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"It Feels Like Engaging With a Friend": Using Interpersonal Communication Strategies to Encourage Science Conversations With Lay Audiences on Social Media

Abstract

Social media offer the potential to facilitate two-way conversations needed for effective science communication; however, research communicators often struggle to reach lay audiences on these media. In this study, the Twitter and Instagram activity of four individual scientists in North America and Europe, acting as recognized science communicators, was compared with the activity of three marine-focused non-governmental organizations (NGOs), particularly paying attention to the strategies that encourage audience engagement in two-way conversations. The results show that a combination of interpersonal communication strategies can have an important effect on the level of lay user engagement in two-way conversations over time.

1. Introduction

"New media" (i.e., the internet and associated tools/applications) are now the main information source for the public, including for scientific and policy information. These media provide research communicators with significant opportunities to share policy-relevant information with citizens, including individuals engaged in public participatory processes (National Science Board, 2012; Purcell, Brenner, & Rainie, 2012). However, recent findings suggest science communicators often struggle to reach lay audiences online, especially citizens active in new social networks exposed to research information for the first time (Alperin, Gomez, & Haustein, 2019; Ke, Ahn, & Sugimoto, 2017). Such results have prompted calls for more innovative/inventive strategies to engage the public with research, particularly subjects linked to important global issues (e.g., Galetti & Costa-Pereira, 2017).

This exploratory study investigated strategies for engaging citizens with marine research and policy information on social media and addresses the question: do particular social media strategies encourage two-way conversations between science communicators and lay audiences online? The social media activity of four North American and European scientists, acting as recognized science communicators using individual Twitter and Instagram accounts to share research, was compared with the Twitter and Instagram activity of three environmental non-governmental organizations (NGOs) (regional, national, and global) using organization accounts to share research and policy information. The research aimed to identify communication strategies that encourage two-way conversations between communicators and citizens. If the results show that particular strategies encourage more conversations, they could be adopted by

science communicators to improve how research and policy information is shared with citizens on social media, and assist citizens for participation in decision-making processes.

2. Methods

A mixed methods approach was used to investigate the strategies of individual and NGO communicators and the conversational engagement they receive on their social media posts. The methods included: 1) an analysis of one month of publicly available Twitter and Instagram data of each of the seven account holders to identify the strategies they used and the follower activity in two-way conversations; 2) interviews with the seven communicators to determine their social media strategies; 3) a survey of audience members involved in two-way conversations to determine what encourages audience participation in conversations; and 4) an audience biography analysis to determine whether communicators are engaging a non-scientific audience (Figure 1). The individual communicators were selected from an Instagram community made up of science communicators using social media to make science, technology, engineering, arts, and mathematics more accessible (instagram.com/thescicommunity). The three environmental NGOs were selected based on their focus on sharing marine research and policy information on social media. Under the ethics approval received for this research and due to the sample size of interview and survey participants, all participants were treated anonymously.

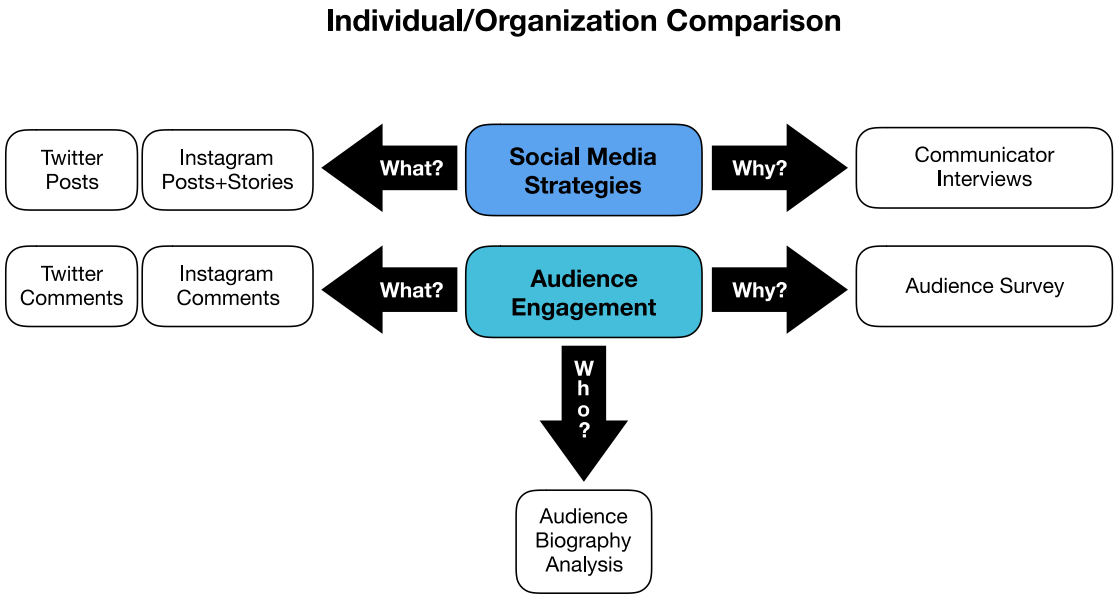

Figure 1. Research framework outlining the study design/methodology.

3. Results and Discussion

Both communicator groups engage a diverse audience of scientists and non-scientists on social media. However, an integrated analysis of the data revealed that the two communicator groups implement different communication strategies in their social media activity with notable effects

on engagement. The individual communicators receive higher engagement on their social media posts in terms of the number of comments and conversationalists (social media users who choose to participate in conversations on communicator posts), because the individual communicators implement interpersonal strategies that encourage user engagement more effectively than the NGO communicators. First, the individual communicators post selfies and selfie videos more frequently than the NGO communicators. The use of selfies leads to more interaction on the social media posts of the individual communicators because audience members are more likely to participate in conversations with people whom they are familiar or feel a personal connection. Second, the individual communicators also post "off-topic" posts (i.e., posts not directly related to core communication subjects) at a higher frequency than the NGO communicators. This practice is important because audience members can relate more closely to social media posts similar in content to their own, and thereby relate to communicators who share content comparable to their own. This feeling of relatability encourages audience members to participate in conversations with the individual communicators.

Third, another interpersonal strategy employed more effectively by the individual communicators is related to the language used. The individual communicators use more positive emotion words and more personal pronouns than the NGO communicators. This use of language helps individual communicators to convey authenticity, encouraging the audience members to participate in conversations with the communicators. Fourth, the individual communicators responded more frequently than the NGO communicators to audience member comments, which fostered relationships. This practice is conducive for encouraging conversations, as once relationships are established between the individual communicators and audience members, conversations can be sustained over time, and are not limited to single posts.

A fifth interpersonal communication strategy that results in higher engagement on the posts of the individual communicators is the priority given to Instagram posts and Instagram stories for sharing scientific information. For all seven of the communicators, Instagram posts received higher engagement than Twitter posts. The data revealed that Instagram posts receive more engagement than Twitter posts because Instagram grants social media affordances that favour the implementation of interpersonal communication strategies more readily than Twitter. Audience members perceive Instagram as a more conversational platform than Twitter, and are more likely to participate in conversations with science communicators on Instagram than Twitter.

4. Conclusions

This research demonstrates that interpersonal communication is an important factor in promoting science conversations on social media. The results of this study are also relevant for science communication practices more generally, extending beyond particular science topics or digital platforms. Because interpersonal strategies mainly relate to *how* content is communicated rather than *what* is shared, these strategies can be adopted for a diversity of subjects, as well as by a variety of communicator types ranging from individuals to organizations to government agencies. Additionally, the seven communicators conducted conversations with a diverse audience—a mix of scientific and non-scientific audience members were involved in conversations with the communicators on communicator posts—demonstrating the value of interpersonal communication strategies in encouraging conversations regardless of audience.

Although interpersonal communication strategies are effective online due to social media affordances, these strategies are not limited to digital environments, but can be implemented throughout a broad spectrum of science communication activities. Nonetheless, to foster public engagement with science, communicators should embrace the interpersonal affordances of social media and form connections and relationships with public audiences online.

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