Equivalency Framing of Problems and Policy Solutions

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Abstract: While there is a large political science literature on framing effects, almost none of it has focused on equivalency framing of actual problems and potential solutions. We investigate whether the public expresses more concern about societal problems when logically equivalent information concerning their prevalence is framed in negative rather than in positive terms, and whether support for ameliorative policies changes when policies are framed as reducing the incidence of bad outcomes as opposed to increasing the incidence of good ones. From experiments covering a diverse set of issues, we find that equivalency frames have a consistent effect on the public's evaluation of social problems: negative frames provoke substantially more negative emotional reactions to problems and lead to judgments that the problems are more serious and deserving of government attention. At the same time, we find no differences in support for gain-framed versus loss-framed policies designed to ameliorate these problems.

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In a January 2022 White House briefing, Biden's Chief of Staff touted progress fighting the COVID-19 pandemic, citing the numbers of American receiving vaccines: "Vaccines remain our single-most powerful tool. And just this week, we hit important milestones. Seventy percent of eligible seniors — those most at risk and most vulnerable — have now gotten their booster shot. And half of all eligible adults are now boosted." Governments, interest groups, and the mass media routinely use this kind of quantitative information to describe problems facing the nation. When doing so, they can choose to report the percentage of people experiencing *good* outcomes—as in the percentage of Americans who are vaccinated, the percentage of high school students obtaining their degree, or the percentage of households with safe drinking water. Or alternatively, they can report the percentage of people experiencing *bad* outcomes—as in the percentage who are unvaccinated, who dropped out of school, or who have unsafe drinking water. Likewise, policy initiatives that aim to improve matters can be framed as increasing the prevalence of good outcomes or as decreasing the prevalence of bad ones.

Despite the ubiquity of such rhetorical choices in political communications, there is almost no research on whether these specific kinds of framing variations matter to public opinion on political issues or policy solutions. In this paper, we investigate whether the public expresses more concern about societal problems when facts concerning current conditions are framed in negative rather than in positive terms, and whether support for ameliorative policies grows when they are framed as reducing the incidence of bad outcomes as opposed to increasing the incidence of good ones. Both of these ideas concern what has come to be called equivalency framing (following Druckman 2001a), as the frames differ in valence but they depict the exact same fact or policy change.

According to the invariance principle of rational choice theory, such framing variations should not matter: "different representations of the same choice problem should yield the same preference" (Tversky and Kahneman 1986, p. S253). Yet, we hypothesize that they can matter, with important consequences for public attitudes. Arguments regarding loss aversion and negativity bias inspire the expectation that people will respond differently to information about social problems and policy remedies if it is negatively rather than positively framed. Likewise, market researchers have shown that consumers' choices are affected by whether products are described in either positive or negative, but otherwise logically equivalent terms—e.g., the lean vs. fat makeup of ground beef (Levin and Gaeth 1988) or the success vs. failure rate of condoms (Linville, Fischer, and Fischhoff 1993).

Working with survey data from a nationally representative probability sample of U.S. adults, we provide a unified, experimental test of equivalency framing on both problems and policy solutions. The experiments address whether people's beliefs, feelings, and opinions differ depending on the framing of factual information about real-world problems—like how many Americans have safe (vs. unsafe) drinking water or live close enough to (vs. too far from) hospitals in order to get adequate care in a medical emergency—and about remedial policies designed to improve matters, depicted as either increasing positive outcomes or decreasing negative ones. As discussed later, this goes well beyond existing equivalency framing research, much of which has focused on whether people tend to become more risk-seeking when presented with information about losses (vs. gains) in hypothetical, risky-choice scenarios. The results show that reporting on problems by identifying the prevalence of bad (vs. good) outcomes in an issue area provokes substantially more concern: people report being more worried and more angry about the problem, judge the problem to be more serious, and are more likely to see the

problem as deserving of government attention. Framing effects are especially large with respect to feelings of anger and on issues that generate a high overall level of concern. In contrast, we find no framing effects on support for policy remedies.

In what follows, we begin by situating our study within the broader literature on framing effects. We make clear what distinguishes equivalency framing from other forms of framing, while also identifying the different forms of equivalency framing that have been studied by social scientists. We then turn our attention exclusively to the specific framing variants we study. We lay out our hypotheses and the theorizing that inspires them, which draws from literature on prospect theory and negativity biases, and provide a detailed overview of previous research. This review makes clear how little attention political scientists have given to equivalency framing in political communications and how our experiments represent an advance over previous work.

We next describe the design and rationale for our experiments—a 2x4x2 factorial—which address either societal problems or policy remedies, on one of four issues (high school achievement, drinking water quality, marine pollution, access to hospital care), and where problem/policy information is framed either negatively or positively. Two results sections follow. The first contains the main experimental results, testing our pre-registered hypotheses. The second presents exploratory analyses relating to why the framing effects we uncover vary across issues, outcomes, and the evaluation of problems vs. policy remedies. Overall, the primary contribution of this paper is to open up a research agenda into the equivalency framing of factual information about real-world political objects. Hence, our final section before concluding sketches out the many fruitful paths for building on this study to develop a broader and deeper understanding of how equivalency framing influences public opinion and political behavior.

Background and Theory

In a review of framing effects, Dennis Chong and James Druckman describe the importance of political communications that frame public debates by shaping the set of considerations and values attached to various policy and political objects. As they summarize: "Frames in communication matter—that is, they affect the attitudes and behaviors of their audiences. … [F]raming changes attitudes by ostensibly altering the underlying considerations used in one's evaluation" (2007). Hundreds of studies have examined the ways frames are created and deployed, and their effects on emotional reactions, political attitudes, and political behavior. One main distinction in the literature is between emphasis framing, where the frames communicate different facts, ideas, principles, or arguments, and equivalency framing, where the frames consist of different but logically equivalent ways of communicating a single fact, idea, principle, or argument (Cacciatore, Scheufele, and Iyengar 2016, Druckman 2015, Ansalem and Zoizner 2022). Research into emphasis framing far exceeds that focused on equivalency framing. Brugman and Burgers (2018), who coded 372 political framing experiments from 284 studies published since 2000, found that only 10% involved equivalency framing. Although equivalency framing takes different forms, framing effects in each case violate the descriptive invariance principle of rational choice.[1]

Varieties of Equivalency Framing

Our problem experiments involve a form of equivalency framing that has come to be called *attribute framing* (following Levin, Schneider, and Gaeth 1998), where the frames convey

[1] Preferences should not be affected by the method used to elicit them, either, which is the focus of "choice framing" research (e.g., Bizer, Larson, and Petty 20119, Shafir, Simonson, and Tversky 1993).

information about an object—typically, aggregate data relating to performance—in one of two equivalent ways: either depicting the frequency of positive outcomes (e.g., percentage successful, safe, clean) or the frequency of negative ones (percentage unsuccessful, unsafe, unclean). Although there is a large attribute framing literature, only a handful of studies have focused on politics, as we detail later. In attribute framing, the frames differ in valence, which distinguishes it from two related equivalency framing variants. In one, the frames vary the format or scale used to convey a given numerical fact—for example, by giving raw counts instead of percentages, or by varying the aggregation interval (e.g., James and Van Ryzin 2019, Manning et al. 2009, Pedersen 2017). Pederson (2017), for instance, found that survey respondents expressed more support for an education initiative described as costing $250/month than for one described as costing $3,000/year. In the second, the focus is on alternative ways to describe group differences or group conflict (e.g., Bowler and Donovan 2007, Chow and Galak 2012, Lowery et al. 2012). When comparing the performance of two groups, for example, one can either point out that group A scored higher than group B or, equivalently, that B scored lower than A. Likewise, when two groups are in direct competition, one could either report that A won or that B lost.

Our policy experiments involve *gain-loss equivalency framing*, which is the subject of three different kinds of studies. In the first, represented by our policy experiments, an object—in our case, a policy initiative—is described as either increasing positive outcomes (gain frame) or, equivalently, as decreasing negative outcomes (loss frame), and the key question is whether peoples' judgments or choices are influenced by the valence of the framing. In the common vernacular, this is a "non-risky choice" scenario, as there is no uncertainty associated with the outcomes. As discussed later, very few studies have addressed whether people's political preferences are affected by this form of gain-loss framing.

In experiments on gain-loss framing in "risky choice" scenarios, by contrast, people are asked to evaluate two options, one of which has properties known with certainty and the other of which has properties known only probabilistically, and where both options are either gain-framed (e.g., refer to survival rates) or loss-framed (refer to mortality rates). The focus of these studies is on how the framing influences people's willingness to take risks, and the typical finding is that people will tend to favor a sure option over a risky option when both are gain-framed but will tend to favor the risky option over the sure option when both are loss-framed. The first and most famous demonstration of this framing effect comes from Tversky and Kahneman's (1981) "Asian Disease Experiment," which has been replicated and extended in countless studies. In political science, risky choice gain-loss framing studies include Arceneaux (2012), Boettcher (2004), Druckman (2001b, 2004), Druckman and McDermott (2008), Kam and Simas (2010), and Osmundsen and Petersen (2020).

A final set of studies involving gain-loss framing, usually called "message framing" studies, evaluate the efficacy of persuasive messages describing the benefits from taking a certain action (e.g. getting a vaccination, paying with a credit card) relative to messages describing the costs from not doing so; for an overview, see Levin, Schneider, and Gaeth (1998), Nabi et al. (2020), and Yi and Baumgartner (2008), and for political science examples, see Arceneaux (2012) and Mann et al. (2020). The message framing literature is extensive, with a lot of variation in study design. The devil is in the details as to whether any given experiment should be classified as equivalency framing. In those that do concern equivalency framing, the frames present logical opposites, as in "if you take this drug, you will be protected from malaria" vs. "if you do not take this drug, you will be unprotected from malaria." In many others, the gain-loss frames convey distinct rather than equivalent ideas about benefits vs. costs. For example, in one

of Mann et al.'s (2020) experiments, subjects in one condition were told that keeping an existing pollution rule would produce job gains, while subjects in a second condition were told that dismantling the existing pollution rule would produce job losses.

In short, this paper opens up a research agenda into two forms of equivalency framing in political communications, which have variety of important implications for both theory and practice that we delineate and discuss in later sections.[2]

Theory and Hypotheses

Research on attribute and gain-loss framing was inspired by Amos Tversky and Daniel Kahneman's prospect theory of decision-making, which holds that people's choices depend on whether they result in welfare gains or losses; that people are loss averse, which is to say that the disutility they receive from a given loss exceeds the utility they receive from an equivalent gain; and that people are more sensitive to varying degrees of loss than they are to varying degrees of gain. Initially developed to explain decision-making when at least one of the options was a risky prospect (Kahneman and Tversky 1979), the theory was later extended to decision-making over non-risky options, the context we study here (Tversky and Kahneman 1991; see Kahneman 2003a on how the theory evolved).

Prospect theory has two major implications for research into attribute and gain-loss equivalency framing. First, the frame sets the reference point: positive frames put the chooser

[2] See Appendix 1 for a chart that summarizes the six different equivalency framing variants we have discussed in this section. We attempted to classify the 38 equivalency framing experiments identified by Brugman and Burgers (2018) into these six categories, finding: (A) 5 involve attribute-framing (B) 3 involve the framing of numerical information, (C) 5 involve the framing of group differences, (D) 0 involve gain-loss framing in non-risky choice scenarios, (E) 9 involve gain-loss framing in risky-choice scenarios, and (E) 11 involve gain-loss message-framing, though not necessarily with logically equivalent frames. In addition, there were 3 that we couldn't code into any of these categories and 2 we could not find.

into the realm of goods and gains, while negative frames put the chooser in the realm of bads and losses. Second, and consequently, the disvalue associated with negatively framed objects (bads, losses) will exceed the value associated with their positive counterparts (goods, gains). [3] Rozin and Royzman (2001) call this the principle of "negative potency." Thus, for example, the expectation is that people will be more alarmed by a diagnosis if told it has a 20% mortality rate than if told it has an 80% survival rate, and will judge water quality more negatively if told that 20% of the samples failed quality-control tests than if told that 80% of the samples passed (attribute framing). Likewise, they will be more likely to accept a medical treatment if it is portrayed as lowering one's likelihood of death by 10% than if it is described as raising one's likelihood of survival by 10%, and will find more value in a policy reducing the percentage of water quality tests that fail by 10% than in a policy increasing the percentage of water quality tests that pass by 10% (gain/loss framing). Put more formally in terms of the focus of our inquiry, the hypotheses are twofold:

> $H_{problems}$: People will express more concern about societal problems when provided with negatively framed facts (prevalence of bad conditions or outcomes) than when framed with positively framed facts (prevalence of good conditions or outcomes).
>
> $H_{policies}$: People will express more support for policies described as decreasing the incidence of bad outcomes (loss-frame) than for those described as increasing the incidence of positive outcomes (gain-frame).

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[3] Prospect theory also gives rise to the hypothesis tested in risky-choice experiments, which is that people are more likely to prefer the risky option when information is loss-framed than when it is gain-framed. This idea is so well-known that it is often called "the" framing effect in the literature. That said, much of the voluminous literature spurred by prospect theory has nothing to do with equivalency framing. Indeed, Barberis' (2013) review of "Thirty Years of Prospect Theory in Economics" says nothing at all about framing. Instead, the focus has been on often-puzzling aspects of the behavior of economic actors that prospect theory can explain, such as status quo biases and the endowment effect (see also Camerer 2004, Kahneman 2003b). Likewise, many of Tversky and Kahneman's own experiments were not about equivalency framing; they instead attempted to manipulate reference points in order to mimic varying real-world circumstances and demonstrate the contrasting reactions to gains vs. losses.

Although prospect theory formalizes the expectation that decision-makers weigh bads and losses more heavily than goods and gains, it does not explain *why* they do so. This question is taken up in the large literature on negativity biases (Baumeister et al. 2001, Norris 2021, Peeters and Czapinski 1990, Rozin and Royzman 2001, Soroka 2014, Taylor 1991). In research focused specifically on equivalency framing, the most common explanation is that different thoughts and feelings will be aroused depending on the valence of the frame, leading to evaluations that are biased in the direction of the frame (Janiszewski, Silk and Cooke 2003, Hardisty, Johnson, and Weber 2010, Leong et al. 2017). The logic is akin to that for the affect heuristic (Slovic et al. 2002) and mood effects (Erisen, Lodge and Taber 2014); evaluations become biased either through direct affect transfer or by bias in the valence of the thoughts that come to mind.

Another possibility is that the frame affects whether people find the information believable (Hilbig 2009, 2012, Jaffe and Greifeneder 2019). For example, Hilbig's (2009) subjects were substantially more likely to believe that 30% of rape cases had not been cleared by police than they were to believe that 70% of rape cases had been cleared. The further implication is that this leads to equivalency framing effects on judgments and choices, with negatively framed information—deemed more truthful—being more persuasive. Negative information also tends to be more attention-getting than positive information (Rozin and Royzman 2001) and more likely to be judged surprising (Vaish, Grossmann, and Woodward 2008), which may also be relevant to explaining equivalency framing effects.

These explanations consider equivalency framing effects as irrational—if understandable—biases. According to an "information leakage" explanation, by contrast, frames contain information that people are rationally taking into account (Sher and McKenzie 2006,

Leong et al. 2017; see also Chick, Reyna, and Corbin 2016, Mandel 2014). This argument has two parts. First, speakers or writers tend to use positive frames when describing good performance and to use negative frames when describing bad performance, and thus the choice of frame carries or "leaks" information. When a baseball team is performing well, for example, sports analysts will tend to talk about its win-rate (goods) or recent win-streak (gains), whereas if it is performing poorly, they will talk about its loss-rate (bads) or loss-streak (losses). Second, because of this empirical regularity, when information is framed positively people infer that it must be a good result relative to an implicit baseline and that when framed negatively people infer that it must be a bad result. If so, frames may lead people to make false inferences about base rates and to shifts in preference that violate the invariance principle, but people are nevertheless acting rationally in using baseline information cued by the frame.[4]

Previous Research

The attribute framing literature is extensive, though very little of it has focused on politics or public policy. Researchers have studied the positive or negative framing of information on consumer products, such as condoms (Linville, Fischer, and Fischoff 1993); on medical treatments (Bigman, Capella, and Hornik 2010) and diagnostic tests (e.g., Howard and Salkeld 2009); on business or financial decisions (e.g., Kerler, Allport, and Fleming 2015); and on the performance of groups or institutions such as contractors, work teams, hospitals, and schools (e.g., Kuvaas and Selart 2004, Olson 2015a, 2015b). This research routinely finds evaluative differences consistent with the direction of the frame. Effects typically increase with

[4] If the frame signals a base rate and people respond rationally on that basis, the invariance principle is nonetheless violated. The base rates implied by the two frames cannot both be true. Thus, equivalency framing effects remain irrational in the sense that they violate the invariance principle.

the size of the numerical framing disparity (e.g., larger for a 75/25 framing than for a 50/50 framing) until the information becomes so extreme that in either frame it overwhelmingly favors one response (Levin et al. 1998). Although the typical study involves generic or hypothetical objects (condom brand X, school A), framing effects have also been found with real objects that are more meaningful to people, such as Covid-19 vaccines (Barnes and Colagiuri 2022), and when people are provided with additional information on which to base their judgment (Olsen 2015b). The effects tend to be smaller among people who have strong attitudes about, prior knowledge of, and/or personal experience with the object (Barnes and Caloguiri 2022, Janiszewski, Silk and Cooke 2003, Levin et al. 1998).

Despite the potential importance of attribute framing in political communications, we know of only four studies concerning politics or policy. Yet, equivalently framed political communications may elicit different responses than those found in the marketing domain. While political messaging often presents candidates, policy options, and concern over issues as a simplified binary choice, the content of these choices often is overwhelmed by association with and source cues from groups, notably parties (Sniderman 2000, Druckman 2001b). Of the existing studies, one exposed undergraduates to mock news stories containing information on race-based differences in NCAA student athlete graduation rates (Ash and Schmierbach 2013); subjects were told either the percentage of black and white athletes who graduated or the percentage who did not. People in the negatively framed condition were significantly more likely than those in the positively framed condition to judge racial disparities in graduation rates as serious and to attribute those disparities to structural causes, but the two groups did not differ in their opinions on policy remedies. In another study, Gamliel and Peer (2010) examined the framing of allocation principles guiding the prioritization of organ transplants, finding that

principles were judged more positively when framed to define who would receive transplants than when framed to define who would not.

More recently, two studies focused on an agenda similar to ours, though developed independently. These studies find somewhat mixed effects. The first (Lee et al. 2019) studied the effects of framing information on crime rates, while the second (Lee et al. 2021) studied the effects of framing information on drunk driving and wildlife conservation. The first study found that people expressed more fear, anger, and sadness when the information was negatively framed, while the second found that to be true for one application but not the other. Judgments of the seriousness of the problems, only addressed in the second study, did not differ across conditions. Neither provided evidence on effects related to public attitudes about government priorities, which we address here.

The literature on gain-loss equivalency framing, while extensive, has almost exclusively focused on message framing effects or preference reversals in hypothetical contexts of risky choice (i.e. people becoming more risk-seeking if choices are loss-framed rather than gain-framed). Experiments in the non-risky choice context are remarkably sparse, and those that do exist are nearly all posed as hypotheticals. For example, Quattrone and Tversky (1988, problem 10) describe an experiment where subjects are asked to choose between two policies—J & K—which were described using either gain-framed or loss-framed information about workforce participation along with unframed information on inflation rates. The gain-framed condition described workforce participation in terms of employment rates (policy J at 90%, policy K at 95%) while the loss-framed condition used unemployment rates (policy J at 10%, policy K at 5%). As expected, subjects were much more likely to choose policy K in the loss-framed condition than in the gain-framed condition (64% vs. 46%).

We found only two experiments developed with respect to real-world policy. These also come from Quattrone and Tversky (1988), focus on the Equal Rights Amendment (ERA), and yield similar results. In one, subjects were told that supporters thought the ERA would either "improve the rights of women" (more of a good) or would "help eliminate discrimination of women" (less of a bad) in job opportunities, salary, and social security benefits. As anticipated, support for the ERA was higher when it was loss-framed. However, as the study examined only one issue area, it remains uncertain whether the same effects would hold across other domains.

In sum, Druckman's (2001a, 239) overall characterization of equivalency framing research in political science as "embryonic" remains largely true today. Our own review, presented here, sustains this claim as do other recent literature reviews (Brugman and Burgers 2018, Cacciatore, Scheufele, and Iyengar 2016). Our study thus makes important contributions by expanding the limited experimental evidence on equivalency framing of political communications concerning real-world political objects. The focus is on the framing of factual (or at least realistic) information about societal conditions and policy remedies rather than hypothetical scenarios, and addresses two forms of equivalency framing that have received almost no attention from political scientists. As elaborated below, our approach provides a unified study of attribute framing (of societal problems) and gain-loss framing (of policy solutions) across multiple policy areas, allowing a comparison of treatment effects on different issues and on a range of outcomes using a similar experimental design.

Experimental Design and Measures

Our experiments were included in a January 2020 survey administered to 3,510 respondents from the NORC AmeriSpeak Panel, which uses probability-based sampling to be

nationally representative of the United States.[5] As elaborated below, each respondent was assigned to either a problem experiment or a policy experiment, which included either negatively or positively framed information and pertained to one of four issues: high school achievement, drinking water quality, marine pollution, and access to hospital care. In other words, the overall design was a 2 (problem vs. policy) x 2 (positive vs. negative frame) by 4 (issue) between-subjects factorial.

Treatment Design

We were guided by several objectives in designing the treatments. First, we needed to devise treatment arms that presented information about societal problems (problem-framing experiments) or remedial policy initiatives (policy-framing experiments) that were logically equivalent while varying by frame. Treatment arms in the problem-framing experiments would either describe the prevalence of good outcomes or the prevalence of bad outcomes, while those in the policy experiments would add information about a policy's expected effects—either gain-framed (i.e. increasing the prevalence of good outcomes) or loss-framed (i.e. decreasing the prevalence of bad outcomes). We were also committed to building in replication across issue areas so as to have evidence regarding the generalizability of any framing effects, and wanted to avoid deception to the extent possible.

We designed experiments in four issue areas where research has shown that the

[5] This study was approved by the UC Berkeley Committee for Protection of Human Subjects under Protocol 2019-08-12450 and pre-registered with EGAP as study 20200116AC (https://osf.io/ngr6a/). It was supported by Time-Sharing Experiments for the Social Sciences (TESS). Preregistered hypotheses relating to the main effects of equivalence frames are addressed in the "main experimental results" section; these include $H_{problems}$, $H_{policies}$, and the hypothesis that framing effects would be larger on issues using the language of "contamination," discussed below. We also set forth several hypotheses regarding moderators. Tests of these are presented in Appendix A6. Exploratory analyses that were not preregistered include tests showing the distinctively large treatment effects on Anger, the Marine Debris issue, and others that are identified as exploratory in what follows.

prevalence of good (bad) outcomes is approximately 80% (20%). In an optional debriefing following the experiment, respondents were presented with links to the factual information sources we relied upon. Considerations of statistical power led us to select issues fitting an 80%/20% scenario rather than, say, a 60%/40% scenario, since framing effects have tended to increase with the size of the framing discrepancy in previous studies. Below is the treatment wording for one of the four problem experiments:[6]

> Hospital Deserts The chance of surviving a life-threatening medical emergency can depend on how long it takes to get to a hospital. According to a recent report, *[80%/20%]* of Americans live *[close enough to/too far from]* a hospital to get adequate care in case of an emergency.

Three of the issues were drawn from a pilot study, described in detail in Appendix 3, which evaluated 16 issue areas on the policy agenda in the United States. We included the Hospital Deserts and High School Achievement issues as a hard test, because they showed the weakest framing effects in the pilot (actually wrong-signed), perhaps because they are frequently in the news. We included the Marine Debris issue because it showed larger framing effects in the pilot. We added the Drinking Water issue to see if framing effects depend on the use of evocative language (i.e., "contaminated"), which was suggested by the pilot study results.

Treatments for the policy experiments provided the framed problem statement, followed by a framed description of the policy initiative. To illustrate, below is the text used for the

[6] Here is the wording for the other three: High School Achievement: Obtaining a high school degree can make a great difference to a person's job prospects and quality of life. In the U.S., [20% / 80%] of students who start high school [drop out and do not obtain a high school diploma/finish and obtain a high school diploma]. Marine Debris: Marine organisms can mistake plastic and bits of trash for food, which can cause harm to ocean ecosystems and to humans who eat the fish. According to recent estimates, [20% / 80%] of fresh-caught fish sold at market are [contaminated / free of contamination] by debris. Drinking Water Quality: People can experience health problems from drinking water that contains unsafe concentrations of bacteria from sewage or chemicals like arsenic and lead. One five-year study found that [20%/80%] of the nation's water treatment systems had delivered unsafe/safe water to residents—water [contaminated/free of contamination] by sewage or chemicals.

Hospital Deserts case:

> The chance of surviving a life-threatening medical emergency can depend on how long it takes to get to a hospital. According to a recent report, *[80%/20%]* of Americans live *[close enough to/too far from]* a hospital to get adequate care in case of an emergency.
>
> Representatives in Congress have proposed a policy that would *[increase/decrease]* the number of Americans that live *[close enough to/too far from]* a hospital to get adequate care. The policy proposal calls for a coordinated effort across the 50 states, the creation of public-private partnerships, and a combination of tax incentives, regulatory reforms and outreach initiatives. The price tag is estimated to be $10 billion/year. The policy is expected to *[increase/decrease]* the percentage of Americans living [*close enough to/too far from*] hospitals from *[80% to 90%/20% to 10%]* by 2025.

The text used for the other issue areas, which is comparable, is provided in Appendix 4. The policy initiatives described in the treatments were fictional, which was disclosed to respondents in the debriefing. Each treatment provided unframed information about the policy (see second and third sentences above), which was added to increase realism.

Dependent Variables & Sequencing

For both the problem and policy experiments, we (a) asked multiple questions to gauge respondents' reactions, (b) presented each question on a separate screen so as to minimize straightlining, (c) measured responses on 7-point scales with each response option labeled, and (d) randomized the direction of the response (positive to negative or vice versa). We also randomized the order of the dependent measures in the problem experiments, though used a fixed order for the dependent measures in the policy experiments to ensure flow. These questions came immediately after the screen that displayed the treatment information, which was preceded by a transition screen saying "Next, we will show you some information about an important issue that impacts many Americans."

For the problem experiments, the dependent variables come from the following four questions (asked in random order), which aimed to measure the range of outcomes suggested by

previous research: (1) Priority: How much priority should the U.S. government give to improving this situation? (lowest priority … highest priority—plus a separate option "government should not be involved in this area" that was coded with "lowest priority"); (2) Serious: In your opinion, how serious of a problem is this situation? (not serious … extremely serious); (3) Anger: "How angry does this situation make you?" (not angry … extremely angry); (4) Worry: How worried are you about this problem? (not worried … extremely worried). We analyze these variables separately but also present results from an additive index (alpha of 0.86-0.90 across the issue areas, 0.89 overall). All variables were scored to range from 1 (least concerned) to 7 (most concerned).

For the policy experiments, the dependent variables come from the following three questions (asked in order): (1) Opinion: What is your view of this policy proposal? (strongly disapprove … strongly approve); (2) Petition: Would you be willing to support a petition in support of this policy? (definitely would not … definitely would); (3) Volunteer: One element of the outreach is to engage citizen volunteers in efforts to solve the problem. Would you be willing to lend your time and energy to this effort? (definitely would not … definitely would). Again, we analyze the dependent variables separately but also present results on an additive index (alpha of 0.77 to 0.80 across issue areas, 0.79 overall). All variables were scaled to range from 1 (least supportive) to 7 (most supportive).

Main Experimental Results

We begin with the problem experiments, first aggregating across issues. We find that when problems were negatively framed—i.e., described in terms of the incidence of bad (rather than good) outcomes—they generated more anger and worry, were perceived as more serious, and were given higher priority for government action (see Table 1). The framing effect is largest

for Anger (0.67), followed by Worry and Serious (0.47 and 0.48) and Government Priority (0.28). These effect sizes equate to 5-11% of the range and 16-36% of the standard deviation of the outcome variables. All effects are statistically significant at p<.001, and differences in the framing effect for Anger relative to the other outcome measures are statistically significant as well.[7]

We also evaluated whether the framing effect diminished with the time that elapsed since respondents were presented with the framed information, as gauged by the (randomized) order in which the dependent variable question was asked. It did not. However, within each condition, levels of anger, perceived seriousness, and government priority were highest when asked first and declined thereafter, while levels of worry held steady or increased slightly (see Appendix Figure A2.1).

Table 1. Problem Frame Effects—Overall

	Anger	Worry	Serious	Priority	Index
Average in Negative Frame	3.73	3.92	4.74	4.57	4.24
Average in Positive Frame	3.06	3.45	4.26	4.29	3.76
Difference	0.67***	0.47***	0.48***	0.28***	0.48***
(Standard Error)	(0.088)	(0.087)	(0.081)	(0.081)	(0.074)
p-value	.001	.001	.001	.001	.001
Difference as % of Range	11%	8%	8%	5%	8%
Difference as % of SD[8]	36%	26%	28%	16%	31%

Note: The dependent variables, shown in the columns, ranged from 1 (least concerned) to 7 (most concerned). Ns are 1783, 1785, 1785, 1785, and 1771, respectively. ***p<.001, two-tailed. Table A2.1 in the appendix shows the comparable results when the analysis is extended to include fixed effects for issue and for the order in which the

[7] Paired t-tests results on Anger vs: Worry d=0.20, p=.001; Serious d=0.19, p=.007; Priority d=0.39, p<.001.
[8] The SD used in this calculation (and that in Table 2) is the within-condition standard deviation of Y; i.e. the root mean squared error from a regression of the column variable on a dummy for frame.

dependent variable was asked.

Table 2 shows the results when each problem experiment is analyzed separately; to simplify we only show the mean difference by condition ("framing effect"). The framing effect is always in the right direction and is statistically significant at $p<.05$ (two-tailed) for each index and for 10 out of 16 of the individual outcome measures, and at $p<.10$ for two more. In each problem area, the framing effects are smallest for judgments of government priority, which accounts for three of the four cases of statistical insignificance. Effects on Anger are largest in 11 out of 12 comparisons—the exception concerns Hospital Deserts, where the point estimate for judgments of seriousness exceeds that found for Anger—but are especially notable on the issues of Marine Debris and Drinking Water.[9]

Table 2. Problem Framing Effects—by Issue

	Anger	Worry	Serious	Priority	Index
Hospital Deserts					
Framing Effect	0.35*	0.26	0.45**	0.24	0.32*
(*p-value*)	(*.030*)	(*.121*)	(*.006*)	(*.158*)	(*.027*)
% of Range	6%	4%	8%	4%	5%
% of SD	21%	15%	27%	14%	22%
High School Achievement					
Framing Effect	0.57***	0.53**	0.39*	0.24	0.44***
(*p-value*)	(*<.001*)	(*.002*)	(*.011*)	(*.138*)	(*.001*)
% of Range	10%	9%	7%	4%	7%
% of SD	33%	29%	24%	14%	30%
Drinking Water					
Framing Effect	0.53**	0.30	0.26	0.04	0.30*
(p-*value*)	(*.002*)	(*.077*)	(*.087)*	(*.762*)	(*.026*)
% of Range	9%	5%	4%	1%	5%
% of SD	29%	17%	16%	3%	21%

[9] Comparing the framing effect on Anger vs. Worry, Serious and Priority, tests of significance yield *p*-values of 0.001, 0.023, and <0.001, respectively, for Marine Debris, and of 0.107, 0.069, and 0.003 for Drinking Water.

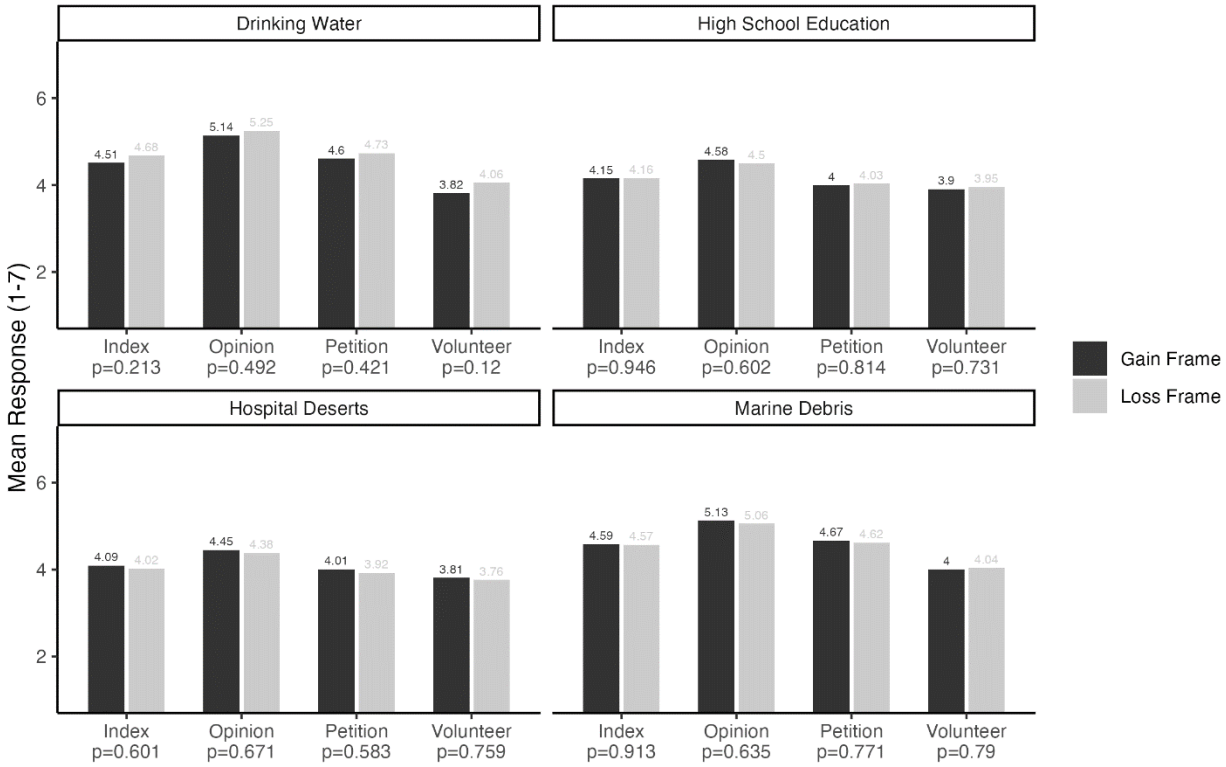
Marine Debris					
Framing Effect	1.05***	0.69***	0.76***	0.53***	0.75***
(*p-value*)	(*<.001*)	(*<.001*)	(*<.001*)	(*<.001*)	(*<.001*)
% of Range	17%	12%	13%	9%	12%
% of SD	61%	42%	49%	37%	54%

Note: The "framing effect" is the difference in means between the negative and positive framing conditions. Ns range from 423 to 464. The mean values under treatment and control for each dependent variable and each issue are shown in appendix Table A2.2.

The size of the framing effect also varies by issue, with the topic of Marine Debris again standing out. On the overall index, the framing effect for Marine Debris (0.75) is more than twice that found for Drinking Water and Hospital Deserts (0.30 and 0.32, respectively), and nearly 80% larger than that found for High School Achievement (0.44). Moreover, this issue is the only one with a clearly statistically significant framing effect on judgments of government priority (b=0.53, $p<.001$). Tests for an interaction between frame and issue (1=Marine Debris, 0=other issues) are statistically significant for Anger (0.53, $p=.007$, two-tailed), Serious (0.39, $p=.035$), and the Index (0.38, $p=.021$), and nearly so for Worry (0.33, $p=.098$) and Government Priority (0.35, p=.059).

The substantial effects uncovered in these attribute framing (problem) experiments contrast sharply with what we see in the gain-loss framing (policy) experiments, where the results are null across the board (see Figure 1). On all three measures of policy support and across all four issues, people's reactions to the gain-framed and loss-framed versions of the policy are almost identical. On only one issue, Drinking Water, are the differences consistently in the expected direction, but even here they are small—between 0.11 and 0.24 on the 1-7 scale—and statistically insignificant, even when indexed ($p=.213$). On the other three issues, the mean difference across frames is between 0.01 and 0.11 on each of the outcome measures and frequently in the wrong direction.

Figure 1. Policy Support by Frame



Note: Bars show mean level of each outcome variable by frame, with *p*-values on the difference in means shown below. Outcome variables were scaled to range from 1 (least supportive) to 7 (most supportive). Ns range from 412 to 450.

Exploratory Analyses

These experimental findings lead to important conclusions, while also raising compelling new questions. Varying the way a single fact about current conditions is portrayed matters to how serious citizens judge the problem to be and the extent to which they feel angry and worried about it. Reporting on the frequency of negative outcomes rather than their logically equivalent positive counterparts elicits stronger reactions, manifestations of concern, and possibly support for political action. While this much is clear, questions remain regarding the downstream consequences of such framing effects and the psychological mechanism(s) giving rise to them.

Also clear is that the framing effects differ across issues, while generally having a disproportionate effect on the extent to which people react with anger, with both patterns begging explanation.

At the same time, opinions about the priority the federal government should give to a problem were, with one exception (Marine Debris), largely unaffected by whether they were provided with information about prevalence of good vs. bad outcomes. And support for policy action was the same regardless of whether the policy was gain-framed or loss-framed—i.e., portrayed as increasing the incidence of good outcomes or decreasing the incidence of bad ones. This, of course, raises the question of why the equivalency framing effects diminish or disappear when it comes to opinions regarding government action.

Although we cannot provide definitive answers to the questions that remain, we offer ideas and some exploratory analyses in what follows.

The Distinctiveness of Anger

We expected people's problem reactions to be biased in the direction of the frame. While this expectation was upheld, the framing variations had a disproportionate effect on the extent to which people reported feeling angry about the problem, as opposed to feeling worried. This phenomenon was also evident in our pilot study (see Appendix 6). An obvious implication is that research into equivalency framing effects needs to theorize about discrete emotions, drawing upon the large literature identifying systematic differences among negative (and positive) emotions. Likely relevant here is that anger is thought to foster heuristic-based decision-making and inspire action (Lerner and Tiedens 2006, Su, Wan, and Wyer Jr. 2018). Feelings of anger could, thus, have enhanced susceptibility to cue-taking by the frame and the desire for a government response.

We cannot say for sure whether these anger-related dynamics mattered to our results, but several patterns from our study are suggestive. First, the issue of Marine Debris generated the most anger (average of 4.2, 48% at least "quite angry"), while Hospital Deserts generated the least (2.5, 13%), and these two issues generated the largest and smallest framing effects, respectively (0.75 vs. 0.32 on the index). In Appendix 8, we present further analysis, using the AmeriSpeak data as well as our pilot study data, showing that the framing effects tended to grow with the extent to which an issue generated anger and other manifestations of concern.

Second, the Marine Debris issue is an outlier both in terms of the framing effect on anger and in terms of the framing effects on our other outcome measures, which hints that the former may have had consequences for the latter. This kind of dynamic is central to the "Emotions-as-Frames Model" used to explain message-framing effects (Nabi et al. 2020)[10] and is consistent with other evidence that anger has carry-over effects (Lerner et al. 2015). To evaluate this, we performed an experimental test of the potential mediating role of anger, asking whether framing effects were larger when anger was asked first—which, as noted earlier, was when anger levels peaked—than when anger was asked later. They were, with the differences statistically significant at $p<.10$ on three of the four outcome measures and the index.[11]

Variation across Issues

Since this research was covering new ground, it was essential to repeat the framing

[10] The Emotions-as-Frames Model holds that once people experience an emotion, "individuals will both have more emotion-consistent information accessible from memory and seek out information related to the emotion's motivational goals, which combined will generate emotion-consistent decisions and action" (Nabi et al. 2020, 1111).

[11] We regressed each outcome variable on frame, a dummy for whether anger was asked first, and the interaction between the two, while including fixed effects for issue. Framing effects when anger was or was not asked first: Anger 0.91 vs. 0.55, two-tailed p=.070; Worry 0.59 vs. 0.41, p=.345; Serious: 0.75 vs. 0.37, p=.044, Priority 0.49 vs. 0.19, p=.096; Index 0.69 vs. 0.38, p=.059. If we run a similar analysis with whether worry was asked first, three of the interactions are negative in sign, though near zero, and the p-values range between .157 and .836.

experiments across multiple issues, so as to provide evidence about whether problem- or policy-framing effects existed and, if so, whether they were general or issue-specific. It is telling that our study uncovered problem-framing effects that were generally evident and policy-framing effects that were generally non-existent. But we also saw substantial variation in the magnitude of the problem framing effects across issues, with effect sizes on the topic of Marine Debris larger than those on the other issues by 50% to 100%.

When it comes to understanding issue variation, we face a problem of too many variables, too few cases. However, we can rule out the idea that references to "contamination" in the Marine Debris treatment drove its distinctively large framing effects, since we used the same language in the Drinking Water treatment. The possibility that framing effects would be enhanced on issues less anchored by party or ideology is plausible. The four issues we studied here are indistinguishable in terms of how much party or ideology anchored people's views, but in our pilot study, where there was variation of this kind, framing effects were larger on the more non-partisan issues.[12] We have seen that framing effects increase with the extent to which the issue generates anger and other expressions of concern, but the mechanism behind this finding remains unclear and could easily be spurious; it is likely that the issues also differ in any number of other (unmeasured) ways that could matter to the potency of framing effects—for example, in the extent to which people found the information new, salient, personally relevant, unexpected, and believable, to name a few. Exploring the facets of different issue areas that heighten or mute framing effects remains a promising area for future study.

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[12] In the AmeriSpeak data the average within-frame correlation between party identification (1-7) and the problem index is very similar across the issues, ranging between .23 and .28; results for ideology are similar. In the pilot data, the correlation across issues (n=16) between the (A) the size of the framing effect, and (B) the extent of a partisan divide on the issue (i.e., average within-frame correlation between party identification and the index) was -.12.

No or Limited Framing Effects regarding Government Response

Equivalency framing effects that were clearly apparent when people evaluated problems diminished or disappeared when they were asked about the priority a problem should receive from the federal government (attribute framing) or for their opinion on an ameliorative policy initiative (gain-loss framing). A first possible explanation, consistent with the literature on affect, is that switching the object of evaluation—from the problem itself to a government response—introduced new thoughts and feelings that contradicted or otherwise interfered with those that were induced by the frame, reducing or eliminating the framing effect (Lerner et al. 2015). A second and related idea is that switching the object of evaluation stopped people from responding in an automatic or heuristic fashion, leading them to respond to questions about government action with more thought and deliberation. This possibility is especially relevant to our gain-loss experiments, which presented respondents with a substantial amount of policy detail. A third possibility is that people were more likely to have and draw upon prior knowledge and predispositions when responding to questions about the federal government, either in lieu of or in addition to the framed information.

Our data provide insufficient evidence with which to formally evaluate these possibilities. We do see a glimmer of support for the third possibility, however. Results from the attribution-framing experiments show that party identification is more strongly associated with judgments regarding government priority than it is with feelings of anger, worry, or judgments regarding problem seriousness; the within-frame correlations are .28 (government priority) vs. .20 (anger, worry, and serious) in absolute value, on average.[13] Furthermore, we find that framing effects

[13] In the pilot study data, the corresponding figures are .21 vs. .13.

tend to be larger among pure Independents than among Democrats and Republicans. However, the differences are almost all statistically insignificant and not especially large on the priority measure (Appendix 7, Tables A7.1, A7.2). For example, in the AmeriSpeak data and aggregating across issues, the priority framing effect among pure Independents (0.57) is over twice that found among Republicans (0.26), but the difference of 0.31 is statistically insignificant (p=.221). The corresponding results for the other dependent variables are: anger—0.59 vs. 0.51 (d=0.08, p=.784), worry—0.68 vs. 0.39 (d=0.29, p=.306), serious—0.73 vs. 0.43 (d=0.30, p=.246).

Discussion

This paper has focused on a largely unexplored but important topic concerning framing effects: whether citizens respond differently when presented with information in one of two logically equivalent forms—information that describes social problems in terms of the prevalence of bad outcomes or instead good ones, and that describes government policies as reducing the former or instead as increasing the latter. This topic is intrinsically important because differential responses would violate a key principle of rationality: the descriptive invariance principle. It is theoretically and empirically important in that it speaks to how citizens form opinions and make decisions.

In this study, we found clear evidence of equivalency framing effects when people were presented with factual information about real-world policy *issues*: those informed of the prevalence of bad outcomes (vs. good ones) reported being more worried and more angry about the problem, judged the problem to be more serious, and were more likely to identify the problem as deserving of government attention. Framing effects were especially large with respect to feelings of anger and on issues that generated a high overall level of concern. That

negative frames evoke these distinct outcomes is a finding with implications for a number of topics that engage political scientists, such as campaigning, fundraising, political mobilization, and persuasion. In contrast, we found no framing effects on support for policy *remedies*.

Despite its potential significance, we have emphasized how little previous attention has been given to the topic of equivalency framing as it bears on politics. The bulk of the existing research has examined gain-loss framing in hypothetical, risky-choice scenarios, replicating or extending Tversky and Kahneman's most famous experiments and focusing on how framing influences risk preferences. In contrast, our study explores new dimensions of equivalency framing by focusing on the framing of factual information about four distinct, real-world problems facing the nation and about realistic policy initiatives designed to ameliorate them. We hope that our experiments will inspire researchers to develop a broader set of inquiries into how equivalency framing influences real-world political dynamics.

There are many potentially fruitful directions that this new research could take. One would be to extend the kind of gain- vs. loss-framed policy variations we studied to the risky choice context. Although we found that opinions were unaffected by whether information about a single policy was gain-framed vs. loss-framed, previous research tells us we should find people gravitating toward a sure policy if gain-framed and a risky one if loss-framed. Furthermore, instead of just presenting framed information about current conditions, as in our experiments, researchers could provide gain-framed and loss-framed information about trends in conditions—e.g., that the percentage of Americans unable(able) to afford a home is rising(declining). Future studies also could explore other real policy problems that were not included among the issue areas we assessed, and extend the focus to divisive issues like abortion, immigration, and redistribution, and those marked by contentious disagreements about current conditions, such as

ballot fraud and climate change. Any of these extensions would enhance our understanding of whether and how political organizations and leaders can shape perceptions of public problems and drum up policy support through frames that focus on the negative rather than on the positive.

More importantly, the potential relevance of equivalency framing likely extends well beyond societal problems and policies. Information about the attributes, performance, popularity, and actions of other political entities can also be framed in equivalent ways, including politicians, voters, nations, legislatures, political parties, and interest groups. Its relevance also extends beyond the framing of information, per se; any number of ideas communicated through appeals, slogans, mission statements, and headlines can be equivalently framed, with potentially significant implications for politically relevant outcomes.

Political science would benefit from an extension of this research agenda along the lines we have outlined, but also from digging more deeply into the topics we have taken up here. We highlight five potentially promising avenues for doing so. First, our attribution-framing experiments had neither a control group nor pre-treatment measures or proxies for the dependent variables. Thus, we could not estimate the effect of *becoming informed through* one frame or another, but only of *being informed by* one frame or another. With a control group and/or pre-treatment Y, one could see how those in each framing condition are moving relative to baseline (e.g., are both groups becoming angrier, just to a different extent?) and whether framing effects are moderated by the level of concern initially expressed.

Second, the treatments in our gain-loss (policy) experiments included a lot of verbiage, with the key framing variations coming last, when attention may have been flagging. In order to reach a firm conclusion about the (ir)relevance of gain-loss framing to opinions on ameliorative governmental policies, we need additional studies with different treatment designs. A first step

could be to design treatments in which one thinks framing effects are most likely to arise; null results in that case would be quite definitive. For example, the treatments could simply provide a framed description of the policy objective (e.g., as increasing lives saved vs. decreasing lives lost).

Third, follow-on research could provide a better sense of the political implications of problem-framing than our foundational study described here is able to offer. One step along these lines would be to use behavioral outcome measures, such as the subject's willingness to donate a portion of their fee to a charitable group focused on the problem. Related, it would be helpful to expand the dependent variables to include opinions on specific policy remedies as well as more causally distant outcomes, like presidential approval. A further step would be to design the study so it speaks to the duration of effects. For example, outcomes could be measured at some remove from treatment information, either within the same survey or via a panel-survey design. Alternatively, one could use a re-framing design (see, e.g., Ledgerwood and Boydstun 2014).

Fourth, there are numerous ways that studies could be designed to extend external validity. Our experiments only focused on problems where current conditions fit an "80% bad" / "20% good" framework. It would be useful to expand the set to include both lesser (e.g. 60/40) and greater breakdowns (e.g., 95/5), which would establish whether attribute framing effects grow with the extent of the disparity, as theory and other research leads us to expect. Other questions about external validity could similarly be addressed. For instance, we delivered framed information in a preamble to a survey question. Would experiments embedding information in news reports or in fundraising appeals yield similar findings? Our study used a representative sample of U.S. residents surveyed in early 2020. Do the conclusions hold when surveying

different (sub)populations in different contexts? We might expect framing effects to be larger, for example, in countries where partisan attachments are weaker and political parties less polarized.

Finally, there is much work to be done to understand why equivalency framing effects arise in the first place and why they are enhanced on some issues (in our case, Marine Debris) and for some outcomes (in our case, Anger). Adjudicating among potential explanations requires studies designed specifically to address hypotheses about causal processes. To better understand the causal dynamics, it would be helpful if new research evaluated how truthful and surprising people find the framed information, whether their most accessible thoughts and inferences vary depending on frame, whether there is direct affect transfer from the frame, and the extent to which emotions are a key pathway by which frames come to influence other judgments and preferences. We believe this to be an especially fruitful area for future study.

As research on equivalency framing in politics moves forward, experimental studies of framing effects must also be complemented by work describing how framing variations are actually playing out in the political world. When do citizens receive political information that emphasizes goods and gains instead of bads and losses? How frequently are these forms of framing evident in campaign slogans, fundraising appeals, party platforms, and political talking points? To what extent is such framing strategic, with left- and right-wing sources, or incumbents and challengers, opting for different frames? Systematic research on these and related topics will allow us to understand how often voters are coming across equivalency frames, in what context, and on what topics. Ultimately, this will enhance the real-world relevance of further experimentation and lead to a better understanding of the political importance of equivalency framing effects.

Conclusion

This article has drawn attention to potentially important but largely unstudied aspects of political communication. When politicians, governments, interest groups, or news media communicate with citizens, they have the option of describing current conditions in one of two logically equivalent ways. They can depict the frequency of desirable outcomes, accenting the positive, or depict the frequency of undesirable outcomes, accenting the negative. Our experiments, replicated across four issue areas, show that people exposed to negatively framed information expressed more anger and worry about the problem, judged it as more serious, and gave it higher priority for government action. In contrast, although policy initiatives can be similarly framed—either portrayed as lowering the incidence of undesirable outcomes or as raising the incidence of desirable ones—our experiments suggest that this framing variation is innocuous.

These findings are novel and important. Although equivalency framing has drawn political scientists' attention for decades, almost no previous research has considered whether citizens respond differently when learning about real-world political objects via information portrayed using a negative frame (depicting bads or losses) instead of a positive one (depicting goods or gains). Existing studies have focused instead on different equivalency-framing variants, contexts, and hypotheses—and even here the research record is thin. Political communications are rife with quantitative information about actors and objects that is capable of being framed in one or another logically equivalent way. Our hope is that this study will inspire further inquiries, leading to a richer understanding of equivalency framing in politics.

Our results fit with a larger pattern of findings on framing; in the words of Amsalem and Zoizner (2022, p.233) "framing effects are real, but that their nature is conditional." Equivalently

framed information is not randomly produced and likely often interacts with emphasis frames, source cues, and other features that affect the public's evaluations of problems and policy solutions. Even in our controlled experiment, the limited effects of framing on government response variables point to people drawing upon prior knowledge and predispositions when responding. Our findings also align with the broader literature in highlighting the importance of emotional reactions to framing variations—both as outcomes in and of themselves (Amsalem and Zoizner 2022) and as potential mediators and moderators of other framing effects (Druckman and McDermott 2008, Nabi et al. 2020)—and in responses to political communications more generally (Brader and Cikanek 2019, Marcus 2020).

At the same time, it is critical to clearly delineate between distinct types of framing, and to theorize and operationalize "framing" accordingly and consistently (Druckman 2015); indeed, Cacciatore et al. (2016) suggest abandoning the general term altogether, in favor of more careful exploration of different forms of framing and related concepts. In this article, we have attempted to do this by focusing narrowly on two specific, underexplored forms of framing that have particular salience for political science. Only after clearly distinguishing between the many varieties of frames, equivalence and otherwise, can we begin to explore their interactions and relative importance in the political sphere.

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