I Don't Want to Hear About it: Rational Ignorance among Duty-Oriented Consumers

Karine Nyborg*

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Abstract

Individuals with a preference for keeping moral obligations may dislike learning that voluntary contributions are socially valuable: Such information can trigger unpleasant feelings of cognitive dissonance. I show that if the initial belief about the social value of contributions is too low to merit a moral responsibility to contribute, duty-oriented consumers are willing to pay to avoid information. Information campaigns can make such consumers contribute by providing them with unwanted information.

JEL codes: D11, D62, D64, D89, H41, Q21.

Keywords: Voluntary contributions, public goods, responsibility, altruism, information campaigns, cognitive dissonance.

*Department of Economics, University of Oslo, P.O.Box 1095 Blindern, NO-0317 Oslo, Norway. E-mail: karine.nyborg@econ.uio.no. Phone: +4722857283, fax: +4722855035. This work was partly done while I was employed by the Ragnar Frisch Centre for Economic Research, some of it during my participation in the project “Environmental economics: policy instruments, technology development, and international cooperation” at the Centre for Advanced Study (CAS) at the Norwegian Academy of Science and Letters in 2005. Thanks to the Research Council of Norway for funding through the SAMSTEMT/RENERGI programmes, to the Frisch Center and CAS for financial, administrative and professional support, and to Geir Asheim, Kjell Arne Brekke, Anniken Greve, Steinar Holden, Tore Helstrup, Espen Moen, Michael Rauscher and two reviewers for comments and discussion.
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Individuals with a preference for keeping moral obligations may dislike learning that voluntary contributions are socially valuable: Such information can trigger unpleasant feelings of cognitive dissonance. I show that if the initial belief about the social value of contributions is too low to merit a moral responsibility to contribute, duty-oriented consumers are willing to pay to avoid information. Information campaigns can make such consumers contribute by providing them with unwanted information.

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1 Introduction

Voluntary contributions to public goods are frequently observed in everyday life: People contribute to charities, volunteer in schools and hospitals, recycle their household waste, and pay higher prices for eco-labeled or fairtrade-labeled goods.

Public authorities attempt stimulating voluntary contributions through various means, including economic incentives such as tax exemptions for charitable contributions. Attitude and/or information campaigns represent another type of instrument. However, while such campaigns seem popular among policymakers, it is not evident, from an economist’s perspective, why they might be expected to increase contributions. The present paper proposes one possible reason: information campaigns can present individuals with information they would rather not have, thus imposing on them a feeling of moral responsibility.

In most non-strategic economic models, more information cannot be harmful to the decision-maker. Below, no strategic interaction is introduced; still, I will show that in a certain class of situations, duty-oriented individuals strictly prefer to avoid information.

I define a duty-oriented consumer as an individual who compares her actual behavior against some ideal standard of behavior, experiencing a utility loss whenever her actual behavior falls short of that standard. The standard can thus be considered a measure of the individual’s perceived responsibility.

Responsibility, however, is a burden that individuals may try to ease. Recent experimental research indicates, indeed, that many subjects tend to avoid contexts associated with moral responsibility. While most subjects share generously as dictators in a dictator game, a substantial share of them prefer to opt out of the game altogether (Dana et al. 2006, Lazear et al. 2006, Broberg et al. 2007). Dana et al. (2007) found that an option to avoid information reduced generosity: In a binary version of the dictator game, most dictators preferred the "fair" outcome (5,5) to the "unfair" (6,1). In another treatment, Dana et al. made the recipients’ payoff uncertain, so that payoffs were either (5,5) and (6,1), as above, or (5,1) and (6,5), with equal probability. This uncertainty, however, could be resolved by dictators at no cost, simply by pushing a button. Only about half of the dictators chose to resolve the uncertainty, and in this treatment, dictators behaved more selfishly. While hardly consistent with a preference for the recipient’s welfare, such behavior may be explained by duty-orientation, provided that responsibility is context-dependent and/or information-dependent.

In the present paper, my focus will be on the role of information. I will assume that moral responsibility is increasing in the believed social value of

\[ (x, y) \] denotes \( x \) to the dictator and \( y \) to the recipient.

\(^2\)See also Larson and Capra (2009).
contributions: the more important I think my contribution is to society, the higher is, in my view, the morally ideal contribution.

The question is what to do when poorly informed about contributions' social value. Should I actively seek information, or base the responsibility judgement on my uniformed prior belief? If I have a disposition for wishful thinking, I could possibly choose a lower "prior" than the one I really believe in; if so, I should of course avoid information, since this could otherwise ruin my attempt at self-deception. However, the analysis below demonstrates that even without self-deception, there is a class of situations in which duty-oriented consumers strictly prefer to avoid information.

If my prior is on average correct, information can reveal that the true social value is either higher or lower than my prior. Consider, however, the case where my prior is too low to justify a moral responsibility to contribute at all. In this case, more information can only harm me: If the true social value is lower than my prior, I still have no responsibility and nothing is changed; if it is higher than my prior, responsibility is imposed on me.

For example, consider the situation of dictators in Dana et al.'s (2007) uncertainty treatment discussed above. If the uncertainty is not resolved, the dictator chooses between a payoff 5 or 6 to herself, not knowing the recipient’s outcome. The expected payoff to the recipient, however, is 3 with each choice. The expected total payoff to the pair (recipient plus dictator) is 8 if she chooses 5 and 9 if she chooses 6. Thus, neither the expected outcome for the recipient nor for the pair would speak for a moral responsibility to contribute (choose 5 over 6) in the state of uncertainty. If the uncertainty is resolved, however, it may either reveal that the true choice is between (5,1) and (6,5), confirming the *a priori* lack of responsibility to contribute; or it may reveal that true payoff alternatives are (5,5) and (6,1), inducing a responsibility to choose 5 (whether she considers this on the basis of the payoff for the recipient or the pair).³

In a world with a multitude of possible good causes and, moreover, plenty of reasons to be skeptical to unfamiliar charities, the case of no initial responsibility ascription is perhaps not all that uncommon. Moreover, even if the individual has at some point received information, costly recall and/or attention may work in a similar fashion as low uninformed beliefs: If information indicating moral responsibility needs to be salient in the individual’s mind in order to trigger contributions, the duty-oriented has no incentive to exert costly effort to store and retrieve such information. Thus, unless she is exposed to reminders – for example through attitude campaigns – her sense of responsibility may gradually decay.

I follow Andreoni (1990) in assuming that individuals derive a private benefit from their own contributions.⁴ While Andreoni’s impure altruist gets a "warm

³One may discuss whether there is not some kind of self-deception even here: the implied assumption is that the obligation to contribute when contributions are socially beneficial is stronger than the obligation to seek information about contributions' social value, see the discussion in section 8. Experimental evidence supports, however, the plausibility of this implicit assumption; see Lazear et al. (2006), Dana et al. (2007), Larson and Capra (2009).

⁴A preference for the aggregate level of a public good is insufficient to explain observed
"glow" of giving, that term is slightly misleading here, since the duty-oriented rather experiences a "cold shiver of not giving enough" (Bruvoll and Nyborg 2004). I have thus chosen to describe this private benefit in terms of self-image: the individual’s picture of herself as a responsible person depends on her contributions. Social psychological research confirms that "[...] one of the most powerful determinants of human behavior stems from our need to preserve a stable, positive self-image" (Aronson et al. 2005, p.166); this interpretation is, however, by no means crucial to the results.5

Whereas the model presented below draws extensively on Brekke et al. (2003), it differs from theirs in several respects, e.g. by more general specifications for duty-orientation and moral responsibility. Most importantly, while Brekke et al. did not explicitly consider the role of information and possible information avoidance, that is my main focus here.

In what follows, I focus on internalized moral motivation, disregarding social interaction effects such as reciprocal preferences or a desire for social approval.6 Further, I limit my attention to the case where the consumer herself has no direct part in the social benefits she considers contributing to. This implies, firstly, that there is no narrowly selfish motive to contribute. Secondly, the consumer’s experience of the value of her contribution will be like a credence good – a cognitive or psychological experience based on her beliefs about her action’s consequence for others – since she can never experience the true consequences for herself. Without information from external sources, erroneous beliefs thus will not be corrected, and the fact that they are erroneous will not affect the contributor's utility.

Attitude campaigns aiming at increasing voluntary contributions often provide two types of information: they emphasize the social importance of potential contributions, but also include information about the most efficient ways to contribute (where to place your recyclables, where to send your money). While my discussion will focus primarily on the first type of information, I also briefly consider the second.

2 The model set-up

Consider a population consisting of n individuals, who are identical except for a characteristic $\alpha_i \in \{0, 1\}$ determining i’s benefits from a public good $G$. To fix ideas, think of the public good as air quality, and its benefits as improved health for asthma patients; I will stick to this example throughout the paper.


6For studies incorporating such effects, see, for example, Rauscher (2006), Nyborg et al. (2006), Rege (2004), Hollander (1990), Sugden (1984).
Let \( \alpha_i = 0 \) mean that person \( i \) is healthy, while \( \alpha_i = 1 \) means that \( i \) is an asthmatic. Moreover, sort individuals such that for \( i = \{1, \ldots, m\} \), \( \alpha_i = 1 \), while for \( i = \{m+1, \ldots, n\} \), \( \alpha_i = 0 \). To establish the benchmark case, assume, first, that individuals have perfect information.

Individual \( i \)'s utility is given by (linear separability is assumed for the sake of simplicity):

\[
U_i = u(x_i) + \alpha_i G + S(g_i)
\]  

(1)

Here, \( u \) is a strictly increasing and concave function, \( x_i \geq 0 \) is \( i \)'s consumption of private goods, while \( S(g_i) \) is the individual’s benefits of maintaining a good self-image, which may depend on her contribution to the public good \( g_i \geq 0 \).\(^7\) Person \( i \)'s budget constraint is given by

\[
F = x_i + g_i
\]  

(2)

where \( F \) is an exogenous endowment (the assumption of equal endowments for all is made for the sake of simplicity and is not essential). Public good provision is determined by the sum of individual contributions:

\[
G = \beta \sum_{j=1}^{n} g_j
\]  

(3)

where \( \beta \geq 0 \) measures the efficiency with which monetary contributions are transformed into public good supply. \( \beta \) is, for now, exogenous and equal for everyone; I will return to the case of endogenous \( \beta \) below. To avoid focusing on strategic interaction, which is not my topic here, let the public good supply from others \( (j \neq i) \) be considered exogenous by \( i \). Assume, again for simplicity, that all individuals agree that social welfare \( W \) can be evaluated using unweighted utilitarianism:

\[
W = \sum_{j=1}^{n} U_j
\]  

(4)

In what follows, I will always assume that the individual \( i \) whose behavior is considered is a healthy person, i.e. that \( \alpha_i = 0 \). Again, this is not essential to the analysis, but implies a distinction between the benefactor and the beneficiary that simplifies the exposition.

The marginal social value of contributions will be a central concept below. By inserting from (1) – (3) into (4) and differentiating with respect to \( g_i \), we get\(^8\)

\[
\frac{\partial W}{\partial g_i} = -u'(F - g_i) + \beta S'(g_i)
\]  

(5)

\(^7\)Eq. (1) actually implies that asthma patients are better off than the healthy. A more plausible specification would be \( U_i = u(x_i) + \alpha_i(G - \hat{G}) + S_i \), where \( \hat{G} \) is the lowest air quality level not bothering asthma patients (and assuming \( G \leq \hat{G} \)). This would change no results, so I keep the simple specification (1).

\(^8\)Primes denote derivatives.
which is the marginal net social value of contributions: \( u'(F - g_i) - S'(g_i) \) is the marginal net cost covered by the contributor, while \( m \beta \) is the public good benefit to others. The phrase "the social value of contributions" refers to the public good benefit to others, \( m \beta \).

The above would correspond to a traditional homo oeconomicus model if \( S(g_i) = K \), where \( K \) is a constant. A healthy (\( \alpha_i = 0 \)) homo oeconomicus will not contribute: Contributions are costly, but give him no benefits. If such a person received information about the social value of his potential contribution, this would, of course, change nothing; he simply does not care.

The model corresponds to the impure altruism model of Andreoni (1990) if \( S(g_i) \) is interpreted as warm glow and is monotonously strictly increasing and concave. An impure altruist would typically contribute until his marginal benefit of consumption equals the marginal warm glow; if \( u'(F) < S'(0) \), contributions would be zero. Nevertheless, as long as warm glow depends on \( i \)'s monetary contribution \( g_i \), not its social welfare consequences, the impure altruist’s contribution is unaffected by its social value \( m \beta \).

The implicit assumption in Andreoni’s (1990) model is that \( \beta_0 \) is constant. Nyborg (2008) analyzes an impure altruism model in which the individual explicitly cares about the welfare consequences of her contribution, rather than \( g_i \), as such, and shows that while both contributions and utility for the healthy consequentialist impure altruist are increasing in \( m \beta \), this model does not produce information avoidance.

3 Duty-orientation

I define a duty-oriented consumer as an individual who compares her actual behavior against some ideal standard of behavior, experiencing a utility loss whenever her actual behavior falls short of that standard. This can be represented by the following type of self-image function:\(^9\)

\[
S(g_i) = f(g_i, g^*_i) \tag{6}
\]

where \( g^*_i \geq 0 \) is \( i \)'s view of the ideal contribution (a point at which further increases in contributions cannot improve self-image). Assume that \( f \) is continuous and twice continuously differentiable; that for any given value of \( g^*_i \), \( f \) has its maximum at \( g_i = g^*_i \); that \( f'_1 > 0 \) whenever \( g_i > g^*_i \), \( f'_1 = 0 \) when \( g_i = g^*_i \), and \( f'_1 \leq 0 \) when \( g_i < g^*_i \); and further, that \( f''_{11} \leq 0 \) everywhere, \( f'_2 < 0 \) when \( g_i < g^*_i \), and \( f'_2 = 0 \) when \( g_i = g^*_i \). \(^{10}\)

Duty-orientation is closely linked to cognitive dissonance (Festinger 1957). Aronson et al. (2005) define cognitive dissonance as "a drive or feeling of discom-

\(^9\)A similar specification is given in Brekke et al. (2003), footnote 6.

\(^{10}\)This is satisfied by, for example, \( f'(g_i, g^*_i) = -\alpha (g - g^*_i)^2 \), \( f''(g_i, g^*_i) = -\alpha \frac{(a - g^*_i)^2}{g^*_i} \), and \( f'''(g_i, g^*_i) = -\alpha \frac{(9g - 9g^*_i)^3}{(g^*_i)^3} \) (where \( \alpha > 0 \)). Also, functions of the type \( f^{II + k}(g_i, g^*_i) = \{f'(g_i, g^*_i)\} \) when \( g_i \leq g^*_i \), and \( 0 \) when \( g_i > g^*_i \) satisfy the conditions, for all \( k \in \{1, II, III\} \) specified above.
fort, originally defined as being caused by holding two or more inconsistent cognitions and subsequently defined as being caused by performing an action that is discrepant from one’s customary, typically positive self-conception” (p.166).11

Consider first the case where \( g_i \) is exogenously fixed. Maximizing utility with respect to \( g_i \), taking \( g_i \) as given, yields the following first order condition for interior utility optimum:

\[
f'_i = u'.
\]

Like the impure altruist, the individual contributes until the marginal benefit in terms of an improved self-image (the left hand side) just equals its marginal cost in terms of forgone consumption benefits (the right hand side). The effect of changes in the ideal can be seen by differentiating (7):

\[
\frac{dg_i}{dg^*_i} = -\frac{f''_{12}}{f''_{11} + u''}
\]

which has the same sign as the cross derivative \( f''_{12} \). Thus, provided that the duty-oriented is initially in an interior optimum, an increased ideal contribution increases the actual contribution whenever \( f''_{12} > 0 \).12 However, the actual contribution is always strictly lower than the ideal: While contributions are always associated with a strictly positive marginal cost in terms of lower consumption (\( u' > 0 \)), the marginal self-image gain goes to zero as \( g_i \) goes to \( g^*_i \).

If

\[
f'_i < u'
\]

for every \( g_i > 0 \), the individual is in a corner solution, contributing nothing. An increase in \( g^*_i \) can then increase her actual contributions if the change implies that (9) ceases to hold; otherwise \( g_i \) is unaffected. Thus, whenever \( f''_{12} > 0 \), \( g_i \) is a weakly increasing function of \( g^*_i \).

A crucial feature of the duty-orientation model, however, is that utility is decreasing in \( g^*_i \).13 Although a greater moral responsibility may induce the duty-oriented to contribute more, moral responsibility is a burden. Assume that the individual is initially in an interior optimum. Using (1) – (3), differentiating and using (7), we then get

\[
\frac{dU_i}{dg^*_i} = f'_2 dg^*_i.
\]

11 For economic analyses of cognitive dissonance, see e.g. Akerlof and Dickens (1982), Rabin (1994), Konow (2000), Oxoby (2004), Östling (2009). Note that cognitive dissonance is not only related to moral issues: "Most of us have a need to see ourselves as reasonable, moral, and smart. When we are confronted with information implying that we may have behaved in ways that are irrational, immoral, or stupid, we experience a good deal of discomfort" (Aronson et al. 2005, p. 166).

12 For \( f^I(g_i, g^*_i) \) and \( f^{II}(g_i, g^*_i) \) given in footnote 10. \( f''_{12} > 0 \) always. For \( f^{III}(g_i, g^*_i) \), \( f''_{12} > 0 \) if \( g_i > \frac{1}{2} g^*_i \). Thus, with \( f^{III}(g_i, g^*_i) \) and low initial contributions, increased \( g^*_i \) can give a discouragement effect: as the ideal becomes increasingly out of reach, \( i \) tries less hard to reach it. For specifications of the type \( f^{III+k}(g_i, g^*_i) \), results are similar except that all derivatives equal zero whenever \( g_i > g^*_i \).

13 See Bruvoll and Nyborg (2004).
By assumption, $f_{ij}^2 < 0$ when $g_i < g_i^*$. Since actual contributions are strictly lower than $g_i^*$ in interior solutions, an increase in $g_i^*$ strictly reduces utility.\(^{14}\)

## 4 The ideal contribution

For a duty-oriented person, a central question is what determines the ideal contribution.\(^{15}\) Since utility is decreasing in $g_i^*$, there is an incentive to reduce one’s responsibility; indeed, only when $g_i^* = 0$, the individual can fully escape cognitive dissonance without contributing at all.

Let us disregard the possibility of outright self-deception, and assume, instead, that the ideal contribution $g_i^*$ is an increasing function of the social value of contributions:

$$g_i^* = g^*(m\beta)$$

(11)

where $g^{*''} \geq 0$, and where there exists, moreover, a value $m\beta$ such that if and only if $m\beta \leq m\beta$, $g^*(m\beta) = 0$. In addition, assume that $g^*(m\beta) < F$ (the ideal must be feasible).

Several ethical principles could yield such a relationship. For example, the individual may think she should ideally contribute as long as her contribution strictly increases social welfare, or alternatively, as long as it increases welfare for others (Brekke and Nyborg 2010). Another example is the ethical principle used in Brekke et al. (2003), who defined $g_i^*$ as that contribution which would, hypothetically, have maximized social welfare if made by everyone.

This gives the following:

**Proposition 1** Assume that $g_i^*$ is given by (11), that $g^{*''} \geq 0$, $g^*(m\beta) < F$, and that there exists an $m\beta$ such that $g^*(m\beta) = 0$ if and only if $m\beta \leq m\beta$. Then, for a healthy duty-oriented individual $i$, the following holds: a) If $f_{ij}^{*} > 0$, $g_i$ is weakly increasing in $m\beta$. b) For all $m\beta > m\beta$, $g_i < g_i^*(m\beta)$. c) For all $m\beta > m\beta$, $U_i$ is strictly decreasing in $m\beta$. d) For $m\beta < m\beta$, $U_i$ is unaffected by marginal changes in $m\beta$.

**Proof.** See the Appendix. \(\blacksquare\)

In words: As long as the cross derivative $f_{ij}^{*}$ is positive, a heavier burden of responsibility makes the healthy duty-oriented increase her contributions; her utility, however, is reduced.

## 5 A principle of unconditional commitment

To understand these mechanisms, the particular self-image function and principle for determining $g_i^*$ used in Brekke et al. (2003) may be illustrating. In their

\(^{14}\)I return to corner solutions below.

\(^{15}\)Several studies indicate that views about the ideal behavior is at least partly determined through observing others’ actual behavior; e.g. Bicchieri (2006), Hauge (2010), Brekke, Kipperberg and Nyborg (2010). Since social interaction is not my focus here, this phenomenon is disregarded in the following.
specification, self-image is given by a quadratic specification,
\[ S(g_i) = -a(g_i - g_i^*)^2 \]  
(12)
where \( a > 0 \).\(^{\text{16}}\) Moreover, \( g_i^* \) was defined as the contribution maximizing social welfare if, hypothetically, chosen by all, i.e.
\[ g_i^* = \arg \max_{g_i} W \text{, subject to } g_i = g_j \text{ for every } j \in \{1, \ldots, n\}. \]  
(13)
This can be viewed as inspired by the Golden Rule and by Kant’s Categorical Imperative, and is a version of Harsanyi’s (1980) "principle of rational commitment" and Sugden’s (1984) "principle of unconditional commitment". Solving the maximization problem in (13) gives the following first order condition for interior welfare maximum:
\[ m_\beta = u'(F - g_i) \]  
(14)
which corresponds here to the usual Samuelsonian condition for optimal provision of a public good.\(^{\text{17}}\) If, however,
\[ m_\beta < u'(F) \]  
(15)
contributions do not produce sufficiently valuable public good benefits to outweigh the lost consumption; hence the contribution maximizing social welfare if chosen by everyone is zero. Consequently, if (15) holds, \( g_i^* = 0 \) and there is no moral obligation to contribute.

Differentiation of (14) with respect to \( m_\beta \) shows that for interior solutions, \( g^*(m_\beta) \) is strictly increasing in \( m_\beta \):
\[ \frac{dg^*_i}{dm_\beta} = \frac{1}{-u''} > 0 \]  
(16)
Hence, with these specifications, \( g_i^* \) is indeed an increasing function of the marginal social value of contributions, where \( m_\beta = u'(F) \). Whenever \( m_\beta \leq u'(F) \), \( g^*(m_\beta) = 0 \), while for all \( m_\beta \geq u'(F) \), \( g^* = \frac{1}{u''} > 0 \).

With the quadratic self-image function (12), we get the following first order condition for an interior utility maximum:
\[ g_i = g^*(m_\beta) - \frac{u'}{2a} \]  
(17)
which clearly shows that, given an interior solution, the individual contributes strictly less than \( g^*(m_\beta) \). Again, we need to consider the possibility of a corner solution. If
\[ a[g^*(m_\beta)^2 - (g_i - g^*(m_\beta))^2] \leq u(F) - u(F - g_i) \]  
(18)
\(^{\text{16}}\) Similar assumptions can be found in Woodward and Warren-Boulton (1984), Bruvoll and Nyborg (2004), Konow (2010) and Cappelen et al. (2007).
\(^{\text{17}}\) Note that in this maximization problem, \( f'_1 \) disappears: \( f'_1 = 0 \) when \( g_i = g_i^* \), which holds here by definition.
for every strictly positive \( g_i \), the self-image gain from a contribution cannot outweigh the resulting consumption loss, and the individual maximizes utility by contributing nothing. If \( g^*(m\beta) = 0 \), (18) obviously holds: With no moral obligation to contribute, there is no self-image loss by not contributing. Note, however, that (18) may hold even for low, but strictly positive levels of \( g_i^* \). In such cases the individual contributes nothing, but still experiences cognitive dissonance. Dissonance is only completely avoided when the social value of contributions is lower than its social cost, that is, low enough to yield \( g^*(m\beta) = 0 \).

**Proposition 2** With perfect information, \( S_i = - a(g_i - g_i^*)^2 \), and \( g_i^* = \arg \max_{g_i} W \), s.t. \( g_i = g_j \) for every \( j \in \{1, ..., n\} \), the following holds for the healthy duty-oriented individual: a) \( g_i \) is weakly increasing in \( m\beta \). b) \( U_i \) is weakly decreasing in \( m\beta \). c) Whenever \( m\beta < u'(F) \), \( U_i \) is unaffected by marginal changes in \( m\beta \).

**Proof.** See the Appendix. 

Consequently, if a healthy individual learns that the social importance of his contribution has increased, he will increase his contribution. But – unless his private consumption is even more socially valuable than contributions to the public good – his utility is strictly reduced: His burden of moral responsibility has become heavier.

6 **Limited information**

Having clarified the role of the social value of contributions, let me now turn to the case where individuals have limited knowledge of this value.

Most of us are aware that environmental degradation, hunger and injustice exist in abundance throughout the world. Nevertheless, our knowledge about the precise character of each potential sub-problem, its scope and severity, and whether and how something could be done to amend it, may be rather poor. I will interpret the model as a partial representation of a more complex world in which a large number of public goods and many groups of potential beneficiaries may exist, and use the model to study \( i \)'s choice of whether to seek information about and whether to contribute to some specific cause.\(^{18}\)

If an individual does not suspect at all that increased provision of the specific public good \( G \) might benefit someone, it seems hard to explain why he would even get the idea of seeking, or avoiding, information. Such complete ignorance is thus not the most interesting case to consider. Rather, by "ignorance" I will mean a state in which the individual has some notion that the social problem might possibly exist and that contributions might possibly be of value, but where he otherwise knows nothing about the number of beneficiaries \( m \) (or more generally, the magnitude of the problem) nor the efficiency of potential contributions.

\(^{18}\)I will stick to the use of "healthy" to denote \( \alpha_i = 0 \). This may be less intuitively appealing when the problem at hand is ill known; the general idea, however, is that "healthy" individuals 1) have no narrowly selfish reasons for contributing, 2) cannot judge the effect of contributions based on their own experience.
contributions $\beta$. One may think of, for example, a substance which $i$ knows to be emitted into the air, but which he has no further information about; he may simply know, on a general level, that some people react to some substances.

Imagine that there exists a verification agency which can provide perfect information about the true value of $m\beta$. Assume, moreover, that such information can be bought by the individual at a fixed cost $C$. Hence, the individual can be in one of two states; ignorant (uninformed) or informed. If informed, the individual knows $m\beta$ perfectly.\footnote{Alternatively, one may assume that prior beliefs are updated in the direction of received information. This would not matter substantially; I stick to the simple assumptions.} If ignorant, the individual’s belief about $m\beta$ is given by a subjective probability distribution $h(m\beta)$ with expectation $E(h(m\beta)) = B^0_i$, where $B^0_i$ is $i$’s uninformed prior belief.

The individual is now faced with the choice of whether to stay uninformed, denoted $\tau_i = 0$, in which case he keeps his initial beliefs and pays no information cost; or whether to collect information, denoted $\tau_i = 1$, in which case he pays $C$ and becomes perfectly informed about $m\beta$. This decision is made before the contribution decision. To incorporate the choice of whether to actively seek information, the budget constraint (2) must be replaced by

$$F = x_i + g_i + \tau_i C.$$ \hfill (19)

Let us continue to consider the example from the previous section, where $S_i = -a(g_i - g^*_i)^2$ and $g^*_i$ is the contribution $i$ thinks everyone should make. If the individual chooses to become informed, this will bring us back to the perfect information case, and the contribution decision will be made as before (except that available income has been reduced by the amount $C$). If the individual decides to stay ignorant, I will assume that the self-image function is the same, but that she now determines her moral obligation $g^*_i$ using the following adjusted principle: I should, ideally, contribute that amount which would maximize expected social welfare if contributed by everyone, given my subjective probability distribution $h(m\beta)$.\footnote{That is, I assume that uncertainty in parameters needed for responsibility ascription is taken care of in the responsibility ascription process itself. Alternatively, one could assume that the healthy duty-oriented maximizes $[U(x_i) + Ef(g_i, g^*_i)]$ (see Asheim 2010). This would make the analysis substantially more complex, due to nonlinearity of the $f$ function. Moreover, in the present context it is not obvious why the consumer would find it relevant to use $Ef(g_i, g^*_i)$ as the basis for her choice; after all, if her assessment of $g^*_i$ is based on erroneous beliefs, but she does not receive information revealing this, the true $m\beta$ will not affect her in any way.} That is, $g^*_i = \arg \max_{g_i} EW$, subject to $g_i = g_j$ for every $j \in \{1, \ldots, n\}$, where $EW$ is given by

$$EW = \sum_{j=1}^{n} [u(F - g_j) + B^0_i \sum_{j=1}^{n} g_j].$$ \hfill (20)

Solving this maximization problem yields the following first order condition for an interior solution:

$$B^0_i = u'(F - g_i).$$ \hfill (21)
which corresponds to eq. (14), except that $m\beta$ is now replaced by $B^0_i$. Thus, the ignorant individual will feel a responsibility to contribute (i.e., $g^*_i > 0$) if

$$B^0_i > u'(F).$$

(22)

Corresponding to the result obtained in Section 3, we have that

$$\frac{dg^*_i}{dB^0_i} = \frac{1}{-u'} > 0.$$

(23)

Consequently, $g^*_i$ can be written as a function of $i$’s belief $B_i$, $g^*_i = g^*(B_i)$, where $g^*$ is the same function as in the previous section, and where $B_i = B^0_i$ if $\tau = 0$ and $B_i = m\beta$ if $\tau = 1$.

Now, will the duty-oriented seek or avoid information? Proposition 2 indicates that the duty-oriented would prefer not to receive information that $m\beta$ is higher than she thought. However, she does not expect new information to change her beliefs in any particular direction, since $E(h(m\beta)) = B^0_i$.

Let us consider two cases separately. First, if the individual’s initial belief $B^0_i$ is sufficiently high, i.e. $B^0_i > u'(F)$, she feels a moral obligation to contribute even when ignorant. New information might either add to (if $B^0_i < m\beta$) or ease (if $B^0_i > m\beta$) this burden of moral responsibility, and there is no reason to expect one to be more likely than the other. Thus, disregarding the cost $C$, there is no strong reason to believe that duty-oriented consumers would systematically avoid, nor seek, information in this case.\footnote{It is not necessarily the case that she is indifferent in expected utility terms, though, even if $C = 0$; this depends on the curvature of $U_i$ as a function of $m\beta$ and on the subjective probability distribution $h(m\beta)$. Depending on the details of $u(x_i)$ and $h(m\beta)$, the consumer with high prior beliefs may seek information, avoid information, or be indifferent. For details, see the Appendix.}

If $C > 0$, this provides, of course, an argument for not seeking information.

The most interesting case, however, is the case where the initial belief is too low to merit a moral obligation in the initial situation; that is, when $B^0_i < u'(F)$. In this case, $g^*_i(B^0_i) = 0$. Since there is no obligation, the individual does not experience cognitive dissonance by not contributing. Her utility if staying ignorant ($\tau_i = 0$) is, thus, simply given by $u(F)$; there is no self-image loss.

If she does seek information ($\tau_i = 1$), she may find that $m\beta$ is either higher or lower than $B^0_i$. If it is lower, she will still feel no obligation to contribute; her utility will then be given by $u(F - C)$, which is obviously strictly lower than $u(F)$ as long as $C > 0$. If it turns out, on the other hand, that $m\beta > u'(F)$, she will feel obliged to contribute. She will still not necessarily contribute (see eq. (22)); but whether she does contribute or not, she will now (in addition to having paid the cost $C$), face cognitive dissonance. Her utility will now be given by $u(F - C - g_i) - a(g_i - g^*_i(m\beta))^2$, where $g^*_i(m\beta) > 0$ and $g_i \geq 0$. It should be immediately clear that this is always strictly less than $u(F)$, her utility if not collecting information. Moreover, it is strictly less than $u(F)$ even if information were costless ($C = 0$). Hence, if initial beliefs are sufficiently low, getting more information can do the duty-oriented individual no good, and may well do her harm. This leads directly to the next Proposition:
Proposition 3 If \( B_0^i \leq u'(F_i) \), there exists a strictly negative information cost \( C < 0 \) such that for every information cost \( C > C \), the healthy duty-oriented consumer strictly prefers not to acquire information.

In other words, in this case, the consumer is willing to pay a strictly positive amount to avoid information.

The above argument was based on a particular principle for determination of \( q^*_i \), as well as a quadratic self-image function. The following proposition specifies conditions for the information avoidance result to hold more generally.

**Proposition 4** Let \( S(g_i) \) be given by eq. (6), and let \( g_i^* = g^*(B_i) \) be a weakly increasing function of \( i \)'s belief \( B_i \). Assume, moreover, that there exists a \( B_0^i \) such that \( g^*(B_0^i) = 0 \) whenever \( B_i \leq B_2 \). Further, assume that \( B_i = B_1^i \) if \( \tau = 0 \), while \( B_i = mB_0^i \) if \( \tau = 1 \). Then, if \( B_0^i \leq B_i \), there exists a strictly negative information cost \( C < 0 \) such that for every information cost \( C > C \), the healthy duty-oriented consumer strictly prefers not to acquire information.

**Proof.** See the Appendix.

The question remains, of course, how plausible (or common) it is that \( B_0^i < u'(F_i) \) (in the more general version, that \( B_0^i < B_i \)). While it seems natural not to feel obliged to contribute to a cause one knows next to nothing about, I do not intend to claim that \( B_0^i \) is always low. Nevertheless, recall that the uninformed prior belief \( B_0^i \) is, almost by definition, not well founded. Since it would be in the duty-oriented’s interest to have a low prior, any self-serving bias in the formation of uninformed prior beliefs would favor low priors.

Another argument is the one mentioned in the introduction: recall and/or attention may be costly. Assume that a feeling of obligation requires that information about the social value of contributions must be salient in the individual’s mind. The information must thus not only be received, but mentally processed, stored, and retrieved; all of which may require costly cognitive effort. The prior belief \( B_0^i \) might thus be interpreted as the salient belief at the time of the contribution choice, such that insufficient salience corresponds to \( B_0^i \leq B_i \).

Costly information processing would play much of the same role as the information cost \( C \) in the analysis above. If information is unpleasant, one may not be willing to exert the required effort to keep it salient. With costly information processing, however, the individual would actually know, when she decides whether to exert effort to keep the information salient, whether the information is unpleasant or not. With this interpretation, campaigns could work even without providing new information; the role of a campaign could simply be to retrieve and make salient knowledge that the individual already possesses.

Frequent reminders could thus be an unpleasant, but effective way to keep obligations salient in the duty-oriented’s mind.

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\(^{22}\)Indeed, research within both social psychology and economics has established that self-serving bias in belief formation is common (see, e.g., Aronson et al. 2005 pp.119-122, Konow 2009).

\(^{23}\)For discussions of the psychology of attention and memory, see, for example, Styles (2005) or Magnussen and Helstrup (2007).

\(^{24}\)In the city of Oslo, for example, collection units for delivery of hazardous household waste
7 Endogenous social value of contributions

As mentioned in the introduction, attitude campaigns often include information about how to contribute: how much to clean one’s recyclables, where to place them for collection, what product to avoid because it is especially environment-hostile, or which address or bank account number to use for charitable contributions.

Information of this type can increase the efficiency of contributions, thus changing $\beta$. This would imply that efficiency of contributions is an individual-specific parameter, whose value depends endogenously on whether the individual is informed. The production of the public good is now determined by

$$G = \sum_{j=1}^{n} \beta_j(\tau_j) g_j$$

which replaces equation (3), where $\beta_j(\tau_j)$ is the efficiency parameter of individual $j$ as a function of $j$’s information choice.

To illustrate this, assume that $G$ cannot be provided directly by individuals, but must be channelled through a charitable organization. Say that there exists only one truly charitable organization with known efficiency $\tilde{\beta}$; with any other recipient of contributions, no public good supply will result. There exists a large number $K$ of bank accounts in society, and only one of these belongs to the charitable organization. Assume that $K$ is known.

For the sake of argument, assume now that $m$, the number of beneficiaries, is perfectly known, and that "being ignorant" simply means not knowing the bank account number of the charity. Contributing in a state of ignorance would then mean to pick a bank account number at random, yielding an expected efficiency of $\tilde{\beta}/K$. Hence, the individual’s belief about the social value of his contribution can now be stated as

$$B_i = \begin{cases} m\tilde{\beta} & \text{if } \tau_i = 1 \\ m\tilde{\beta}/K & \text{if } \tau_i = 0. \end{cases}$$

Consider first the case where $C = 0$. Using the general specification from above, assume that $m\tilde{\beta}/K \leq B_i$, so that $g^*(m\tilde{\beta}/K) = 0$. Moreover, assume that $g^*(m\tilde{\beta}) > 0$. The duty-oriented then does not feel obliged to contribute under ignorance, but knows in advance that he will feel an obligation to contribute once he learns the right account number. His utility, thus, will strictly decrease once he becomes informed.

In this case, the duty-oriented is willing to pay a strictly positive amount to avoid the information. For him, ignorance is bliss: Knowing how to contribute leaves him with a heavier burden of moral responsibility.

Nevertheless, if the charity, or others, succeed in providing him with the unwanted information, he will start contributing. Hence, although the duty-oriented does not want to hear, he will act upon the information if he does

are placed in easily visible places, decorated by photographs of an infant and the following text: "You won’t poison me, will you?"

$^{25}$Thanks to Kjell Arne Brekke for suggesting this interpretation.
receive it; it is, consequently, in the charity’s (or rather, the beneficiaries’) interest to try to tell him.

8 Discussion

There is an important caveat to the above results. I have assumed that self-image depends on actual and ideal contributions, but not on actual and ideal information-seeking. If the duty-oriented felt obligated to seek information, it is less obvious that he would in fact avoid information.²⁶

The experiments by Lazear et al. (2006) and Dana et al. (2007), indicate, however, that ambiguity about the possible consequences of one’s contributions reduces contributions, and that many subjects choose not to resolve the uncertainty even when this is costless to them (see also Larson and Capra 2009). This is consistent with the view that obligations to contribute, once the consequences have been made clear, is felt as stronger than the obligation to clarify those consequences. Thus, many seem to adopt Kierkegaard’s view: Innocence is ignorance.

Social psychologists have pointed out that cognitive dissonance can potentially be reduced by changing one’s ideals rather than by changing actual behavior (see, e.g., Aronson et al. 2005). It is well documented that views of fairness tend to be self-serving (e.g., Konow 2000). Similarly, self-serving interpretation of facts seems to be very common (see, e.g., Aronson et al. 2005, Ch.4); this is presumably particularly important for non-verifiable factual information, such as accounts of others’ utility. In the above analysis, the principle determining the duty-oriented’s moral obligations was assumed fixed. For simplicity, I also assumed that asthmatics’ marginal utility of \( G \) was perfectly known. Nevertheless, if the government or others tried to impose heavy moral obligations on individuals, it is certainly conceivable that those individuals would respond by changing their moral principles or beliefs (Rabin 1994).

Although outside the scope of the present paper, laboratory experiments would be an interesting way to test the predictions presented above. The theory predicts that those who prefer avoiding information also 1) will not contribute in the absence of information, 2) will contribute, and/or experience a loss of self-image (bad conscience), if the information is provided. One possible experimental design would be to ask for contributions to a charitable project subjects are unfamiliar with, but before the contribution choice let subjects choose between two alternatives: certain revelation of information, and a lottery in which such information is provided with a probability less than 1. While impure altruists whose warm glow is increasing in the social value of contributions would prefer to reveal the information (see Nyborg 2008), duty-oriented individuals may prefer the lottery. Duty-oriented who choose the lottery and get informa-

²⁶He may still to some extent resist information, though: Recall that for interior solutions, a duty-oriented person will always contribute strictly less than \( g^*(m|g) \). In the same vein, he may seek less information than he ideally thinks he should. A formal analysis of this remains to be done.
tion would be more likely to contribute than those who choose the lottery and do not get information (note, however, that the former group would not necessarily contribute; they may choose, instead, to realize the entire utility loss in terms of cognitive dissonance rather than lower consumption).

9 Concluding remarks

If moral responsibility is a burden to the individual, and if, moreover, this burden is to some extent endogenous to her, there is an incentive to avoid situations which may face the individual with a heavier burden of responsibility. Economic analysis of voluntary contributions needs to take this into account. Although a duty-oriented consumer might contribute a lot the moment she has accepted a personal responsibility for an issue, she might go to quite some lengths to avoid being faced with that responsibility.

I have shown that if prior beliefs about the social value of contributions are sufficiently low, duty-oriented consumers are willing to pay a strictly positive amount to avoid information. Attitude and information campaigns may thus increase contributions simply by informing duty-oriented consumers about social needs they would have preferred to be ignorant about.

Does this mean that attitude campaigns should be used more extensively, as a cheap means to increase the provision of public goods? Perhaps, but the answer is not straightforward. If self-image benefits are included in the social welfare function, cognitive dissonance must be counted as a social cost; and there is no guarantee that the extra burden of moral responsibility caused by an attitude campaign is outweighed by the social benefits of increased contributions. Since my scope has been positive rather than normative analysis, I will not pursue this issue further here.

References


A Proofs

Proof of Proposition 1:

Proof. a) Consider first the case where the initial solution is interior. Then, utility maximization yields the first order condition

\[ f_1'(g_i, g^*(m\beta)) = u'(F - g_i). \]  

(26)

Differentiating, we get

\[ f_{11}' dg_i + f_{12}'' g'' d(m\beta) = -u'' dg_i \]

or

\[ dg_i \]

\[ d(m\beta) = -\frac{f_{12}'' g''}{f_{11}'' + u''}. \]
which has the same sign as \( f'_{12} \) (unless \( g'' = 0 \), which occurs only when \( m\beta \leq m\beta \) and consequently \( g_i = 0 \)).

Consider then the case where \( g_i = 0 \), which occurs when \( f'_1(0, g^*(m\beta)) \leq u'(F) \). If \( f'_1(0, g^*(m\beta)) < u'(F) \), an incremental increase in \( m\beta \) will not change the fact that \( f'_1(0, g^*(m\beta)) \leq u'(F) \), and contributions are unchanged. If \( f'_1(0, g^*(m\beta)) = u'(F) \), an increase in \( m\beta \) changes \( f'_1 \) by \( f'_{12}g''d(m\beta) \), which has the same sign as \( f'_{12} \) unless \( m\beta \leq m\beta \), in which case \( g'' = 0 \) and thus \( f'_{12}g''d(m\beta) = 0 \). ■

b) \( m\beta > m\beta \) implies that \( g^*_1(m\beta) > 0 \). The proof is by contradiction: Assume that in optimum, \( g_i = g^*_1(m\beta) = 0 \). If contributions were reduced by one unit, consumption benefits would increase by \( u'(F - g^*(m\beta)) > 0 \), while the marginal self-image loss would be \( f'_1(g^*(m\beta), g^*(m\beta)) = 0 \). Hence the situation \( g_i = g^*(m\beta) > 0 \) could not have been a utility maximum. A similar argument holds for \( g_i > g^*(m\beta) > 0 \): If, from this situation, contributions were reduced by one unit, the marginal consumption utility gain would again be positive, while the marginal self-image change would either be zero or negative (since \( f'_1 \leq 0 \) when \( g_i > g^*_i \)).

c) For \( m\beta > m\beta \), \( g^*(m\beta) > 0 \). Consider first an initial solution. Differentiating utility with respect to \( m\beta \) gives

\[
\frac{dU_i}{d(m\beta)} = \frac{dg_i}{d(m\beta)}(f'_1 - u') + f'_{12}g''
\]

where, in the last line, I use that \( f'_1 = u' \) in an interior solution. Due to b) above, we know that \( f'_{12} < 0 \) in this case.

However, even if \( g^*(m\beta) > 0 \), it may happen that \( g_i = 0 \). In this case, we know from above that \( f'_1 - u' \leq 0 \) and that \( \frac{dg_i}{d(m\beta)} \) is either zero or has the same sign as \( f'_{12} \). Using again that \( \frac{dU_i}{d(m\beta)} = \frac{dg_i}{d(m\beta)}(f'_1 - u') + f'_{12}g'' \), we see that the last term is negative, as above. Considering the first term, \( f'_1 - u' \) is either negative or zero. If it is zero, i.e. the individual is indifferent between contributing and not contributing, \( \frac{dU_i}{d(m\beta)} < 0 \). If \( f'_1 - u' < 0 \), the individual strictly prefers to not contribute, in which case \( \frac{dg_i}{d(m\beta)} = 0 \) (see a) above). Hence, in the corner solution case as well, \( \frac{dU_i}{d(m\beta)} < 0 \).

d) \( m\beta \) affects utility only through \( g^*(m\beta) \). A change in utility must thus occur via a change in \( g^*(m\beta) \). If \( m\beta < m\beta \) initially, an incremental increase in \( m\beta \) may lead to a new situation where either \( m\beta = m\beta \), or (still) \( m\beta < m\beta \), while \( g^*(m\beta) > 0 \) requires that \( m\beta > m\beta \). Thus, an incremental increase in \( m\beta \) when \( m\beta < m\beta \) leaves \( g^*(m\beta) \) and thus utility unchanged.

**Proof of Proposition 2:**

**Proof:** a) Consider first the case where the initial solution is interior. From (17), inserting from (2), we have

\[
g_i(m\beta) = g^*(m\beta) - \frac{u'(F - g_i(m\beta))}{2a} \tag{27}
\]
where the actual contribution is written as a function of its social value. Differentiating this with respect to $m\beta$, using (16), we get

$$\frac{dg_i}{d(m\beta)} = \frac{2a}{-u''(2a - u'')} > 0.$$  

(28)

If the initial contribution is zero, contributions will increase if and only if the change implies that (18) ceases to hold; otherwise $g_i$ is unchanged. We know from eq. (16) that $g_i$ is strictly increasing in $m\beta$ unless $m\beta < u'(F)$. If $m\beta < u'(F)$, however, (18) holds with strict inequality. If so, the inequality will still hold after an incremental increase in $m\beta$, so contributions will stay unchanged at zero. If the individual is initially indifferent between contributing and not contributing, that is, if $g_i - g^*(m\beta) = u(F) - u(F - g_i)$ for some strictly positive $g_i$, a marginal increase in $m\beta$ will make contributing strictly preferable and the individual will go from $g_i = 0$ to $g_i > 0$, so in this case the increase in $g_i$ is strict.

b) For an interior solution, the change in utility due to a marginal change in $m\beta$ is given by

$$\frac{dU_i}{d(m\beta)} = -u' \frac{dg_i}{d(m\beta)} - 2a(g_i - g^*(m\beta))(\frac{dg_i}{d(m\beta)} - \frac{dg^*_i}{d(m\beta)}) \frac{dg^*_i}{d(m\beta)}$$  

(29)

$$= \frac{dg_i}{d(m\beta)}[-u' - 2a(g_i - g^*(m\beta))] + 2a(g_i - g^*(m\beta)) \frac{dg^*_i}{d(m\beta)}$$  

$$= \frac{2a(g_i - g^*(m\beta))}{-u''} < 0$$

where the last line is obtained by using (17) and (16). We know from (17) that $g_i - g^*(m\beta) < 0$; hence the sign of $dU_i/d(m\beta)$ is unambiguously negative.

For an initial corner solution $g_i = 0$, we have that $U_i = u(F) - a(g^*(m\beta))^2$ initially. Then,

$$\frac{dU_i}{d(m\beta)} = -2ag^*(m\beta)g'' \leq 0.$$  

(30)

c) We know from (14) and (16) that whenever $m\beta \leq u'(F)$, $g^*(m\beta) = 0$. Since $m\beta$ affects $U_i$ only via $g^*(m\beta)$, utility is unaffected as long as $g^*(m\beta)$ is unaffected. When $m\beta < u'(F)$, we will still have $m\beta \leq u'(F)$ after an incremental increase in $m\beta$. Thus, if $m\beta < u'(F)$, $dU_i/d(m\beta) = 0$.

Proof of claim given in Footnote 21:

Proof. The expected utility increase due to a decrease in beliefs $B_i$ may differ in magnitude from the expected utility decrease due to an equally large increase in $B_i$. For example, if utility were linear in $m\beta$ and $h(m\beta)$ were a symmetrical distribution, the individual would be indifferent to costless information; if utility were concave in $m\beta$, or if it were linear and $h(m\beta)$ had a thick upper tail, the individual would be willing to pay to avoid information, and if utility were concave and $h(m\beta)$ were symmetrical, the individual would prefer to get costless information. However, the curvature of $U_i$ as a function of $m\beta$ is indeterminate,
unless one makes more specific assumptions about \( u(x_i) \). Using (29), we find \( d^2 U_i/d(m\beta)^2 \) by differentiation:

\[
\frac{d^2 U_i}{d(m\beta)^2} = \frac{2a}{(u'')^2} \left[ -\frac{-(u'')^2 - 2a(g_i - g^*(m\beta))u'''}{-u''(2a - u'')} \right].
\]  

(31)

The sign of this expression is given by the sign of \( -\frac{-(u'')^2 - 2a(g_i - g^*(m\beta))u'''}{-u''(2a - u'')} \). Hence, \( U_i \) is strictly concave in \( m\beta \) if \( -\frac{-(u'')^2 - 2a(g_i - g^*(m\beta))u'''}{-u''(2a - u'')} < 0 \) (which always holds if \( u''' \leq 0 \)), but general conclusions cannot be drawn.

**Proof of Proposition 4:**

**Proof.** If \( B^0_i \leq B_i \), then by assumption \( g^*(B^i) = 0 \). Since the self-image function (6) reaches its maximum when \( g_i = g^*(B^i) \), then in the state of ignorance, self-image and utility is maximized at \( g_i = 0 \). Assume first that \( C = 0 \). Information can either reveal that \( m\beta \) is higher than \( B^0_i \) or lower. If \( m\beta \leq B^0_i \), it must be the case that \( g^*(m\beta) = 0 \), and utility is unchanged (see the proof for Proposition 1). If \( m\beta > B^0_i \), utility will still not change if \( m\beta \leq B_i \); if, however, it turns out that \( m\beta > B_i \), a moral obligation to contribute will arise \( (g^*(m\beta) > 0) \) and utility will strictly decrease.

Thus, when \( B^0_i \leq B_i \), \( U_i \) can decrease or stay unchanged, but not increase, as a result of seeking costless information. The individual is thus willing to pay a strictly positive amount to avoid becoming informed. ■