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Theoretical framework

Effectively communicating scientific knowledge to the public is essential in stimulating anthropogenic climate change (ACC) mitigating behavioural changes (Goodwin & Dahlstrom, 2014). A strategy that has proven its efficacy when communicating about ACC is framing (Spence & Pidgeon, 2010). The current study revolved around locality framing, a type of framing that is frequently examined in relation to ACC. Locality framing is a manifestation of emphasis framing that attempts to decrease the perceived spatial distance between the content of a message and its reader. When locality framing is applied to a message about ACC, its local consequences (e.g. nearby sea level rise) are emphasised over its global consequences (e.g. global sea level rise).

To date, comparable studies have not managed to provide a clear consensus on whether a message stressing the local consequences of ACC should be favoured over a message stressing its global consequences. There is evidence that supports that messages with a local frame have a more positive impact on people's attitude towards ACC mitigating behaviours in comparison to messages with a global frame (Evans, Milfont, & Lawrence, 2014; Scannell & Gifford, 2013), and *vice versa* (Altinay, 2017; Schoenefeld & McCauley, 2016). Furthermore, despite solid evidence existing that people's demographic characteristics significantly influence their perspective on ACC (Wolf & Moser, 2011), no prior studies were found that combine a wide range of demographic characteristics with a systematic locality framing manipulation. The aim of the current study, therefore, was to answer the following research question:

How does a message with a local frame impact its receivers' attitude towards ACC mitigating behaviours relative to a message with a global frame, and how is this impact moderated by the receivers' demographic characteristics?

Method

To provide an answer to the research question a one-way between-participants design (frame: local vs global) was performed. By means of a survey experiment, inhabitants of Hoek van Holland ($N = 154$) were presented with infographics about the acceleration of

sea level rise as a consequence of ACC with either a local or a global frame. For the participants, the acceleration of sea level rise was a geographically relevant consequence of ACC, making it a suitable topic for the locality framing manipulation. On grounds of ACC mitigating behaviours often being perceived as having negligible effects, attitude towards a behaviour, a determinant of the Reasoned-Action Approach (Fishbein & Ajzen, 2010), was employed as the dependent variable.

Participants' attitude towards ACC mitigating behaviours was measured both before ($\alpha = .82$) and after ($\alpha = .82$) they were presented with the infographics via an effectiveness rating task. To enable testing if the impact of the frame conditions on participants' attitude towards ACC mitigating behaviours was moderated by their demographic characteristics, information about their gender, age, income, education level, political background, and religiosity was collected.

Results

The results indicated that both the infographic with a local frame, $Mdif = 1.05$, $t(75) = 17.04$, $p < .01$, BCa 95% CI [.92, 1.17], $d = .99$, and the infographic with a global frame, $Mdif = .80$, $t(77) = 10.66$, $p < .01$, BCa 95% CI [.61, .94], $d = .70$, had a significant positive impact on participants' attitude towards ACC mitigating behaviours. To calculate attitudinal change, participants' pre-infographic attitude ($M = 4.26$, $SD = 1.07$) was subtracted from their post-infographic attitude ($M = 5.18$, $SD = 1.16$); this revealed that the attitude towards ACC mitigating behaviours of participants in the local frame condition ($M = 1.05$, $SD = .54$) had increased significantly more than that of participants in the global frame condition ($M = .80$, $SD = .66$), $Mdif = .25$, $t(152) = 2.61$, $p = .01$, BCa 95% CI [.06, .46], $d = .41$.

No significant moderation effects were uncovered for the demographic characteristics despite the pre-infographic attitude towards ACC mitigating behaviours significantly differing between: genders, income groups, and political backgrounds.

Conclusion

The results suggest that applying locality framing in messages that aim towards positively influencing people's attitude towards ACC mitigating behaviours is highly efficacious when the employed consequence of ACC is geographically relevant for the target audience. The impact of the message with locality framing applied generalised

over participants' demographic characteristics, endorsing locality framing as a suitable communication strategy for a wide range of people. Furthermore, the results of the current study herald the efficaciousness of infographics to communicate complex information. Despite infographics being labour intensive to produce they are a productive asset to communicate about ACC with a high impact.

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