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The making of Homo Honoratus: From omission to commission

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Abstract

This study investigates how people's tendency to avoid action, known as "omission bias," influences their financial decisions, specifically in the context of debt repayment to the UK government. Using a randomized controlled trial, we communicated with individuals who owed money, employing two distinct message framings. The omission-framed message suggested that nonresponse was seen as inadvertent, while the commission-framed message treated nonresponse as a deliberate choice. Analyses of nearly 40,000 responses revealed that repayment rates almost doubled with commission framing, reaching 23.2%, as opposed to 12% under omission framing. This reframing strategy generated over \$1.4 million in additional revenue, underscoring the considerable real-world impact of understanding and leveraging the omission bias in shaping financial behaviors.

KEYWORDS

behavior change, debt repayment, field experiment, nudge, omission bias

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INTRODUCTION

A growing body of evidence suggests the existence of an "omission bias"-people tend to prefer not acting over making an active choice (Anderson, 2003; Schweitzer, 1994). The preference for no-action options has gathered significant scholarly attention regarding how certain options can be framed to influence behavior (Brown & Krishna, 2004). However, there are additional dimensions of the preference for inaction that have received relatively less exploration. For example, Dhar (1997) has documented instances in which consumers prefer not to choose or delay their choices when faced with indecisiveness about their preferred product. Remarkably, in such cases, consumers consciously select the no-choice option, weighing its costs and benefits (Dhar, 1997). This observation highlights the pervasive influence of omission bias in consumer decision-making, even when individuals explicitly opt for nonaction considering the advantages it offers.

Concrete examples further illustrate the impact of omission bias in consumer contexts. Take the case

of subscription services, where consumers often find themselves automatically enrolled in a recurring subscription unless they take active steps to cancel it. Many individuals continue their subscriptions, even when they no longer derive significant value from the service, due to the inertia and perceived effort required to cancel (Madrian & Shea, 2001; Samuelson & Zeckhauser, 1988). Similarly, consumers may procrastinate on making important financial decisions, such as selecting the appropriate retirement plan or investment strategy, as they tend to favor the familiar and resist the complexities and potential risks associated with change (Choi et al., 2004; Thaler & Benartzi, 2004). These examples highlight how omission bias can shape consumer behavior, influencing choices to maintain the status quo or delay decision-making.

In this article, we delve into another facet of omission bias—the impact of inaction on our perception of how others judge us. Research indicates that individuals tend to assign more blame to others when a negative outcome results from an action rather than an inaction (Cushman et al., 2006; Descioli et al., 2012). Indeed, some studies

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indicate that individuals may deliberately fail to act because they anticipate they will attract less blame if a bad outcome ensues, compared to if they had made an active choice. In other words, individuals may be using an omission *strategy* because it incurs lower blame from the audience (DeScioli, Bruening, et al., 2011; DeScioli, Christner, et al., 2011). In addition, omissions tend to receive less condemnation than commissions due to the inherent difficulties in coordinating blame for inactions compared to actions (DeScioli, Bruening, et al., 2011).

The recent work of Holz et al. (2023) underscored the significance of the omission-commission dynamic in taxation. They illustrated how framing noncompliance as an active choice (commission) increased tax compliance among firms. However, while their research focused on nudging businesses toward compliance, our study seeks to understand and influence individual decision-making in the context of inappropriate receipt of government benefits. To help address this need, we conduct a large natural field experiment aimed at applying the principle of the omission strategy to generate public benefits.

Our study focuses on the UK government's endeavor to increase repayments among 40,000 individuals who have been overpaid a government benefit, typically due to their failure to report changes in their circumstances. We explore how reframing nonresponse to a payment request as an active choice, rather than an omission, influences individuals' repayment rates. By conducting a randomized controlled trial, we evaluate the effectiveness of two distinct message framings: omission-framed messages that convey nonresponse as inadvertent, and commission-framed messages that treat nonresponse as a deliberate choice.

We find that reframing not responding to a request for payment as an active choice, rather than an omission, doubles payment rates in the immediate period after the message is received. Furthermore, we examine the impact of the source of the omission message on repayment rates and find consistent results regardless of the sender. To gain a deeper understanding of the mechanisms underlying these behavioral changes, we complement our field experiment with a survey experiment. From this experiment, we find that the act of commission increases the perceived costs of not acting. Our research highlights the potential of reframing strategies to drive behavioral change, with implications not only for debt recovery but also for other social marketing goals and consumer interactions that require compliance with established policies.

THEORY AND EXPECTATIONS

The distinction between omission and commission profoundly affects individual decision-making processes and moral interpretations. In relation to omission, there is an important difference to be made between passive omission and the strategic selection of omission options. Passive omission, or avoidance of action, often sustains a "status quo bias," a preference for maintaining the current situation (Kahneman et al., 1991; Samuelson & Zeckhauser, 1988). On the other hand, the strategic selection of omission options is not mere avoidance of action, but a conscious strategy to create ambiguity, reducing blame and punishment while maintaining a positive self-image (DeScioli, Christner, et al., 2011; Mazar et al., 2008; Schweitzer & Hsee, 2002).

Contrary to omission, commission signifies an active choice disrupting the status quo. One example of commission is found in the study by Dana et al. (2007), where some participants opted to give up monetary reward to avoid making a choice that would disadvantage another participant. Here, an active decision was made to deviate from the standard economic behavior of maximizing self-interest, demonstrating the influence of commission on moral decision-making processes. In the context of consumer behavior, Keller et al. (2011) postulated that the cognitive load of active choice can reshape self-perception, fostering a sense of responsibility conducive to behavioral modification.

The omission-commission dichotomy influences our interpretation of others' actions. The "omission bias" suggests that we are prone to assign more blame to adverse outcomes stemming from active decisions compared to passive inactions (Cushman et al., 2006). Thus, actions causing negative outcomes are judged more harshly than comparable harmful omissions (Baron & Ritov, 2004; Teper & Inzlicht, 2011).

When making inferences about the self, individuals strategically navigate between omission and commission. Research posits that omission strategies are not merely inaction born of avoidance but are often intentional selections aimed at minimizing potential blame and preserving a positive self-image (Campbell & Sedikides, 1999; Mazar et al., 2008; Schweitzer & Hsee, 2002). For example, DeScioli, Christner, et al. (2011) found that participants are significantly more likely to obtain money from another person by omission (letting a timer elapse) than by commission (selecting an option) when the threat of punishment by a third party is present. In other words, people select the omission option because they think they will be judged less harshly by others as a result. Related evidence shows judgments about the immorality of omissions and commissions are dependent on the presence of salient alternative causes in omissions (Spranca et al., 1991).

In light of the above, with the recognition of the moral malleability offered by the strategic omission, it becomes increasingly important to understand the role of active versus passive choices. This suggests the potential for interventions that reframe omissions as commissions, thereby decreasing the ambiguity that facilitates transgressions, as part of an effective strategy to influence human behavior.

Our research adopts a natural field experiment to investigate how messages that frame inaction as an active, intentional choice rather than an omission. We hypothesize that such framing, particularly when indicating that the behavior will be judged as an active choice by a relevant party (here, the UK government), will be more effective. By implementing this study in a field setting, we tackle the gap in empirical evidence on active omission strategy and circumvent potential inconsistencies between laboratory and field behavior (Levitt & List, 2007). This approach also ensures high internal and external validity without selection bias or experimenter demand effects (Harrison & List, 2004). To probe the mechanisms behind our framing treatment effects, we supplement our field experiment with a survey experiment, combining field and survey methods to provide a more comprehensive understanding of the omission–commission dynamic (Czibor et al., 2019; List, 2003).

FIELD EXPERIMENTAL DESIGN

Numerous instances necessitate individuals providing the UK government with truthful, accurate information about their circumstances, especially in the context of compliance with conditions for social benefit programs. There exists a potential for beneficiaries to selectively withhold notifications of altered circumstances, thus deriving undue profit through omission. This concern is especially relevant in the context of Tax Credits, a form of benefit administered by the UK government.

The Comptroller and Auditor General's report from July 2022 (National Audit Office, 2022) reveals that the UK Department for Work and Pensions is owed £7.6 billion for overpaid benefits, benefit advances, and tax credits by approximately 5 million claimants—a figure that escalated by over £1 billion in the fiscal year 2021–2022. Fraud and error-induced overpayments impose financial burdens on taxpayers and constrict public resources meant for other sectors. The Department for Work and Pensions can recoup only the overpayments it has successfully identified, while a significant majority remain unidentified, and hence, unrecoverable. According to the Department's accounts as of March 31, 2022, the gross debt due to overpayments in administered tax credits totaled £2.7 billion. This demonstrates a trend of escalating tax credits overpayments from £0.3 billion in 2018, to £0.8 billion in 2019, £1.8 billion in 2020, £2.2 billion in 2021, and finally, £2.7 billion in 2022 (National Audit Office, 2022). Considering the size of this debt and its persistent growth, gaining a comprehensive understanding of the factors influencing repayment behavior becomes essential.

In this spirit, we address a particular compliance challenge: Collecting overpaid Tax Credits, a form of benefit provided by the UK government. Tax credits



come in two main forms: Child Tax Credit, awarded to support the raising of children, and Working Tax Credit, paid to those who are in work but have a low income (for more information, see https://www.gov.uk/ child-tax-credit). Reasons why a recipient may be paid too much through UK Tax Credits include: A failure to notify the authorities of a change in the recipient's situation, providing incorrect information, or a failure to renew credits on time (http://www.hmrc.gov.uk/taxcr edits/things-go-wrong/overpayments/how-happened. htm). Therefore, it is worth noting that the overpayment itself may have occurred as a result of inaction on the part of the individual. The UK government then has a duty to reclaim the overpaid Tax Credits, since they constitute a debt. Individuals receive an initial statement of the debt; if they do not respond to this statement, then they are sent targeted letters requesting payment, followed by further enforcement actions, if appropriate.¹

Methodology

Our study incorporated seven message variations to understand the dynamics of tax compliance in the context of written communication from the tax authority. The control condition involved the conventional letter issued by the UK Tax Office, which was primarily a form letter providing basic information about the debtor's dues and how to make the payment (see Figure 1). This letter served as our control group, against which we compared our other experimental arms.

The experimental treatment letters were identical to the control aside from inclusion of various short messages (see Figure 2 for the Collective Omission to Commission letters). The first, and most important, departure from the control letter is the change of the framing from omission to commission, which we tested using two experimental treatments (individual vs. collective omission to commission). Next, in the other four experimental treatments, we compared countering the omission strategy with an alternative

¹At the time of the study, the sequence was as follows: Letter 1—Issued at 0 days. These are the variants in the trial. Letter 2-Issued at approximately 23 days, and they warn of interest rates being applied. Letter 3-Issued at after an undefined number of days from letter 2. If debt is above £3500: Third letter warns of the possibility that goods may be seized to pay the debt, and If debt is below £3500: Third letter warns of the possibility that a debt collection agency may be used to recover the debt. Stage 4-Debt Management Call Center-Telephone call to try to collect the debt. If no payment, warning that next contact will be the enforcement payment of debt. Stage 5-Enforcement-If debt is above £3500: Officer instructed to seize goods. If debt is below £3500: No further enforcement action planned. The enforcement actions include telephone calls and personal visits from an HMRC officer. If no contact can be made, or the benefit recipient refuses to pay, then HMRC may: refer the debt to a private debt collection agency; seek to remove it automatically from payrolls; or consider seizing goods to recoup the amount owed. A summary of the process can be found at: http://www.revenuebenefits.org.uk/tax-credits/guida nce/how-to-deal-with-hmrc/dealing-with-debt/. We discuss the particular actions applied to these debts later in the article.

Dear Sir/Madam

Date of issue 25 April 2012 Reference REFERENCE NUMBER

Your Tax Credits debt of £9999999999999999

We told you recently that you were paid too in uch through your tax credits. Our records show you have not been in touch about this.

Please call 0845 302 1421 now.

Calling us is quick and easy, and you can spread your payment over 12 months.

You can pay by debit card, credit card or Direct Debit. You can also pay using internet and telephone banking. For more information on how to pay, go to **www.hmrc.gov.uk/payinghmrc**.

If you believe that you don't owe this amount, please call us on the number above.

If you have already paid, thank you. If not, please act now.

Yours faithfully

Officer of Revenue and Customs

ID MS99P

FIGURE 1 Control letter.

non-deterrence approach for increasing compliance, based on offering additional help and lowering perceived barriers to resolving the recipient's debt situation. This more "customer focused" approach has been discussed extensively as a means of creating a good relationship between tax authority and citizen—which in turn has been found to boost voluntary compliance (Braithwaite, 2003; Kirchler, 2007; Smith, 1992). There is some field experimental evidence that messages of this kind can raise tax compliance (De Neve et al., 2021; Hallsworth et al., 2017; Hasseldine et al., 2007). In our field experiment, these additional four letters provided more information about call center opening times (denoted "Opportunity"), pointed out that the tax authority was attempting to resolve the issue (denoted "Reciprocity"), suggested making a plan to call the tax authority (denoted "Planning"), and provided a summary box of the main points in the letter (denoted "Salience"). These other omission-framed treatments provide a reference effect size and place our main treatment effects in perspective. The design elements and hypotheses for each condition are discussed below.

Individual omission to commission

The "omission strategy" is based on anticipated blame, and the salience of this blame is likely to vary according HMR C 10/10

to its source. In this situation, there are two overlapping sources, since the letter is addressed from both an organization (i.e., the UK tax office) and an individual within that organization (i.e., a specific collector). As such, there is a case for examining whether emphasizing the individual or the collective influences compliance. The findings from Packard et al. (2018) show that firm agents who refer to themselves using "I" pronouns, rather than "we" pronouns, increase perceptions of empathy and improve customer satisfaction. Our hypothesis was that this personalized message will make noncompliance feel more of an intentional act, thereby increasing compliance rate. Taking this into account, we framed the "Individual Omission to Commission" letter as follows: "Previously, I treated your lack of response as an oversight. Now, if you do not call [telephone number], I will treat this as an active choice."

Collective omission to commission

Building on the findings of Tausczik and Pennebaker (2010) that show lower status speakers using the first-person singular pronoun "I" more frequently, and higher status speakers preferring the first-person plural pronoun "we," we infer a potential influence of framing—personal or collective—on message reception. This idea, along with Bargh's (2006)





Dear Sir/Madam

Date of issue 25 April 2012 Reference REFERENCE NUMBER

Your Tax Credits debt of £999999999999999999

We told you recently that you were paid too much through your tax credits. Our records show you have not been in touch about this.

Previously, we treated your lack of response as an oversight. Now, if you do not call 0845 302 1421, we will treat this as an active choice.

Calling us is quick and easy, and you can spread your payment over 12 months.

You can pay by debit card, credit card or Direct Debit. You can also pay using internet and telephone banking. For more information on how to pay, go to www.hmrc.gov.uk/payinghmrc .

If you believe that you don't owe this amount, please call us on the number above.

If you have already paid, thank you. If not, please act now.

Yours faithfully

Officer of Revenue and Customs

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FIGURE 2 Example trial letter—Collective Omission to Commission.

study suggesting collective priming can encourage altruism, forms the basis for our message. The message communicated was: "Previously, we treated your lack of response as an oversight. Now, if you do not call [telephone number], we will treat this as an active choice" (see Figure 2). We theorized that reframing non-compliance as an act against the collective will lead to a higher compliance rate. In addition, considering the evidence presented above, we introduced a subordinate hypothesis: Individuals who receive a message, at the point of decision, that states that noncompliance will be an act of commission will be more likely to comply if the sender is framed as a collective, rather than an individual.

Opportunity

In the "Opportunity" condition, we reiterated the call center opening times and expressed eagerness to receive the debtor's call, based on the idea of lowering perceived barriers as discussed by De Neve et al. (2021) and Hasseldine et al. (2007): "We are keeping our lines open every day... We are waiting for your call today." We

expected this to lower perceived barriers to debt resolution, potentially leading to higher compliance.

Reciprocity

The "Reciprocity" condition is informed by the evidence on how tax compliance is influenced by procedural fairness (Hartner et al., 2008; Wenzel, 2002). Specifically, it incorporated a reciprocal fairness element, framing the tax authority's contact as a proactive attempt to help. The desire to reciprocate past actions has been shown to be a powerful driver of behavior (Axelrod, 1984; Fehr & Gächter, 1998, 2000). In terms of compliance, the theory is that people are more likely to see an authority as legitimate, and therefore accept its rules and decisions, if they feel that their procedures are fair and have been followed fairly. We hypothesized that invoking a sense of reciprocity could increase compliance rates. The message therefore framed the current contact from the tax authority (accurately) as a proactive attempt to resolve the situation, which may trigger a sense of reciprocity: "Please call [telephone number] now. We are offering to help sort this out. All you have to do is call."

OF CONSUMER ESYCHOLOGY

Planning

For the "Planning" condition, we encouraged recipients to make a plan to call the tax authority, based on evidence that making a simple plan can increase the likelihood of an action being carried out. This approach was informed by Mazar et al.'s (2018) and Gollwitzer and Sheeran's (2006) research on implementation intentions and plan-making as behavior change strategies. Notably, the vast majority of tax debt communications simply demand payment instantly, rather than suggesting making a plan. Therefore, we created the "Planning" treatment to assess the effectiveness of a simple planning prompt: "Please choose one day this week. Please choose a time that day. Promise yourself to call [telephone number] then." We anticipated that this strategy could enhance compliance rates.

Salience

In the "Salience" condition, we made the main request more attention-grabbing, a strategy rooted in the concept of salience as explored by Chetty et al. (2009). We hypothesized that making the main requests in the letter more salient would increase compliance (note that given the technical constraints imposed by HMRC's letter technology, we were unable to alter the size or color of the letter's font, which may have offered an obvious route for increasing salience.). We created a short summary box, placed below the main text of the letter that set out the main messages simply:

> "Tax Credits overpaid Payment plan available [telephone number]"

To execute this field experiment, we issued letters to the sampled debtors in January 2012. The experimental sample comprised 38,800 cases, all debtors for whom the outstanding amount could not be recovered via payroll deductions. We anticipated that equal allocation among the seven conditions detailed above would allow us to detect an average treatment effect of 2.7% with 80% power, which is similar to the smaller effects obtained by Hasseldine et al. (2007) and Hallsworth et al. (2017). Randomization was executed using the random number function in SAS, with letters issued in tranches sorted by debt size over five sequential days. Importantly, the randomization resulted in equal proportions of each letter type being issued each day. We ensured that no significant differences existed between control and treatment groups in terms of gross income, log gross income, current debt level, existence of previous debt, and gender (see Tables S1 and S2).

FIELD EXPERIMENTAL RESULTS

Our main results are contained in Table 1, which presents the marginal effects from a logit regression where the dependent variable is whether the recipient made a payment within 30 days of being sent the letter. Thirty days represents the last point at which we can be confident that individuals had not received the subsequent letter asking for payment (which did not form part of this experiment). Around 12% of recipients in our control treatment made such a payment within 30 days.

Regression (I) is the basic specification, with the treatment groups as the independent variables. The "Reciprocity," "Planning," and "Salience" treatments do not have a significant effect on repayment rates. The "Opportunity" treatment produced a 2.2% increase in payments. The effect in comparison to the control group is an 18.5% (0.06 SD) effect size. In terms of the omission to commission messages, the "Collective Omission to Commission" group created an 11.2% point increase in payment rates. This is equivalent to a 94.1% (0.33 SD) treatment effect size. Moreover, the "Individual Omission to Commission" group produced a 10.9% point increase. This is equivalent to a 91.6% (0.32 SD) treatment effect size. These results are not statistically significantly different from each other, which does not support our secondary hypothesis. However, they are significantly different from the other treatment effects and the control at conventional significance levels, confirming our primary hypothesis regarding the effect of omission to commission framing on increasing compliance rate (p < 0.001).

We now look at whether and how the main outcome variable is affected by covariates. Regression (II) in Table 1 includes the individual's gross income for that year and their gender (dummy being male). Importantly, when we include these variables the coefficients on our treatments do not change. However, we find that men are 5% points less likely than women to repay their tax credits overall. This result accords with the relatively limited evidence on gender and tax compliance (Alm, 2019; Jackson & Milliron, 1986; Kastlunger et al., 2010). Regression (III) in Table 1 interacts the income and gender variables with the six treatment variables. The interactions are neither large nor statistically significant. As far as the observables, we find that individuals with higher incomes are more likely to repay. For each pound sterling that someone earns, they are 0.0002% more likely to pay the tax back within 30 days. To place the 11.2% increase found above for "Collective Omission to Commission" in context, we would have to raise incomes by £50,000 to obtain the same effect.

We do not find any differences in treatment effects between the quartiles of debt owed (Table S3). We also find that there are no substantive differences in treatment effects at 30 days between those individuals who had recently incurred a debt with the UK government and those who **TABLE 1** Marginal effects of letter treatments on payment rates within first 30 days.



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	(I) Logit Paid in 30 days	(II) Logit Paid in 30 days	(III) Logit Paid in 30 days
Reciprocity	0.011	0.011	0.017
	(0.008)	(0.008)	(0.022)
Planning	0.008	0.008	0.032
	(0.008)	(0.008)	(0.024)
Salience	0.005	0.005	0.024
	(0.008)	(0.008)	(0.023)
Opportunity	0.022***	0.022***	0.029
	(0.008)	(0.008)	(0.023)
Collective omission to commission	0.112***	0.108***	0.147***
	(0.009)	(0.009)	(0.027)
Individual omission to commission	0.109***		0.104***
	(0.009)	(0.008) 0.108*** (0.009) 0.109*** (0.009) 2.98e-06*** (0.000) -0.050*** (0.004)	(0.026)
Income	(0.002)		3.65e-06***
income			(0.000)
Male			-0.047***
Wate			(0.011)
Reciprocity*Income		(0.004)	-5.38e-07
Recipioenty Income			
			(0.000)
Planning*Income			-1.53e-06
			(0.000)
Salience*Income			-1.06e-06
			(0.000)
Opportunity*Income			-4.93e-07
			(0.000)
Collective Commission*Income			-1.49e-06
			(0.000)
Individual Commission * Income			4.69e-07
			(0.000)
Reciprocity*Male			0.011
			(0.018)
Planning*Male Salience*Male			0.008
			(0.018)
			-0.004
			(0.017)
Opportunity*Male			0.007
			(0.018)
Collective Commission * Male			-0.014
			(0.015)
Individual Commission * Male			-0.015
			(0.015)
Ν	38,290	38,097	38,097
R^2	0.02	0.02	0.02

Note: The control group had a mean and standard deviation payment rate of 0.119 and 0.324, respectively. Standard errors in parentheses. p < 0.05, p < 0.01, p < 0.001

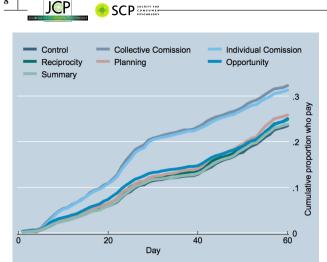


FIGURE 3 Cumulative payment rates by group. *Note*: The *y*-axis is the cumulative proportion of people who pay their money back to the Government. The *x*-axis is days since the experiment started. "Summary" refers to Salience condition operationalized via "Summary box."

had not (Table S4). In alternative analyses, we investigated different outcome measures and their temporal aspects. Initial findings reveal no significant variance in payment value across treatment groups within the first 30 or 80 days, suggesting the messages mainly prompted quicker payment instead of larger amounts (Table S5). Notably, the letters did not significantly enhance complete debt clearance rates at either the 30- or 80-day mark. Instead, they encouraged individuals to initiate debt payment, rather than settling the entire amount possibly due to liquidity constraints and installment plans availability. Moreover, tracking cumulative payment rates over 2 months, we noted high early payment rates among the commission groups, which remained consistent (Figure 3). Our examination of "day of payment" as a continuous variable offered nuanced insights. The omission to commission groups significantly accelerated their payments, 22 and 18 days earlier than the control for the "Collective" and "Individual" groups, respectively (Table S6). Curiously, the "Planning" group also paid earlier, suggesting a shortlived effect of planning messages. Additional analysis factoring in income and gender revealed income positively associated with quicker repayment, and men generally delayed payment compared to women. Notably, higher income recipients in "Planning" and "Collective Omission to Commission" groups and male recipients in the "Collective Omission to Commission" group showed delayed payment behavior (Table S6).

Using the estimates from regression (I) Table 1, we can provide an estimate of the benefits from this study. First, we can estimate the accelerated yield at 30 days. The control group in the first 30 days paid £599,334 back to the government. The "Collective Omission to Commission" group paid £1,284,337 in the first 30 days and the "Individual Omission to Commission" group paid £1,061,623 in the first 30 days—the gross marginal yield

was therefore around £1.15million. These calculations are made by multiplying the absolute treatment effect per group by the number of individuals in each group and the amount of debt in each group. For the control group, this was calculated as $N(5417) \times \text{Debt} (\pounds926.63) \times \text{Payment rate}$ (0.1194), for the collective omission group, $N(6330) \times \text{Debt}$ ($\pounds920.23$) × Payment rate (0.221), and for the individual omission group, $N(5245) \times \text{Debt} (\pounds932.75) \times \text{Payment rate}$ (0.217). The marginal yield from the omission treatments was calculated by adding together (collective omission payments – control payments) and (individual omission payments – control payments).

Second, we can estimate the total additional (rather than accelerated) yield. To do this, we first identify the debts with a value of less than £3500. Debts above this amount were sent for enforcement action that consisted of seizure of goods, and therefore any gains in this group are likely to consist of accelerated revenue only. However, debts below this amount were subjected only to a series of letters, which were completed within 80 days after the trial began. Therefore, any marginal gains that still existed at this end point represent additional (rather than accelerated) yield. No further enforcement action was planned to take place after the data period we can observe; and to the best of our knowledge, none did take place, but we cannot guarantee this is the case. At this time, the new marginal yield on sub-£3500 debts was £512,604 ("Collective Omission to Commission") and £366,920 ("Individual Omission to Commission")the aggregated new marginal yield was £879,525. At 80 days, the absolute treatment effects of "Collective Omission to Commission" and "Individual Omission to Commission" were 8.8% and 7.6%, respectively. It should be noted that the additional marginal cost to the government from this intervention was effectively zero, since these letters would have been sent regardless. Given these benefits and costs of this intervention, the marginal value of public funds is infinite (i.e., a pareto improvement) (Finkelstein & Hendren, 2020).

In light of the data presented, our analyses highlight the marked influence of shifting from omission to commission framing on tax repayment rates. Collections nearly doubled due to this reframing, moving from an initial 12%–23.2%. This strategic shift resulted in an additional revenue of over \$1.4million (the estimated value is based on the exchange rate in September 2023), emphasizing the tangible impact of understanding and utilizing the omission bias in financial decision-making.

SURVEY EXPERIMENT

In our natural field experiment, we observed how transitioning from omission to commission messaging significantly impacted repayment behaviors, likely by amplifying the perceived cost of inaction. To provide empirical support for the explanation proposed in our field experiment, we furthered our investigation with a web-based survey experiment.

One obvious possibility is that the inclusion of the wording "we will treat this as an active choice" provides a direct signal of increased consequences from the tax authority. In order to examine this point, we conducted a trial that tested this message against an omission message that lacked the specific phrase italicized above. The survey experiment was conducted online to increase speed of recruitment while minimizing costs. Using the online survey platform Maximiles, in April 2015, we recruited a national sample of 250 UK citizens who were or had been in receipt of tax credits. This recruitment strategy means that the survey sample was as similar to the field experiment population as practically possible (the only difference being that the survey population may not have had a tax credit overpayment previously). Participants were first screened for eligibility: They could proceed if they answered "yes" to the question "Are you receiving tax credits, or have you ever received tax credits in the past? (Tax credits include Child Tax Credits and Working Tax Credits.)" They then answered a set of questions to identify their background characteristics: gender, age, total household income, and professional status of highest income earner in household (see Appendix S1). The full protocol is provided in Section B of Appendix S1.

Participants were then randomized into two groups. Group 1 was presented with two different scenarios. The first (control) scenario involved receiving the control letter. This read as follows:

> Imagine that you have been paid too much in Tax Credits by the government. The tax authority sends you a letter asking for you to repay what you owe, but you do not respond. The tax authority then sends you another letter, which contains the statement: 'We told you recently that you were paid too much through your tax credits. Our records show you have not been in touch about this. Please call [phone number] now.'

The second ("Omission to Commission") scenario featured the omission to commission phrasing from the field experiment:

> Imagine that you have been paid too much in Tax Credits by the government. The tax authority sends you a letter asking for you to repay what you owe, but you do not respond. The tax authority then sends you another letter, which contains the statement: 'We told you recently that you were paid too much through your tax credits. Our records show you have not been in touch about this. Previously, we treated your lack of response as an oversight. Now, if you do

not call [phone number], we will treat this as an active choice.'

The order in which participants saw these scenarios was randomized. Participants were then asked: "Of these two scenarios, which would lead to a more severe punishment if you did not respond to the letter?" This was followed by a final question: "How severe do you think the punishment would be? (Please give your answer out of 10, where 1 means no action and 10 the maximum penalty possible.)" Participants who were randomly allocated to Group 2 received exactly the same messages as Group 1, with one exception. The "Omission to Commission" scenario concluded: "Now, if you do not call [phone number], this will be an active choice." In other words, Group 1 saw the phrase "we will treat this as an active choice'; Group 2 saw the phrase 'this will be an active choice." This latter version, seen by Group 2 therefore lacked any signal of punishment ("we will treat this"), but retained the commission element (i.e., the fact that the omission is treated as an active choice). Group 2 participants were asked the same questions about perceived severity of punishment (Table S7 (Appendix S1) gives the results of the balance checks on the covariates of gender, age, and household income—overall, the sample appears to be well balanced, although there are fewer 55–64-year-olds in Group 1).

The results, detailed in (Tables S8 and S9, indicate that the manipulation of implied punishment versus no implied punishment in the "Omission to Commission" scenarios did not impact participants' perception of the severity of punishment at a 95% significance level. Specifically, 78.4% of participants in the standard omission to commission group rated it as producing more severe punishment compared to the control condition (mean severity score of 6.48 and 6.44, respectively). Similarly, 81.6% of participants in the "non-threat" omission to commission group considered it to lead to more severe punishment than the control letter (mean severity scores of 6.73 and 7.09). However, these differences were not statistically significant (t(198)=0.79, p=0.43, two-tailed). In terms of participants' rating of the perceived severity of punishment communicated via the letters, the mean severity scores were 6.47 for the standard omission to commission version and 6.79 for the non-threat omission to commission version, with no significant difference between them (t(248)=1.12, p=0.26, two-tailed). Covariates such as age, gender, and income level did not substantially affect the conclusions.

GENERAL DISCUSSION

Our research underscores the utility of commission framing as a means to counteract the strategy of omission, as substantiated by a large-scale natural field experiment. This approach successfully altered the perceived cost of inaction, leveraging principles from behavioral science that underline the efficacy of reframing. Specifically, recasting noncompliance as an act against either an individual or collective led to significantly higher compliance rates, compared to a control condition that presented the standard UK Tax Office letter detailing the debtor's obligations and payment procedures. Contrary to our secondary hypothesis, no significant difference was observed between the impacts of Individual Omission to Commission and Collective Omission to Commission framing. Additionally, our reframing approach to transition from omission to commission was markedly more effective in ensuring compliance than combining the omission strategy with a non-deterrence method aimed at facilitating compliance by offering additional assistance and reducing perceived barriers to debt resolution.

It is noteworthy that our framing techniques did not depend on traditional deterrence mechanisms like the looming threat of fines or legal consequences. Further corroborating these field findings, our survey experiment indicated that a direct threat of action from the tax authority did not significantly influence participants' perceptions of punishment severity, thereby dismissing a potential alternate explanation for the field experiment outcomes through the pathway of threat.

Theoretical implications

Our research offers valuable insights into the existing body of knowledge on the roles of omission and commission in guiding individual behaviors and decisionmaking processes, with a particular emphasis on their practical influence within the domain of tax compliance. We demonstrate that when nonresponse is viewed through the lens of commission framing—seen as a deliberate choice—it can lead to a significant surge in repayment rates. This stands in stark contrast to the outcomes observed when the same nonresponse is perceived through the lens of omission framing, which paints it as a passive oversight. Our findings highlight the importance of devising effective strategies to improve compliance and promote behavioral changes, spanning from tax compliance to broader corporate behaviors.

Building on the theoretical foundation, our research highlights the significant impact of perception shifts. Specifically, we examine how individuals move from viewing inaction as a simple passive oversight (omission) to recognizing it as a deliberate, active choice (commission). This shift is crucial. By emphasizing the intentional aspect of choice, we demonstrate the effectiveness of commission framing in countering the human tendency to uphold the status quo. Holz et al. (2023) support this view, with their findings showing the positive results of such framing techniques in corporate settings, particularly in improving tax compliance rates. Our results, consistent with prior research by Kettle et al. (2016), Hernandez et al. (2017), and Robitaille et al. (2021), underline the benefits of integrating behavioral insights into compliance systems. These combined strategies can enhance tax compliance methods and play a vital role in strengthening government revenue sources in the face of emerging economic challenges.

Lastly, we must recognize that the dynamics of commission versus omission extend beyond individual reflection. These principles influence broader societal viewpoints, affecting how we perceive others' actions, and subsequently, inform our self-assessments. Our research contributes to this conversation, providing empirical evidence demonstrating how subtle changes in framing can alter both internal and external views. Consistent with prior theories, it is clear that individuals often shift between these frames, using them strategically to avoid blame and maintain their self-image (Campbell & Sedikides, 1999; DeScioli, Bruening, & Kurzban, 2011). By highlighting this nuanced interaction, our study indicates the potential of interventions designed to emphasize the deliberate aspect of decisions in noncompliance situations. Such interventions, by focusing on this conscious decision-making, can heighten the perceived consequences of inertia, making inaction less appealing.

Practical implications

Our research underscores the significance of commission framing as an actionable approach for policymakers aiming to foster responsible behavior, notably in areas like government benefit schemes. Building on the foundational work about the influence of framing on behavior (Madrian, 2014), we emphasize that the framing of inactions (omissions) versus active decisions (commissions) has a notable influence, especially when examining issues like tax credit repayment and related government benefits.

Globally, the challenges related to tax credit repayments are pervasive, suggesting that the insights from our study have international relevance. For example, the US government, with its expansive suite over 1000 distinct benefits programs, has recorded a marked increase in social benefits expenditures, moving from \$2.25 trillion in 2011 to an impressive \$18.25 trillion in 2021 (Bureau of Economic Analysis, 2022). A significant challenge in effectively managing these programs is the issue of overpayments, largely due to beneficiaries' omissions in updating their eligibility status.² This pattern aligns with our inves-

²The scale of the overpayment issue in the United States is vast and growing. For example, from 2004 to 2020, the annual rate of Unemployment Insurance Overpayments remained alarmingly high, varying from \$7.6 billion (8.7%) in 2020 to \$3.6 billion (12.6%) in 2018 of the total unemployment insurance benefit payments (United States Government Accountability Office, 2021). Moreover, the problem of reporting integrity extends beyond unemployment insurance benefits and has been exacerbated by unforeseen events such as the COVID-19 pandemic. It has been reported that an estimated \$12.9 billion in overpayments were made across various unemployment programs from April 2020 through March 2021. Further, improper overpayments represented 6.15% of Medicare fee-for-service program spending in FY 2021, which translated to an astounding \$24.6 billion (Department of Health and Human Services, 2021, 211).

tigation into omission bias. Integrating commission framing strategies offers a promising avenue to address these overpayments, paving the way for more strategic and effective governmental resource allocation.

Drawing from Mazar and Hawkins (2015), who pointed out potential vulnerabilities with omission-centric strategies that individuals might leverage, our findings suggest a need for caution. It is vital for policymakers, when drafting services or policies, to assess and guard against the unintentional promotion of such exploitative behaviors through an overreliance on omissions. Where potential loopholes are identified, timely interventions should be enacted to uphold the intended policy objectives and maintain the trustworthiness of governmental programs.

Limitations and future research

While our study contributes valuable insights into the dynamics of commission versus omission framing in the context of tax compliance, it has limitations. One of the primary constraints pertains to the external validity of our findings. Though our research incorporates a diverse sample, its focus on the UK tax compliance landscape may limit the generalizability of the results. It would be beneficial to conduct cross-cultural studies to confirm the universal applicability of our findings, given the wide cultural variations in tax compliance attitudes and behaviors (Alm & Torgler, 2006).

Another dimension worth considering is the potential moderators of the effect. Individual differences, such as prior experience with tax systems, financial literacy, or personal values, could potentially interact with the commission framing effect. Investigating these interactions can grant a more comprehensive perspective on where commission framing proves most potent.

From a methodological viewpoint, future research could benefit from a multi-method approach. While our design effectively captures the nuances of commission versus omission framing, the incorporation of qualitative research methods, such as in-depth interviews, could delve deeper into the individual cognitive processes that drive these perceptions. This could offer a more granular understanding of how individuals rationalize their decisions within these framing contexts.

Finally, the realm of public policy and governmental benefit schemes is vast. We have spotlighted tax compliance, but the principles underscored in our research might be pertinent to other domains. Exploring the applicability of commission versus omission framing in other governmental or public policy domains, such as health or education, might yield fruitful revelations about human behavior and decision-making processes in these sectors. Such exploration would not only extend the boundaries of our understanding but also offer pragmatic recommendations for policymakers across different sectors. 11

CONCLUDING REMARKS

Our study emphasizes the power of commission framing as a countermeasure to omission strategies, particularly in the field of tax compliance, as evidenced by a large-scale natural field experiment. The reframing of noncompliance from an unintentional omission to a deliberate act resulted in heightened compliance rates, unaffected by traditional deterrence mechanisms like legal repercussions or fines. Our findings extend their implications to designing strategies that encourage compliance and behavioral change across various sectors, offering potentially transformative applications for government-led revenue mobilization initiatives and beyond.

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DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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