

Encouraging Civic Behaviour: A Randomised Controlled Trial of Interventions to Influence Organ Donor Registration¹

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1st Draft and very preliminary findings, please treat with caution!

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(I) Introduction: Resolving Social Dilemmas and Civic Behaviour Issues

Influencing citizens in order to help resolve social dilemmas and to encourage civic behaviour is a core aspect of the work of modern government. Social dilemmas occur where there are conflicts of interest between individuals and society more broadly (Van Vugt et al 2000). Civic behaviour refers to ‘action that shows regard for others; reflects both wisdom and responsibility in its employment and...is oriented toward the collective good’ (Cotterill et al, 2009: 3). Consideration for the environment, paying taxes, and looking after one’s own health are just a few areas where individual behaviour has a civic dimension, since individual actions or inactions have consequences for wider society. They are also social dilemmas, with the needs and desires of individuals often in conflict with those of society as a whole. In such areas governments are challenged to find ways of encouraging civic behaviour and there have been recent debates about the most effective methods for doing this (John et al. 2009).

Much of the recent discussion of public policy interventions to influence citizen behaviour has centred around the use of policy tools which exploit principles from behavioural economics. These policy tools have gained popularity in the UK and elsewhere partly under the influence of arguments put forward by Thaler and Sunstein in their book *Nudge* (Thaler and Sunstein, 2008). Several recent policy papers and think tank publications have also made the case for using such approaches (PM’s Policy Unit, 2007; IPPR, 2007; NEF, 2005; Cabinet Office, 2004).

While there is fairly robust science behind the principles underlying behavioural economics itself, there is less evidence of how well these principles stand up in empirical terms when they are translated into policy designs in the area of civic behaviour. There is also little evidence of how these approaches compare to other methods for generating civic behaviour. In particular, there is another school of thought which suggests an alternative to the largely top-down ‘nudging’ approach to behavioural change in citizens. The alternative put forward by John et al (2009) has a more bottom-up orientation and involves governments providing citizens with opportunities collectively to deliberate and ‘think’ their own way through to collectively welfare maximizing solutions.

In this paper we put these two broad approaches to behaviour change to the test in a randomized controlled trial examining the issue of organ donor registration. Organ donation is a collective action problem with a strong civic dimension. British citizens benefit from a National Health Service which provides the institutional structure to allocate life saving organs to those in need. All citizens are potential recipients of organs. The vast majority, health permitting, are also potential posthumous donors. Yet the pool of donors is relatively small because only a minority of the population (27%) is signed up to the organ donor register. In social dilemma terms, there is a free rider problem.

One way round this problem is to shift ‘choice architecture’ so that citizens are automatically assumed to be willing donors unless they opt out. This type of ‘presumed consent’ system is used widely across Europe and the UK government has given serious consideration to a change towards such a system. A recent Taskforce, however, recommended against this option, partly due to concerns over perceived coercion and a negative backlash from altruistic donors, and a possible erosion of trust between patients and health professionals (Organ Donation Taskforce, 2008). One alternative is to retain the current system and instead work on persuading people to join the register. This is the present strategy of the UK government which has chosen to retain the current informed consent or ‘opt in’ system while introducing a national target to increase organ donation registrations to 50% of the population by 2012 using a national information campaign to help achieve this.

However, there is little evidence upon which to base such a campaign and relatively little is known about which methods of persuasion and information campaigning are most effective. This paper asks the simple question, does an information booklet based around behavioural economics principles generate more organ donor registrations than discussion between citizens about organ donation? Or, to put it another way, does a ‘nudge’ have more or less impact than a ‘think’? After presenting behaviour change principles under each of these two headings, we then summarise current knowledge on methods encouraging organ donor registration before outlining the study methodology and presenting some preliminary findings and discussion.

Using behavioural economics to encourage civic behaviour

Behavioural economics rejects the assumptions of neo-classical economics that humans make decisions as rational utility maximisers with fixed preferences, and instead argues for a bounded rationality conception of human decision-making (Simon, 1947/ 1997). Its advocates argue that for public policy interventions to be effective they should be designed to reflect this reality about human decision-making. Centrally, human decision-makers are seen as possessing limitations in terms of cognitive processing, time and resources, factors which prevent them from searching comprehensively among the different options each time they make a decision. For these reasons citizens take shortcuts and employ heuristics to aid decision-making. Frequently this involves opting for the status quo, or following the herd, options which cost little, or nothing, in time and effort. Moreover preferences are socially constructed rather than fixed, and so amenable to influence from government and other credible sources. The argument is that governments can design policy tools and alter the way that options are presented to people to endear them towards certain socially optimal choices.

The tools of government promoted by behavioural economists differ in some important respects from conventional tools of government intervention. While traditional regulatory instruments are commonly deployed to reduce negative *externalities*, behavioural economists focus on rectifying negative *internalities* to promote individual welfare. Hernstein (1993) defines these as the ‘private costs due to self-control problems and procrastination’ (see Kooreman and Prast, 2007: 6).

Furthermore, compared to traditional authoritative command and control techniques, the tools advocated by behavioural economists have a more libertarian flavour. Nudging is described by Thaler and Sunstein as a form of ‘libertarian paternalism’ in which citizens choose from different options without significant coercion. However, since the choices citizens make are not always deemed to be in their own best interests, they are steered and encouraged to choose certain options. It is viewed as legitimate for government to take on the role of ‘choice architect’, that is, to organise the context of decision-making to endear citizens towards certain options.

Common behavioural economics techniques include framing and changing defaults. Framing involves changing the way a policy problem is presented to individuals, for instance by stressing the potential losses to an individual rather than the potential gains. Prospect theory (Kahneman and Tversky 1979) alerts us to the ‘endowment effect’ which suggests that when we are already in possession of something, we are very reluctant to lose it. Related work on framing by political elites is most effective when there is a strong identification with those who are generating the frames, for instance because they are liked or regarded as a credible and trustworthy source (Druckman, 2001).

Changing the default is a method employed in recognition of the status quo bias and inertia inherent in decision-making (Samuelson and Zeckhauser, 1988; O’Donoghue and Rabin, 1999). By presenting certain options as the default, governments can steer people towards a socially desired choice. If individuals view the default option as reflecting policy makers’ preferences, this may provide them with the rule of thumb needed to help them ascertain that the default is socially accepted.

An additional tool of behavioural economics is to engineer the context of individual decision-making to make people’s choices visible to their peers. The ‘information disclosure’ approach (Thaler and Sunstein, 2008: 189) exploits the idea that people care what their peers think of them, and that making choices visible enables individuals to signal to others that they have chosen a socially beneficial option.

While mainstream behavioural economics applications focus largely on strategies to change behaviour for the benefit of the individual concerned, recent academic and policy contributions following in this vein focus on the use of behavioral policy tools for attaining both individual *and* wider civic benefit (Halpern et al., 2004; John et al, 2009; Kooreman and Prast, 2007). By improving the choices made by individuals, it is also viewed as possible to improve collective welfare.

Using discussion and deliberation to encourage civic behaviour

The alternative method for effecting behavioural change focuses on strategies involving citizen deliberation and dialogue. Such methods are part of a new repertoire of policy instruments which reflect the deliberative turn in democratic theory and practice (Smith,

2005). These strategies have a more direct civic orientation, and focus on collective rather than individual decision-making.

Such methods are based on the notion that public dialogue and exchange of ideas has an educative effect, and that discussing issues in public leads citizens to place greater weight on the collective good than their own self-interest. A task for governments wishing to make greater use of such strategies is to find ways of institutionalizing procedures and norms of deliberation into governmental decision-making processes (John et al. 2009). Several methods have been developed along these lines, including citizens' juries and assemblies, forms of e-democracy such as discussion forums and online-polling, and participatory budgeting (Smith, 2009). Along similar lines, policy makers are now experimenting with various forms of co-production in public services, where citizens help to educate or to help influence the behaviour of other citizens.

Existing Evidence on interventions to influence organ donor registration

To date, there is fairly limited evidence regarding the effects of education and information campaigns on actual organ donor registration levels. There is some evidence from experimental studies conducted amongst school pupils regarding the effects of information provision and educational interventions on pupils' *stated intention* to become an organ donor (Reubsæet et al., 2005; Smits et al, 2005; Vinokur et al., 2006). In most countries young people under the age of 18 are not yet eligible to sign organ donor registers, and so studies carried out with this group can only provide data on pupils' future hypothetical intentions and attitudinal data. Generally these education programmes appear to have a positive impact on pupils' future intentions to become donors as well as generating pro-donation attitudes. For instance, a large scale study by Reubsæet et al (2005) of high school pupils in the Netherlands found that 68% of pupils receiving two 50-minute lessons on organ donation declared a positive registration intention compared to 51% in a control group. Also in the Netherlands, Smits et al (2005) found a significant effect on students' intention to sign up to the organ donor register as a consequence of a 45 min educational intervention delivered by ex-patients, with a registration intention rate of 51% as compared to 43% for a control group. Another study of high school students from Michigan (Vinokur et al. 2006) found that pupils exposed to educational

materials about organ donation were more likely to contact the organ donor registry for further information than those in a control condition (22% and 16% respectively). Similar results have been reported in Italian studies of education programmes for school age students. Piccoli et al (2006) report an increase in favourable opinions towards posthumous organ donation amongst pupils exposed to an education programme consisting of lessons from health professionals and former organ recipients.

Outside of school settings there have been some experimental studies investigating organ donor interventions such as canvassing and information provision. One study (Girandola, 2002) found a significant ‘foot in the door’ effect amongst householders canvassed by an organ donor education officer, with those receiving two visits more likely to declare an intention to become a donor than those receiving one visit only. A further study of patients attending GP surgeries in Detroit found that written materials were more effective in increasing self-reported commitment to organ donor registration than information combined with a discussion with their physician. Finally, a quasi-experimental study carried out in libraries, universities, colleges and hospitals in Arizona investigated different types of message appeal on actual registration rates with posters adjacent to kiosks where passers-by could register as organ donors (Siegel et al., 2008). Messages containing counterarguments debunking myths about organ donation were significantly more effective than emotional appeals, motivational calls to action to overcome procrastination or an appeal highlighting the cognitive dissonance between people’s self-conception and their actions (Festinger, 1957).

The previous literature focuses primarily on information campaigns and education programmes. We have not identified any research which examines the effect of citizen-to-citizen discussion in comparison to information based explicitly around behavioural economics principles. Moreover, with one or two exceptions, the majority of previous studies report only *on hypothetical commitment* to organ donation. Our study sought to make a new contribution in this regard.

(II) Study aims and design

The study was a post-test only randomised controlled trial to determine the effects of an information ‘nudge’ versus a combination of an information nudge and discussion on organ donor registration rates. Registration on the organ donor register was the primary outcome measure. As a secondary measure we were also interested in the effect of the treatment groups on *attitudes* towards organ donation. Additional issues of interest were participants’ views of different organ donor registration systems and the relationship between participants’ views of the principle of organ donor registration and their pre-intervention organ donor registration status. The trial was conducted amongst undergraduate university students and consisted of two intervention groups and one control group.

The Treatments

Participants were randomly allocated in approximately equal numbers to one of these three groups (see flow diagram below).

Information only Group

The first treatment group received a four-page tailored information booklet using persuasion techniques based on behavioural economics principles and social marketing to encourage organ donor registration. The booklet included official endorsement of the principle of organ donation in the form of an NHS Organ Donation Logo and website address. As noted above, previous work on framing effects indicates that messages are more likely to when they are provided with credible sources (Druckman, 2001).

Existing research on social influence and persuasion indicates that when faced with difficult choices, people often look to others for cues about how to behave (Cialdini, 2007). As well as looking to authority for cues, people also draw influence from their peer groups and those that they like. Consequently, photographs and supportive quotations from other students as well as celebrities were included in the booklet. This

is also in line with social marketing approaches which suggest that behavioural change interventions should employ ‘segmenting’, or tailoring the message to the particular target group in mind. The booklet also stressed that over 90% of people in surveys say that they support the principle of organ donation and that the number of donors is increasing daily. This was to generate the sense of a social norm supportive of organ donation and encourage participants to follow the trend. From a behavioural economics perspective, a social norm provides a heuristic for people to follow when there is a choice to be made.

Two further insights from behavioural economics were used to help structure the message. The booklet firstly stressed the number of lives lost of each year due to a shortage of organ donors. As noted above, prospect theory, one strand of behavioural economics, suggests that people are generally loss averse, and are more likely to respond to messages constructed as losses rather than gains (Kahneman and Tversky 1979). Secondly, the booklet advertised an existing website which would provide the opportunity for participants to ‘blog’ or ‘tweet’ their friends to highlight their organ donation decision and to play a part within the organ donation campaign. This would permit ‘information disclosure’ which suggests that people may be encouraged to change their behaviour if their behaviour is made visible to their peers and ‘spotlighting’ which refers to the notion that our decisions are formed at least partly on the basis that we care about how other people perceive us (Thaler and Sunstein, 2008).

Information and discussion Group

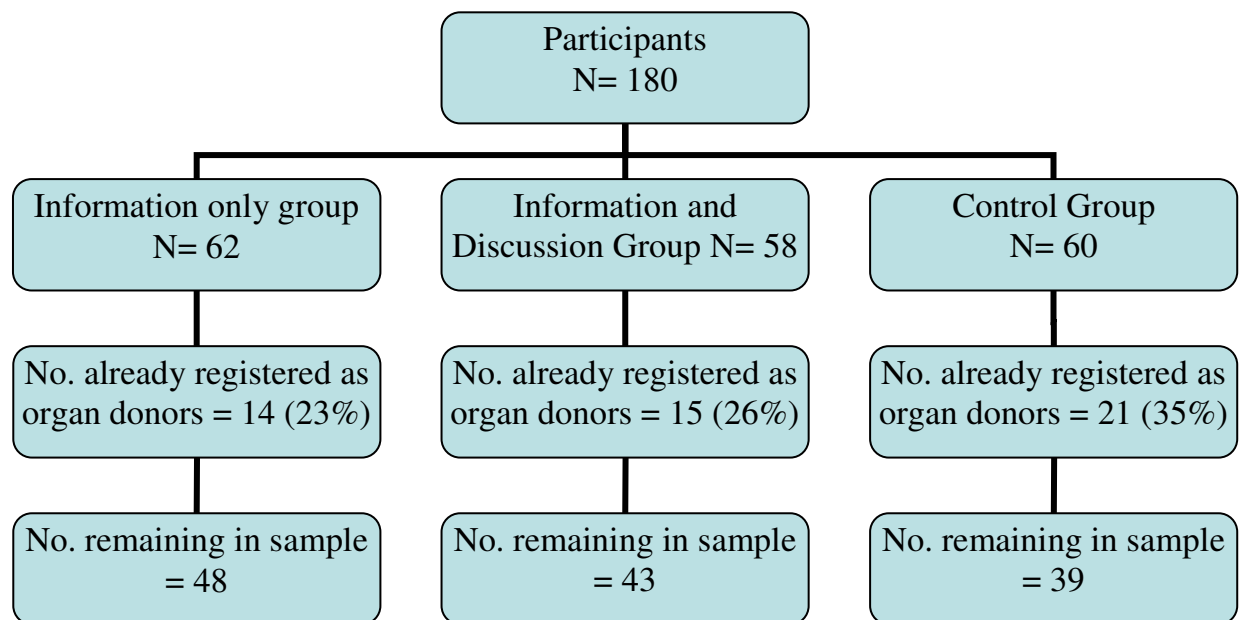
The second treatment group received the same booklet and additionally took part in small group discussions lasting 10-15 minutes. Groups consisted of 3-5 people and three short case studies were provided in written format for groups to consider. Each case study highlighted a topical issue related to organ donation, including discussion of organ donation amongst families, entitlement to receive an organ by different groups of people and different types of organ donation system. Group discussion was led entirely by the groups themselves without the intervention of a facilitator, although a researcher was present in the room to ensure that the discussions took place. The aim was to foster debate about controversies relating to the organ donation

debate issues related to organ donation, to generate discussion about the merits of different types of systems and to permit critical reflection of the issues.

Control Group

The control group was received an information booklet of similar length to the treatment groups but the topic was an official NHS booklet on the prevention of Swine Flu. The aim was to generate comparable levels of information processing to the treatment groups.

Fig 1



Participants and Recruitment

Participants were recruited in waves over a 6 month period between October 2009 and March 2010. Two principal recruitment approaches were used. Emails were sent to academic staff to seek permission for researchers to collect data during ordinary lecture time, where possible making use of spare lecture slots or using the second half of revision lectures. Permission was obtained from Heads of School before contacting lecturers.

Additionally, four lunchtime and early evening events were held in the campus student union and advertised to students. These were held on two separate days over two weeks. An advertising campaign to generate participants began around 9 days before the first event and continued for the duration of the data collection wave. It comprised of a student newspaper advert, plasma screen notices around campus, flyers distributed in student residences, lecture theatres, catering outlets and union buildings, and slides displayed by lecturers during classes. Emails were also sent to global lists of students via administrators in different schools. On the day of the events themselves, student helpers stood outside the union building to distribute additional flyers and recruit students passing by.

To ensure that the advertising campaign did not recruit only those with particular interests or strong views on the subject of the research, it was not made explicit within the advertising materials that the subject of the topic was organ donation. Instead, the materials invited people to 'make a difference', and to 'get their views heard on a life saving topic'. A total of 180 participants were recruited to the study, 120 during lecture slots and 60 during the specially organised events.

Incentives

All participants had the opportunity to be entered into a prize draw to win one of three Amazon vouchers. Those taking part in the special events were also offered a free lunch as an incentive to participate. No payments were offered for taking part.

Randomisation Procedure

Sealed brown envelopes containing the numbers 1, 2 or 3 were placed into a ballot box in equal numbers corresponding to the number of participants present in each case. Envelopes were jumbled up and placed into a box and participants asked to select an envelope. Participants were asked to open their envelope and were divided into three groups according to their group number.

Data Collection

In order to avoid contamination between the three groups, groups 1 and 2 were asked to sit on different sides of the lecture theatre while group 3 was taken to a different room. Participants were provided with a pack containing the appropriate information booklet according to their treatment group, a survey and an organ donor registration leaflet. A standardised set of instructions was used and read out by a trained facilitator providing instructions to participants who were asked firstly to read the enclosed information booklet. In group 3 this was followed by the group discussions.

After the ‘treatments’ had been taken, participants were asked to complete their survey as fully as possible. They were informed that an optional organ donor registration leaflet was included and that filling this in was entirely optional. The leaflet provided to participants contained a code number which reflected the participants’ treatment group. Participants who chose to complete a leaflet could leave this with the research team to post on their behalf or take the leaflet away for further consideration and post it themselves using a pre-paid reply slip. Prior agreement was obtained from NHS Blood and Transplant for the NHS to provide the research team with data on the number of registrations from each group.

Ethical Issues

In all cases it was made clear that participation was voluntary. Where lecture slots were used, students were made aware in advance that data collection would take place. They were provided with an information sheet in advance explaining the broad study aims. The full experimental aims were not made explicit in order to avoid compromising the experiment. Participants were provided with an envelope to take away at the end which would allow them to de-register from the Organ Donor Register within a set period of time by contacting the research team who would destroy their registration leaflet via a unique ID number of each participant. No participants took up the option of de-registering. No individual names were collected and surveys were anonymous. Participants were asked to seal their registration leaflet if they had chosen to complete one to protect anonymity.

(III) Preliminary Results

The following analysis is based on information available from the surveys and leaflets collected at the data collection events in the lecture theatres and student union events. As stated above, participants also had the option of posting their registration leaflets direct to the NHS. NHS Blood and Transplant have agreed to provide data on the numbers from each treatment group who go on to register on the Organ Donor Register (determined by the ID number on registration leaflets) but at the time of writing this data is not yet available. The results below should therefore be treated as preliminary findings, providing a flavour of the broad direction of the results only. Further analysis and statistical testing are needed before conclusive comments can be made.

The Impact of the Interventions on Organ Donor Registration Rates

Excluding those who had already registered on the organ donor register before the trial, the preliminary results suggest that *information alone* had a greater effect on organ donor registrations (with 42% registering) than combined information and discussion (only 21% registering) (see table 1). However, the control group who received the swine flu information signed up in similar proportions to the group receiving the tailored organ donation information. This suggests that it is not the effect of the specific content of the information nudge that influenced organ donor registrations but the act of providing information itself. According to this preliminary data, therefore, the information nudge is more effective in encouraging organ donor registrations than a combination of information and discussion, but has no added value above other types of information.

Table 1 Number and Percentage of each trial arm signing the organ donor register at the end of the treatment

Treatment group	Number unregistered pre - intervention	Number that registered post-intervention	% that registered post-intervention
Information only group	48	20	42
Information and discussion group	43	9	21
Control group	39	16	41

The Impact on of the Interventions on attitudes towards Organ Donation

Secondary outcome measures included attitudes toward the general principle of organ donation, stated willingness to donate an organ posthumously, and stated willingness to join the organ donor register (see table 2). Contingency tables were run to investigate effect of the interventions on participants' attitudes. Where 7-item Likert scales were used for attitudinal questions the values were collapsed into 3 categories to permit this analysis. The analysis on the first two variables below was conducted on all participants (N=180), including those who had already signed up to the Organ Donor Register.

Table 2 Attitudinal variables

Treatment group	% in favour of organ donation (N=180)	% willing to donate posthumously (N=180)	% intending to join the ODR (N=130)
Information only group	94%	77%	65%
Information and discussion group	88%	67%	56%
Control group	87%	73%	39%

All groups were in favour of the general principle of organ donation. The information only group was more certain than the information and discussion group and the control group about this, with 94% stating that they were 'definitely in favour' or 'very in favour' compared to 88% and 87% in the other two groups respectively.

Willingness to donate was also highest in the information only group (77% definitely willing or very willing), followed by the control group (73%) and lowest in the information and discussion group (67%).

Of those who had not already joined the organ donor register (N=130), intention to register was highest amongst the information only group (65%) followed by the information and discussion group (56%) and lastly the control group (39%).

Uncertainty was highest in the control group, with 51% undecided, as compared to 37% undecided in the information and discussion group and 27% in the information only group.

Across all three of these attitudinal variables, the information only group is most 'pro-donation'.

(IV) Discussion and Conclusion

The preliminary results were contrary to our expectations. Our initial hypothesis was that discussion amongst citizens combined with an information nudge would have a greater impact on organ donor registration than the information nudge alone. We anticipated that the effect of discussion would be to foster commitment to the principle of organ donation.

We can speculate about the possible reasons underlying the result. Since the discussions themselves allowed participants to explore the complexity of the topic and reflect in more detail, this enabled them to see different sides of the issue. The discussion topics purposefully raised topical issues that participants in the other two groups are unlikely to have considered. This seems to have generated some uncertainty amongst participants. However, it is also possible that those who began to discuss and reflect on the issues decided that they needed more time to make a decision about organ donor registration. This can only be determined when the full results are retrieved from the NHS.

In terms of our primary outcomes measure, we have noted that the control arm signed up in roughly equal numbers to the information only group. However, in terms of attitudes to organ donation, the control group are less pro-donation than either of the treatment groups in terms of stated intention to donate. Their pro-donation attitudes towards the principle of organ donation in general are lower than the information only group but roughly similar to the information and discussion group.

The study overall indicates that it is possible to influence organ donor registration and attitudes to organ donation within the context of a research trial. Tailored information booklets based around behavioural economics principles create increases in organ donor registrations are more effective than combined information and discussion. However in terms of actual organ donor registration there is little difference between the information based on and a control group.

There are some methodological limitations which must be noted. The central issue relates to the relatively small numbers in the trial. Power calculations were used before recruitment to estimate the sample size required to detect a difference of 10% on the main outcome measure (organ donor registrations), estimating a 35% sign up rate in the information and discussion group and a 25% sign up rate based on the control or information only group. The expected difference was an estimate based on pilot work carried out with 65 students. The prior literature had not compared these types of interventions directly and so it was difficult to predict the expected effect size on the basis of previous published work. The power calculation was generated using the power sampling calculator within Stata 9.1, selecting the two sample comparison of proportions function. The numbers recruited fell short of the target sample size for generating a power level of 0.8 which would equated to 279 in each trial arm. A retrospective power calculation suggests that the numbers recruited in our trial for the difference of 21% between the two treatment groups provided statistical power of 0.6.

A further limitation refers to the possibility of contamination. The original intention was to collect data at one time point. However, this proved impractical and so it was necessary to adjust the design and recruit participants in waves. This is standard practice in field experiments and is use in medical trials where recruitment occurs as new patients enter a service, but does introduce the possibility that study participants

will talk to one another outside of the controlled conditions and therefore possibly influence responses.

Overall, these preliminary findings indicate that an information nudge based around behavioural economics principles seems to make a difference in changing behaviour in a controversial and sensitive area of civic behaviour. By contrast, we find that when citizens engage in relatively unfacilitated discussions about the issue, their response is quite different and behaviour is harder to shift. This finding takes us to the heart of a dilemma facing policy makers seeking to encourage behaviour change: should they really be nudging citizens over areas such as these which have profound implications for individual liberty? Perhaps these areas are worthy of more sustained discussion and reflection. Behavioural economists would argue that people often fail to make active choices on these issues largely because of inertia and procrastination, suggesting that citizens just do not take the time to think the issues through. The implication of these arguments is for a paternalistic state which helps citizens make choices, providing them with a steer to guide them in the right direction. However, our research suggests that individual preferences, when allowed more space to develop following a short period of even brief deliberation, may be at odds with the priorities that policy makers hold. A potential implication is that to get citizens to make choices that they really believe in, forms of discussion, deliberation or education may be a necessary adjunct to nudging.

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