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Nano-targeting or mass appeal, what makes persuasive climate communications?

*New tools are making it feasible to target individuals with tailored communications at scale. **Miriam Sorace**, **Thomas Robinson**, **Simon Hix** and **Joris Frese**, in exploring the persuasiveness of these nano-targeting tools, apply them to the field of climate communications and find that, while they may not be effective at building support for climate action, they can dissuade and polarise. They also find more conventional mass appeals comfortably beat nano-targeted messaging and can increase support for climate policies from sizable pluralities to clear majorities.*

Nano-targeting is an advanced version of micro-targeting, a form of hyper-personalised message tailoring. In a nutshell, it involves breaking messaging up into multiple components and then changing these components to match what the individual is predicted to respond to.

It is a cutting-edge technology that is likely to spread widely as advances in AI make it more accessible. However, whether these approaches work better than either standard micro-targeting approaches, or crafting broadly appealing messages, is an open question.

How persuasive is nano-targeting?

To test the power of these tools, in a new quantitative evaluation of nano-targeting, we set out to apply nano-targeting techniques to climate policy. Specifically, we test the extent to which they can persuade audiences of the need to reduce global CO2 emissions.

Scientists agree that the best approach to prevent climate change from spiralling into disastrous consequences is a "radical reduction in fossil-fuel- and land-use-related carbon emissions". They also agree that there are multiple possible pathways to achieve this goal. One could prioritise different sectors and/or pick different policy instruments. What is more, different groups in society

prefer different climate policies. The multi-dimensional contestation around climate policy makes it a perfect case to test nano-targeted communications, as it is a harder test for a simpler 'one-size-fits-all' majority appeal messaging strategy.

As with existing studies on micro-targeting, nano-targeting turned out not to be a uniquely powerful persuasion weapon. However, we do find it can be an effective dissuasion and polarisation weapon instead. Support for climate protection fell more sharply among individuals exposed to messages they were predicted to dislike than it increased among those shown messages they were predicted to like. And it outperformed the broad appeal message only for individuals that were already pro-climate, thereby reinforcing pre-existing views rather than reaching new pockets of support.

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The results are concerning as they suggest that nano-targeting is strategically more advantageous for actors who seek to dissuade and attack or polarise – tactics commonly employed by anti-system political entrepreneurs. It can, for example, be successfully deployed by climate sceptic campaigns to serve only climate policies and frames each individual dislikes, thereby successfully reducing net zero support. Climate campaigns can leverage it at most to mobilise their supporters, or, if they want to design it for dissuasion, they can try to serve climate change consequences that each individual particularly dislikes, to turn them *away from* climate *inaction*.

Crafting more appealing climate messaging

Increasing support for climate action does not require sophisticated, ethically questionable or costly communication systems, however: even in this multi-dimensional policy area campaigns can shift public attitudes with broad appeals that resonate with the majority, rather than trying to selectively hide or emphasise different aspects of the message with different people.

The central plank of our study was a conjoint analysis on climate messaging run on a nationally representative sample of the UK voting age population at the end of March 2025. The conjoint survey experiment helped to identify the broad appeal message that could resonate with most people. The conjoint data was also used to train the predictive model used to nano-target messages to each individual (in a separate sample). Conjoint survey experiments are particularly well-suited to design successful policy messaging, as they make explicit the multi-dimensionality and inherent trade-offs of public policies. By asking respondents to compare two options at a time over several rounds, they allow to extract the relative importance of specific components of, say, a policy message. By unpacking the various dimensions of a choice in detail, they reduce the likelihood that respondents pick what they think are socially acceptable answers and ensure that the policy question is understood similarly by different respondents.

We varied the following attributes of our climate policy messaging:

Attribute	Frame / Level
Emotional preamble	Negative Positive No frame
Benefit preamble	Security Jobs/Economic growth No frame
Lever 1: Energy and industrial policy	Bans/Phase outs Tax increase Government intervention Tax incentives No statement
Lever 2: Buildings and homes	*[as for Lever 1]*
Lever 3: Transport	*[as for Lever 1]*
Lever 4: Natural resources	*[as for Lever 1]*
Lever 5: Trade and finance	*[as for Lever 1]*

Table 1. Climate policy messaging conjoint attributes and levels. *Note, all attribute levels were fully and independently randomized in the conjoint experiment.

Figure 1 below shows what the respondents saw in the survey platform. The below task was presented to each respondent a total of four times.

Fig1: YouGov Conjoint Experiment Survey Platform Example

One key statistic we can get from conjoint analyses are marginal means (see Fig.2 below). These statistics capture the percentage of climate policy messages containing the specific framing and/or policy pledge that were chosen by respondents in the sample. For example, over 55% of climate messages containing the pledge "Investing £5 billion from the budget (about 0.5% of government spending) every year to develop eco-friendly fuels and low emission vehicles" were supported, controlling for all other possible frames and policy pledges.

Fig.2: Conjoint Experiment Marginal Means

We took the pledges and framings with the highest marginal means (one per category) to create a one-size-fits-all climate policy message. This broad appeal message (a) offers strong tax incentives on sustainable buildings and for renewable energy companies; (b) proposes strong investment for technological innovation in the transport and natural resources sectors; (c) begins with a proactive, positive preamble that highlights the energy-security benefits of the policy. We also find a slight marginal positive effect of tax incentives when it comes to trading with sustainable overseas companies.

In our second experimental phase we tested this one-size-fits-all message against nano-targeted messages and a control group. We found that the one-size-fits-all message led to a 9% increase in the probability of supporting net zero policies. Compared to a baseline net zero policy support of 42% in the control group, the one-size-fits-all best message raised support to a majority (52%). Furthermore, it significantly increased the probability to vote for a pro-net zero party as well as support for increased public spending to reach net zero.

Our key take-away for climate communication campaigns is: careful policy design and public opinion analyses that acknowledge the inherent trade-offs of climate policies are the most reliable pathways to successful persuasion.

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