

Elegant Science Narratives and Unintended Influences:

An Agenda for the Science of Science Communication

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Members of the scientific community play a vital role in promoting solutions to complex and wide-ranging societal problems when they communicate research findings in ways that inform the public and guide public policy making. We argue that this constructive role that scientists play can at times draw attention away from a contrasting, darker side to science communication. At times, well-meaning and successful attempts by scientists to engage and inform the public can produce reactions that exacerbate the very problems that they as scientists are working to remedy. This second possibility – of scientists doing harm through their educational outreach – has important ramifications for the ‘science of science communication.’

Scholarly treatments often fail to consider sufficiently the unwanted effects of science communication. This is evidenced by tendencies among scholars to equate a science communicators’ level of success with their ability to engage and inform the public. In contrast, we focus attention on the tangible *effects* that science communicators can have – both wanted and unwanted. We review examples from climate science, showing how attempts to educate the public on the latest scientific findings can result in backlash against climate researchers and the broader scientific community. This contrasts with how the public might react to science reporting on advances in geoengineering, where technological approaches to mitigating climate change might be embraced so strongly that the public’s commitment to reducing their carbon emissions is diminished. We draw as well from examples taken from research in the health sciences, where scientists’ attempts to educate the public about research on personal risk factors can at times increase rather than decrease behavioral risk taking.

We then explore two ‘case studies’ in greater detail, both drawn from the field of social psychology. The first case study presents evidence that psychologists’ attempts to educate the public about the science of implicit bias might in some instances increase rather than decrease racial discrimination tendencies. The second case study presents evidence that psychologists’ attempts to promote seemingly straightforward science-based strategies to reduce racial disadvantage might in some instances increase rather than decrease the public’s tendency to blame the historically disadvantaged for their circumstances.

These examples caution scientists not to assume that they exert only positive influences when they successfully engage and educate the public. We argue, however, that the best solution is not for scientists to silence themselves or to otherwise avoid public communications. Open societies need their scientist to actively engage and inform their members, so that their policy makers can advance more sound, science-based public policies. But our analysis does suggest a need for scientists to turn their scientific scrutiny inward. Scientists should be critically evaluating the consequential effects that they and their colleagues are having on public opinions. We thus close by calling for a vigorous science of science communication, one that is oriented around two complementary pursuits. First, scientists should pursue *critical studies* that identify the dominant messages being advanced by their own disciplines, in order to empirically assess the consequential effects their messages are having on public opinion. This line of research should consider the full range of potential effects, such that it reveals both the desired and undesired effects scientists are having in their attempts at public education and outreach. Second, scientists should pursue *strategic studies* that empirically test new communication strategies that will help them educate the public in ways that reduce – rather than exacerbate – current social problems.

This second pursuit is the more controversial of the two. By exploring strategies that scientists might enlist to influence public opinion, this line of research threatens to undermine scientists’ reputation as neutral, disinvested communicators of fact. We argue, however, that it often is not possible for scientists to adopt this esteemed, neutral position, once their own research topics have taken on political, partisan or ideological significance in the public square. In divisive, partisan times such as these, there

may be no 'neutral' facts that scientists can communicate on topics that already have political significance (e.g., climate change, geoengineering, racism, child vaccinations, stem-cell applications, etc.). This does not mean, however, that scientists should abstain from educating the public on their findings. To the contrary, it is on precisely topics of this nature that scientific facts are of most use, where there is potential for science to inform public policy. One goal of strategic science communication studies should be identification of ways for scientists to understand and respect the different lenses through which the public will view their research, so that researchers' attempts to educate the public will promote responses that help to reduce, rather than exacerbate, social problems.