

“Deservingness” and Public Support for Universal Public Goods: A Survey Experiment

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Abstract

Voters support less spending on means-tested entitlements when they perceive beneficiaries as lacking motivation to work and pay taxes. Yet do concerns about the motivations of “undeserving” beneficiaries also extend to universal public goods (UPGs) that are free and available to all citizens? Lower spending on UPGs poses a particular trade-off: It lessens subsidization of “unmotivated” beneficiaries, but at the expense of reducing the ideal levels of UPGs that voters personally can access. Studies suggest that individuals will sacrifice their preferred amounts of public goods when beneficiaries who do not pay taxes try to access these goods, but it is unclear whether they distinguish based on motivations. To analyze this question, we field a nationally-representative survey experiment in the UK that randomly activates some respondents to think about users of the country’s universal National Health Service as either “motivated” or “unmotivated” non-contributors. Although effect sizes were modest and spending preferences remained high across-the-board, results show that respondents support the least spending on the NHS when activated to think of users as “unmotivated” non-contributors. These findings suggest how the deservingness heuristic may shape public attitudes toward government spending, regardless of whether benefits are targeted or universal.

Keywords: public goods, deservingness, motivation, survey experiment, healthcare, NHS

JEL Codes: C83, D72, H41, I10

Shortly after becoming UK prime minister in 2019, Boris Johnson’s past words came back to haunt him. An article he had penned more than two decades prior was unearthed ([Bienkov, 2019](#)) in which he observed the “moral point” that “if NHS services continue to be free in this way, they will continue to be abused like any free service” ([Johnson, 1995](#)). In calling for structural reform of the National Health Service and emphasizing the term “abuse,” the language sparked criticism ([Glaze, 2019](#); [Topples, 2020](#)). As a politician today, Johnson is much more likely to be heard praising the NHS as “sacred” and lauding “the simple beauty of the principle that...if you fall sick the whole country gathers figuratively at your bedside” ([Johnson, 2019](#)). Yet his earlier comments potentially vocalized a common, if often unspoken, opinion. A strong belief in universal healthcare belies an underlying concern about “undeserving” beneficiaries.

A robust finding in political economy is that voters support less generous welfare states when they perceive users as lacking motivation to work and pay taxes ([Appelbaum, 2001](#); [DeSante, 2013](#); [Gilens, 1999](#); [Oorschot, 2000](#); [Oorschot and Meuleman, 2014](#); [Petersen et al., 2011](#); [Petersen, 2012](#)). Yet do such concerns affect not only support for means-tested entitlements, but also for universal public goods (UPGs)—such as public healthcare—that are free and available to everyone? Research shows that voters consider both their own self-interest and the characteristics of likely beneficiaries from social policies ([Cavallé and Trump, 2015](#)). However, this distinction poses a particular trade-off when assessing UPGs that may have a redistributive component but which also yield benefits to all voters: Lower spending on these goods diminishes benefits to the “unmotivated,” but at the cost of eroding services for everyone.

Studies reveal that citizens will reduce their ideal support for UPGs when “undeserving” beneficiaries who do not pay into the tax base try to access these goods ([Fehr and Gächter, 2000, 2002](#); [Osborne, 2009](#); [Ostrom, Walker and Gardner, 1992](#); [Rand, Ohtsuki and Nowak, 2009](#); [Smirnov, 2007](#); [Yamagishi, 1986](#)). Yet the focus is typically on their contributions only. As with welfare, however, some “undeserving” beneficiaries may be “motivated” but still not pay into the tax base through no fault of their own (for example, if they are disabled, sick, or got laid off), whereas others may be simply “unmotivated” to exert effort.¹ It is unclear whether voters will support

¹Although there are some differences in how the term “undeserving” is invoked in scholarship and popular discourse, we use the term broadly to refer to non-contributors to the tax base. By this definition, the “undeserving” may be

even lower spending on UPGs for “unmotivated” non-contributors when considering goods that they themselves consume. In this article, we analyze whether voters adjust their support for UPGs when activated to think of the motivations of non-contributors.

From a theoretical standpoint, we develop the concept of the UPG trade-off in public opinion and analyze how citizens react to the motivations of “undeserving” beneficiaries. From a policy standpoint, the question has relevance for the sustainability of UPG expenditures, particularly in advanced democracies. In healthcare, for example, even before COVID-19, where ageing and new medical technologies have spiked costs, expenditures were set to grow at 2.7 percent yearly in the period 2020-2030 in the OECD, faster than GDP (OECD, 2019). Public support for such increases may be fragile, however, as polarized media or political actors emphasize negative traits of beneficiaries. This is especially salient given claims of mounting anti-solidarity trends in many post-industrialized democracies (Roemer et al., 2007) that threaten social cohesion (Lupu and Pontusson, 2011; Luttmer, 2001; Shayo, 2009).

We conceptualize two main ways by which voters may reduce support for UPGs when activated to think of “undeserving” beneficiaries. First, *contributions-only-based preferences* take into account only the contributions of beneficiaries to the tax base. In line with prior research, voters may support less spending on UPGs when beneficiaries are non-contributors. Voters, however, should not demand either greater or fewer departures from their ideal levels of spending based on the motivations of non-contributors. Conversely, *motivations-based preferences* consider not only the contributions of beneficiaries, but also their motivations. By this logic, voters may again support less spending on UPGs when non-contributors try to access goods. However, voters should support the least spending and be most willing to reduce their preferred levels of support when non-contributors are “unmotivated.”

To adjudicate between these responses, we conduct a nationally-representative survey experiment in the UK that presents fictional users of the country’s National Health Service (NHS) and then asks respondents how much spending they prefer on the NHS. We randomly activate some respondents to think about NHS users as non-contributors to the income tax base, varying their

either “motivated” or “unmotivated,” depending on their willingness to exert effort.

levels of motivation. By “motivated,” we depict users looking for work. By “unmotivated,” we depict users unconcerned with looking for work, but who still feel entitled to NHS services. The presentations—designed to simulate portrayals by politicians, the media, or activists (Katz, 2013; Romano, 2018; Zucchini, 1999)—speak to core precepts of social reciprocity, where motivation is broadly defined as the willingness of recipients to contribute effort and resources in exchange for benefits (Fong, Bowles and Gintis, 2006; Petersen, 2015).

The UK is a useful case because notions of “deservingness” have long shaped public conversations over government policy, and data reveal that large percentages of citizens think “unmotivated” beneficiaries receiving state support is a problem (NatCen Social Research, 2015). We focus on the NHS because virtually all UK citizens access the NHS, making it a paradigmatic UPG. Furthermore, healthcare is one of the UK’s largest budgetary outlays (amounting to almost 10 percent of GDP in 2018 (The King’s Fund, 2019b)), meaning it is a high-order fiscal priority with large political stakes. Lastly, broad cross-partisan support exists for increasing (or at least maintaining) commitment to a strong NHS (Wellings, 2017). To the degree that changing the motivations of users shifts public support for the NHS, we might expect such effects to be at least as significant when applied to other UPGs where support is less solidified.

We find evidence of *motivation-based preferences*. Respondents were less likely to support more spending on the NHS when activated to think about non-contributors, but particularly “unmotivated” non-contributors. Effects were modest, however, and more research should be done to confirm the findings before building on them. The difference between support for greater spending on the NHS when respondents were activated to think of “motivated” versus “unmotivated” non-contributors was marginally significant by standard thresholds. Moreover, support remained high across-the-board, reflecting that general public pressures on politicians to spend more may not change markedly. The likelihood of supporting “more” or “much more” spending on the NHS was 86.2 percent when non-contributions were not mentioned, 83.2 percent for “motivated” non-contributors, and 80.2 percent for “unmotivated” non-contributors.

In a set of empirical extensions, estimates revealed that presenting users with more severe medical conditions raised baseline support for spending, presumably by anchoring respondents to

think about the NHS delivering more life-essential treatments. However, mentioning need did not alter our core results. Additionally, we found that conservatives (who may be more likely to emphasize a “self-reliance” narrative) were especially averse to more spending when activated to think of “unmotivated” non-contributors. We did not find that higher-income earners (who might have a greater personal stake in the tax base) or older respondents (who might be more likely to use the NHS) expressed significantly different preferences than other respondents. However, limited statistical power, combined with conditioning on non-experimentally-manipulated covariates, makes us cautious about interpreting these results.

Our study contributes to an extensive literature on public opinion toward government spending (Brooks and Manza, 2007; Garritzmann, Häusermann and Palier, 2022) by suggesting that voters distinguish between the motivations of non-contributors when assessing UPGs. When goods that most voters themselves consume are at stake, they still support less spending when activated to think of “unmotivated” non-contributors. This outcome suggests that, while standard utility-maximizing models may powerfully predict democratic agency (Downs, 1957), there is a critical social dimension (Sigmund, 2007; Tajfel, 1974) to how people support UPGs. Where concerns about upholding tacit social bargains exist, our finding sheds light on how voters tend to support universal versus particularist social expenditures (Brady and Bostic, 2015; Korpi and Palme, 1998; Oorschot et al., 2017; Rothstein, 2001).

In leveraging the NHS as an emblematic UPG to make inferences about other state provisions, our results also speak to a burgeoning literature on the politics of healthcare (Busemeyer, 2021; Carpenter, 2015; Habibov et al., 2018; Missinne, Meuleman and Bracke, 2013; Wendt, Mischke and Pfeifer, 2011). Our analysis most closely aligns with research examining how citizens support health provisions for individuals who fall victim to sickness versus joblessness (Jensen and Petersen, 2017). A key finding is that citizens tend to view healthcare as a form of insurance against “as-if” randomly exposed risk, making it less of a wedge issue than unemployment benefits. We add to this research by showing that the motivations of users of the healthcare system—as measured by whether users are perceived to uphold their side of an implied social contract—further shape public opinion toward state health spending.

1 The Universal Public Goods Trade-Off

Claims about the “deservingness” of government beneficiaries are salient in public policy, often leveraged by politicians, activists, and the media to argue either for or against more public spending (Katz, 2013; Romano, 2018; Zucchini, 1999). From “strivers” to “skivers” (Williams, 2013), motivational tropes can serve as forceful images for demands to either expand or retrench welfare. Study after study, for example, confirms that voters support fewer transfers (e.g., unemployment benefits, tax credits for the poor, food stamps) when non-contributors to the public tax base are viewed as lacking motivation to care for themselves (Appelbaum, 2001; DeSante, 2013; Gilens, 1999; Oorschot, 2000). Concerns about motivations are often so strong that they can overwhelm both self-interest and other deeply-held values informing support for means-tested entitlements (Petersen et al., 2011; Petersen, 2012).

Yet even if voters support less welfare for “unmotivated” beneficiaries, it is unclear whether a similar dynamic applies to universal public goods (UPGs). Such goods—like universal healthcare—are distinctive in that they may have a redistributive component, but they are most characterized by being free and available to all citizens. This means that UPGs yield a particular tension. Lower spending on UPGs can ensure that “unmotivated” non-contributors receive fewer benefits. However, it can also erode the goods that most voters themselves use (or may use in the future). Consequently, voters face a trade-off. One option is to prioritize their preferred levels of UPGs by maintaining consistent support for these provisions, disregarding the motivations of non-contributors. Another option is to reduce their support for UPGs and undercut their ideal levels of these goods when they know that “unmotivated” citizens will consume them.

Seminal research (Hardin, 1971; Olson, 1965) indicates that individuals may act contrary to their own interests by penalizing “undeserving” beneficiaries who do not contribute to the public good. Certain game-theoretic models, for instance, show that the desire to avoid being a “sucker” can induce players to penalize non-cooperators even when it clashes with selfish motivations (Osborne, 2009). Laboratory experiments similarly find that social punishment can override self-interest when individuals perceive that others receive benefits without contributing proportionally (Fehr and Gächter, 2000, 2002; Ostrom, Walker and Gardner, 1992). This research mostly concerns whether

a beneficiary contributes to the public good. However, the non-contributor could be “motivated” or “unmotivated” depending on their reasons for not contributing, a key dimension in practical evaluations of UPGs, but one rarely made explicit.

For UPGs, this distinction matters because it is not obvious whether voters support less spending when non-contributors access goods primarily due to their non-contributions or because they make assumptions about motivations. On the one hand, voters might endure lower than their ideal levels of UPGs when considering non-contributors because their primary concern is whether recipients pay into the tax base. On the other hand, voters might endure lower than their ideal levels of UPGs because, in the absence of more information, they assume that some fraction are “unmotivated.” If voters could better gauge motivations, they may make sharper distinctions. Voters might support even less spending on UPGs when non-contributors are “unmotivated.” Especially because goods they themselves consume are at stake, they may also make more allowances if non-contributors are “motivated.”

Based on this distinction, we conceptualize two discrete ways in which voters can express spending preferences for UPGs when faced with “undeserving” users. *Contributions-only-based preferences* are concerned only with contributions to the underlying tax base. If other citizens do not contribute to the public good through financing UPGs, voters may support less than their preferred levels of these provisions. Voters are agnostic, however, about whether they perceive non-contributors to be “motivated” or “unmotivated.” Alternatively, *motivation-based preferences* distinguish between non-contributors. Voters care not only about a lack contributions, but also their motivations. When non-contributors are viewed as “unmotivated,” voters should support lower than their preferred levels of UPGs, whereas they should be less inclined to do so when non-contributors are viewed as “motivated.”

2 The Experiment

To test support for *contributions-only-* or *motivation-based preferences*, we asked respondents in the UK to express their opinions about spending on an important UPG—the country’s universal National Health Service (NHS)—after being provided with different prompts describing fictional

users. By randomly varying whether beneficiaries are presented as contributing to the tax system and—if not, whether non-contributors are presented as “motivated” or “unmotivated”—we isolate the impact of these presentations in activating more or less support for spending on healthcare. Data were collected online from a panel of UK citizens 18 years of age and older in February 2018 (pre-COVID-19) by the survey firm Survey Sampling International (SSI, now Dynata). The sample was nationally-representative by age, gender, and statistical region.² A total of 3,000 respondents finished the survey, from a base of 3,505 eligible individuals who started the survey. The survey was not preregistered, and as such, may be interpreted as a plausibility probe.

2.1 Test Case

UK Case: We examine the UK case because the concept of “deservingness” plays a salient role in public debates over state programming in the country. Numerous analyses suggest that distinctions between “motivated” and “unmotivated” beneficiaries have featured prominently in the nation’s public discourse and policy choices (BBC, 2010; Behr, 2012; Guardian, 2012; Lakasing, 2015). Survey data corroborate that considerable percentages of the British public express concern about the level of state benefits afforded to “unmotivated” recipients. For example, in recent years, approximately 30 to 40 percent of Britons have agreed that “most people on the dole [unemployment benefits] are fiddling in one way or another.” Additionally, upwards of 50 percent of British citizens have expressed concern that government benefits for the unemployed are “too high and discourage work” (NatCen Social Research, 2015).

NHS: We concentrate on the NHS because, despite having a redistributive component, it is regarded a paradigmatic UPG whose services are used widely across the population. The NHS is a universal, single-payer healthcare scheme where all citizens are automatically enrolled into the system and can use its services for free. In England alone, the NHS serves more than 300 million primary care patient visits each year (NHS, 2020). The UK does have a small private healthcare insurance and provider system, but the overwhelming number of UK residents—across

²Appendix Table B1 shows demographic means for respondents in our sample relative to national U.K. means for the covariates we include in subsequent regressions. The only substantial deviation from national averages is that respondents are considerably more likely not to be employed. Values of the covariates are balanced across treatment groups (one out of sixteen differences in means is statistically significant), indicating successful randomization.

class and income brackets—rely on the NHS. This means that the NHS should be characterized by the UPG trade-off. Lower spending on the NHS would reduce the amount of resources devoted to “unmotivated” non-contributors, but reduce the ideal availability and quality of healthcare that most voters could personally access.

The NHS is also instructive because it comprises a large section of overall government spending in the UK—equating to nearly 10 percent of national income ([The King’s Fund, 2019b](#)). This not only makes healthcare a high-stakes policy area for the UK government, but it also should increase its salience among the electorate and generate informed and stable opinions over its financing. Amid recent concerns over hospital overcrowding ([Yeginsu, 2018](#)) and other financial strains on the UK health sector due to ageing and rising costs ([Triggle, 2018](#)), the NHS has been a particularly high-profile issue in public debates, with politicians on both the left and the right making it a central part of their campaign platforms. In the 2019 UK general election, both Conservative and Labour leaders called for increased funding for the NHS in their party manifestos, highlighting its centrality to national politics.³

Lastly, the NHS’s affirmed popularity makes it a “hard test” for shifting public opinion. Polling data, for example, show that 77 percent of Britons think “the NHS is crucial to British society” and that the UK “must do everything we can to maintain it” ([Wellings, 2017](#)). Unlike in some countries, such as the US, where debates over government regulation of healthcare are polarized ([Smith, 2015](#)), the NHS receives broad cross-partisan support. In recent years, the NHS has been likened to everything from a “national treasure” ([West, 2013](#)) to a “national religion” ([Field, 2016](#)) to the country’s “greatest national asset” ([Stubley, 2020](#)) to “a veritable Golden Calf” ([Herron, 2020](#)). To the extent that activating voters to think about “unmotivated” non-contributors lowers relative support for the NHS even amid this status, such impacts should be at least as large when applied to other UPGs where public support is more fragile.

³See: <https://vote.conservatives.com/our-plan> and <https://labour.org.uk/manifesto-2019/rebuild-our-public-services/>.

2.2 Non-Contributions and “Deservingness”

Our experiment manipulates whether NHS users are presented as non-contributors to the tax base—and if so, whether they are “motivated” or “unmotivated.” We designed the vignettes to resemble the sorts of characterizations of NHS users to which voters might be exposed from politicians, political actors, and the media (Katz, 2013; Romano, 2018; Zucchini, 1999). Responses can be interpreted as the effect of activating citizens to think of individual users of the NHS as non-contributors based on their motivations.

Non-Contributions: To confirm that voters are generally averse to subsidizing “non-contributors,” we first randomly vary mentioning (or not) non-contributions of NHS users based on their employment status. In the UK, approximately 99 percent of NHS funding comes from taxes (The King’s Fund, 2019a)⁴: 81 percent from general taxation, and another 18 percent from National Insurance (NI) contributions (which can be understood as a tax on the employed). Of the amount that comes from general taxation, about 48 percent comes from taxes tied to employment status (Miller and Roantree, 2017).⁵ Overall, this means that about 57 percent of all NHS funding comes from sources linked to employment. Therefore, although other forms of taxation partially fund the NHS—and even those without jobs pay incidental contributions to the NHS—unemployment serves as a reasonable marker of a non-contributor.

Motivations: For our main tests, we vary the motivations of NHS users presented as non-contributors. Although there are many ways to define and measure motivation (Feather, 2002; Lerner, Miller and Holmes, 1976; Meuleman, Roosma and Abts, 2020; Watkins-Hayes and Kovalsky, 2016), our construct is based on an implied social contract requiring that citizens contribute proportionally to society based on what they can reasonably pay. When citizens violate that tacit agreement—by not working and paying taxes when they could—this entitlement is likely to be seen as a breach of social norms (Fong, Bowles and Gintis, 2006; Petersen, 2015). In short, we define motivation in terms of whether NHS users work or willfully exploit the contributions of others,

⁴About 1 percent of the NHS is funded through patient charges.

⁵These taxes include those on income and wealth, including property taxes. Of the remainder, 37 percent comes from VAT or other consumption taxes, 10 percent comes from corporate taxes, and 5 percent comes from other taxes, including devolved taxes and environmental levies.

thereby violating tenets of reciprocity. For simplicity, we dichotomize motivations, such that users are presented as either “motivated” or “unmotivated.”

2.3 Main Treatments

Respondents were randomly assigned to one of three main groups based on whether NHS users contributed to the tax base—and if, not, whether they were “motivated” or “unmotivated.” All the vignettes (see Appendix C for full text) opened by explaining that the NHS faces major challenges, such as hospital overcrowding, and described heavy usage of the NHS. The vignettes then introduced two fictional users of the NHS—Patrick Smith and George Peterson—who were recently treated for medical conditions.

In Treatment 1 (“motivated” non-contributor), the text presents Smith and Peterson—as representative of many other NHS users—as unemployed and includes quotes from them expressing eagerness to find work and to pay taxes that fund the NHS.

The U.K.’s National Health Service (NHS) faces big challenges, including significant overcrowding at hospitals. Many unemployed people in the U.K., who do not pay income taxes, use the NHS.

One such person is Patrick Smith, 37, from Birmingham, who says, “I’m actively applying for jobs and hope soon to pay my fair share to support the NHS.” Another is George Peterson, 47, from London, who says, “I’m trying my best to find work and to contribute meaningfully to the NHS.”

In Treatment 2 (“unmotivated” non-contributor), the text again presents Smith and Peterson—as representative of many other NHS users—as unemployed, but includes quotes from them expressing a lack of interest in finding work and feeling entitled to NHS services.

The U.K.’s National Health Service (NHS) faces big challenges, including significant overcrowding at hospitals. Many unemployed people in the U.K., who do not pay income taxes, use the NHS.

One such person is Patrick Smith, 37, from Birmingham, who says, “I’m not too concerned about finding a new job, since the NHS will always support me.” Another is George Peterson, 47, from London, who says, “I’m entitled to NHS services anyway, so I’m not in a rush to find work.”

In the *Control* condition, the text does not mention the employment status of NHS users, does not highlight Smith and Peterson as unemployed, and does not include any quotes.

The U.K.’s National Health Service (NHS) faces big challenges, including significant overcrowding at hospitals. Many people in the U.K. use the NHS.

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Because our treatments do not include normative judgments about the motivations of the non-contributors, the language is likely mild compared to what voters might receive from activists with express agendas over cutting or expanding UPGs. Deliberate efforts to play up the motivation (or lack thereof) of non-contributors—through explicitly using these terms or by invoking other phrases and concepts designed to activate more positive or negative views about the beneficiaries (Shildrick, 2018)—might sway public opinion more. There are numerous instances of the UK media reporting on such language, including with regard to healthcare.⁶ To the extent this is the case, the treatments should only underestimate how much the motivation of users affects voter support

⁶In the UK, efforts by the media and politicians to present the poor as “motivated” (Wolff, 2019) or “unmotivated” (Smith, 2010) are common. With the NHS specifically, the notion of “abusers” of the system extends to numerous areas, as evidenced by articles such as “The NHS and Demos—It’s a Bad Idea to Stigmatise the Poor” (Independent Board, 2013), “Foreign Patients Cheat NHS out of £30MILLION in One Year” (Daily Express) (Hall, 2016), or “Put Feckless Patients at the Back of NHS Queue” (The Daily Telegraph) (Forges, 2018).

for spending on UPGs.

2.4 Subtreatments: Need of Users

In line with standard studies of government spending, we also condition on the needs of beneficiaries (Meuleman, Roosma and Abts, 2020; Reeskens and van Oorschot, 2013). Because voters should support higher spending to the extent that provisions are considered essential to users or there is deprivation requiring reliance on government services, we expect greater needs of users to boost levels of support for healthcare spending. In particular, baseline support for NHS spending may increase with the presentation of more severe medical needs, due to the anchoring effect (Mussweiler and Strack, 2000; Tversky and Kahneman, 1974) of respondents considering the NHS delivering more life-essential treatments. To the extent that respondents react similarly in relative terms to “motivated” and “unmotivated” non-contributors regardless of need, it affirms the robustness of our findings.

We presented NHS users as suffering from medical needs ranging from benign (common cold) to serious (hip problems) to emergency (heart failure).⁷ At the end of the vignettes, we randomly added information about the needs of the users. In *Subtreatment A* (“benign”), the text notes that Smith and Peterson—as representative of other NHS users—were treated for benign medical conditions.⁸

Last month, both Patrick and George - along with many other [unemployed] people - were treated by NHS doctors for common colds that would have left them feeling temporarily uncomfortable if left untreated.

In *Subtreatment B* (“serious”), the text refers to serious medical conditions.

⁷In contrast to many policy areas, where need could be considered subjective, what constitutes minor or major medical conditions should be less ambiguous for the healthcare case.

⁸As denoted by the brackets, when respondents received *Treatment 1* or *2*, we re-emphasized that the users were unemployed, whereas we made no mention of this in the *Control* condition.

Last month, both Patrick and George - along with many other [unemployed] people - were treated by NHS doctors for hip problems that would have made them unable to walk if left untreated.

In *Subtreatment C* (“emergency”), the text refers to emergency medical conditions.

Last month, both Patrick and George - along with many other [unemployed] people - were treated by NHS doctors for heart failure that would have killed them on the spot if left untreated.

2.5 Summary of Vignettes

A summary of the vignettes, totaling nine different conditions, is as follows:

Table 1: Summary of vignettes.

<i>Treatment 1A</i>	Motivated Non-contributor	Benign
<i>Treatment 1B</i>		Serious
<i>Treatment 1C</i>		Emergency
<i>Treatment 2A</i>	Unmotivated Non-contributor	Benign
<i>Treatment 2B</i>		Serious
<i>Treatment 2C</i>		Emergency
<i>Control A</i>	Control	Benign
<i>Control B</i>		Serious
<i>Control C</i>		Emergency

3 Non-experimental Moderators: Respondent Ideology and Material Self-Interest

In addition to our experimental treatments, we also extend our analysis by conditioning on standard respondent covariates proxying: 1) voter ideology; and 2) material self-interest.

Ideology. Ideology-based models of spending preferences suggest that political persuasion features prominently in the willingness of voters to support state expenditures ([Alesina and Glaeser](#),

2004; Feldman and Zaller, 1992; Lelkes and Sniderman, 2014). Ideology eschews a standard rational-choice logic in formulating attitudes toward government spending in favor of opinions based more on personal values and conceptions of fairness. We predict that conservative or right-leaning voters, who emphasize and embrace a “self-reliance” narrative (Feather, 1984; Lakoff, 2016), should be more concerned both with the contributions of beneficiaries and their motivations. Individuals who tilt to the right politically are more likely to resent or to judge harshly others who express feelings of entitlement, making them especially likely to react negatively when presented with “unmotivated” non-contributors who use UPGs.

Material Self-Interest. Conventional redistribution models assume that material incentives to support state spending are moderated by how much voters pay into the tax base (Meltzer and Richard, 1981; Iversen and Soskice, 2001) and how much they benefit (Busemeyer, Goerres and Weschle, 2009). The more that voters see themselves as having a stake in the tax base that funds a UPG, the less they should want resources spent on non-contributors, and particularly “unmotivated” non-contributors. We predict that higher-income earners, who pay proportionally higher taxes and have more “skin in the game,” might be more averse to subsidizing “unmotivated” non-contributors given greater personal resources at stake. Conversely, older populations, because of their greater likelihood of requiring medical care, might resist reducing spending on healthcare, regardless of the motivations of other users.

4 Dependent Variable: Attitudes toward Spending

The dependent variable is support for government spending on the NHS, which we measure with the question: “Would you like to see more or less government spending than there is today on the NHS?” *Contributions-only* or *motivation-based preferences* entail supporting lower spending than voters would otherwise prefer. To ensure that respondents express a general preference for government spending on the NHS, the question does not ask specifically about spending to help the users in the vignettes. For simplicity in interpreting our main results, we dichotomize the DV and estimate linear probability models, coding “Government should spend much more” or “Government

should spend more” as 1 and 0 otherwise.⁹ As robustness checks, we keep the full variation in our DV and estimate ordered logit models (and, alternatively, OLS models), and we also look at the dependent variable of supporting “less” or “much less” spending. As described below, we do not find any substantive differences from our main results.

5 Results

5.1 Contributions of Users

We first check whether respondents activated to think of non-contributors as users support less spending on the NHS, irrespective of the motivations of those non-contributors.¹⁰ Model 1 of Table 2 reports these results. As predicted, the coefficient on *Non – contributor* is negative and statistically significant ($p = .001$), suggesting that respondents support less spending on the NHS when activated to think of non-contributors as users.¹¹ This finding is consistent with individuals being more reluctant to fund UPGs when considering beneficiaries who do not pay into the tax system. As shown in Appendix Figure A1, high levels of support exist across the board, reflecting the status of health care as a valence issue. The portion of respondents who prefer “more” or “much more” spending on the NHS is 81.7 percent for the non-contributor condition, compared to 86.2 percent for the control group.

⁹The other options were: “Government should spend the same as now,” “Government should spend less,” and “Government should spend much less.”

¹⁰We collapse *Treatments 1* and *2* and estimate linear probability models: $Y_i = \alpha + \beta_1 \text{Non – contributor}_i + \epsilon_i$, where *Non-contributor* denotes non-contributors, regardless of their “motivation” and the severity of their medical conditions (the *Control* is the omitted term).

¹¹These results hold in Model 2 of Table 2 (using ordered logit regression); in Models 1 and 2 of Appendix Table B2 (where we include individual-level covariates); and in Model 1 of Appendix Table B3 (where we estimate OLS models using the full 1-5 variation in the dependent variable). When we use support for “less” or “much less” spending as the dependent variable in Models 1 and 2 of Appendix Table B4, we find directionally similar coefficients, although they are less precisely estimated because of how few voters support actually reducing expenditures.

5.2 Motivations of Users

For our main tests, we disaggregate the effect of the non-contributor treatment by motivation.¹² In Model 3 of Table 2, we find a negative and marginally significant coefficient on *UnmotivatedNon – contributor* ($p = .09$), meaning that respondents activated to consider non-contributors as “unmotivated” rather than “motivated” support less spending on the NHS.¹³ These findings align with the *motivation-based preferences hypothesis*.¹⁴ As revealed in Appendix Figure A2, the proportion of respondents who favor “more” or “much more” spending on the NHS is 80.2 percent for the “unmotivated” non-contributor condition, 83.2 percent for the “motivated” non-contributor condition, and 86.2 percent for the control. In comparing responses to the “unmotivated” and “motivated” non-contributor treatments, the difference in support for increased spending of 3.0 percentage points is modest, yet still notable in the context of a UPG with large baseline support, where the question is about overall (not targeted) spending, and where the treatments offer no explicit normative judgments of the beneficiaries.¹⁵ Also notable is the variation of a full 6 percentage points between respondents receiving the “unmotivated” non-contributor treatment and the control.¹⁶

¹²We estimate the following linear probability model: $Y_i = \alpha + \beta_1 \text{Control}_i + \beta_2 \text{UnmotivatedNon – contributor}_i + \epsilon_i$, where *UnmotivatedNon – contributor* represents the “unmotivated” non-contributor treatment, again irrespective of the severity of medical conditions, and *Control* represents the randomization arm where no employment information was provided (the “motivated” non-contributor treatment is the omitted category).

¹³Results are again comparable when using ordered logit regression (Model 4 of Table 2); when including individual-level covariates (Models 3 and 4 of Appendix Table B2); and when estimating OLS models with the complete 1-5 range in the dependent variable (Model 2 of Appendix Table B3). As before, when changing the dependent variable to support for “less” or “much less” spending, we find directionally similar (though less precisely estimated) coefficients (Models 3 and 4 of Appendix Table B4).

¹⁴The p value of the main effect suggests there is only a 9 percent probability that we would incorrectly reject the null hypothesis of there being no actual effect of the “unmotivated” non-contributor treatment in activating respondents to reduce preferences for more spending.

¹⁵The difference in support between those receiving the “unmotivated” and “motivated” non-contributor treatments is about the same size as the difference in support between those who receive the “motivated” non-contributor treatment and the control group, or about 3 percentage points. See Model 3 of Table 2.

¹⁶In Appendix Table B5, we also analyze support for other DVs that might be expected to mirror reduced levels of support for more spending—namely, efforts to ration NHS services through co-payments, caps on individual usage, and prioritizing users who pay income taxes. See Appendix C for the full set of questions. In Models 1, 3, and 5, we find that the non-contributor treatment prompts respondents to be more supportive of rationing (although these effects are only statistically significant for caps). In Models 2, 4 and 6, we find that this is particularly true when respondents are activated to think about non-contributors as “unmotivated” (where the effects are statistically significant for all the outcomes).

Table 2: Support for increased spending on the NHS, by user contribution and “motivation”

	(1)	(2)	(3)	(4)
	LPM	OLogit	LPM	OLogit
Non-contributor	-0.0450*** (0.001)	-0.176** (0.014)		
Unmotivated Non-contributor			-0.0296* (0.087)	-0.125 (0.142)
Control			0.0302* (0.061)	0.114 (0.169)
Constant	0.862** (0.000)		0.832** (0.000)	

Coefficients from linear probability models (Models 1 and 3) and ordered logit models (Models 2 and 4) with no individual covariates. In Models 1 and 2, the omitted category is the control condition, and all non-contributors are lumped together (we do not disaggregate by “motivation”). In Models 3 and 4, the omitted category is the “motivated non-contributor” condition. p values in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

5.3 Need of Users

Next, we test whether support for more spending on the NHS is conditioned by the perceived health needs of users. Table 3 reports these results. In Model 1, we do not find statistically significant coefficients on either *Non-contributor X Serious* ($p = .42$) or *Non-contributor X Emergency* ($p = .90$), suggesting that the severity of the medical conditions with which users are presented does not alter our core findings. However, respondents directionally support greater baseline spending when presented with users suffering from more severe medical conditions (main effects of “serious” and “emergency” are positive). This is consistent with our expectation of an anchoring effect whereby citizens are activated to think of the NHS providing more expensive, life-essential services.¹⁷ We do flag here the limitations to statistical power in analyzing the conditional effects by need. The standard errors of the estimates for interaction terms in Table 3 are about 50 percent larger than for the main effects in Table 2, as each of the subgroups contain fewer respondents. As such, we

¹⁷Figure A3 summarizes the likelihood of respondents supporting “more” or “much more” spending for the full nine treatment-control combinations.

Table 3: Support for increased spending on the NHS, by user contribution, “motivation”, and need

	(1)	(2)	(3)	(4)
	LPM	OLogit	LPM	OLogit
Non-contributor	-0.0530** (0.579)	-0.0687 (0.579)		
Serious	0.0261 (0.348)	0.196 (0.157)	0.0635** (0.026)	0.299** (0.038)
Emergency	0.0539** (0.043)	0.536*** (0.000)	0.0175 (0.563)	0.214 (0.152)
Non-contributor × Serious	0.0284 (0.418)	0.00226 (0.990)		
Non-contributor × Emergency	-0.00434 (0.899)	-0.344* (0.053)		
Unmotivated non-contributor			-0.0450 (0.159)	-0.0452 (0.769)
Unmotivated non-contributor × Serious			-0.0178 (0.677)	-0.203 (0.337)
Unmotivated non-contributor × Emergency			0.0641 (0.138)	-0.0421 (0.843)
Control			0.0305 (0.305)	0.0465 (0.744)
Control × Serious			-0.0373 (0.349)	-0.103 (0.607)
Control × Emergency			0.0364 (0.366)	0.322 (0.119)
Constant	0.835*** (0.000)		0.805*** (0.000)	
Observations	3000	3000	3000	3000

Coefficients from linear probability models (Models 1 and 3) and ordered logit models (Models 2 and 4) with no individual covariates. In Models 1 and 2, the omitted category is the control-benign condition, whereas in Models 3 and 4, the omitted category is the “motivated non-contributor-benign” condition. p values in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

interpret these models as more suggestive.¹⁸

¹⁸Results are similar in Models 2 and 4 of Table 3 (where we estimate ordered logit models) and in Models 3 and 4 of Appendix Table B3 (where we estimate OLS models using the full 1-5 scale in the dependent variable). Appendix Table B6 and corresponding Appendix Figure A4 show results using as the dependent variable support for “less” or “much less” spending. The effects line up almost symmetrically with those of support for more spending.

5.4 Respondent Ideology and Material Self-Interest

Finally, we analyze whether our results are moderated by the ideology and material self-interests of voters. Results are presented in Table 4. In Model 1, we find a negative and marginally significant coefficient on the interaction *Unmotivated Non-contributor X Conservative* ($p = .09$), indicating that conservatives do support comparatively less spending on the NHS when presented with “unmotivated” as opposed to “motivated” non-contributors. By contrast, we find no statistically significant coefficients on the interactions *Unmotivated Non-contributor X Income* (Model 2) or *Unmotivated Non-contributor X > 65* (Model 3), suggesting that income and being older (over age 65) do not affect responses to “unmotivated” non-contributors.¹⁹ These results imply that concerns related to the “self-reliance” narrative—more than paying a larger amount of taxes or being especially dependent on healthcare services—appear to underlie our main findings. As shown in Appendix Figure A5, the number of conservatives who support “more” or “much more” spending is 76.1 percent when receiving the “unmotivated” non-contributor treatment, compared to 83.7 percent for the “motivated” non-contributor treatment (a spread of 7.6 percentage points). For liberals, those numbers are 89.7 and 91.4 percent, respectively (a difference of only 1.7 percentage points). As before, however, we are cautious about interpreting these effects because of constraints on statistical power. The standard errors of the estimates for interaction terms in Table 4 are between the same size (for *Conservative*) to 50 percent larger (*Income* and *Age*) than for the main effects in Table 2.²⁰

6 Conclusion

We fielded a nationally-representative survey experiment in the UK to test whether voters support less spending on universal public goods (UPGs) when non-contributors to the tax base are perceived as “unmotivated.” Analyzing the NHS, the country’s universal single-payer healthcare system, we found that respondents favor less spending on UPGs when activated to think of non-contributors as

¹⁹The only other main regression we estimated (but do not report) included an interaction with a dichotomous employment variable. The results were not statistically significant and capture a similar effect as income.

²⁰We also acknowledge the limitations of conditioning on non-experimentally-manipulated variables.

Table 4: Support (dichotomous) for increased spending on the NHS, by user contribution, “motivation”, ideology, age, and income subgroups

	(1)	(2)	(3)
Unmotivated non-contributor	-0.000962 (0.967)	-0.0373 (0.138)	-0.0254 (0.178)
Control	0.0241 (0.0160)	0.0307* (0.0161)	0.0302* (0.0161)
Unmotivated non-contributor × Conservative	-0.0476* (0.095)		
Unmotivated non-contributor × Income		0.000278 (0.655)	
Unmotivated non-contributor × >65 years			-0.0184 (0.610)
Conservative	-0.0880*** (0.000)		
Income		-0.00119*** (0.000355)	
>65 years			-0.00306 (0.873)
Constant	0.898*** (0.000)	0.869*** (0.000)	0.831*** (0.000)
Observations	3000	3000	3000

Coefficients from linear probability models with no individual covariates. Conservatives are coded as those who self-identify as being “slightly to the right,” “to the right,” or “extremely to the right.” We also add a dichotomous variable for moderates, making liberals the reference group. Income is in thousands of pounds. p values in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

users. Support is lowest, however, when non-contributors are presented as “unmotivated” and respondents making the evaluations are conservatives apt to prioritize the importance of self-reliance. Although the effects are modest, these findings hold when conditioning on user needs, as proxied by the severity of medical conditions. Overall, results indicate that when goods that most voters consume are on the line, they discern between “motivated” and “unmotivated” non-contributors in supporting spending on UPGs.

Our study adds to an extensive public opinion literature on “deservingness” and government spending by examining how voters approach the UPG trade-off. Unlike with means-tested entitlements, UPGs generate a specific tension. Lower spending on UPGs decreases benefits for “unmotivated” non-contributors, but at the cost of reducing the ideal level of goods that most voters demand. Prior research shows that individuals will sometimes reduce their preferred spending levels when faced with “undeserving” users. Yet studies largely overlook whether preferences are conditioned not just by whether users fail to contribute to the tax base, but whether they are “motivated” or “unmotivated.” We clarify that voters depart more from their preferred spending levels on UPGs when activated to think of “unmotivated” non-contributors who are perceived as not upholding their side of a tacit social contract.

Our non-preregistered predictions make it important to re-establish and confirm these results. Future research should examine whether similar patterns of support hold for the NHS in the post-COVID-19 era²¹ and for UPGs across other policy areas, such as education, where the profile of beneficiaries may differ.²² Scholars could also test whether results replicate outside the UK, especially in settings where spending on public services tends to be more or less generous and connected to individual contributions (e.g., the Nordic countries vs. the United States), where average perceptions of the motivation of the unemployed differ, and where perceived motivation may interact with other social divides (e.g., race, gender, age). Our results suggest that efforts to portray “undeserving” users as “motivated” or “unmotivated” may not only influence voter support for means-tested entitlements, but also for UPGs that are free and open to all citizens.

²¹Research suggests that online experiments conducted during the COVID-19 pandemic yield similar results to those conducted prior to the outbreak (Peyton, Huber and Coppock, Forthcoming).

²²See, for example: Ansell (2010); Busemeyer, Garritzmann and Neimanns (2020).

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Appendices

Appendix A: Figures

Figure A1: Likelihood of supporting “more” or “much more” spending on the NHS, comparing control group with non-contributors (both “motivated” and “unmotivated” treatments combined)

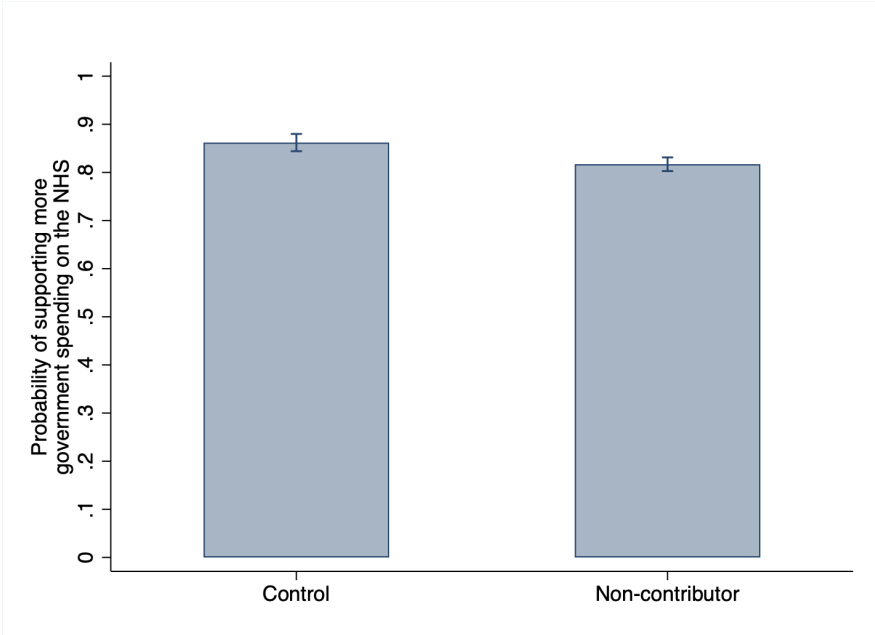


Figure A2: Likelihood of supporting “more” or “much more” spending on the NHS, comparing control group with “motivated” and “unmotivated” non-contributors

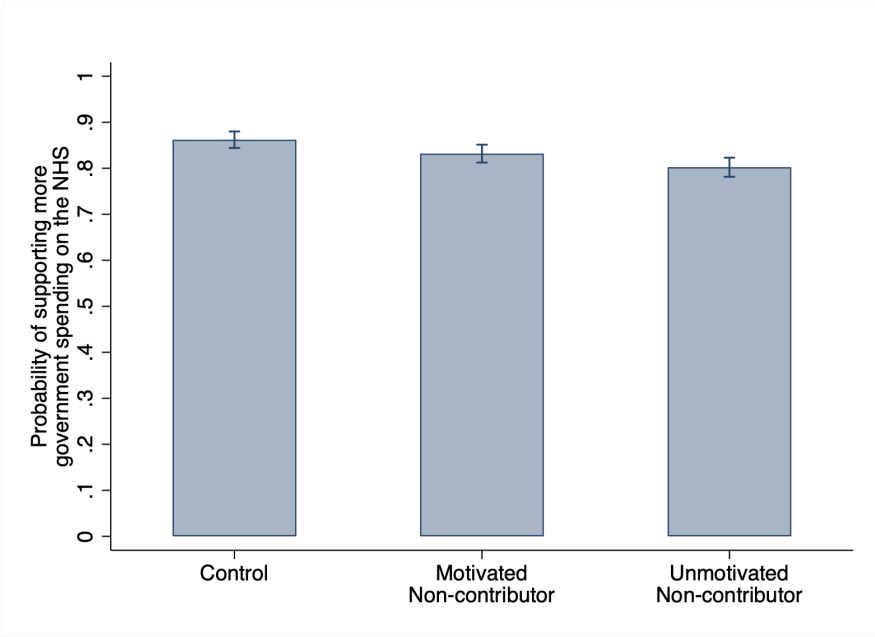


Figure A3: Likelihood of supporting “more” or “much more” spending on the NHS, by treatment and need

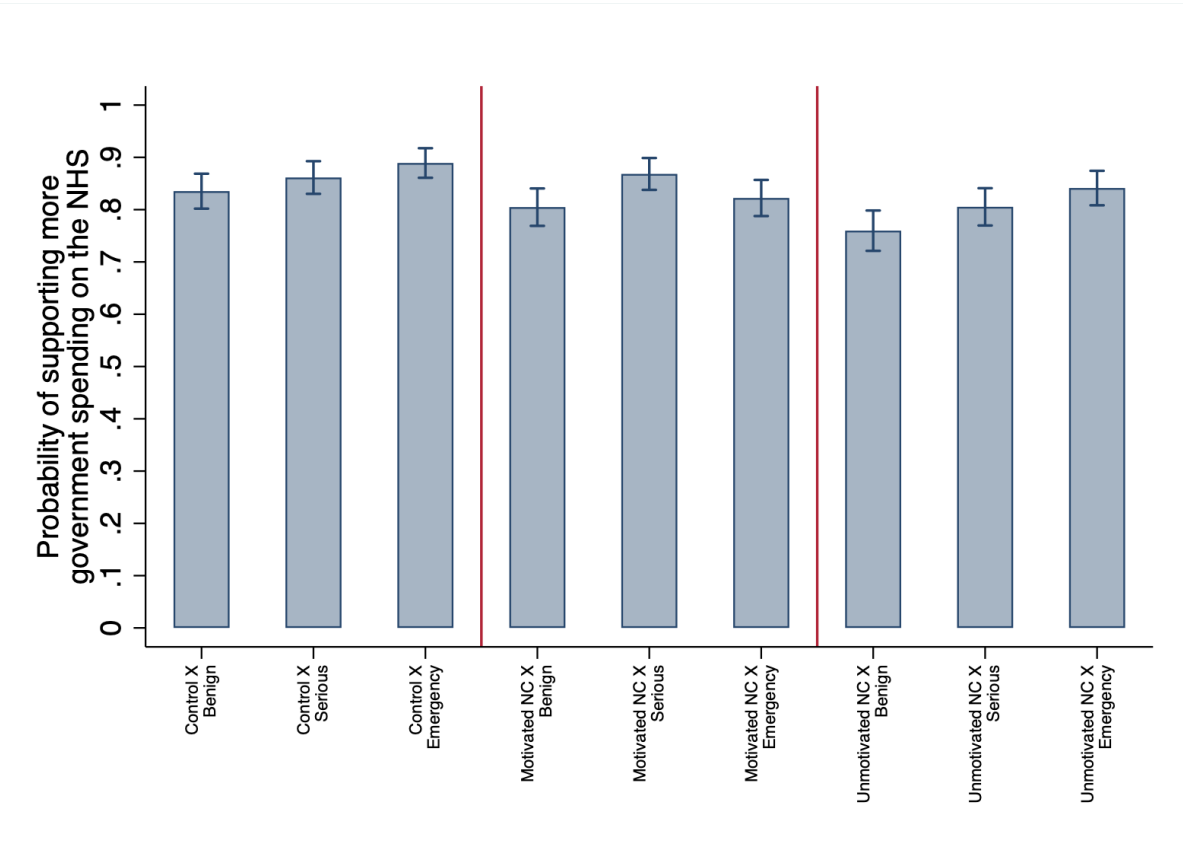


Figure A4: Likelihood of supporting “less” or “much less” spending on the NHS, by treatment and need

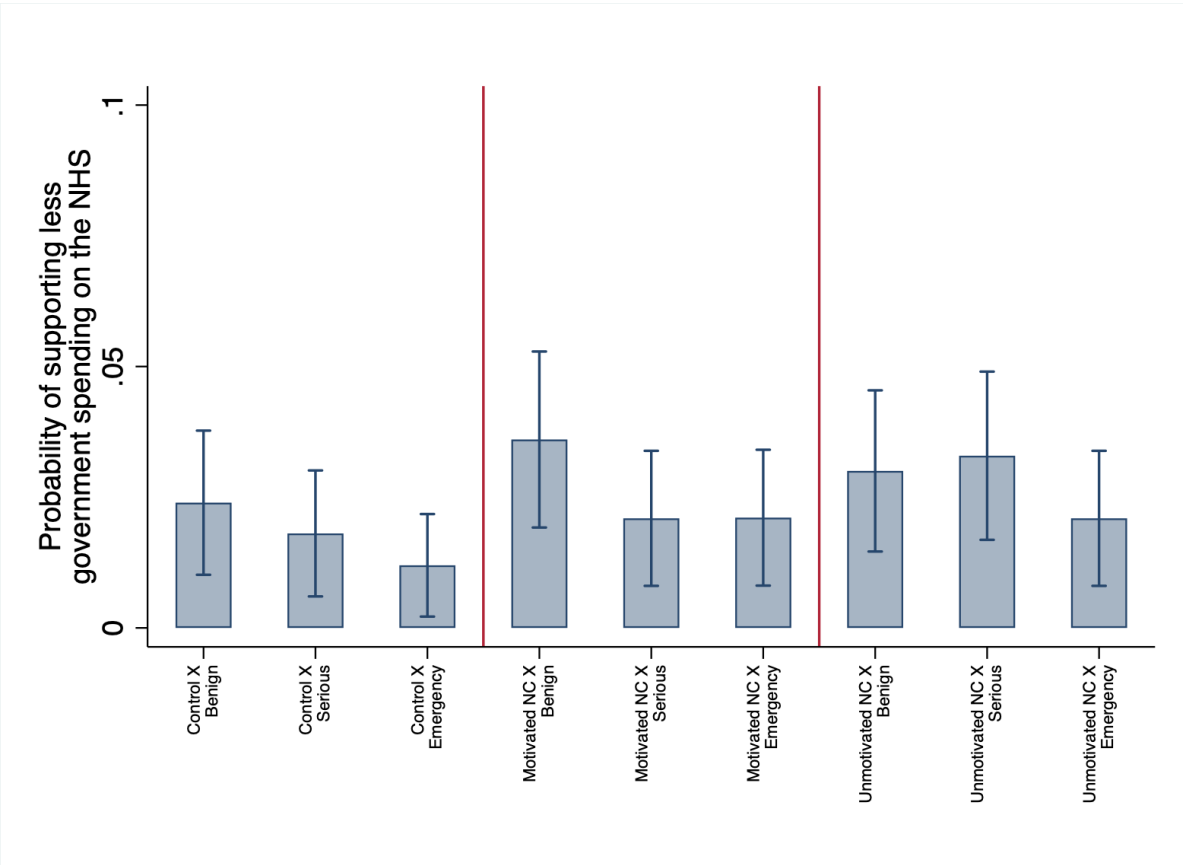
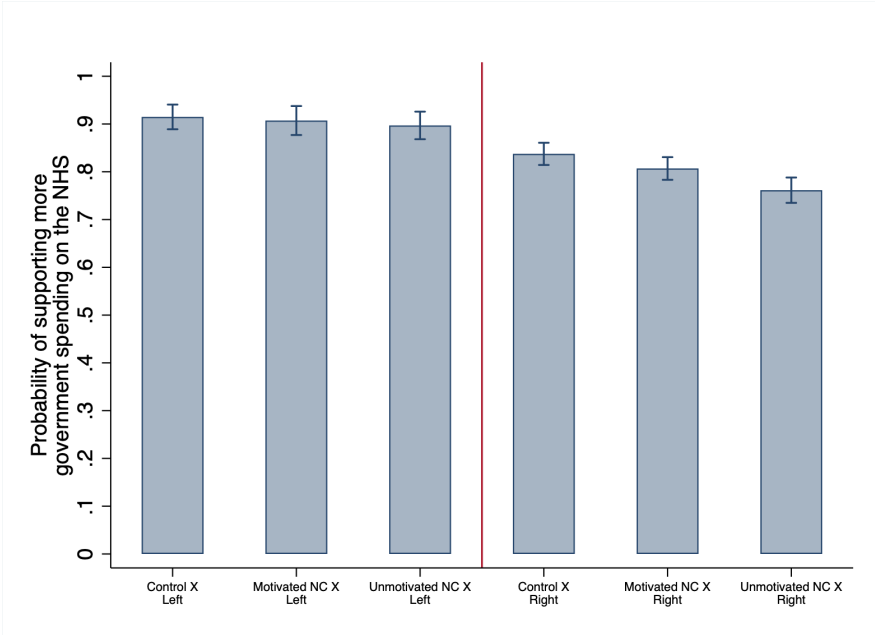


Figure A5: Likelihood of supporting “more” or “much more” spending on the NHS, by treatment and ideology



Appendix B: Additional Tables

Table B1: Comparison with U.K. national figures and balance of the covariates across the different treatment groups

	(0) U.K. Mean	(1) Full sample Mean	(2) Control Mean	(3) Motivated NC Mean	(4) (3) - (2)	(5) Unmotivated NC Mean	(6) (5) - (2)
Female	0.508	0.512 (0.500)	0.511 (0.500)	0.519 (0.500)	0.008 [0.737]	0.506 (0.500)	-0.005 [0.840]
Age	48.332	46.376 (17.602)	45.822 (17.594)	47.059 (17.447)	1.237 [0.115]	46.248 (17.759)	0.426 [0.590]
Parent	N.A.	0.617 (0.486)	0.604 (0.489)	0.631 (0.483)	0.027 [0.221]	0.616 (0.487)	0.012 [0.570]
White	0.870	0.907 (0.290)	0.905 (0.293)	0.907 (0.291)	0.002 [0.884]	0.910 (0.286)	0.005 [0.694]
Born in U.K.	0.86	0.927 (0.261)	0.924 (0.265)	0.935 (0.247)	0.011 [0.340]	0.921 (0.270)	-0.003 [0.807]
University graduate	0.384	0.363 (0.481)	0.374 (0.484)	0.325 (0.469)	-0.049* [0.022]	0.389 (0.488)	0.015 [0.501]
Not employed	0.244	0.437 (0.496)	0.438 (0.496)	0.436 (0.496)	-0.002 [0.944]	0.436 (0.496)	-0.002 [0.913]
Household income	28,400	32,215 (25,262)	32,125 (24,587)	31,647 (25,177)	-478 [667]	32,872 (26,012)	747 [509]
Observations		3,000	1,000	999	1,999	1,001	2,001

NC= non-contributor. Displays mean values of covariates in each of the treatment groups and their difference with the control. Household income is in thousands of pounds. Source for gender, age, ethnicity and place of birth is ONS (2018a), employment and income is ONS (2018b), university graduate is ONS (2020a), and immigration share in the local authority is ONS (2020b). In parentheses, standard deviations for means and, in square brackets, p values for differences in means. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table B2: Support for increased spending on the NHS, by user contribution and “motivation”, including individual covariates

	(1)	(2)	(3)	(4)
	LPM	OLogit	LPM	OLogit
Non-contributor	-0.0452*** (0.001)	-0.179** (0.013)		
Unmotivated Non-contributor Control			-0.0592 (0.104)	-0.130 (0.128)
			0.0524 (0.134)	0.114 (0.174)
Female	0.0397*** (0.005)	0.161** (0.027)	0.0748** (0.015)	0.160** (0.027)
Age	-0.000169 (0.720)	-0.00564** (0.020)	-0.00188* (0.064)	-0.00575** (0.018)
Children	0.0200 (0.180)	0.171** (0.024)	0.0677** (0.035)	0.171** (0.024)
White	0.0792*** (0.005)	0.284** (0.039)	0.148** (0.012)	0.287** (0.037)
UK Native	-0.0243 (0.368)	-0.0533 (0.693)	-0.0522 (0.343)	-0.0581 (0.668)
Some college	0.0206 (0.150)	0.139* (0.054)	0.0592* (0.053)	0.145** (0.046)
Unemployed	0.00239 (0.882)	0.00195 (0.981)	0.0136 (0.695)	0.00420 (0.960)
Income (tsd)	-0.00107*** (0.001)	-0.00950*** (0.000)	-0.00369*** (0.000)	-0.00949*** (0.000)
Observations	3000	3000	3000	3000

Coefficients from linear probability models (Models 1 and 3) and ordered logit models (Models 2 and 4) with no individual covariates. In Models 1 and 2, the omitted category is the control condition, and all non-contributors are lumped together (we do not disaggregate by “motivation”). In Models 3 and 4, the omitted category is the “motivated non-contributor” condition. p values in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table B3: Support for increased spending on the NHS, by user contribution, “motivation”, and need (OLS models using 1-5 Likert scale)

	(1)	(2)	(3)	(4)
Non-contributor	-0.0830*** (0.006)		-0.0459 (0.400)	
Unmotivated non-contributor		-0.0584 (0.111)		-0.0270 (0.683)
Control		0.0537 (0.126)		0.0324 (0.607)
Serious			0.0826 (0.172)	0.140** (0.023)
Emergency			0.213*** (0.000)	0.0909 (0.154)
Non-contributor × Serious			0.00976 (0.897)	
Non-contributor × Emergency			-0.121 (0.104)	
Unmotivated non-contributor × Serious				-0.0957 (0.291)
Unmotivated non-contributor × Emergency				0.00149 (0.987)
Control × Serious				-0.0576 (0.504)
Control × Emergency				0.122 (0.161)
Constant	4.305*** (0.000)	4.251*** (0.000)	4.207*** (0.000)	4.174*** (0.000)
Observations	3000	3000	3000	3000

Coefficients from OLS models with no individual covariates. In Model 1, the omitted category is the control condition. In Model 2, the omitted category is the “motivated non-contributor” condition. In Model 3, the omitted category is the “control-benign” condition, and in Model 4, the omitted category is the “motivated non-contributor-benign” condition. For the dependent variable, the scale of support ranges from 1 (supports “much less” spending) to 5 (supports “much more” spending). p values in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table B4: Support for “less” or “much less” spending on the NHS, by user contribution and “motivation”

	(1)	(2)	(3)	(4)
	LPM	OLogit	LPM	OLogit
Non-contributor	0.00900 (0.105)	0.176** (0.014)		
Unmotivated			0.00195 (0.788)	0.125 (0.142)
Control			-0.00803 (0.222)	-0.114 (0.169)
Constant	0.0180*** (0.000)		0.0260*** (0.000)	

Coefficients from linear probability models (Models 1 and 3) and ordered logit models (Models 2 and 4) with no individual covariates. In Models 1 and 2, the omitted category is the control condition, and all non-contributors are lumped together (we do not disaggregate by “motivation”). In Models 3 and 4, the omitted category is the “motivated non-contributor” condition. p values in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table B5: Support for rationing NHS services

	(1)	(2)	(3)	(4)	(5)	(6)
	Co-	Co-	Caps	Caps	Waitlists	Waitlists
	payments	payments				
Non-contributor	0.0130 (0.497)		0.0495*** (0.006)		0.00400 (0.819)	
Control		0.0256 (0.244)		-0.0263 (0.201)		0.0187 (0.348)
Unmotivated non-contributor		0.0771*** (0.000)		0.0463** (0.029)		0.0454** (0.025)
Constant	0.421*** (0.000)	0.395*** (0.000)	0.291*** (0.000)	0.317*** (0.000)	0.283*** (0.000)	0.264*** (0.000)
Observations	3000	3000	3000	3000	3000	3000

Support for all rationing types dichotomized, with option indicating no support coded as 0, and those indicating conditional or unconditional support coded as 1. Coefficients from linear probability models with no individual covariates. In Models 1, 3, and 5, the omitted category is the control condition, whereas in Models 2, 4, and 6, the omitted category is the “motivated non-contributor” condition. p values in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table B6: Support for “less” or “much less” spending on the NHS, by user contribution, “motivation”, and need

	(1)	(2)	(3)	(4)
	LPM	OLogit	LPM	OLogit
Non-contributor	0.00908 (0.404)	0.0687 (0.579)		
Serious	-0.00588 (0.597)	-0.196 (0.157)	-0.0151 (0.242)	-0.299** (0.038)
Emergency	-0.0120 (0.244)	-0.536*** (0.000)	-0.0150 (0.247)	-0.214 (0.152)
Non-contributor × Serious	0.0284 (0.418)	0.00226 (0.990)		
Non-contributor × Emergency	-0.0000360 (0.998)	0.344* (0.053)		
Unmotivated non-contributor			-0.00601 (0.665)	0.0452 (0.769)
Unmotivated non-contributor × Serious			0.0180 (0.336)	0.203 (0.337)
Unmotivated non-contributor × Emergency			0.00588 (0.741)	0.0421 (0.843)
Control			-0.0121 (0.361)	-0.0465 (0.744)
Control × Serious			0.00920 (0.589)	0.103 (0.607)
Control × Emergency			0.00298 (0.857)	-0.322 (0.119)
Constant	0.0240*** (0.004)		0.0360*** (0.000)	
Observations	3000	3000	3000	3000

Coefficients from linear probability models (Models 1 and 3) and ordered logit models (Models 2 and 4) with no individual covariates. In Models 1 and 2, the omitted category is the “control-benign” condition, whereas in Models 3 and 4, the omitted category is the “motivated non-contributor-benign” condition. p values in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

6.1 Appendix C: Survey Instrument

Vignettes

The survey instrument included the following vignettes:

Treatment 1A: [Motivated][Benign]

The U.K.'s National Health Service (NHS) faces big challenges, including significant overcrowding at hospitals. Many unemployed people in the U.K., who do not pay income taxes, use the NHS.

One such person is Patrick Smith, 37, from Birmingham, who says, "I'm actively applying for jobs and hope soon to pay my fair share to support the NHS." Another is George Peterson, 47, from London, who says, "I'm trying my best to find work and to contribute meaningfully to the NHS."

Last month, both Patrick and George - along with many other unemployed people - were treated by NHS doctors for common colds that would have left them feeling temporarily uncomfortable if left untreated.

Treatment 1B: [Motivated][Serious]

The U.K.'s National Health Service (NHS) faces big challenges, including significant overcrowding at hospitals. Many unemployed people in the U.K., who do not pay income taxes, use the NHS.

One such person is Patrick Smith, 37, from Birmingham, who says, "I'm actively applying for jobs and hope soon to pay my fair share to support the NHS." Another is George Peterson, 47, from London, who says, "I'm trying my best to find work and to contribute meaningfully to the NHS."

Last month, both Patrick and George - along with many other unemployed people - were treated by NHS doctors for hip problems that would have made them unable to walk if left untreated.

Treatment 1C: [Motivated][Emergency]

The U.K.'s National Health Service (NHS) faces big challenges, including significant overcrowding at hospitals. Many unemployed people in the U.K., who do not pay income taxes, use the NHS.

One such person is Patrick Smith, 37, from Birmingham, who says, "I'm actively applying for jobs and hope soon to pay my fair share to support the NHS." Another is George Peterson, 47, from London, who says, "I'm trying my best to find work and to contribute meaningfully to the NHS."

Last month, both Patrick and George - along with many other unemployed people - were treated by NHS doctors for heart failure that would have killed them on the spot if left untreated.

Treatment 2A: [Unmotivated][Benign]

The U.K.'s National Health Service (NHS) faces big challenges, including significant overcrowding at hospitals. Many unemployed people in the U.K., who do not pay income taxes, use the NHS.

One such person is Patrick Smith, 37, from Birmingham, who says, "I'm not too concerned about finding a new job, since the NHS will always support me." Another is George Peterson, 47, from London, who says, "I'm entitled to NHS services anyway, so I'm not in a rush to find work."

Last month, both Patrick and George - along with many other unemployed people - were treated by NHS doctors for common colds that would have left them feeling temporarily uncomfortable if left untreated.

Treatment 2B: [Unmotivated][Serious]

The U.K.'s National Health Service (NHS) faces big challenges, including significant overcrowding at hospitals. Many unemployed people in the U.K., who do not pay income taxes, use the NHS.

One such person is Patrick Smith, 37, from Birmingham, who says, "I'm not too concerned about finding a new job, since the NHS will always support me." Another is George Peterson, 47, from London, who says, "I'm entitled to NHS services anyway, so I'm not in a rush to find work."

Last month, both Patrick and George - along with many other unemployed people - were treated by NHS doctors for hip problems that would have made them unable to walk if left untreated.

Treatment 2C: [Unmotivated][Emergency]

The U.K.'s National Health Service (NHS) faces big challenges, including significant overcrowding at hospitals. Many unemployed people in the U.K., who do not pay income taxes, use the NHS.

One such person is Patrick Smith, 37, from Birmingham, who says, "I'm not too concerned about finding a new job, since the NHS will always support me." Another is George Peterson, 47, from London, who says, "I'm entitled to NHS services anyway, so I'm not in a rush to find work."

Last month, both Patrick and George - along with many other unemployed people - were treated by NHS doctors for heart failure that would have killed them on the spot if left untreated.

Control A: [Control][Benign]

The U.K.'s National Health Service (NHS) faces big challenges, including significant overcrowding at hospitals. Many people in the U.K. use the NHS.

One such person is Patrick Smith, 37, from Birmingham. Another is George Peterson, 47, from London.

Last month, both Patrick and George - along with many other people - were treated by NHS doctors for common colds that would have left them feeling temporarily uncomfortable if left untreated.

Control B: [Control][Serious]

The U.K.'s National Health Service (NHS) faces big challenges, including significant overcrowding at hospitals. Many people in the U.K. use the NHS.

One such person is Patrick Smith, 37, from Birmingham. Another is George Peterson, 47, from London.

Last month, both Patrick and George - along with many other people - were treated by NHS doctors for hip problems that would have made them unable to walk if left untreated.

Control C: [Control][Emergency]

The U.K.'s National Health Service (NHS) faces big challenges, including significant overcrowding at hospitals. Many people in the U.K. use the NHS.

One such person is Patrick Smith, 37, from Birmingham. Another is George Peterson, 47, from London.

Last month, both Patrick and George - along with many other people - were treated by NHS doctors for heart failure that would have killed them on the spot if left untreated.

6.1.1 Questions

Spending

Would you like to see more or less government spending than there is today on the NHS?

Government should spend much more

Government should spend more

Government should spend the same as now

Government should spend less

Government should spend much less

Co-Payments

Should users of the NHS be required to pay a portion of the cost of treatment out of pocket?

Yes, everyone should pay a portion of the cost of treatment out of pocket

Yes, but only those who do not pay income taxes should pay a portion of the cost of treatment out of pocket

No, no one should pay a portion of the cost of treatment out of pocket

Caps

Should there be a cap on the number of times someone can use the NHS in a given year without being charged?

Yes, everyone should have a cap on the number of times they can use the NHS in a given year without being charged

Yes, but only those who do not pay income taxes should have a cap on the number of times they can use the NHS in a given year without being charged

No, everyone should be able to use the NHS as many times as they request without being charged

Waitlists

When it comes to receiving healthcare through the NHS, should the government prioritize citizens who pay income taxes over those who do not pay (for example, moving those who do not pay income taxes to the back of waiting lists)?

Yes

No