

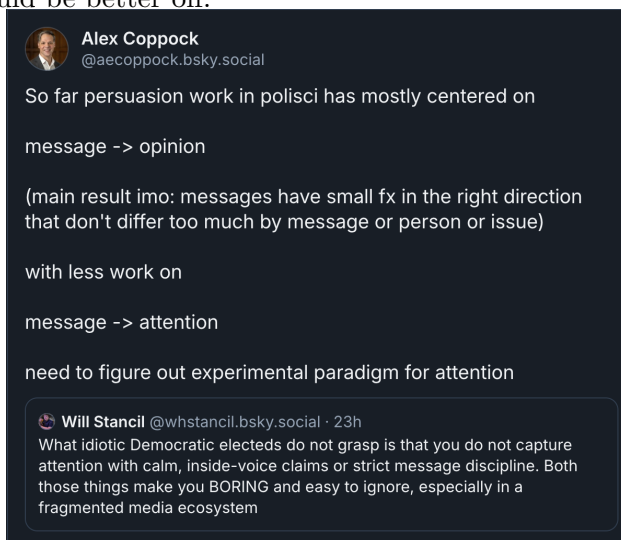
Notes on attention

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January 30, 2025

This week on Bluesky we had a nice conversation about “attention.” I posted something to the effect of “we don’t know much about attention,” which of course prompted people who have studied attention to share their work. This note is a little round up of what I learned.

For starters, I quote-tweeted Will Stancil lamenting that Democratic politicians are boring and they don’t capture attention. I take the claim to be is that if they did something different, they would be better off.

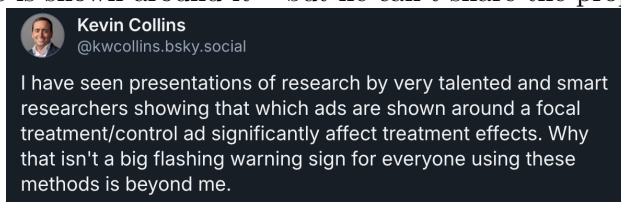


My claim about what we know about the effects of messages is a restatement of the “persuasion in parallel” argument of Coppock (2022) and the title claim of Coppock, Hill, and Vavreck (2020), but this finding shows up very consistently in, e.g., Tappin, Berinsky, and Rand (2023) and Broockman and Kalla (N.d.). Conditional on exposure to a message, people update in the direction of the message by small amounts that aren’t too different depending on the person, the message, etc. As always, we’re not talking about “group cue” messages with this claim.

Suppose you really believed this basic claim was roughly true – if they’re listening, it doesn’t matter much what you say, it all works about the same small amount – then the obvious important next question to answer would be “what makes them listen?” In other words, we want to know the causal effects of message characteristics (and other treatments) on attention.

The view from campaign world

Kevin Collins says he’s seen work that shows the attention paid to a message is affected by what else is shown around it – but he can’t share the proprietary work.



Jeff Liszt describes a Clinton campaign effort to estimate which kinds of people paid attention to which kinds of message – but the work is not public.



To me, these cryptic references to proprietary work sound like a) campaigns on the left kind of know attention is a problem to be solved but b) they haven’t solved it yet. I’m not sure that political science can learn much from these efforts in the absence of design transparency. I only sort of understand the need for secrecy on these matters (though to anyone reading, I have respected every NDA I’ve ever signed, I promise!).

The information board design

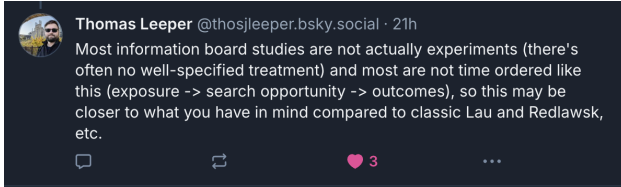
We have a good design for studying the effects of messages on opinion, i.e., we have the survey experiment in which we randomize (forced) exposure to messages and then measure attitudes post treatment. This design is not well adapted to studying attention because we’ve already purchased subjects attention to our treatments.

The information board experiment is a design I know from Taber and Lodge (2006), and also Redlawsk, Civettini, and Emmerson (2010). The basic idea is that subject are shown a feed of information from which they can select particular headlines. It simulates an information environment in which subjects can pay different amounts of attention to different messages.

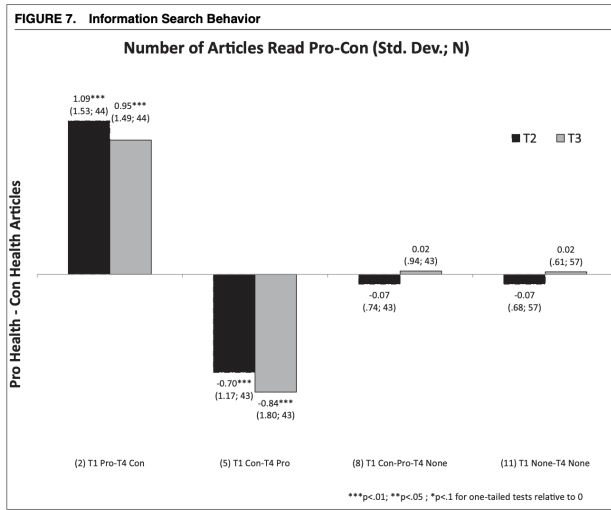
That work was used information board studies to support a “motivated reasoning” account of information processing. I really don’t like that interpretation and Chapter 7 of Coppock (2022) is an extended critique of that kind of inference. That said, information board experiments substantiate claims of “selective exposure,” i.e., the idea that different kinds of people choose to click on different kinds of headlines. It seems very clear from that work that people pay more attention to congenial information and less attention non-congenial information.

This finding doesn't *particularly* help a campaign who wants to get more attention – they can't just switch their message from being congenial to liberals to congenial to conservatives in order to get more conservative eyeballs (or vice-versa).

Thomas Leeper dropped a link to an information board study of his (Druckman, Fein, and Leeper, 2012) and noted that:



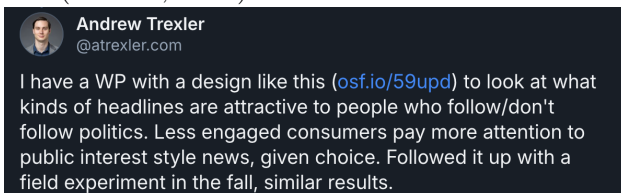
His study did randomize the content of information boards and showed that people assigned to boards with more pro information read more pro information and people assigned to boards with more con information read more con information.



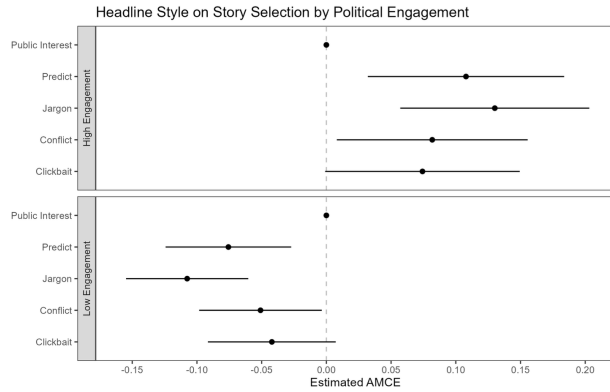
This finding resonates with Redlawsk, Civettini, and Emmerson (2010) which also finds increased opportunity for exposure increases exposure. If you show people more conservative content, they will consume more conservative content. If you show people more liberal content, they will consume more liberal content.

I think these two studies do have some implications for campaigns: yes indeed, if you flood the zone with more content, more people will see it. That's not about changing messages to be more attention grabbing, it's just about increasing the volume of communication.

The closest the thread got to the idea in the quoted Will Stancil tweet was a study from Andrew Trexler (Trexler, 2024).



Trexler randomly assigns features of the headlines and shows that the causal effect of some of the more obnoxious ways of writing headlines (conflict, clickbait) is indeed positive – for highly engaged people. But it’s negative for less engaged people.



Ben Tappin chimes in:



That linked study (Epstein et al., 2022) describes a “faux feed” experiment in which the authors measure whether people “dwell” on posts and whether they subsequently engage on them. The claim is that sensationalism causes increases in dwell, but not engagement. I’m a little concerned about how to estimate these quantities because the paper estimates the effect of sensationalism on engagement given dwell, but both behaviors are downstream of the message.

All in all, though, it seems like the information board is something like a “design for studying attention.”



The faux feed design allows us to control:

1. the overall mix of content (as in Druckman, Fein, and Leeper (2012) and Redlawsk, Civettini, and Emmerson (2010))
2. the characteristics of any particular post (as in (Trexler, 2024))

and to measure

- “dwell” i.e, how long people linger on a post
- “clicks” i.e., whether people click to read
- “likes”
- I don’t think we get genuine sharing behavior or commenting behavior in a faux feed design. I’m also a little skeptical of likes
- we could also measure attitudes post treatment via survey

To me, this design seems like it would be well suited to substantiate some claims about what kinds of things are more attention grabbing.

Field trials on “real feeds” rather than “faux feeds” I think has extremely difficult logistical challenges. If we had the ability to show some followers one thing and other followers another thing, we might be able to get there?

Other designs

The information board / faux feed design isn’t the only one people have used; here’s a few others.

Emily Thorson points to the “passive encounter” design reported in Stroud (2017).



The passive encounter design doesn't try to change the content of the message instead, it slips it in. Halfway through some entertainment, the content switches to news – “a bait and switch.” In this particular study, the news delivered in this doesn't seem to have big effect on knowledge, but of course the bait and switch is a tried and true tactic to get people to pay attention to something is to pretend that is something other than what it is. We have not even scratched the surface of experimental estimates of the effectiveness of this technique in political science.

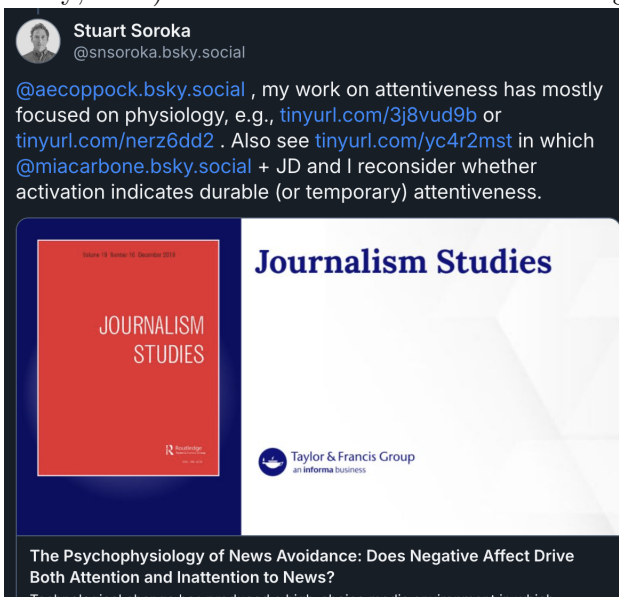
Jay Van Bavel linked to a study of his (Brady, Gantman, and Van Bavel, 2020) that showed words that vary in their moral and emotional valence to participants. Participants are more able to remember words with more moral or emotional language, presumably because of attention.



Kathleen Searles describes how in her book with Johanna Dunaway (Dunaway and Searles, 2023) they consider how features of the information environment impact attention though I haven't read the book and I'm not sure what the research designs are from this excerpt.

We offer a framework and a model that illuminates how communication technology shapes media effects by first understanding how people are exposed to information, and, second, understanding how they process that information once exposed. The chapter emphasizes that exposure is necessary but insufficient for learning and thus, a more serious treatment of attention is needed. The physical and cognitive access framework underscores the difference between the opportunities mobile devices offer for *physical* access to information, and the ways that same device structures cognitive access to information. Notably, physical access can mitigate, but not eradicate, the costs associated with information seeking and processing, which are exacerbated by mobile device features. Mobile features make attention allocation, and thus learning, more costly. With this in mind, the post-exposure processing model sets forth parameters for understanding the effects of changes in communication technology. We apply the framework and model to mobile devices.

Stuart Soroka described two of his studies (Soroka and McAdams, 2015; Mia Carbone and Dunaway, 2024) that estimate the effect of news negativity on biometric markers of attention.



To me, it remains an open question what the best way to study attention is. The information board design uses clicks, likes, “dwell” – and these physiological studies go after biometric markers of attention. Perhaps we think the biometric approach is closer to “true” attention and platform behaviors are downstream of true attention.

What I think I learned

Even though when you post on the internet that we don’t know much about X, people say yes we do, we know a lot about X – I still don’t think we know much about the effects of many treatments on attention.

To make progress, I think we need to coordinate on a paradigmatic research design. For persuasion, we have the survey experiment – that workhorse has led to a pretty thorough exploration of

the landscape and we've come back with a pretty simple overall conclusion: conditional on contact, messages move people in the direction of information by small amounts that don't vary too much.

For attention, I doubt we're going to arrive at such a simple answer since what people like (and want to pay attention to) will vary from person to person. The information board experiments establish that in a coarse way - people are more likely to click on congenial information. The Trexler study shows that conflict type language grabs attention from some (the very online) but not for others. Studying something heterogeneous is way harder than studying something homogeneous, so we'll need a strong design paradigm to test many variations. I think the design we'll coordinate on is the information board and variants since there is a lot of opportunity to use this design to understand the causes of attention.

Not for nothing, something like this design is presumably what tech companies are doing en masse to maximize engagement on platform. The kinds of things they know are probably pretty black box i.e., they know that if they train their classifier to predict the things that you'll click on, you'll click on more things. The big Meta and poli sci collaboration (Guess et al., 2023) is a very good demonstration that that's true: switching the algorithm to the chronological feed people makes people pay way less attention to Facebook and Instagram. That is, we can infer that these adaptive algorithms are certainly one way to increase attention. Of course the issue is Meta doesn't care *what* you're paying attention to as long as you're paying attention. The problem for campaigns is that they need people to pay attention to something particular.

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