently. With more frequent tweeting activity, it is possible that these companies have a more consistent tweeting style. As the MDA will identify the most dominant patterns of linguistic co-occurrence the corpus can thus affect the results of our analysis. However, a corpus that is more balanced in terms of companies is not necessarily more representative of communication styles, as it might equally introduce more stylistic variation within companies.

The dimensions often have two sets of linguistic co-occurrence patterns that are in complementary distribution. So, when texts have the features associated with the positive pole they rarely have the features associated with the negative pole, and vice versa. Accordingly, linguistic features on the positive side of the dimension need to be interpreted in opposition to the linguistic features on the negative side of the dimension. Overall, a dimension is a continuum of stylistic variation; the features on one side are more characteristic of the communication style, whilst features on the other side are less characteristic of that communication style, and vice versa.

MDA is based on the relative frequencies of linguistic features. So most MDA research has analyzed longer texts, as relative frequencies in short texts tend to be unreliable. Tweets are characteristically short texts, rarely exceeding 40 words (Clarke 2019a). One solution for analyzing short texts has been to concatenate short texts to a length more suitable for frequency-based analyses (e.g. Passonneau et al. 2014). However, this loses the distinction between individual tweets. In this study, we applied a modified version of MDA designed to identify aggregated dimensions of functional variation in short texts, which is based on the occurrence (e.g. presence/absence) as opposed to the relative frequency of lexico-grammatical features. This modified version of MDA uses multiple correspondence analysis (MCA) as opposed to factor analysis (Clarke and Grieve 2017). We applied this method to the CWI, which we tagged for a variety of linguistic features using the Twitter tagger (Gimpel et al. 2011) and a Multi-Dimensional Twitter Tagger (Clarke 2019b)[2]. MCA assigned each tweet and each linguistic feature a positive or negative coordinate and a value indicating its contribution to the dimension. We then interpreted the major dimensions in terms of stylistic variation. We focused in particular on tweets that were assigned high positive/negative coordinates and which had the strongest contributions for their underlying communication style.

Results of the Multi-Dimensional Analysis

For this study, we interpreted the first two dimensions, as these were readily interpretable and they explained 54% of the variance[3]. The distribution of the tweets in the CWI along these two dimensions is shown in Figure 1. As discussed in more detail below, we interpret Dimension 1 (X-axis) as reflecting the degree of formality and Dimension 2 (Y-axis) as indicative of the degree of affect exhibited by the tweets. A list of the features most strongly contributing to these dimensions and their respective coordinates is given in Appendix 1. A glossary of these features and linguistic examples can be found in Appendix 2.

[2] The complete set of linguistic features used by the taggers as well as the sets of rules they operate by are described in detail in the referenced studies.

[3] The percentage of variance explained by the dimensions was calculated using Benzécri's (1992: 412) modified rates.

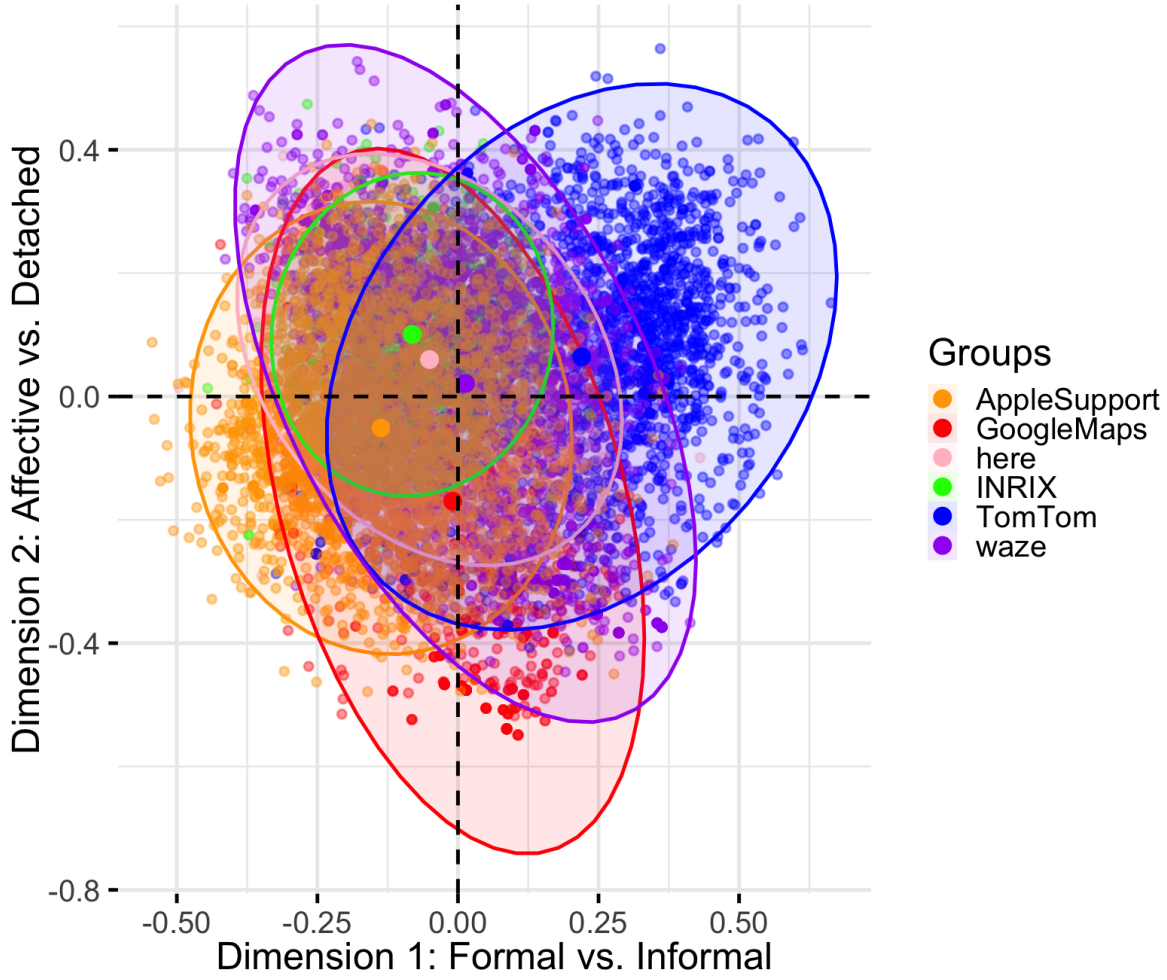

Figure 1: Coordinates for CWI tweets of Dimension 1 and Dimension 2

Dimension 1 opposes tweets and features associated with a formal communication style on the positive side with tweets and features that are associated with an informal style on the negative side. Features associated with the positive pole include greetings (e.g. *Hi*, *Hello*) and closings (e.g. *Best*), which are used in the tweets to begin and end them in a formal way. Whilst in some contexts *Best* as shorthand for *Best wishes* might be viewed as less formal than *Sincerely*, in the context of Twitter, a closing of any sort is atypical and can be regarded as formal (Page 2014). Other features associated with positive Dimension 1 include noun types, such as proper nouns and nominalizations, and nominal modifiers, such as possessive determiners and definite articles. These features are associated with texts that have a high (abstract) informational focus (Biber 1988), and are often used in the tweets to refer to specific entities and abstract actions, as illustrated by the underlined words in example (1).

(1) @username Hi, Please call [number] to deal with this, it is an automated 24/7 hotline, you will be prompted to use the keypad on your phone to enter the DiSa number. If this does not resolve the issue we must advise you to contact Walmart for further assistance. Best, [company name] Team

Brackets also strongly contribute to positive Dimension 1 and are used frequently in the tweets to provide supplementary information for the purpose of exemplification and clarification, as in example (2).

(2) @username Hi, There are several different devices which include "XL" in their name, so we must ask you to please DM us the serial number of your device (12 characters long, follows this format - AB1234C56789) so we can answer you accurately. Best, [company name] Team

Positive Dimension 1 is characterized by features associated with a procedural communicative function, including general subordinators, suasive verbs, and necessity and possibility modals, which occur in the tweets to talk about particular scenarios and request action in a polite and formal way. Example (2) uses several of these features (underlined words) to formally request that the user provides them with the serial number of the product without using imperatives, which may be perceived as an impolite way of demanding action.

By contrast, the negative pole of Dimension 1 is characterized by contracted forms. Examples include WH-words with contracted verbs and pronouns with contracted verbs, as shown in (3), which are associated with informal registers and styles (Finegan 1980) and tend to be used in the tweets and CMC generally to mimic orality and phonological reduction (Werry 1996).

(3) @username We'd like to understand more about this. Please DM us some details about what's going on. We're glad to help. https://url

Many of the features associated with negative Dimension 1 have an interpersonal focus. For example, question features, such as WH-words and question marks, are used to request further information and seek further interaction, as in (4).

(4) @username We can certainly understand where you'd be concerned, and we want to help you figure out what's going on. Can you tell us what software you're using?

Additionally, emoticons and emojis, stance verbs and private verbs are used to encode stance, emotions and intellectual states), as in example (4). Infinitives are used in the tweets to expand on an idea unit (Chafe 1980). All of these features are associated with interpersonal functions, and tend to occur more frequently in informal and interactive texts (Biber 1986; Biber 1988). Modals of prediction also tend to occur in these tweets, predominantly as a contracted modal in the structure *We'd like to*, which often marks willingness to help or understand. Finally, imperatives are used to request more information informally, as seen above in example (3) (*Please DM us*).

Overall, the tweets strongly associated with positive Dimension 1 display a formal communication style. They employ structures reflective of 'mini formal emails' with salutations and closings, and a high degree of specific information in response to a consumer. The tweets also tend to be impersonal and procedural. They try to persuade the addressor to do something, often by employing politeness strategies when requesting action. By contrast, the tweets strongly associated with negative Dimension 1 display an informal communication style. They tend to be more conversational, as shown by features such as contracted verbs, question marks, emojis, stance and private verbs.

The second dimension captures an affective communication style on one end and a detached communication style on the other. Positive Dimension 2 is characterized by features associated with affective stance, such as BE as a main verb, predicative adjectives, perception verbs, and adjective + to complement clauses (Biber 1988). In example (5) these features convey affect and build rapport.

(5) @username Hi [name]! Yes, it was a temporary outage, we're glad to see it's resolved! Best, [company name] Team

The affective stance of Dimension 2 is further expressed by emphatic features, such as exclamation marks and amplifiers. Time adverbs are also associated with positive Dimension 2. They occur in the tweets to reassure the addressee by providing them with information on when something happened or will happen. Positive Dimension 2 comprises a combination of informal and formal features, such as pronouns with contracted verbs and closings, which strike a balance in the tweets between personable

and professional communication. Overall, these features contribute to an affective style - one which is concerned with doing emotional work and building rapport, especially in contexts where there has been a complication.

In contrast, typical of negative Dimension 2 are features that are used to demand and request particular action of the addressee. These features include second person pronouns, sentence-initial modals, modals of possibility, infinitives, private verbs and imperative mood. In example (6), the addressee is asked to complete an action where the infinitive provides a reason for the request.

(6) @username Hi there. Could you try the steps in this guide to improve your location's accuracy: https//url? Let us know if that helps.

In the tweets most associated with this dimension, imperative mood and private verbs are used to demand some action from the addressee, especially the act of providing more information, as in example (6) (*Let us know if that helps*). Additionally, imperative mood occurs in the tweets as a pronoun drop, often to thank the addressee in advance for doing the requested/demanded action, as in example (7), which can also function as a persuasive device.

(7) @username Hi there. Thanks for reaching out. Could you submit this feedback directly to [company name] here: https://url? Appreciate it.

Other features of negative Dimension 2 are associated with 'written pointing', such as demonstrative determiners and place adverbs. Such features are used to point to a URL, where extra information and content can be accessed or submitted, or they refer to the original post of the addressee, as in example (7) (*this feedback*, *here*). Features of negative Dimension 2 include public verbs, gerunds and nominalized phrasal verbs, which are often used to acknowledge receipt of the original tweet or refer to the addressee's previous comment in order to request more information or information in a different format, as opposed to expressing personal gratitude (in (7), *Thanks for reaching out. Could you submit this feedback […])*. All of these features contribute to a detached and disinterested communication style.

Overall, the tweets most strongly associated with positive Dimension 2 often encode the company's affective evaluations in order to build rapport. These tweets tend to involve expressions of sympathy, shared excitement, pride and happiness, gratitude, and reassurance. By contrast, the tweets on the negative side of Dimension 2 display a detached style. These tweets are less personal. They tend to give the consumer specific instructions, e.g. to provide feedback or information in an alternative format, to read help guides, or to follow particular steps in these guides.

Experiment

The results of the MDA reveal that the communication styles adopted by the companies in our sample can be largely described along two major, interconnected dimensions: in/formality and affectivity. All four possible combinations of these dimensions are attested in the corpus, as evidenced by the relatively broad spread of the data points in the multidimensional space (see Figure 1). We can therefore postulate four webcare styles resulting from the combination of in/formality and affectivity features: (i) informal/affective, (ii) formal/affective, (iii) informal/detached, (iv) formal/detached. The results indicate substantial differences in the approach used by different companies. TomTom, for example, tends to use a formal and affective style, whereas Apple Support often adopts an informal, detached tone (see Figure 1). What the corpus analysis is not equipped to show, however, is which of these four approaches is the most effective for responding to customer complaints. In other words, how do these styles influence complainants' satisfaction with how the company dealt with their issue? Which style elicits the most positive response? To address these questions, we carried out an experiment in which participants were asked to imagine writing a complaint to a company on social media, saw a reply by the company tailored to match one of the four styles above, and indicated their level of satisfaction with the company's response. In this section, we provide a detailed description of the experimental hypotheses, design and findings.

Participants

Participants were recruited via Prolific (Palan and Schitter 2018), an online platform which attracts a large pool of individuals interested in taking part in paid academic studies. Online participant recruitment platforms such as Prolific or Amazon Mechanical Turk (MTurk) have emerged as a reliable and cost-effective alternative to traditional student samples. Subjects recruited through these services are equally or more attentive than those from undergraduate pools (e.g. Hauser and Schwarz 2016; Paolacci et al. 2010; Ramsey et al. 2016) and tend to be more demographically diverse (Goodman and Paolacci 2017). Prolific was chosen over the more popular MTurk as subjects recruited through this service tend to be comparatively more naïve and less dishonest (Peer et al. 2017). Several recruitment filters were applied. Only individuals whose first language was English and whose nationality was British were allowed to take part in the experiment in order to control for potential linguistic and cultural background influences. Further, only subjects who used Twitter as their main social networking site[4] and whose approval rating was equal to or higher than 95% were admitted to the study. Participants were compensated at an average hourly rate of £5.10 (£0.85 per survey, with an estimated duration of 10 minutes). A total of 239 subjects participated in the study. 61.9% of the sample was female, 37.7% male and 0.4% unspecified. The subjects' average age was 35.3 (SD = 11.7). Participants had a diverse educational background, with 35.1% having completed a Bachelor's degree, 25.5% A Levels, Baccalaureate or equivalent, 15.1% a Master's degree, 13.8% GCSEs, High School Diploma or equivalent and the remaining either a professional degree or a doctoral degree. 55.2% of participants indicated their occupation as working full time, 18.4% as working part-time, 8.8% as student and the rest were either carers, temporarily unemployed, permanently unemployed or retired.

Conceptual model and hypotheses

To describe the effects of the four styles of webcare uncovered by the corpus analysis we adopt a well-established model of post-complaint behavior which identifies antecedents and outcomes of consumer satisfaction in the context of a product or service failure (e.g. Blodgett et al. 1997; Homburg and Fürst 2005; Maxham and Netemeyer 2002a; Tax et al. 1998). The model centers on the socio-psychological notion of *justice* as a key driver of individuals' attitudes towards organizations following a complaint episode (Blodgett et al. 1997). According to the model, perceived justice serves as an antecedent of individuals' overall satisfaction with complaint handling which, in turn, influences their intentions to purchase a company's products and to spread positive word-of-mouth about the brand (Maxham and Netemeyer 2002a).

In this experiment, we measure the effects that the four webcare styles discussed above have on justice perceptions and overall complaint satisfaction. Given mixed results from previous studies, it is not possible to propose a firm hypothesis concerning the relative effectiveness of formal versus informal styles. On the one hand, we could expect an informal style to be comparatively more effective because it helps to 'humanize' the company, conveying friendliness, approachability and trustworthiness (Gretry et al. 2017; Kelleher 2009). In addition, an informal style may be considered more appropriate on social media given that the language people use on these platforms tends to be informal and conversational (Soffer 2010; Zappavigna 2012). On the other hand, an argument could be made that a formal style is more effective because it conveys professionalism and respect by emphasizing interpersonal distance between the staff member and the customer. Furthermore, a formal style better conforms to the tone traditionally used in company-to-customer communications (Zhang and Vásquez 2014) and may therefore be considered more suitable for responding to a complaint. In light of the uncertainties that persist about the effects of in/formality features, we will frame our expectations as a research question.

- RQ1: Is an informal style more effective than a formal style for responding to customer complaints?

As far as affectivity is concerned, we predict that an affective style will yield more positive consumer attitudes than a detached style. Affective language plays a pivotal role in efforts to communicate empathy and concern (Fuoli and Paradis 2014). In turn, empathy and concern are important criteria for assessing a company's behavior during a complaint episode as they feed into people's justice

[4] Information about participants' first language, nationality and social media preferences is collected by Prolific as part of the recruitment process.

perceptions (Tax et al. 1998: 63). Further, empirical research has consistently shown that displays of empathy and concern can improve customers' satisfaction with complaint handling (Min et al. 2015; Radu et al. 2019; Simon 2013). Based on this evidence, we formulate our hypothesis about the effects of affectivity features as follows:

- H1: An affective style will be more effective than a non-affective style for responding to customer complaints.

Design and procedure

The experiment used a between-subjects design with communication style as the independent variable. There were four experimental conditions, each corresponding to one of the webcare styles identified through MDA. Participants were randomly assigned to one of the conditions.

The experiment was administered online and proceeded as follows. After receiving general information about the study and completing a consent form, participants were presented with a vignette which instructed them to imagine owning a paid-for navigation app called Mapsie and experiencing problems with it (see Appendix 3). The vignette also asked them to imagine posting a tweet complaining about these issues and asking the fictitious app developer Navigamo for help. Participants were then shown a fabricated complaint tweet and were told to assume that they had written it. Next, they were shown the company's response tweet. Each participant was exposed to one of four different versions of the company's response, each emulating one of the webcare styles tested. After reading the company's response, participants completed a questionnaire which included several psychometric scales measuring dependent and control variables, an open question asking them to give their opinion about the company's response, and demographic items. Finally, participants were debriefed and thanked.

Stimuli development and validation

The initial complaint as well as all four versions of the company response were adapted from authentic tweets found in our corpus. To create stimuli representing the webcare styles tested, we selected four authentic responses to complaint tweets from the corpus, each situated in one of the quadrants of the multi-dimensional space (see Figure 1), and slightly altered some of their lexico-grammatical features to optimally represent the corresponding webcare style while simultaneously maximizing the difference between versions. Linguistic features that the MDA showed to be associated with the in/formality and affectivity dimensions were added or removed as needed. All stimulus materials, including a detailed breakdown of the linguistic devices they each incorporated, are given in Appendix 3. To ensure ecological validity, the stimuli mimicked the graphic design of Twitter. An imaginary company and app name were used to avoid prior attitudes towards the brand as a confounding factor.

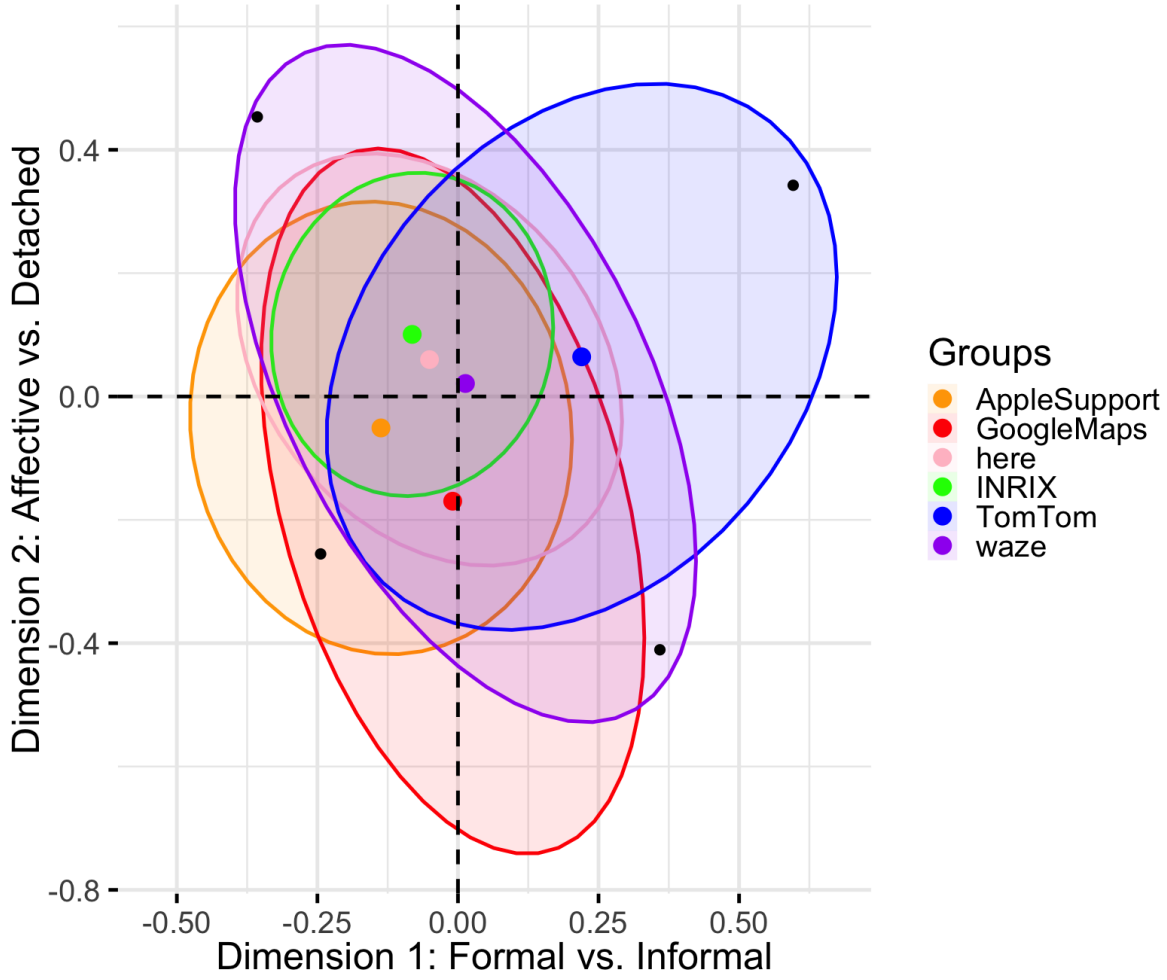

Figure 2. Multidimensional analysis of stimulus tweets

Two complementary sources of evidence were used to empirically verify that the four versions of the stimulus response tweet adequately reflected the communication style they were intended to mimic. First, the stimuli were specified as supplementary in the MDA of the original analysis to retrieve their position along the dimensions without affecting the main results of the analysis. This was done to verify that they fell within the same region of multidimensional space as the tweets that share the same communication style. As shown in Figure 2, all four stimulus responses, represented by the black dots, fit within the confidence ellipses designating the four webcare styles we are comparing. Second, the stimuli were pre-tested by asking 162 participants recruited through Prolific to rate them on two seven-point semantic differential scales anchored by the adjectives 'detached-sympathetic' and 'formal-informal'. The design of the pre-test was identical to the design of the main experiment, except that the questionnaire did not include dependent and control measures. Subjects who took part in the pre-test were not admitted to the main experiment. The results of the pre-test corroborate our interpretation of the stylistic dimensions emerging from the MDA and demonstrate that the stimulus responses are interpreted by participants in a way that is consistent with our analysis. As expected, tweets expressing an informal communication style were rated as significantly more informal than tweets designed to convey a formal style (t = -8.17, df = 148.31, $p < 0.001$). Similarly, tweets representing an affective style were judged to be more sympathetic than those designed to enact a detached style (t = -8.60, df = 159.15, $p < 0.001$). These two converging lines of evidence demonstrate that the stimulus tweets are both plausible and adequate realizations of the webcare styles assessed in the experiment.

Dependent and control measures

We assessed the effects of webcare style on justice perceptions and overall satisfaction with complaint handling based on the model described above. Justice perceptions were measured using four items adapted from the 'interactional justice' scale used in Homburg and Fürst (2005). Complaint satisfaction was measured using three items also adapted from Homburg and Fürst (2005). Six control variables were included in the questionnaire: failure severity, blame attributions, prior complaint experience, frequency of Twitter use, frequency of navigation app use for (i) driving and (ii) purposes other than driving. Failure severity was added as a control variable because previous work has shown that it can negatively affect individuals' attitudes towards companies in a complaint scenario (e.g. McQuilken and Robertson 2011). Similarly, blame attribution was included based on the assumption that the more a customer believes the company to be responsible for the problem they are experiencing, the more critical they will be of it (cf. Maxham and Netemeyer 2002b). Prior complaint experience refers to an individual's tendency to make complaints in case of dissatisfaction. It was included as a control variable because research has shown that customers who complain more frequently tend to feel more confident in airing their grievances (Kim et al. 2003) and are thus potentially more critical and demanding. The final group of control variables relates to participants' familiarity with the technology that is relevant to the complaint scenario. These variables were added to ensure that participants had some experience with using Twitter and navigation apps, so that they would be able to relate to the scenario. We distinguished between the frequency of use for driving and other purposes (e.g. walking, cycling, identifying public transport routes), because we assumed that technological problems with the app would be most severe for drivers. Failure severity and blame attributions were measured on three items each adapted from Maxham and Netemeyer (2002b). Prior complaint experience was measured with a single-item scale taken from Gelbrich et al. (2016). Frequency of Twitter use and frequency of navigation app use (for driving or other purposes) were measured on five-point scales with 'daily' and 'never' as anchors. The questionnaire included one attention check ("Please tick strongly disagree"). All the scales and items used are given in Appendix 4. Participants also had the opportunity to provide a free-text response to comment on the scenario.

Results

Seven participants (2.93%) failed the attention check and their responses were therefore discarded. Following these exclusions, 232 cases were available for analysis. Table 2 reports overall mean values, reliabilities, and inter-correlations of the dependent and control variables used in the study. As shown in the table, the reliability coefficients for all the scales included in the questionnaire were above the recommended cut-off of $\alpha = 0.70$ (DeVellis 2012: 109). The scales may therefore be considered as reliable indicators of the corresponding latent constructs.

Table 2. Variable means, standard deviations, reliabilities, and intercorrelations

Variable	M	SD	α	1	2	3	4	5	6	7
(1) Justice perceptions	5.2	1.41	0.92							
(2) Complaint satisfaction	4.86	1.52	0.89	0.881*						
(3) Failure severity	4.73	1.38	0.91	-0.063	-0.114					
(4) Blame attributions	5.39	1.1	0.88	-0.054	-0.088	0.279*				
(5) Prior complaint experience	5.09	1.7	n.a.	0.059	0.050	-0.078	0.227*			
(6) Frequency of Twitter use	4.21	1.06	n.a.	0.067	0.050	0.056	0.000	0.154*		

(7) Frequency of navigation app use (driving)	3.02	1.27	n.a.	0.013	-0.008	0.079	0.207*	0.250*	0.017	
(8) Frequency of navigation app use (other)	3.29	1.03	n.a.	0.047	0.001	0.109	0.041	0.106	0.095	0.212*

*p < .05.

Table 3 reports mean values and standard deviations for the dependent variables across experimental conditions. Mean scores across conditions are also presented graphically in Figure 3 to facilitate interpretation. The mean values suggest that affective styles were more effective than their non-affective counterparts, regardless of the level of formality of the message. The informal affective style was rated highest and the formal detached style lowest.

Table 3. Number of observations, means, and standard deviations by condition

		Justice perceptions		Complaint satisfaction	
Webcare style	N	M	SD	M	SD
Formal affective	59	5.83	0.89	5.62	1.02
Formal detached	58	3.78	1.28	3.55	1.42
Informal affective	58	6.06	0.83	5.67	1.15
Informal detached	57	5.11	1.31	4.59	1.40

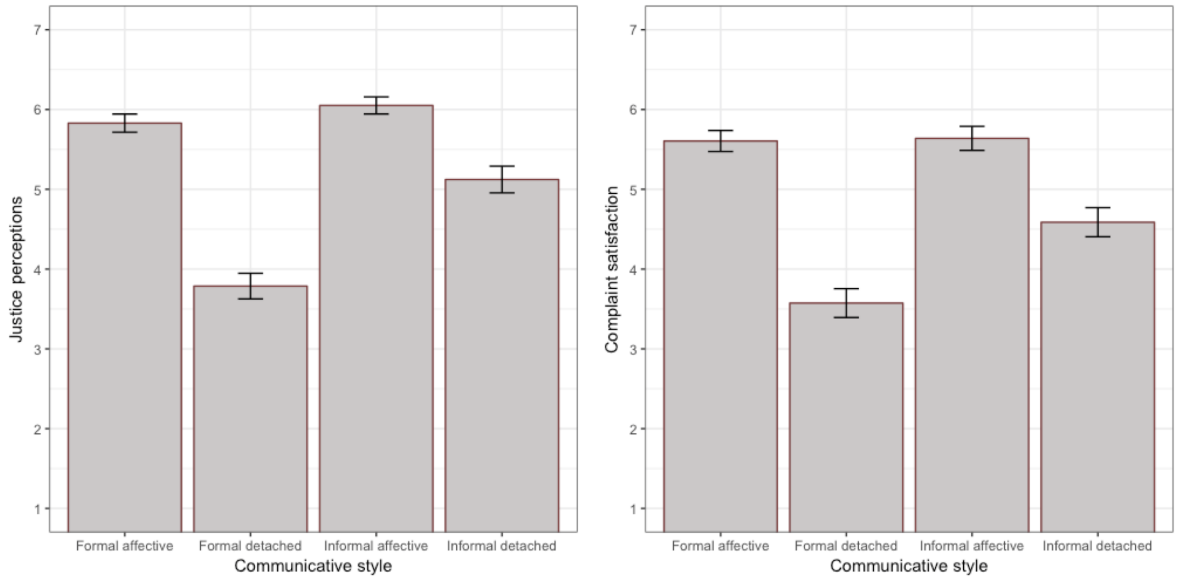

Figure 3. Variable means by experimental condition

Multiple regression analysis was used to test whether the differences observed are statistically reliable. Two regression models were fitted with justice perceptions and complaint satisfaction as dependent variables, respectively, and with webcare style as predictor. The models also included all the control

variables. Overall, the models were able to account for a sizeable proportion of variance in justice perceptions (R^2 = 0.42, F(9, 222) = 17.82, p < .001) and complaint satisfaction (R^2 = 0.34, F(9, 222) = 12.93, p < .001). None of the control variables were statistically significant for either of the dependent variables.

The analysis confirms that affective webcare styles were more effective than detached styles. Participants who were presented with a response in the informal affective style evaluated the organization as acting more fairly and reported higher levels of satisfaction with the handling of their complaint compared to both participants who received a formal detached response (justice perceptions: B = -2.33, p < 0.001; complaint satisfaction: B = -2.14, p < 0.001) and participants who received an informal detached response (justice perceptions: B = -0.98, p < 0.001; complaint satisfaction: B = -1.11, p < 0.001). Similarly, participants who were presented with a reply in the formal affective style reacted more positively than those who received responses in the formal detached (justice perceptions: B = -2.07, p < 0.001; complaint satisfaction: B = -2.06, p < 0.001) and the informal detached (justice perceptions: B = -0.71, p < 0.001; complaint satisfaction: B = -1.02, p < 0.001) styles. Based on these results, we may conclude that H1 is supported.

The difference between the formal affective and the informal affective style was not statistically reliable (justice perceptions: B = 0.27, p = 0.194; complaint satisfaction: B = 0.09, p < 0.702). That is, participants who received an informal affective response did not evaluate the organization as acting significantly more fairly or report significantly higher levels of satisfaction than participants who received a formal affective response. A significant positive difference was found between the formal detached and the informal detached style (justice perceptions: B = 1.35, p < 0.001; complaint satisfaction: B = 1.04, p < 0.001). Thus, informality only had a significant positive effect in the case of detached styles, suggesting an interaction between the in/formality and affectivity dimensions. Based on these results, we may conclude that an informal style can help improve the effectiveness of the webcare interventions only when a detached style is used.

We conducted a mediation analysis to test whether the effect of webcare style on complaint satisfaction is mediated by justice perceptions, as predicted by the model outlined above. The analysis was conducted using PROCESS (Hayes 2017) and followed the procedure for multi-categorical predictors outlined in Hayes and Preacher (2014). Bootstrapping was used to determine bias-corrected confidence intervals, using 10,000 resamples with replacement. Control variables were included as covariates. The results of the analysis show that, as expected, justice mediates the effects of webcare style on complaint satisfaction. The relative indirect effect of both the detached styles was different from zero (formal detached: -1.96, LLCI: -2.39, ULCI: -1.55; informal detached: -0.67, LLCI: -1.08, ULCI: -0.30), meeting the criterion for mediation involving multi-categorical predictors (Hayes 2017: 192). Further evidence of mediation is provided by the results of omnibus tests, which showed that the total effect of webcare style on complaint satisfaction was significant (ΔR^2 = 0.32, F(3, 222) = 36.32, p < 0.001) but the total direct effect was not (ΔR^2 = 0.01, F(3, 221) = 2.35, p = 0.073).

Discussion

The Multi-Dimensional Analysis revealed substantial differences in the major communication styles used by the companies in our sample in response to customer feedback. We interpret these differences as representing four webcare styles at the intersection of two fundamental stylistic dimensions: in/formality and affectivity. The follow-up experiment assessed the comparative effectiveness of these approaches in order to determine which of them works best in response to customer complaints on Twitter. The results demonstrate that messages in an affective style outperform detached ones, regardless of their level of formality. Previous work (e.g. Kelleher 2009; Sung and Kim 2018) has recommended the adoption of an informal style for webcare. Our results, however, show that an informal style is not necessarily more effective than a formal style. What makes a greater difference is whether the company appears to show genuine concern in their response.

The finding that an affective style yields more positive attitudes than a detached style is in line with previous studies showing that, in complaint situations, customers react positively to displays of empathy

(e.g. Min et al. 2015; Radu et al. 2019; Simon 2013). This is reflected in many of the free-text responses given by participants who were exposed to the affective versions of the company's message. One of them, for example, wrote: "I think Navigamo responded to my request for help appropriately. They seemed concerned and wanted to help me out". From a politeness perspective, an affective style works because it attends to the customers' positive face wants, that is, her/his desire to be ratified, understood, approved of etc. (Brown et al. 1987: 62). Protecting a customer's positive face is especially important in social media environments, where the public nature of conversations means that the effects of any face threats will be amplified. Another factor that might have contributed to the appeal of the affective versions of the company's response is that they included an apology, unlike their detached counterparts. Several studies have found that apologies can enhance the success of complaint handling communications (e.g. Conlon and Murray 1996; Hui and Au 2001; Radu et al. 2019). This is because apologies serve as a form of psychological compensation (Davidow 2000) and can thus help restore perceptions of justice (Tax et al. 1998). By the same token, these factors may help explain why a detached style of webcare was relatively less successful. A detached response can create the impression that the company is not interested in the customers' problems and feedback, and may thus be perceived as dismissive and impolite. This is reflected in the participants' free-text comments, many of which criticized the company's response as generic, unhelpful and rude.

As far as the in/formality dimension is concerned, the beneficial, if limited, effects of an informal style may be due to a combination of factors. First of all, an informal communication style may better conform with individuals' expectations about language use on Twitter (cf. Page 2014, Soffer 2010, Zappavigna 2012). Accordingly, the company's response may have been perceived as more natural and authentic. This view is supported by several participant comments. One of them, for example, wrote that s/he "felt it was good the way an emoji was used as this is more common for Twitter". Another contributing factor may have been the fact that an informal tone can help to humanize the company by conveying friendliness and approachability (Gretry et al. 2017; Kelleher 2009). This is particularly important in view of Twitter users' growing weariness of automated response algorithms, as illustrated by the following participant comment: "I like the way they addressed you as a human being, in the world of social media it is nice to feel like you are speaking to a person and not a bot". Additionally, informal language can function as a positive politeness strategy in certain situations. Since the customer addressed the company using an informal communication style, the company's similarly informal response may be seen as a type of involvement strategy (Scollon and Scollon 2011) aimed at communicating solidarity and in-groupness.

While informality did have a marginally positive effect in the case of a detached webcare style, the results of the experiment show that a formal style can be equally effective when used in combination with affective devices. This may be due to the synergetic interplay of affective and informal features, whereby the former encourage a positive interpretation of the company's communicative intentions and of the interpersonal meanings indexed by formal language. Formality is thus interpreted as a way of showing professionalism and of communicating courtesy and respect (Brown et al. 1987). This is reflected in a number of free-text comments by participants, one of which, for example, reads as follows: "I think Navigamo responded in a polite and professional manner trying to address my concerns as best and as efficiently as they can".

Lastly, in relation to the in/formality dimension, it is worth noting that our findings appear to contrast with Gretry et al. (2017), who found that an informal style may backfire when customers are not familiar with the brand. What we found is that an informal message, when combined with affective features, leads to high justice perceptions and satisfaction with complaint handling scores, despite the fact that the brand was fictitious and therefore unknown to participants. This difference could be due to the nature of the exchanges considered by Gretry et al. (2017), all of which revolved around either positive feedback or simple questions from customers, or to the social media channel used, i.e. Facebook. More research is needed to test these hypotheses.

Conclusion

With the help of an innovative mixed methods approach, we were able to identify some of the key features that mark the communication styles used by a sample of companies in response to customer feedback on Twitter. We were also able to determine the most effective approach. The results clearly show that affectivity plays a crucial role in webcare communications. An affective webcare style, expressed through linguistic devices such as stance markers, emphatics and amplifiers, was found to be more effective than a detached style, regardless of the formality of the response. Based on these findings we may conclude that showing concern and building rapport with the customer is more important and can have stronger beneficial effects than adopting an informal communication style.

Beyond the specific results for the CWI, our study contributes to research in the field of business communication studies and in particular to the emerging literature on webcare in several ways. First, it provides a systematic, data-driven description of the stylistic features of authentic corporate tweets. Second, it moves beyond a narrow focus on in/formality to explore additional key aspects of webcare discourse, most notably affectivity. Further, by combining corpus analysis and experimental methods in research on business communication, we addresses the hitherto neglected issue of reader response, thus responding to recent calls in this regard (Page 2014; Zhang and Vásquez 2014). More generally, our approach provides a descriptive framework and a replicable method that will be applicable to a wide range of data sets generated in similar communicative situations. From a methodological perspective, the study makes a contribution to the fields of Corpus Linguistics and Discourse Analysis by demonstrating that informant ratings can complement data-driven analyses and be used as a basis for validating interpretive constructs, thereby mitigating concerns around the subjectivity of analysts' judgments. Finally, this research offers public relations practitioners concrete evidence for actionable guidelines that can inform the development of webcare strategies.

Our results suggest numerous areas for future research. One question that would be worth pursuing is whether companies tend to adapt to the style used by customers (Bell 1984) and whether matching responses are received more positively than non-matching ones. In our experiment, the initial complaint was worded in a relatively informal style, which leaves the question open as to whether participants would react differently to formal webcare messages when the initial complaint is also expressed in a formal tone. Further, now that we have established a reference point and methodological approach, it will not only be possible to compare communicative strategies across different industries, but also to explore differences in reactions across different consumer groups. In relation to this, it would be worth exploring to what extent attitudes towards different styles of webcare vary across cultures. The results presented in Steinmann et al. (2015), for example, seem to suggest that German consumers tend to favor a more formal style. Future replications of this study could involve participants from countries outside the UK to establish whether our results reflect tendencies that are generalizable to a wider audience. Finally, in the experiment, we operationalized communication style as a multi-faceted construct and measured the effects of different webcare styles holistically, that is, as the outcome of a combination of multiple, co-occurring linguistic features. This approach is in line with the methodological assumptions of multi-dimensional analysis, the results of which directly informed our experimental design. It also maximizes external validity as the tweets that participants saw are near-authentic. One of the main drawbacks of this approach, however, is that it is not equipped to establish the individual contribution of the linguistic devices included in the four webcare responses we compared. The next logical step, then, will be to unpack these effects by assessing each individual stylistic feature in a controlled environment to determine what role they play in shaping consumers' attitudes. We hope that this study will encourage further research in this increasingly important domain of business communication.

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