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Communicating urgency through humor: School Strike 4 Climate protest placards

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Abstract

Protest placards are an important part of School Strike 4 Climate (SS4C) protest culture and illustrate how protesters view, understand and share their environmental concerns. Many of the placards use humor to convey the messages of their creators. Bringing together science communication and humor studies, this paper examines the communicative functions of humor in Australian SS4C posters by asking to what extent protest signs can be understood as a vehicle of science communication. The paper reveals how humorous protest placards become the means of grassroots creativity, exploring bottom-up science communication in an ambiguous, but accessible and enjoyable form.

Keywords

Environmental communication; Science communication: theory and models; Visual communication

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Context

Human-induced climate change is one of the greatest and most existential action challenges and collective problems of the 21st Century. Its ramifications are global, multi-dimensional and heavily dictate the lives of future generations. Public understanding and engagement with climate change are embedded in a matrix of complex processes — including cultural and social processes — that give climate change meaning in our daily lives [Boykoff & Osnes, 2019, p. 155]. Our ecological crisis is indeed reflected in a variety of media and cultural contexts, and given the frequently noted oversaturation of sombre science-based discussions about climate change (for example) in the news [Boykoff & Osnes, 2019, p. 154; Skurka, Niederdeppe & Nabi, 2019, p. 395; Anderson & Becker, 2018, p. 525], increasing attention is being paid to the role of humor in communicating environmental messages. In this context, science communicated via comic memes, amusing cartoons or visual comedy is attracting more and more scholarly interest [see e.g. Farinella, 2018; the *Frozen Ground Cartoon* project, see Bouchard, Fritz & Sjöberg,

2022; or Jürgens, Fiadotava, Tscharke & Viaña, 2021]. It is therefore not surprising that humor plays an important role in the context of climate protest.

The School Strike 4 Climate (SS4C) Australia is a movement of youth protestors who skip Friday classes to partake in climate change activism, as an example of a bottom-up public coming together around an issue that's important to them [see Marres, 2005]. Evolving from the original Fridays For Future (or Skolstrejk för Klimatet), started by then-16 year old Greta Thunberg in 2018, SS4C participants often use visual media — including humorous placards — to demonstrate their views and demands [Catanzaro & Collin, 2021]. School Strike 4 Climate research has flourished since the immense growth of the movement began in 2019, and researchers have explored the strikes via a wide number of data sources. From interviews and surveys with protest attendees [de Moor, Uba, Wahlström, Wennerhag & De Vydt, 2020], through to analysis of Greta Thunberg's speeches [Holmberg & Alvinius, 2020] and other secondary sources such as media representation of the strikes [cf. Alexander, Petray & McDowall, 2022], exploration of climate change discourse among young people has a rich and evolving place in science communication research [e.g. Feldman, 2020]. The research has shown that youth climate strikes have been characterised by the quest for global climate justice and punctuated by creative interventions [Buckley & Bowman, 2021, p. 15].

The present paper takes a similar approach building primarily on the work of Catanzaro and Collin [2021] who examined youth climate discourse via the vast array of placards seen at a SS4C event in Sydney, Australia. Through semiotic analysis of 652 photographs, Catanzaro and Collin [2021] explored textual, visual and design elements of placards at the Sydney September 2019 rally. Their work — which positions protest placards within the framework of visual, creative and collaborative methods in teaching and learning (as a means of co-creating climate change education) — uncovers three dominant visual modes within the environmental messaging in the signage at SS4C in Sydney: creativity, emotion and temporality. Emotion can provide insight into students' views and beliefs on climate change, policy and practice, and Catanzaro and Collin detected in their dataset the emotional state of amusement in expressions of irony, sarcasm, wit, wordplay and ridiculous or comical metaphors or illustrations — without examining these forms of humor and their role in communicating environmental messages in more detail or systematically. Taking their findings as a point of departure, the present paper, therefore, explores the importance of humor in grassroots climate change communication via the School Strike 4 Climate case, bringing a science communication lens to social research on protest studies. We will do so by adopting the theoretical categorisation of the functions of humor to describe various ways how it can influence recipient audiences and, essentially, its role as a rhetorical communication, as described by John Meyer in his 2000 essay "Humor as a Double-Edged Sword: Four Functions of Humor in Communication". Following Meyer's approach, we do not aim to explain the essence of all humor, but rather look at how it is enacted in particular communicative settings, which are in this case the protest placards used during the demonstrations. Thus, this paper affirms humorous climate protest placards as vehicles of grassroots creativity, exploring bottom-up science communication in perhaps an ambiguous, but highly accessible and enjoyable form.

Objectives

As a significant component of protest culture, protest placards illustrate the way protesters see, understand and share their environmental concerns, and the School Strike 4 Climate movement is no different. In this paper we will investigate the communicative functions of humor in the SS4C placards, and what we can learn about the environmental messages involved. What is the role of humor in conveying (which) messages? And can protest placards be interpreted as means or vehicles of science communication — if so, how? Examining these questions, this paper contributes to the study of both the intangible cultural aspects of environmental communication [cf. Burns, O'Connor & Stocklmayer, 2003, p. 191; Kirby, 2017] and the role of humor in communicating environmental urgency. Elucidating the functions of humor [cf. J. C. Meyer, 2000] in environmental protest placards provides new perspectives for our understanding of humor in climate change activism and communication [Pinto & Riesch, 2017; Becker & Anderson, 2019]. Our study reveals new facets of how humor enriches informal public climate communication and diversifies the modes of humor in its academic discussion [cf. Osnes, Boykoff & Chandler, 2019] — how different modes of humor can be activated as a tool to reach, if not engage, diverse publics [cf. Merzagora, Aguirre, Boniface, Bricout & Martineau, 2022; Chan & Udalagama, 2021]. Similar to adopting an action-based approach to climate storytelling, using humor to communicate environmental messages can help deal with the anxiety and apathy that the current issue-based approach to climate storytelling provokes [De Meyer, Coren, McCaffrey & Slean, 2021, p. 11]. More broadly, this study clarifies the role of humor in times of environmental crisis and eco-anxiety [Panu, 2020].

Climate communication and humor

The field has struggled at times with presenting an 'ideal' model of science communication [e.g. Cortassa, 2016; G. Meyer, 2016; Simis, Madden, Cacciatore & Yeo, 2016; Suldovsky, 2016]. But as many science communication authors have previously argued, presenting evidence and statistics or treating the public as 'empty vessels' that needed greater scientific literacy is often not enough to educate and engage individuals, especially around contentious topics [Schäfer & Metag, 2021; Davies, Halpern, Horst, Kirby & Lewenstein, 2019; Metcalfe, 2019; Ahteensuu, 2012]. This is especially the case for climate change communication [Kahan, 2012], given the politicisation of the topic in a number of countries, including Australia [Colvin & Jotzo, 2021; Hornsey, Harris & Fielding, 2018; Potter & Oster, 2008; Tranter, 2013]. Rather than a deficit model of communication [Gross, 1994], employing more responsive [Trench, 2008] democratic, dialogue approaches [Sturgis & Allum, 2004] of climate messaging may be more appropriate in many cases to bridge the gap between climate communicators or scientists and the public [Corner, Shaw & Clarke, 2018; Howarth, Parsons & Thew, 2020; Kahan, 2012]. For example, Davies et al. [2019] make a case for understanding science communication as an inextricable part of the broader cultural landscape, recommending meaning-making through emotive storytelling as a key science engagement approach. Devices including humor in climate messaging have been shown to deepen audience perception of messages and motivate environmental activism [Skurka, Niederdeppe, Romero-Canyas & Acup, 2018]. Skurka et al. [2018] found humorous weather-reporting videos increased the intentions of college students to partake in climate advocacy compared to neutral videos. Other studies have shown humor is an effective device to 'break the ice' of

contentious topics, and raise audience awareness of climate change issues [Kaltenbacher & Drews, 2020; Brewer & McKnight, 2017]. Moreover, Osnes et al. [2019] investigate how "good-natured comedy" (beyond satire) helps people "positively process negative emotions regarding global warming, sustain hope, and grow as communicators of climate". Humor can generate positive emotions such as joy (in the producer and receiver), joy feeds hope and hope is essential for sustained action climate action [see Osnes et al., 2019].

Humorous representations of climate change are not a new phenomenon — in fact, humor is a faithful companion of many, if not all, disasters and catastrophic events in contemporary human history [see, e.g., Oring, 1987; Kuipers, 2002; Chovanec, 2019], and the ability and willingness to use humor in tragic and challenging circumstances has long been a subject of academic discussion. For example, humor is known to be an effective mechanism that helps people cope with stress [see, e.g., Dundes, 1987; Saroglou & Anciaux, 2004]; it has been used to endure traumatic events [see, e.g., Stokker, 1997] and evade the hardships that they bring [Laineste & Lääne, 2015]. This is relevant also in the context of global warming. Humor can help not only to deal with feelings of despair and pessimism in the face of environmental crisis and urgency, but also to regulate these negative emotions so as not to become overwhelmed or rendered inactive [Osnes et al., 2019].
The proponents of this perspective on humor (revolving around the relief theory) argue that humor can be used to verbalize topics and ideas that are suppressed in serious communication; the possibility to discuss these topics provides a relief for the human psyche [Spencer, 1911].[1] From this point of view, humor targeting taboo topics can also help to overcome psychological burdens associated with censorship. Humor in the face of (eco-) trauma also has other functions: it gives a voice to the powerless and strengthens the group cohesion [Stokker, 1997, p. 17]. Humor can also be understood as a public reaction to vivid representations of catastrophes in media, particularly those conveyed through audio-visual media [Oring, 1987; Kuipers, 2002]. With the instant availability of news and the hyper-realistic visualisation of climate change related disasters in contemporary media, humor becomes an indispensable tool for interpretation and commentary, simultaneously reasserting the important role of the visual in our perception of climate change and subversively offering an alternative, and attractive, way of reflecting on current events. In other words, humor renegotiates the impact of visuals and media on our perception of environmental events, including through movements such as the School Strike 4 Climate.

However, humor is not just an attractive representation strategy, but also an effective rhetorical device. J. C. Meyer [2000] looks at how humor demarcates group identity and negotiates social norms by outlining four communicative functions of humor: identification, clarification, enforcement and differentiation. While these functions reflect a broad spectrum of communicative settings, the use of humor in and for communicating science and environmental issues in particular is an important area that has evoked researchers' interest in the recent decades. Important studies by Kaltenbacher and Drews [2020], Bangsund [2018] and

[1] Other popular humor theories include superiority and incongruity theories. The superiority theory implies that by making fun of or laughing at certain targets people reaffirm their superiority over them. The incongruity theories explain humor as a result of [sudden] awareness of incongruity between two or more scripts embedded in the same text [for an overview of humor theories, see Morreall, 2016].

S. O'Neill and Nicholson-Cole [2009], for example, examine the role of humor and comedy in communicating scientific information to the public and highlight the ambivalence — the pitfalls and promises — of humor in the context of climate change understanding and action.

On the one hand, research highlights that humor can draw attention to and increase engagement with climate change [Anderson & Becker, 2018; Eisend, 2009], and help people cope with the catastrophic effects of global environmental problems [cf. Jürgens et al., 2021]. On the other hand, this stream of research also shows that humor can divert people's attention from the main message and negatively influence the credibility of serious issues such as climate change [e.g. Pinto, Marçal & Vaz, 2015; Riesch, 2015]; it can reduce fear and risk perception and lead to a decrease in the desire to take action on climate change [Skurka et al., 2018]. Humor is often dismissed as trivial [Lockyer & Pickering, 2008] and thus humorously framed messages might not be perceived as equally important as the ones expressed seriously [Grugulis, 2002, p. 388]. Systematic reviews have revealed that while humor can help raise awareness of climate change problems it may also risk trivialising serious issues and impede behavioural climate action [Kaltenbacher & Drews, 2020].

One of the complex intricacies of humor, highlighted throughout the research [e.g. by Bore & Reid, 2014] is the fact that humor is subjective: humor can promote positive engagement with climate change, but only if perceived as funny. Moreover, positive engagement might not occur immediately after the exposure to humor, but humorous messages can have a longer-lasting influence on peoples' attitudes than serious ones [Nabi, Moyer-Gusé & Byrne, 2007, p. 49].

A further complication in the use of humor as a persuasion strategy is its inherent ambiguity [Grugulis, 2002; Tsakona & Popa, 2011, p. 15–16]. Humorous utterances often allow for multiple and even mutually contradictory interpretations. The choice of a certain interpretation over others depends on the general cultural context as well as the particular circumstances of a communicative event [Pickering & Lockyer, 2005, p. 9]. The intentions of both humor producers and their audience is of crucial importance for determining whether the message is considered humorous, and if it is, whether its serious implications are also taken into account and can stimulate engagement with the relevant issue.

One of the key features that makes contemporary humor attractive is its visuality [Fiadotava, 2020; Olah & Hempelmann, 2021, p. 331]. This trend can also be traced in the climate change discourse; studies on visual media addressing climate change issues (e.g. climate change memes or videos) show that humorous material encourages greater engagement [Zhang & Pinto, 2021; Ross & Rivers, 2019]. In addition, Topp, Thai and Hryciw [2019] showed that there is an indirect relationship between humorous materials (such as videos and memes) and engagement via the increase of the entertaining value of the information. Not just memes and videos, but also humorous cartoons can have a similar effect [Boykoff & Osnes, 2019; Manzo, 2012].

These effects are yet to be explored in the remit of the School Strike 4 Climate. The rise of nihilistic, meme-driven 'Gen Z humor' [Wilkie, 2021] is an additional consideration in SS4C messaging driven by this young, emerging demographic,

and investigation of protest placards can contribute to this growing body of work bringing together humor, youth, and protest studies.

Methods

Sampling

A list of all in-person SS4C Australian protests that took place in 2021 was gathered from the official SS4C Facebook events page [School Strike 4 Climate, 2021a]. Photographs of SS4C placards from each event were then searched online to cover as many of the listed events as possible. Photographs were first sampled from the SS4C official Flickr account which provided media coverage of the majority of their events [School Strike 4 Climate, 2021b]. For the protests that were not covered, local media reports were then searched in order to generate images for the remaining protests. These reports included but were not limited to, Pestrin, Mohammadi, Hynes and Carmody [2021], Bainbridge and McIlroy [2021] and Little [2021]. Following this, social media hashtag searches were conducted on Facebook, Instagram and Twitter respectively with terms for example #ClimateStrike for the remaining events [e.g. McArthur, 2021]. Overall 62 events that occurred in 2021 were searched, with 53 yielding photographic coverage.

Screenshots of these placards were then generated. Placards that were selected had fully visible and readable text, and appeared to be held by youth protestors. The placards held by participants who did not appear to be young (for example, people who may be parents or teachers) were excluded. Placards that did not include a humorous statement or visual (for example, stating a fact or promoting a specific call to action) were also excluded. Images of placards meeting these criteria ($n = 237$) were then collated in order to form a primary dataset for the analysis.

Identification of humor forms is an intricate process, where a single textual or visual prompt can be interpreted as humorous for various reasons or simply be deemed not humorous at all [J. C. Meyer, 2000]. To maximise the internal validity, researchers cross-checked selected placards for the presence of humor. Following, as part of an inductive approach, researchers cross-examined selected images in order to identify recurring visual and textual patterns related to humor mechanisms within the dataset [Graneheim, Lindgren & Lundman, 2017]. A qualitative content analysis was conducted in order to explore the forms, mechanisms and rhetorical functions of humor present within these protest placards. Meyer's [2000] categorisation of humor functions was then used to explain the potential roles this humor had in conveying climate messages.

Theoretical framework of the analysis

In his 2000 paper "Humor as a Double-Edged Sword: Four Functions of Humor in Communication", John Meyer highlights how humor acts as a rhetorical device in four ways: it plays a role in identification, clarification, enforcement and differentiation of messages. Each function has the potential to unite and/or divide communicators and audiences from one another and, depending on individual perspectives, may overlap or be assigned to humor differently. In identification humor functions to build support by identifying communicators with their audience to enhance speaker credibility. The function of clarification is to allow

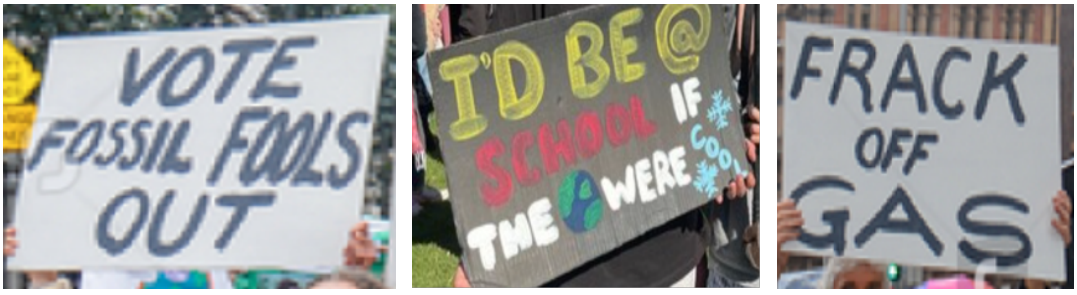
communicators to use humor to make their messages more memorable. Enforcement describes how humor asserts social norms, allowing for identification with certain audiences, but dividing those who do not conform to these norms. Differentiation is the emphasis on the differences between separate social groups allowing for the unification of those within the ingroup and distancing others who are not. So while the functions of identification and clarification rely on some agreement with the norm involved, and thus unify audiences with communicators, enforcement and differentiation more-so rely on disagreement with the issue involved, which can be divisive [cf. Gring-Pemble & Watson, 2003]. This framework was applied to the collected material to identify the specific ways in which these four functions of humor manifest themselves in the placards within our sample.

Results — forms and mechanisms of humor in Climate Strike placards

As is to be expected in the context of protests and explosive political issues, such as climate change [see e.g. Becker & Anderson, 2019], there is a satirical undertone to many protest placards. While satire is a fascinating means of critique and often a funny way to draw attention to societal and global shortcomings, it is a very broad phenomenon that does not capture the many subtleties of the protest placards at stake. In fact, a closer look at the SS4C posters reveals a whole panorama of humor forms used to draw attention to our ecological crisis — and responsibility.

Puns, rhymes and other forms of wordplay

The most dominant type of humor found in the SS4C placards is wordplay humor. Phrases such as "fossil fools" (Figure 1a), "frack off" (Figure 1c), or "school… cool" (Figure 1b) were found repeatedly. Some of the wordplay humor forms are puns (for example, "Oceans are rising — so are we"), whereas others are based on a rhyme (e.g., "cool/school"). Many puns can be classified as imperfect puns (e.g., "fossil fools"), i.e. they are paronymic rather than homophonic or homographic [Hempelmann, 2014]. "Fossil fools" and "frack off" seemingly poke fun at the high reliance of the Australian Government on fossil fuel production through procedures such as petroleum fracking and hence the foolish nature of doing so [Statista, 2020]. This is congruent with other research showing that young people in the SS4C are distinctly targeting government institutions or 'the state' [Holmberg & Alvinius, 2020].



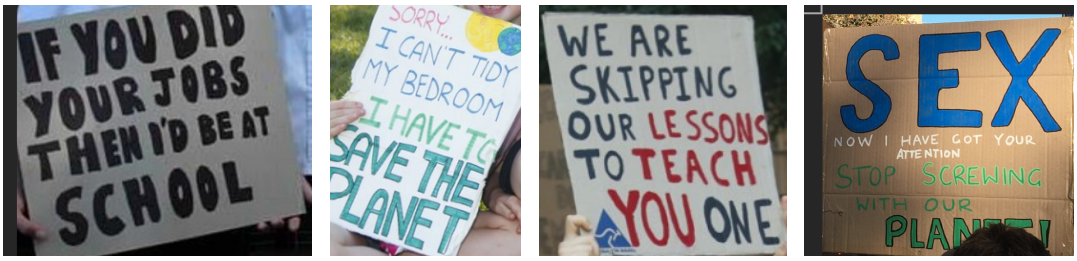
(a) (b) (c)

Figure 1. Placards that demonstrate wordplay as the predominant humor type.

Similarly to the use of puns in political debates [see, e.g., Tsakona, 2013], puns in the SS4C placards are used to criticize and delegitimize those in power. Being one of the most concise forms of humor, they fit perfectly into the format of placards that requires a short text which could immediately attract attention. Rhetorical devices including puns and rhymes are commonly found in the communication of corporate slogans for advertising and these are employed to enhance memorability and positive affect in audiences [McQuarrie & Mick, 2003; Miller & Toman, 2016]. Placards containing rhetorical figures would act in a similar manner and increase the impact of climate messaging [McQuarrie & Mick, 2003]. This adds an additional perspective to how rhetorical devices are used in the context of the School Strike, especially to challenge power structures and bolster the legitimacy of the SS4C protestors as science communicators [Feldman, 2020].

Funny juxtapositions

Unlike the examples belonging to the previous category, the humor in the placards displayed in Figure 2 arises not from phonetic/graphic similarities, but rather from semantic differences. Among the recurrent juxtapositions is the contrast between the world of children (represented by such activities as going to school, tidying their bedrooms etc., see Figures 2a, 2b and 2c) and the world of adults, in particular politicians. The assumed powerlessness of children is reversed as they choose climate activism instead of doing the everyday and inconsequential activities that they are supposed to do. The power of politicians is, on the other hand, downplayed as they are depicted as inept and unable to solve the climate change issues. Overall, this bolsters youth participation in the political process, and pushes against the idea that politics is something 'done to' young people in a top-down fashion [Andersson, 2015].



(a) (b) (c) (d)

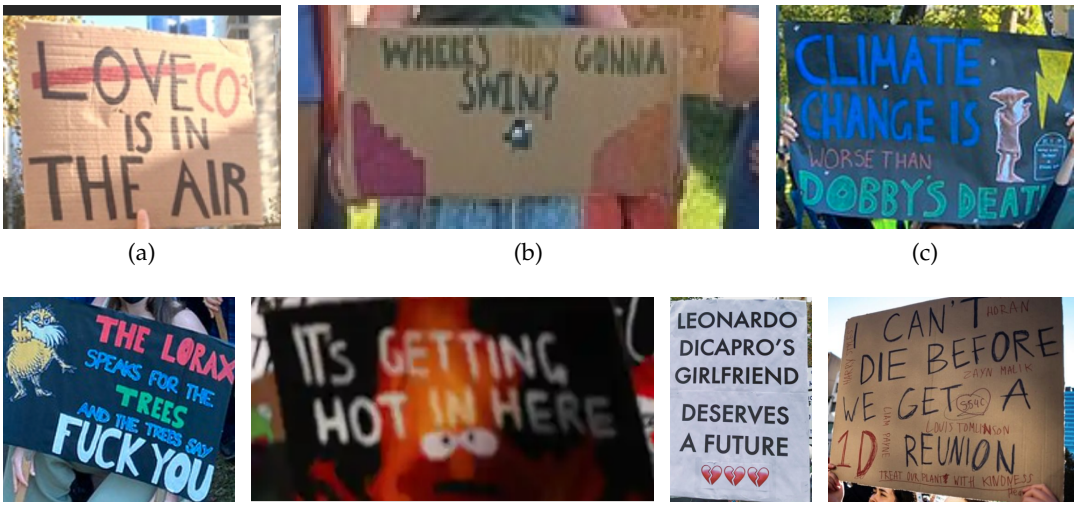
Figure 2. Placards that demonstrate funny juxtapositions.

Figure 2d displays another type of juxtaposition. Its text evokes both a sexual script — which is bluntly represented by the very first and the biggest word on the poster, as well as the word "screwing" — and a climate activism script.
The "screwing with our planet" part of the sexual script is a figurative way to discuss environmental issues and represent the anthropogenic harm to the planet very vividly. Putting the word "sex" at the top of the placard, besides pursuing the direct purpose of attracting attention to the placard, can also be used as a metacommentary on the role of environmental agenda in society; despite being a pressing issue, climate change does not receive enough attention and coverage unless provocative means are employed to put it in the spotlight.

Juxtaposition is one of the popular logical mechanisms in verbal humor [Attardo, Hempelmann & Di Maio, 2002]. By contrasting different scripts or realms, SS4C placards create a fruitful ground for humor that is easily understandable by different audiences and does not require extensive contextual information to be appreciated. This acts as a more light-hearted alternative to climate communication when compared to fear-based or alarmist approaches that can disengage audiences from the message [Wibeck, 2014].

Witty cultural references

The next group of placards relies on the understanding of some cultural codes. Visual fiction — for example in the form of animated film — is a useful tool for communicating environmental messages. It is thus not surprising that some placards also include references to humorous popular animated film comedies, including *Finding Dory* (Figure 3b) and *The Lorax* (Figure 3d), as well as films and books (for example, reference to a character in *Harry Potter* in Figure 3c), and music *Love Is In The Air* (Figure 3a). These placards are interesting because fictional narratives in entertainment media are a powerful means of reaching the public with scientific content and can help audiences interpret information about the environment and (its) science (without having to justify its accuracy), which can help them answer questions about the world [Jürgens et al., 2021; Kirby, 2017]. Cultural references in climate messaging are a known phenomenon and generate audience relatability to messages [Moret-Soler, Mateu & Domínguez, 2021; Wibeck, 2014]. It is suggested by Jaspal, Nerlich and van Vuuren [2016] that cultural references anchor climate messages in broader social contexts, enhancing communication with audiences that identify with demonstrated references.
For example, employing cultural references in climate videos serves to increase the entertainment level of climate messages and thereby increase perceived audience engagement with the topic [Topp et al., 2019], with this entertaining experience deepening audience encounters [Burns et al., 2003].



(a) (b) (c)

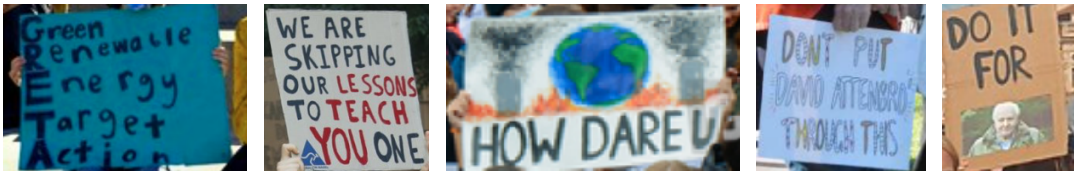
(d) (e) (f) (g)

Figure 3. Witty pop-culture references.

The placard 3f, for example, draws upon showbusiness gossip about actor Leonardo DiCaprio dating only much younger women. The fact that DiCaprio is frequently engaged in environmental activism adds another layer of meaning to this humorous placard. While the famous actor might be considered an implicit target of this placard's humor, the main underlying idea is the importance of climate change activism for the future of the younger generation. Similarly, placard 3g makes reference to the popular band One Direction (1D) and their ongoing indefinite hiatus. The humor lies in that the impending climate crisis seemingly will occur before the band reunites.

Elmo, a character from *Sesame Street*, set on fire appears on a placard (Figure 3e) that does not fit the normal context of the children's show. However, the joke is portrayed in a non-threatening way as audiences are very aware the situation is too incongruous to be real [cf. McGraw, Williams & Warren, 2014, for a related concept of benign violation]. On the other hand, the very incongruity of the setting provokes attention toward the climate change message of the placard. It also fits into the "Elmo rise" internet meme [KnowYourMeme, 2017] thus making it relatable to the young audience.

Apart from the allusions to popular culture, there are also political and environmental activism references embedded in placard humor. For example, some of the placards refer to Greta Thunberg, either by spelling her name out or by using one of her iconic phrases (Figures 4a, 4b, 4c). Other placards (Figures 4d, 4e) depict David Attenborough, a famous broadcaster and natural historian based in the United Kingdom who has spoken publicly about the need for swift and comprehensive climate action. The use of these positive role models makes these placards stand out from most of the other humorous placards featuring famous people, where humor is used to ridicule them. By referring to Greta Thunberg and David Attenborough, the placard creators opt for an affiliative style of humor [for a discussion on affiliative and other styles of humor, see Martin, 2007, pp. 211–214] and thus aim to unite people in the struggle against climate change.



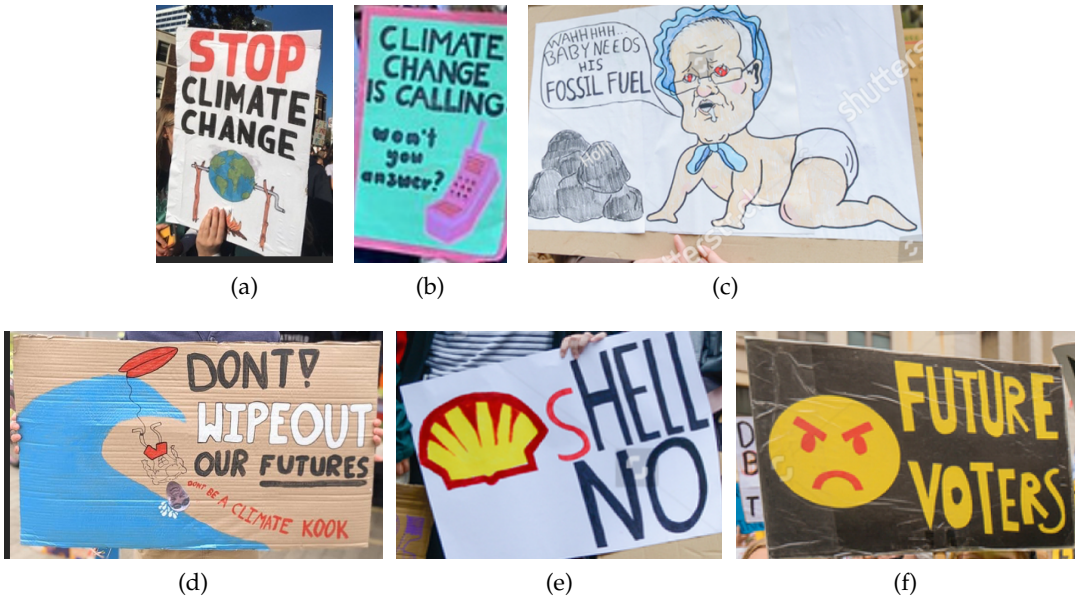
(a) (b) (c) (d) (e)

Figure 4. Placards that make cultural reference to environmental activists.

Visual humor

In most of the placards discussed above, humor is created primarily or solely by written means; images are sometimes used as illustrations, but were not essential for humor production per se.

However, in some of the placards the primary mechanism of the humor creation lies in the visual details or in the combination of visual and textual elements of a placard [cf. the concept of verbal-visual implicatures, see Yus, 2019, p. 108].



(a) (b) (c)

(d) (e) (f)

Figure 5. Placards that demonstrate visual humor.

For example, the placard in Figure 5a has a serious text ("stop climate change") but also figuratively represents global warming by picturing the Earth on a spit roaster. Similarly, the placard in Figure 5b draws upon the notion of "calling" that might be interpreted either in a more abstract or in a more mundane way. The clash between literal and metaphoric interpretations of climate change issues produces a humorous effect. Another type of humorous clash is the juxtaposition of a serious text and its funny visual representation (Figure 5f).

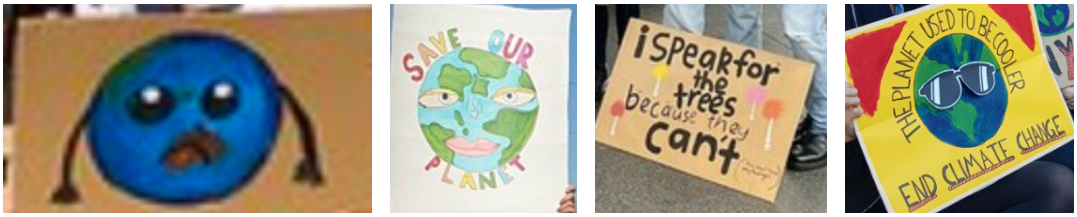
The importance of visuality in some placards does not exclude the possibility of using other mechanisms of humor creation as discussed above. For instance, the placard in Figure 5e creates a verbal pun through a recognisable visual reference to a major oil and gas company. Figure 5c references Scott Morrison's (Australian Prime Minister at the time of SS4C events) favourable opinions towards the coal industry, including a stunt in 2017 where, as Federal Treasurer (at the time), he brought a piece of coal into the Australian parliament to demonstrate its 'harmlessness' as 'just a rock'. Figure 5d similarly pokes fun at Scott Morrison's 2019 internet-famous pool selfie, asking not to "wipeout" the youth generations future despite falling off the surfboard himself in a surfing "wipeout".

The reliance on visual elements for humor production fits into the general paradigm of the increasing popularity of visual humor discussed above. As many of the climate activists creating and using the placards analysed here belong to the younger generations, employing visuality is a common practice and is one of the means to embed these forms of expression into their cultural code [Mihailidis, 2020, p. 767].

A particular form of visual humor in climate change placards is linked to personifications of our planet, or, more precisely, anthropomorphism. Anthropomorphism can create favourable conditions for humor. The French philosopher Henri Bergson [1914, pp. 3–4], for example, notes that animals and

lifeless objects only produce humorous effects due to their resemblance to people. In children's media (cf. above the reference to the animated film *Finding Dory*, Figure 3b), anthropomorphism in the form of animals with humanlike properties is frequently used to create narratives and characters that young audiences can easily identify with [Caraway & Caraway, 2020, p. 688]. While the use of anthropomorphism to convey knowledge and to teach about biological and natural topics is heavily debated in the science education literature, some research has shown that anthropomorphism in the medium of film is beneficial when used for science education [Bonus & Mares, 2018, pp. 452–453]. This not only links the placards to an even younger audience for SS4C communication, but also positions the strikers as adopters of familiar language in their alternative approaches to climate change.

SS4C protestors seem to reflect these notions by personifying the Earth and other known ecological artefacts that are at the brunt of climate induced change. As shown in Figures 6a and 6b the globe is anthropomorphic due to human attributes such as facial expression. Visually, these faces vary with the globes portraying sad, neutral or even "cool" expressions where Figure 6d acts as a double entendre referencing a cooler earth temperature. Similarly, a placard in Figure 6c has human emotions attributed to trees, as per the Dr. Seuss story *The Lorax* (also referenced in Figure 3d).



(a) (b) (c) (d)

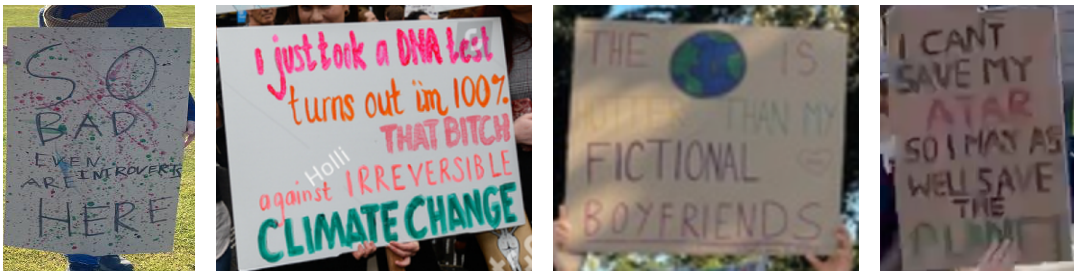
Figure 6. Placards that personify the environment.

Personification is often a major theme in visualisations of climate change [S. J. O'Neill & Smith, 2014]. Personifying the environment or making images more personally relatable has been shown to increase engagement with climate action by attenuating psychological distance from the issue [Leviston, Price & Bishop, 2014]. Similarly, anthropomorphising climate change draws attention to the human impacts of climate change, where audiences are potentially more likely to identify with said messages through an 'identified victim' effect [Smith & Joffe, 2009]. However, others have argued climate imagery that depicts non-humans distances audiences from personal implications, contributing to its perception as a remote issue [S. J. O'Neill & Smith, 2014; Wibeck, 2014]. For example, certain visualisations such as arctic sea ice, greenhouse gasses, and smokestacks created negative emotions in audiences, leaving them feeling helpless and diminishing their self-efficacy to act [S. J. O'Neill & Smith, 2014]. The specificities of these climate visuals and how they affect the propagation of climate messages is therefore complex, including in the SS4C, where they can engage or disengage different audiences.

Self-deprecating humor

When protesters target themselves in their jokes by belittling, disparaging and devaluing their perceived cultural value, they are self-deprecating. This form of humor — which has been called a form of satire directed towards the self rather than external targets, thus "accommodating the perceptions of others" [Russell in Tomsett, 2018, p. 7] — is reliant upon the identities of the placard authors and their audiences. Self-deprecation as a mode of addressing and articulating the experiences and concerns of young protesters is itself paradoxical [cf. Tomsett, 2018]: it can highlight different messages at the same time, such as (critique of) personal identity; marginalisation and empowerment. Self-deprecating humor in the realm of young people's humor is not a new phenomenon [Ask & Abidin, 2018]. This humor has been used to communicate shared student struggles by criticising individual shortcomings while subtly highlighting systematic issues [Ask & Abidin, 2018]. From a communications standpoint, it aims to generate audience relatability to the cause and hence potentially enhances climate messaging in the SS4C context [Ask & Abidin, 2018].

The particular targets of self-deprecation on the placards may vary from academic performance[2] (Figure 7d) to character traits (Figure 7b) to romantic pursuits (Figure 7c). Some of the self-deprecating placards employed popular tropes of placards from other protests (Figure 7a) — the slogan "It's so bad even the introverts are here" was used at the 2017 March for Science [CNN, 2017], 2019 anti-Brexit protests in London [Richardson, 2019] and many other events around the world. While describing oneself as "that bitch against irreversible climate change" (Figure 7b) seems self-deprecating on the surface, this also plays into the aforementioned humor based on cultural references. This line is specifically a play on a lyric from a popular song at the time (*Truth Hurts* — Lizzo) about standing up for your values and holding those in power accountable — ideas very relevant to the SS4C message. What unites all the instances of self-deprecating humor on the placards is the underlying assumption that all the protesters' negative features, that they put into the spotlight, are not as detrimental as the issue of climate change. Moreover, in some cases (like, for example, in Figure 7c) self-deprecation is also one of the forms of personification of climate change which, as we discussed above, is an efficient tool for increasing engagement with the issue.



(a) (b) (c) (d)

Figure 7. Placards that demonstrate Self-deprecating humor.

[2] ATAR [The Australian Tertiary Admission Rank] is a ranking used in Australia to indicate high school students' relative position among all the graduates of the same age group and is usually used in the context of university admissions [Universities Admissions Centre, n.d.].

Underlying theme of satire

This study found that satire underpinned all the other types of humor utilised in the placards in our sample. Satire seeks to both entertain and critique [Declercq, 2018] and has been defined as a technique for providing social criticism in particular [see e.g. Gring-Pemble & Watson, 2003; Skurka et al., 2019]. Satire is also a method of persuasion and questioning of established ideas or new proposals, and has proven particularly effective when dealing with highly politicised issues [cf. Gring-Pemble & Watson, 2003], such as climate change. In fact, research has provided evidence that satirical messaging can lead to changes in attitude and behaviour [Holbert, Tchernev, Walther, Esralew & Benski, 2013] and that the use of satirical appeals led to increased acceptance of climate change, increased perceptions of risk and an increase in intentional behaviours and positive attitudes to mitigate climate change [Skurka et al., 2019; Skurka et al., 2018]. The use of satire to expose a position might be unpredictable, as satire can both encourage audience acceptance of ideas and connection between like-minded people, as well as encourage the denigration of the same ideas and create contrast and demarcation between groups or individuals [see Gring-Pemble & Watson, 2003, p. 133, p. 137]. By highlighting incongruities and offering a new way of looking at something, satire questions what is taken for granted and can (thereby) create new insights and make transformation or change possible — or at least point out that alternate perspectives exist [Gring-Pemble & Watson, 2003, p. 139, p. 146]. In contrast to the decrease of interest towards satirical humor as a result of prolonged periods of stress [Laineste & Lääne, 2015], our study shows that eco-anxiety can accommodate a wide selection of satirically framed messages. Such seeming discrepancy might be resolved by looking at practical eco-anxiety as a moral emotion that conditions peoples' critical — but also caring — attitudes towards environmentalism and their willingness to make their lifestyles more sustainable [Panu, 2020, p. 12].

Humor on SS4C placards is multifaceted and polyvalent in nature. Drawing on a satirical underpinning, the various forms of humor examined in this sample can both encourage audience acceptance of ideas and inspire disparagement of those same ideas [see Gring-Pemble & Watson, 2003, p. 133]. Or, put differently, humor in these placards is both "a 'lubricant' and an 'abrasive"' — "It can smooth the way and integrate a rhetor into a greater level of credibility within a group, but it can also ruffle feathers" [J. C. Meyer, 2000, p. 317; quoting Martineau, 1972]. Various mechanisms and forms of humor in the placards highlight different aspects of the climate change problem, and help the audience to reflect on them in a creative and playful manner. However, the fundamental question remains: what are the functions of placard humor in climate change communication?

Discussion — on the functions of humor on protest placards

Following John Meyer's [2000] categorisation of the function of humor in communication (see 'Methods'), the various humor forms uncovered on protest placards can be discussed in terms of identifying, clarifying, enforcing and differentiating messages. This allows us to understand what role humor plays in establishing and/or erasing the boundaries between different agents of climate change discourse (including youth), and explore how they engage with the norms and values that are associated with environmental activism. If the purpose of science communication revolves around what Burns et al. [2003] called "AEIOU" — Awareness of science, Enjoyment or other affective responses to science, Interest

in science, the forming, reforming, or confirming of science-related Opinions, and Understanding of science — in what ways can the humor in protest placards, and humorous placards more generally, contribute to the communication of science-related environmental urgency? Whilst many placards did not communicate scientific facts per se, they do touch on scientific ideas around anthropogenic climate change and its impacts on young people (as well as society more broadly) that are part of contemporary political discourse in Australia and elsewhere. This positions the young people as "alternative" science communicators [Maeseele, 2009, p. 56] using non-normative forms of communication to discuss climate change as is important to them.

Climate placard humor and identification

A large portion of the placard (and their online representations) audiences are the people who share the values of the placards' creators and operate within a similar set of norms as they do. Approaching the issue of climate change with humor means playing with these norms, but even if some violations of norms are involved to produce a humorous effect, the norms are not disputed or questioned.
For example, by placing the climate change activism within a playful framework of caricatures (see, for example, Figure 5c) or turning the Earth into a cartoon character (Figure 6), the placards' creators and audience still assert the importance of the struggle against climate change. Re-establishing the significance of shared norms and values, humorous placards facilitate the process of identification and stimulate the creation of groups/networks of like-minded young people. Familiar witty references also contribute to identification and create the sense of belonging to the (inside) group that is able to appreciate the humor [Martin, 2007, p. 122]. This would facilitate ingroup trust allowing for greater perceived credibility of the messenger and hence the environmental message the placard entails [Fiske & Dupree, 2014; Tajfel & Turner, 2001]. It should be noted, however, that these references and in-group dynamics speak to other young people, rather than directly to other actors in climate politics, such as adults in positions of power through school, media, or government.

Climate placard humor and clarification

Some of the humorous placards discussed above offer an unconventional perspective on the issue of climate change by, for example, using wordplay to compare the hotness of the planet with a fictional boyfriend (Figure 7c) or by literally interpreting the slogan "Climate change is calling" (Figure 5b). Similar to the humorous placards that stimulate identification with a group of climate change activists, such placards do not subvert the mutually accepted norm, but rather look at it from a new perspective. As it often happens, the function of clarification also involves making the ideas more memorable — and in the case of the climate placards, memorability is often achieved not just through humor, but also through other rhetorical devices, such as rhymes (Figure 1b). Arguably, humorous communication provides a surprising perspective on the issue and making the ideas more memorable can contribute to greater engagement with the message.

Climate placard humor and enforcement

As the enforcement function [J. C. Meyer, 2000] is strongly connected with criticism, its strong presence in the humorous climate placards is not surprising. By ridiculing politicians who do not want to take action against climate change (Figures 5c, 5d), placards' creators underscore the norm violations. Moreover, humorous teasing in this case goes hand-in-hand with serious criticism, thus potentially provoking not only humorous, but also serious reactions from the targets and the audience. Open and visible humorous critique of the politicians via the placards also puts political targets into an uneasy position as they have to develop an efficient reaction strategy. Whether they choose to treat humorous criticism seriously or try to reply to it in a humorous way, they might 'lose face' and be ridiculed even more; none of the options in this dilemma are attractive [Sørensen, 2013, p. 80]. This is one particular instance where the audience for the humorous content displayed on the School Strike 4 Climate placards can actively and deliberately extend beyond in-group youth.

Climate placard humor and differentiation

The very existence of climate change activism means that there are social and political groups that hold opposite opinions on the environmental agenda. These groups use various means to demarcate the boundaries between them, and humor is one of these means. Some of the placards use sarcastic and derogatory labels (such as "fossil fools", see Figure 1a) or straightforwardly draw the line between the 'incompetent' policy-makers and youth activists who have to step in and do political work. As this function involves a clear demarcation between 'us' and 'them', humor often explicitly refers to the two opposing parties as groups ("*We* are skipping our lessons to teach *you* one", emphasis by the authors, see Figure 2c). Labelling and separating these groups would act to delegitimize the targeted opposing groups (in this case politicians) and their respective opinions on climate change while simultaneously reaffirming the credibility of their own message [Jaspal et al., 2016]. humor thus helps to maintain social differences and distances [J. Meyer, 2021, p. 68].

Conclusions

The impact that climate change has on all of us highlights the importance of science communication on environmental topics, and looking at the new bottom-up ways climate change communication can contribute to our understanding of the messages that are relevant and inspiring to our younger generations. SS4C is an inherent part of climate change discourse which gains high visibility due to the young age of the protesters, their numerous and varied activities, and, to some extent, the humor they use to communicate their messages to the world.

This analysis revealed that the humor in SS4C placards takes on many different forms. Protestor signage displayed satirical undertones that critique current climate inaction and utilise wordplay, juxtapositions, cultural references, and visual humor to propagate messages. Given the especially young participants of SS4C, it is unsurprising that they largely use humor styles that appeal to their particular age group, such as satire and nihilism [Wilkie, 2021]. The analysis also demonstrated that humor is an effective tool to transmit not only the content of a

message, but the values and social identities embedded in it [Lockyer & Pickering, 2008]. Applying Meyer's categorisation to these placards highlights that SS4C humor draws upon the social norms of youth protestors and potentially amplifies their climate messages by identifying with and dividing their audiences. Humorous placards can act as a unifying device in social movements which display and represent the shared values between climate activists and bring these like-minded protagonists together. Humor also functions as a means of bringing levity to the overwhelming topic of climate change, allowing audiences to identify with protestor messages or look at them from a new perspective. This acts to increase the salience and memorability of protest climate messages by presenting them in a non-confronting way [Boykoff & Osnes, 2019, p. 155]. Protestors also used humor to creatively confront actors on the opposing side of their agenda, seeking to distance and critique the actions or inaction of environmental policy stakeholders. It is also important to note the protest setting these placards exist in: this humorous effect is potentially compounded by the repetition of similar climate messages, which can strengthen their ability to influence audience perspectives on climate change [Catanzaro & Collin, 2021; Wang, Corner, Chapman & Markowitz, 2018]. Placards are material traces of sense-making practices; they represent empirical evidence of how young protesters make sense of our looming ecological disaster. Humorous placards therefore act as a meaningful vehicle for science communication, especially in a climate-protest environment. Young protesters' humor can simultaneously entertain, provoke attention and call for action which brings climate change communication closer to the "action-based" approach [De Meyer et al., 2021]. Following Catanzaro and Collin's approach [2021, p. 3], the exploration of humor in these personalised protest posters created by these young demonstrators to wake, shake and educate diverse publics, contributes to the development of climate education as a field capable of responding to and accounting for "the rapidly changing environmental conditions of everyday life" [Cutter-Mackenzie & Rousell, 2019, p. 101].

Humor can help young protesters regulate their emotions in the face of the urgency of climate action and eco-anxiety and thus grow as active climate ambassadors and communicators [cf. Osnes et al., 2019]. However, humor is a subjective category, and the selection of placards themselves and subsequent interpretations may or may not align with individual perspectives. Further, these placards existed as digital artefacts to us, therefore Australian SS4C events in 2021 that did not have online coverage would not have been analysed, nor were placards that were not digitally recorded, presenting a key limitation of the study. Furthermore, while the scope of the research was limited to placards, there are many other visual mediums for conveying climate messages worth exploring. Finally, this paper was done purely by adults, and therefore may not be accurately capturing key messages and humor as would be identified by young people themselves. Opportunities to co-research with youth protestors in future is therefore greatly encouraged, wherever possible.

Despite the impact on all people globally, scientific literature can be inaccessible to non-scientists, so there is a need for high quality communication to bridge that gap. Depictions of collective anger and challenging authorities in protest contexts often reflect the link between injustice and emotions [della Porta, 2015]. Future research can further clarify if humorous placards can be read as a source of cultural pedagogy [a term borrowed from Kellner, 2020, p. 2], contributing to educating us

on what (not) to think, feel, fear and aspire for. Further, it is questioned whether humor can act as a narrative strategy itself, or as a 'device' that persuades and elicits emotional reactions in audiences, making environmental urgency accessible and evoking environmental awareness beyond the SS4C protest group.
The connections between the use of humor, the dominant and underlying narratives and young people's agency in addressing the issue of climate change also deserve further research, as they will help to understand in which way and to what extent humor can be used to stimulate or hinder young people's active engagement with climate change issues. By affecting individuals both on the cognitive and emotional level, humor is an appropriate means to meet this purpose of science communication. Its subtlety and playfulness can fill in the gaps that are left open by serious science communication methods, and thus engage a larger audience and achieve a longer-lasting effect on its attitudes towards climate change. This is demonstrated largely in the present research by enabling a shared communication language among young people, a group often left out of environmental policy and management discussions. Examining audiences' direct responses to youth protestors' climate messages would hence be beneficial and further elucidate whether humorous (especially to an in-group audience) climate messages have the potential to instigate climate action. Further research can also explore climate placards from the perspective of visual epistemologies, examining their visuality and visual culture of environmental communication, and the "various kinds of relations that can hold among different vehicles of visually transmitted knowledge" [Nyhart, 2016, p. 445] when understood as driven by activism. This paper thus opens up multiple ways to explore the interrelations between climate change communication, humor, and protest, and stimulates the discussion on how and why to discuss humor in the quickly evolving context of the youth action against climate change.

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