Cross-national evidence of a negativity bias in psychophysiological reactions to news

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What accounts for the prevalence of negative news content? One answer may lie in the tendency for humans to react more strongly to negative than positive information. "Negativity biases" in human cognition and behavior are well documented, but existing research is based on small Anglo-American samples and stimuli that are only tangentially related to our political world. This work accordingly reports results from a 17-country, 6-continent experimental study examining psychophysiological reactions to real video news content. Results offer the most comprehensive cross-national demonstration of negativity biases to date, but they also serve to highlight considerable individual-level variation in responsiveness to news content. Insofar as our results make clear the pervasiveness of negativity biases on average, they help account for the tendency for audience-seeking news around the world to be predominantly negative. Insofar as our results highlight individual-level variation, however, they highlight the potential for more positive content, and suggest that there may be reason to reconsider the conventional journalistic wisdom that "if it bleeds, it leads."

news coverage | negativity bias | political communication

This paper is focused on the human propensity to give more weight to negative information than to positive information and the relevance of this tendency for the nature of news coverage. The importance of negativity biases for news is relatively clear. Negativity biases affect news selection, and thus also news production, as well as citizens' attitudes about current affairs. Testing for the prevalence of negativity biases and considering their implications for the nature of news content is central to our understanding of the flow and impact of mass-mediated current-affairs content. In a period during which news around the world is especially wrought with negativity, this subject is of obvious significance.

The paper proceeds as follows. We first review the existing literature on negativity biases, particularly as it relates to news consumption, highlighting the paucity of comparative research on the issue. We note that one major consequence of this gap in research is an inability to distinguish the extent to which these negativity biases vary due not just to individual-level, but also to cultural, political, or media-system factors. The key, we argue, lies in testing for differences in responses to news content across both individuals and cultures. We then present results from what is, to our knowledge, the single largest, directly comparable body of data on negativity biases in psychophysiological responses to video news.

Results, based on over 1,000 respondents across 17 countries and 6 continents, suggest that there is, on average, a negativity bias in psychophysiological reactions to video news content. There are, however, also considerable differences in the way in which individuals react to negative versus positive news content. These individual-level differences are not easily explained by culture or country. Indeed, there is considerable within-country variation in responses to news content. This fact highlights the possibility that news content could be attention-grabbing for some citizens even if it is not systematically negative.

Background

Our research is motivated by 2 widely recognized features of modern-day communications. First, mass-mediated news is a central and critical component of large-scale representative democracy. Media provide a critical flow of information between elites and citizens and are a vital mechanism for democratic accountability. Second, negative tone is a defining feature of news; good news, in contrast, is nearly synonymous with the absence of news. This asymmetry in coverage has been the focus of a considerable body of work on mass media in the United States (1, 2), and it is evident in studies of media content and journalists' decisions cross-nationally (3–5). Importantly, this work suggests that, even as news coverage has been negative for many years, it has also been increasing in recent decades.

In sum, the nature and quality of mass-mediated news content is central to the nature and quality of representative democracy, and that content is systematically skewed toward negative information. This is partly a function of the demand for negative news, since market forces will produce news in line with

Significance

News coverage of current affairs is predominantly negative. American accounts of this tendency tend to focus on journalistic practices, but this cannot easily account for negative news content around the world. It is more likely that negativity in news is a product of a human tendency to be more attentive to negative news content. Just how widespread is this tendency? Our evidence suggest that, all around the world, the average human is more physiologically activated by negative than by positive news stories. Even so, there is a great deal of variation across individuals. The latter finding is of real significance for newsmakers: Especially in a diversified media environment, news producers should not underestimate the audience for positive news content.

consumers' interests, including negativity (6). Even so, the tone of news content has been cited as a source of systematic deficiencies in what citizens know about their governments and the world around them (1). Inadequate or incorrect political knowledge, citizen apathy, and disengagement—these are just some of the consequences attributed to the overwhelmingly negative nature of news content.

These facts point to the importance of understanding why media content is the way it is. They also highlight the need to understand if and why media consumers prioritize negative coverage. Concerns about media coverage typically focus on the supply side of the media—i.e., choices of journalists and editors—but the demand side may be equally important. Even as people say they want more positive news, they systematically select more negative news (7), for instance. This should come as no surprise: There are, after all, burgeoning literatures across the social sciences identifying negative biases in human information processing and behavior (8–12).

What explains the apparently widespread preference for negative information? One account is rooted in evolutionary theory. Attention to negativity may have been advantageous for survival. Negative information alerts to potential dangers (13); it has special value in terms of "diagnosticity" (14), or the "vigilance" (15) that is required to avoid negative outcomes. This account of the negativity bias is evident in literatures in physiology (16), neurology (17, 18), and, particularly, work on the importance of "orienting responses" in evolutionary biology (19). This account leads to the expectation of a negativity bias present across all human populations.

Another account is evident in work on cultural psychology and anthropology, as well as recent work on "media systems." This research emphasizes the possibility that there are cross-cultural differences in negativity biases. There is, after all, work examining cross-cultural variation in related psychological phenomena, including self-assessments (20, 21), self-esteem (22), satisfaction (23), optimism (24), and reasoning (25). One frequent contrast in this work is between what seem to be more optimistic countries in the West (typically the United States) and less optimistic countries in the East (typically Japan). And, while cross-cultural explorations into negativity biases specifically are rare, several important exceptions find evidence of cross-national differences (23, 26, 27).

Systematic cross-national differences in responsiveness to news content might provide clues about how this negativity bias arises. What might drive this cross-cultural variance? The literature on cultural values points to some possibilities (28). Societies deal with anxiety about future uncertainties in different ways, and the extent to which members of a culture feel threatened by ambiguous or unknown situations may well affect the tendency to focus on negative information. A range of institutional factors may also matter. Societal tension between groups, and especially conflict that has crystallized in the polarization of political-party systems, may matter for negativity, at least where attentiveness to news coverage is concerned. Another dimension of variability is rooted in the institutionally coded professional practices of journalists (29). A strong professional requirement that journalists routinely cover politics in conflictual terms may also lead to viewers' habitual expectation and attention to negativity.

Note that neither the evolutionary nor the cultural-institutional account depends on a conscious desire for negative information so much as an unconscious adaptation or learned tendency to prioritize negative information. Note also that the 2 accounts are not in competition—negativity biases are almost certainly conditioned by both. Consider work on the importance of "social learning," alongside biology, as the basis of culture (30) and work in neurology and physiology on culture–gene coevolution (31, 32). We also do not want to discount the possibility that variation in negativity biases is not a primarily cross-cultural phenomenon, but an individual one. There already is work suggesting that negativity biases in reactions to video news vary across gender, for instance (33). And there is a growing literature focused on differences in negativity biases across political ideologies (34–36).

Individual-level variables may be at the root of cross-cultural variation, insofar as individual-level factors vary across cultures. Individual-level variation may also be entirely independent of culture or work differently across cultures. Thus far, we simply do not know the extent to which heightened activation in response to negative news content is a culturally determined phenomenon. This not only limits our understanding of negativity biases generally, it limits our understanding of the demand and supply of negative news content.

Cross-National Physiological Responses to News

Our cross-national work responds to growing pleas for a more comparative approach to (political) psychology (37) and more comparative work in political communication as well (38). We also build upon a small, but growing, literature focused on cross-national experimentation in psychology and economics (39, 40).

Our analyses are based on laboratory experiments run in 17 countries: Brazil, Canada, Chile, China, Denmark, France, Ghana, India, Israel, Italy, Japan, New Zealand, Russia, Senegal, Sweden, the United Kingdom, and the United States. We also have 2 separate samples in Canada, Anglophone and Francophone, and 2 separate samples in Israel, Jewish and Palestinian. Our results are based on 1,156 respondents; to our knowledge, this is the largest and most broadly comparative psychophysiological study in the social sciences to date. (*SI Appendix* discusses sampling decisions in detail; *SI Appendix*, Fig. S1 shows the distribution of respondents by country and gender, and *SI Appendix*, Fig. S2 shows the distribution of age by country.) The study protocol is straightforward: Respondents watched 7 randomly ordered BBC World News stories on a laptop computer while wearing noise-cancelling headphones and sensors on their fingers to capture skin conductance and blood volume pulse. (Videos were subtitled where necessary, and tests suggested that subtitles do not change the results presented here. See *SI Appendix*, Table A5.)

There already is a considerable body of work examining negativity biases in psychophysiology; there is a growing literature on psychophysiological reactions to political news content as well (33, 41, 42). Physiological measures have the advantage of capturing real-time, often subconscious, reactions to news content. We examined normalized skin-conductance levels (nSCLs), indicating physiological activation connected to, e.g., "orienting responses," and the "fight or flight" response. We also relied on heart-rate variability (HRV)—specifically, the root mean square of the successive differences (RMSSD), capturing a combination of activation (increasing heart rate) and attentiveness (decreasing heart rate). (For more thorough accounts of both measures, see, e.g., refs. 43 and 44.) Note that past work also views HRV as a measure of "emotional regulation" (45). The 2 perspectives are similar—each focuses on variation caused by the excitatory sympathetic nervous system and inhibitory parasympathetic nervous system, and each views higher HRV as an indicator of both activating and calming/focusing responses.

The tone of video content was the primary independent variable. Negativity was measured as an interval-level measure based on the average of second-by-second coding by expert coders (outlined in more detail in *SI Appendix*). Expert coders' assessments were in line with assessments from study participants. (Average story ratings, by country, are shown in *SI Appendix*, Fig. S3.)

Analyses use data at several different levels of aggregation. Variation in heart rate was necessarily measured over longer intervals—in this case, over the course of entire news stories. Analysis of RMSSD values is thus at the respondent–story level. Skin conductance can be measured over very short time periods; here, we examined nSCL using a time-series panel dataset in which each respondent was a "panel" and nSCL was captured at 1-s intervals. The processing of physiological measures is discussed in *SI Appendix*.

The basic results for RMSSD, estimated across all participants in all countries, are illustrated in Fig. 1. Results are based on the regression model shown in *SI Appendix*, Table S2. (*SI Appendix*, Table S3 reproduces the same model, assigning weights to individuals so that all country-level samples are weighted equally; results are not substantively different.) The shift shown in Fig. 1, from an average story tone of −2 (positive) to +2 (negative), is equivalent to 10% of the observed SD in RMSSD. Participants thus exhibited higher variability in heart rate during negative news stories than they did during positive news stories. Given past work on HRV and media content (44), we interpret these results as reflecting higher attentiveness and arousal during these negative stories.

Results for nSCL are illustrated in Fig. 2, based on second-by-second models shown in *SI Appendix*, Table S4. Note that these results are similar to those using the same respondent-stimulus-level data as was used for RMSSD; these models are included in *SI Appendix*, Table S2 (without country weights) and *SI Appendix*, Table S3 (with country weights). The second-by-second models of nSCL interacted negativity with time (in seconds, by story), given past work suggesting that the impact of negativity on skin conductance decreases over the course of a news story (42). Fig. 2 shows the estimated impact of negative (+2) content, versus neutral (0) and positive (−2) content, 20 s into a news story. The shift shown in Fig. 2 is equivalent to 65% of the observed SD in nSCL. The evidence supports the expectation that physiological arousal is greater for negative news coverage than for positive news coverage.

Note that while these findings are in line with past work, they are among the first to rely on such a large sample, focused on actual video news content, and not based exclusively on
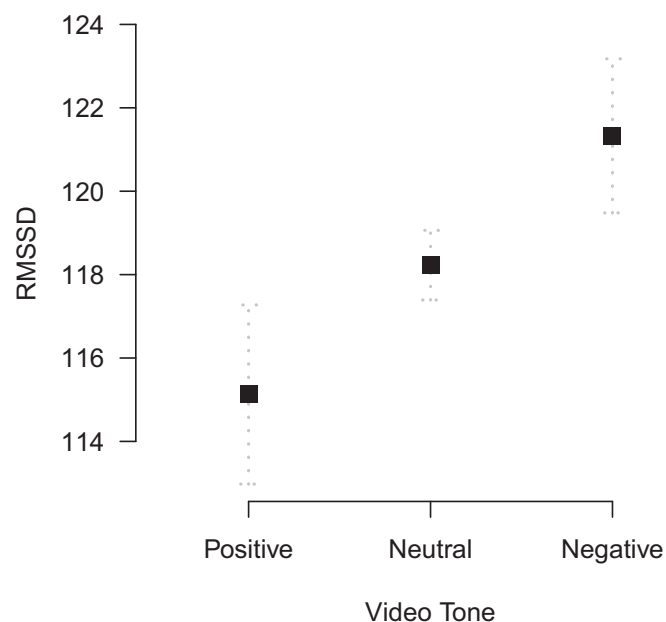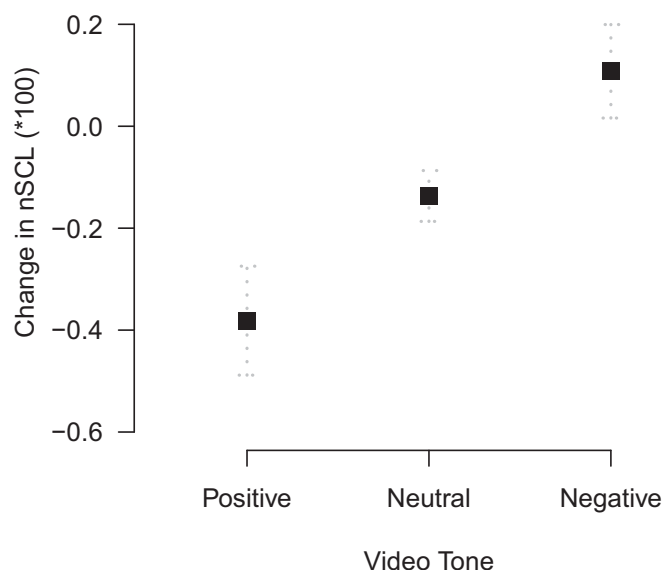
Fig. 2. The estimated effect of by-second news story tone on nSCL, 20 s into news stories, all countries combined.

Anglo-American respondents. The fact that a negativity bias in physiological responses to video news is readily evident in cross-national data using stimuli with high external validity is of real significance. To be clear: This study directly demonstrates that humans around the world are more activated by negative news coverage. We are, perhaps, one step closer to accounting for the high frequency of negative news content around the world.

Recall, however, that our principal goal is to examine the possibility of systematic cross-national variation. Figs. 3 and 4 offer the critical diagnostic test. Fig. 3 shows the estimated effect on RMSSD of a 1-unit increase in negativity, based on models estimated separately for every participant, using the same specification as in *SI Appendix*, Table S2. The distribution of these estimated effects is shown, by country, where "estimated effects" are the coefficients for the negativity measure. The figure makes clear the high degree of variability underlying the overall result in Fig. 1. On balance, there are more participants to the right of the zero line—suggesting that respondents are more attentive to and activated by negative news stories. Overall, the mean coefficient is greater than zero. But there is a great deal of within-country variability as well. Indeed, Fig. 3 shows asterisks beside the countries for which the mean coefficient is significantly greater than zero (based on a 1-tailed *t* test); only Brazil, Canada, France, Italy, and Sweden showed systematically higher RMSSD during negative video content.

The story is relatively similar for nSCL, in Fig. 4, which plots the estimated effect of a 1-unit increase in negativity on nSCL, based on second-by-second models estimated separately for each participant, using the same specification as in *SI Appendix*, Table S4. Again, results are shown by country, and asterisks are shown beside the countries for which the mean coefficient is significantly greater than zero (based on a 1-tailed *t* test). Results point to significant negativity biases in 9 of the 17 countries. In 2 countries, New Zealand and Sweden, the impact of negativity is, on average, opposite to our expectations, although not significantly so. (And note that while country-by-country results vary slightly across different model specifications and levels of data aggregation, in all cases, the basic story is the same: an overall average negativity bias, but with a good degree of individual-level difference; *SI Appendix*.)

Country accounts for very little of the variation in Figs. 3 and 4. ANOVAs suggest that country (included as a factor variable,

Fig. 1. The estimated effect of news story tone on RMSSD, all countries combined.
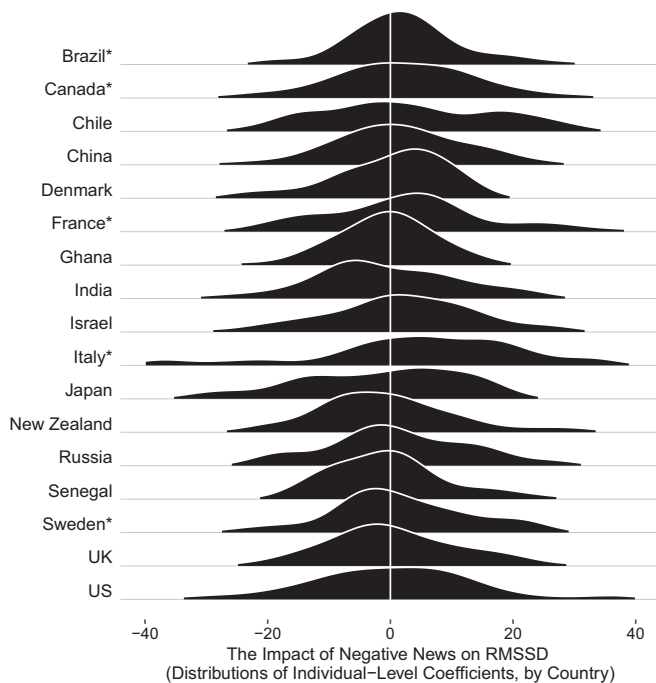
Fig. 3. The estimated effect of news story tone on RMSSD, by country. Asterisks indicate the countries for which the mean coefficient is significantly greater than zero (based on a 1-tailed *t* test).

with no additional controls) accounts for 1.5% of the observed variance in coefficients for RMSSD and 2.7% of the observed variance in coefficients for nSCL. Even if there were cultural, political, and/or media-system variables correlated with cross-national differences, then, it seems unlikely that they would explain much variance, and, indeed, we find no significant correlations between such measures and the coefficients used in Figs. 3 and 4 (*SI Appendix*, Table A6). This is not to say that there are no systematic individual-level differences—there clearly are significant differences in the ways in which individuals react to negative versus positive news content. Those differences simply do not appear to be strongly connected to country-level contextual factors.

Discussion

Our results suggest that negativity biases in reactions to news content are not a uniquely American phenomenon. Reactions to video news content reveal a mean tendency for humans to be more aroused by and attentive to negative news. That said, there also is considerable individual-level variation around that mean, and, in some instances, country-level samples would not on their own suggest statistically significant negativity biases in responsiveness to video news content.

Note that our results are focused entirely on reactions to news content—they do not run contrary to evidence of other systematic and important cross-cultural differences in psychology and information processing, nor do they counter the claim that deep-seated negativity biases in information processing are endemic. There is, of course, a good deal of work in psychology and neurology highlighting negativity biases in information processing generally (13, 16–22, 46). Our goal has been to examine the degree to which these widely accepted psychological and neurological findings are evidenced in reactions to video news content. This is because we are interested in understanding why news content looks the way it does, and we allow for the possibility that reactions to news content are conditioned by a range of contextual and cultural factors beyond fundamental (physiologi-

cal and neurological) negativity biases in information processing. That said, our results find little impact of country-level context in conditioning physiological responsiveness to video news.

There are, of course, a number of limitations to this study. We opted for nearly identical stimuli across countries, which has the advantage of comparability, but also means that we capture responses to news that may be different from what is typical in each country. A survey question asking about differences between our BBC and domestic news stories suggests small to moderate observed differences for all (non-U.K.) countries in our study (*SI Appendix*, Fig. S4). Even so, understanding the demand and supply of news may benefit from further country-specific analysis, targeting not just the tone, but also other varying aspects of news coverage.

We also do not want to discount entirely the possibility that context matters for negativity biases. The diagnosticity, or "outlyingness" (47), of negative content may well vary across contexts; those contexts may simply not correspond to the national–cultural samples we examine here. Indeed, even one's own personal information environment, structured by factors such as income and employment, may affect negativity biases and news consumption. All we can say definitively here is that there is no link in our data between physiological reactions to valenced news content and national contexts—political, media, or otherwise.

That said, our results demonstrate a broadly cross-national negativity bias in responsiveness to video news content, while at the time demonstrating a very high degree of individual-level variation. This individual-level variation has important implications for how we understand news production. Most importantly, it suggests that audience-seeking news media need not necessarily be drawn to predominantly negative content. Even as the average tendency may be for viewers to be more attentive to and aroused by negative content, there would appear to be a good number of individuals with rather different or perhaps more mutable preferences. One lesson of our analyses is that work on media coverage and news production should not lose sight of these individual-level differences. For those focused on the

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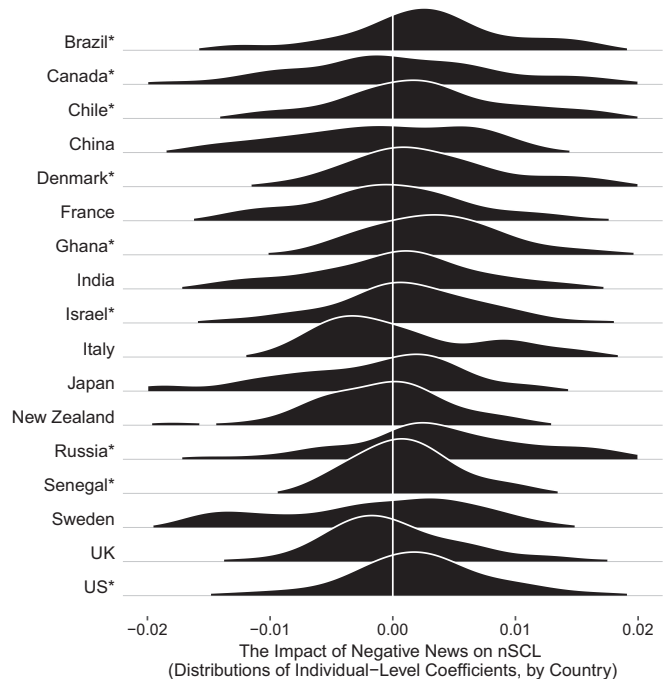
Fig. 4. The estimated effect of by-second news story tone on nSCL, 20 s into news stories, by country. Asterisks indicate the countries for which the mean coefficient is significantly greater than zero (based on a 1-tailed *t* test).

substance and nature of news content, individual-level variability in negativity biases highlights the possibility for the audience-seeking success of news coverage that is less systematically negative.

Materials and Methods

There are 6 sections included in *SI Appendix*. *SI Appendix*, section A describes the experimental protocol. *SI Appendix*, section B includes the script used to introduce participants to the experiment. This study was reviewed and approved by the Comité d'Éthique de la Recherche des Arts et des Sciences at the Université de Montréal. Written informed consent was sought from and provided by all participants, using text included in *SI Appendix*, section C. *SI Appendix*, section D discusses both sampling and location in each country. *SI Appendix*, section E describes the processing of physiological data. *SI Appendix*, section F briefly reviews alternative estimation strategies. For the purposes of education and research, data and replication materials are available through the Harvard Dataverse (48).

1. T. E. Patterson, *Out of Order* (Vintage Books, New York, NY, 1994).
2. S. J. Farnsworth, S. R. Lichter, *The Nightly News Nightmare: Television's Coverage of U.S. Presidential Elections, 1988-2004* (Rowman & Littlefield Publishers, Lanham, MD, 2007).
3. G. Lengauer, F. Esser, R. Berganza, Negativity in political news: A review of concepts, operationalizations and key findings. *Journalism* 13, 179–202 (2012).
4. B. Zhong, J. E. Newhagen, How journalists think while they write: A transcultural model of news decision making. *J. Commun.* 59, 587–608 (2009).
5. R. Vliegenthart, H. G. Boomgaarden, J. W. Boumans, "Changes in political news coverage: Personalization, conflict and negativity in British and Dutch newspapers" in *Political Communication in Postmodern Democracy: Challenging the Primacy of Politics*, K. Brants, K. Voltmer, Eds. (Palgrave Macmillan UK, London, U.K., 2011), pp. 92–110.
6. J. Dunaway, Media ownership and story tone in campaign news. *Am. Pol. Res.* 41, 24–53 (2013).
7. M. Trussler, S. Soroka, Consumer demand for cynical and negative news frames. *Int. J. Press/Politics* 19, 360–379 (2014).
8. R. F. Baumeister, E. Bratslavsky, C. Finkenauer, K. D. Vohs, Bad is stronger than good. *Rev. Gen. Psychol.* 5, 323–370 (2001).
9. J. T. Cacioppo, W. L. Gardner, Emotion. *Annu. Rev. Psychol.* 50, 191–214 (1999).
10. P. Rozin, E. B. Royzman, Negativity bias, negativity dominance, and contagion. *Personal. Soc. Psychol. Rev.* 5, 296–320 (2001).
11. D. Kahneman, A. Tversky, Prospect theory: An analysis of decision under risk. *Econometrica* 47, 263–292 (1979).
12. S. T. Fiske, Attention and weight in person perception: The impact of negative and extreme behavior. *J. Personal. Soc. Psychol.* 38, 889–906 (1980).
13. P. J. Shoemaker, Hardwired for news: Using biological and cultural evolution to explain the surveillance function. *J. Commun.* 46, 32–47 (1996).
14. J. J. Skowronski, D. E. Carlston, Negativity and extremity biases in impression formation: A review of explanations. *Psychol. Bull.* 105, 131–142 (1989).
15. M. Irwin, T. Tripodi, J. Bieri, Affective stimulus value and cognitive complexity. *J. Personal. Soc. Psychol.* 5, 444–448 (1967).
16. S. E. Taylor, Asymmetrical effects of positive and negative events: The mobilization-minimization hypothesis. *Psychol. Bull.* 110, 67–85 (1991).
17. N. K. Smith, J. T. Cacioppo, J. T. Larsen, T. L. Chartrand, May I have your attention, please: Electrocortical responses to positive and negative stimuli. *Neuropsychologia* 41, 171–183 (2003).
18. S. Dehaene, M. I. Posner, D. M. Tucker, Localization of a neural system for error detection and compensation. *Psychol. Sci.* 5, 303–305 (1994).
19. A. Öhman, A. Flykt, F. Esteves, Emotion drives attention: Detecting the snake in the grass. *J. Exp. Psychol. Gen.* 130, 466–478 (2001).
20. E. C. Chang, K. Asakawa, Cultural variations on optimistic and pessimistic bias for self versus a sibling: Is there evidence for self-enhancement in the west and for self-criticism in the east when the referent group is specified? *J. Personal. Soc. Psychol.* 84, 569–581 (2003).
21. S. J. Heine, Positive self-views: Understanding universals and variability across cultures. *J. Cult. Evol. Psychol.* 2, 109–122 (2004).
22. J. D. Brown, H. Cai, M. A. Oakes, C. Deng, Cultural similarities in self-esteem functioning: East is east and west is west, but sometimes the twain do meet. *J. Cross Cult. Psychol.* 40, 140–157 (2009).
23. S. Oishi, E. Diener, D. W. Choi, C. Kim-Prieto, I. Choi, "The dynamics of daily events and well-being across cultures: When less is more" in *Culture and Well-Being*, E. Diener, Ed. (Social Indicators Research Series, Springer, Dordrecht, Netherlands, 2009), vol. 38, pp. 143–168.
24. S. J. Heine, D. R. Lehman, Cultural variation in unrealistic optimism: Does the west feel more vulnerable than the east? *J. Personal. Soc. Psychol.* 68, 595–607 (1995).
25. R. Nisbett, *The Geography of Thought: How Asians and Westerners Think Differently. . .and Why* (Simon and Schuster, New York, NY, 2004).
26. I. Grossmann, P. C. Ellsworth, Y. Y. Hong, Culture, attention, and emotion. *J. Exp. Psychol. Gen.* 141, 31–36 (2012).
27. M. Abalakina-Paap, C. W. Stephan, W. G. Stephan, T. Stefanyenko, C. Gabrielidis, Memory for cultural information about Russia and the United States. *J. Cross Cult. Psychol.* 32, 32–42 (2001).
28. G. Hofstede, *Culture's Consequences: Comparing Values, Behaviors, Institutions and Organizations Across Nations* (SAGE Publications, Thousand Oaks, CA, 2001).
29. T. Hanitzsch, Deconstructing journalism culture: Toward a universal theory. *Commun. Theor.* 17, 367–385 (2007).
30. A. R. Rogers, Does biology constrain culture? *Am. Anthropol.* 90, 819–831 (1988).
31. L. L. Cavalli-Sforza, M. W. Feldman, *Cultural Transmission and Evolution: A Quantitative Approach. (MPB-16)*, Monographs in Population Biology (Princeton University Press, Princeton, NJ, 1981).
32. J. Y. Chiao, K. D. Blizinsky, Culture–gene coevolution of individualism–collectivism and the serotonin transporter gene. *Proc. R. Soc. Biol. Sci.* 277, 529–537 (2010).
33. S. Soroka, E. Gidengil, P. Fournier, L. Nir, Do women and men respond differently to negative news? *Politics Gend.* 12, 344–368 (2016).
34. D. R. Oxley *et al.*, Political attitudes vary with physiological traits. *Science* 321, 1667–1670 (2008).
35. K. B. Smith, D. Oxley, M. V. Hibbing, J. R. Alford, J. R. Hibbing, Disgust sensitivity and the neurophysiology of left-right political orientations. *PLoS One* 6, e25552 (2011).
36. M. D. Dodd *et al.*, The political left rolls with the good and the political right confronts the bad: Connecting physiology and cognition to preferences. *Philos. Trans. R. Soc. Lond. B Biol. Sci.* 367, 640–649 (2012).
37. J. Henrich, S. J. Heine, A. Norenzayan, The weirdest people in the world? *Behav. Brain Sci.* 33, 61–83 (2010).
38. S. Livingstone, On the challenges of cross-national comparative media research. *Eur. J. Commun.* 18, 477–500 (2003).
39. M. H. Segall, D. T. Campbell, M. J. Herskovits, *The Influence of Culture on Visual Perception* (Bobbs-Merrill, Oxford, U.K., 1966).
40. E. Diener, M. Diener, C. Diener, Factors predicting the subjective well-being of nations. *J. Personal. Soc. Psychol.* 69, 851–864 (1995).
41. S. N. Soroka, *Negativity in Democratic Politics: Causes and Consequences* (Cambridge University Press, New York, NY, 2014).
42. S. Soroka, S. McAdams, News, politics, and negativity. *Political Commun.* 32, 1–22 (2015).
43. J. Cacioppo, L. Tassinary, G. G. Berntson, Eds., *Handbook of Psychophysiology* (Cambridge University Press, New York, NY, ed. 4, 2017).
44. R. F. Potter, P. Bolls, *Psychophysiological Measurement and Meaning: Cognitive and Emotional Processing of Media* (Routledge, New York, NY, ed. 1, 2011).
45. B. M. Appelhans, L. J. Luecken, Heart rate variability as an index of regulated emotional responding. *Rev. Gen. Psychol.* 10, 229–240 (2006).
46. M. E. Grabe, A. Lang, S. Zhou, P. D. Bolls, Cognitive access to negatively arousing news an experimental investigation of the knowledge gap. *Commun. Res.* 27, 3–26 (2000).
47. P. J. Lamberson, S. Soroka, A model of attentiveness to outlying news. *J. Commun.* 68, 942–964 (2018).
48. S. Soroka, P. Fournier, L. Nir, Replication Data for: Cross-National Evidence of a Negativity Bias in Psychophysiological Reactions to News. Harvard Dataverse. https://doi.org/10.7910/DVN/F08NDH. Deposited 15 August 2019.