Title: Folk beliefs about where manipulation outside of awareness occurs, and how much awareness and free choice is still maintained.

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Abstract

To examine folk beliefs on manipulative techniques targeting the unconscious and their effects on free choice and level of awareness, we collected judgments based exclusively on examples participants volunteered themselves. Our sample (N = 961) consisted of respondents from 6 continents with 46 different nationalities and residing in 27 different countries. Participants were first asked to report (via free text) a personal experience in which they suspected that unconscious manipulation had taken place. After this, they rated their experience across a number of dimensions (e.g. level of awareness of manipulation, success of manipulation, level of free choice, level of concern). Consistent with previous findings, participants thought of marketing as the most common context in which unconscious manipulation takes place (45% of all participants) followed by research (11%) – typically psychological studies, therapy (2%) – typically hypnosis, media (11%) - incl. entertainment, news media, social media, and politics (3%). In addition, free choice, awareness, and most other ratings were not reliably predicted by the context of the example volunteered, or by group level differences (place of residence, age, gender, religiosity, political affiliation, education), suggesting near universally shared beliefs in the way unconscious manipulation is being conceptualised. As observed in previous work, we also find that, irrespective of context, participants believe that even if manipulated, they retain some degree of free choice. We focus the discussion on new insights that the data set revealed with respect to other domains of influence and manipulation.

Introduction

If it is the case that our ability to freely choose in day-to-day contexts is subverted by manipulative techniques that target us outside our awareness, we would expect that free choice should be undermined. On this basis, a simple prediction is that the more we suspect that unconscious manipulation takes place in some context, the less free choice we would believe to be left with. A more puzzling question is how we can assess the role of unconscious influences in our decision-making behaviour, given that, by definition, we are not aware of them. A solution would be to associate certain contexts or scenarios with mechanisms that override our conscious deliberative faculties (e.g. unconscious priming) and assume that in such cases we cannot confidently believe the choices we make to be (exclusively) our own. However, the finding from several studies examining people's folk beliefs (Osman, 2020, Osman & Bechlivanidis, 2021, 2022) is that the relationship between the judged level of manipulation and the level of free choice is weak. The studies are based on people's appraisals of everyday situations in which choices are made (e.g. electoral voting, consumer choices, interactions on social media), as generated by other people. By encouraging a more personalised perspective of the various genuine scenarios that have been volunteered by people (Osman, 2020) the overall relationship between the two (likelihood of manipulation and level of free choice) is strengthened. However, the findings also show that the relationship is still unstable in spite of the experimental instructional manipulations (Osman & Bechlivanidis, 2022). The relationship is stronger in some prototypical contexts commonly associated with unconscious processes being targeted (e.g. sleep research, subliminal priming, subliminal advertising, hypnotherapy). The weaker associations were found in the marketing contexts, which include a range of scenarios (i.e. communication styles of political leaders campaigning, jingles in supermarkets, product placement in supermarkets, sales tactics in car dealerships). Overall, previous work shows that while unconscious manipulation and free choice are

correlated in the expected (negative) direction, the relationship is much weaker than logically expected and sensitive to the degree of personalisation, and the type of scenario.

Motivation of Present Study

Although there are multiple experimental studies in which conscious awareness is manipulated and level of estimated free choice is investigated (Clark et al., 2017; Schooler et al., 2014; Shepherd, 2012; – for review see Mudrik, et al., 2022), there is little data about what people actually believe about this relationship. In people's view, to what extent can there be freedom of choice in the face of unconscious manipulation? Is the degree of awareness of those manipulative tactics associated with the amount of free choice people believe they are left with? Understanding folk beliefs on this matter is important in informing moral, philosophical and policy-related questions. For example, while manipulation is commonly assumed to be morally reprehensible, especially since it restricts autonomy, it is not known whether people see a necessary link between these two concepts, or whether that link suffices to determine moral judgements. The question of which of these intuitions are universal is critical when attempting to decide between the multitude of philosophical theories of manipulation that have appeared recently (Noggle, 2020). Finally, understanding how people evaluate manipulative tactics in different contexts should be a central consideration when the state considers either implementing or regulating interactions in the absence of clear consent.

There is a logical inconsistency that is confronted when collecting any rating of awareness of suspected manipulation as well as of judged level of manipulation (Osman, 2020; Tallis, 2002). For both, if manipulative tactics used to target psychological processes below an individual's awareness are successful, then how would that individual be able to detect the presence of the manipulation, or the amount of manipulation happening at the time? To get around this, the proposals made in previous work, and here, is that people draw from their general knowledge of the employment of manipulative psychological tactics in any context

they confront. General cultural and social knowledge of manipulative tactics (e.g. subliminal advertising, hypnosis, microtargeting, subliminal priming) can be recruited to judge the likelihood of their presence in any given context. It is also possible that people form general impressions or feelings of an impetus to choose to act in a way, as a result of external mechanisms and techniques, that is inconsistent, or occasionally consistent, with their conscious intentions (Holton, 2009; Lefebvre, 2001; Levy 2011, 2014; Osman, 2020; Owens, 2000); evidence of this has also been reported in studies of young adults (e.g. Hagger at al., 2002). To this end, the reason for expanding the sample to include more countries than were in the original (Australia, Canada, UK, US) was to examine a wider range of cultural perspectives.

To explore this, the novel contribution the present study makes by focussing on folk beliefs is threefold. First, rather than the experimenters coming up with carefully controlled but possibly unrealistic examples, participants are instead asked to generate their own examples where they suspect psychological tactics are used to manipulate their choices outside of their awareness. From previous work, the evidence suggests that people provide a rich range of scenarios. By using this approach, the present study is also able to look at the level of consistency with Osman's (2020) study to assess the contexts that participants volunteered to determine type and frequency of examples generated. To that end, we use the same basic open question as before, and we draw on the same sample of participants (i.e. Australia, Canada, UK, and US), while also expanding the sample to include nationalities from a wide range of countries and continents (Africa, Asia, Europe, Oceania, South America), to form a broader cultural range of perspectives.

Second, as an extension of prior research (Osman, 2020; Osman & Bechlivanidis, 2021, 2022), the present study asks participants to give ratings on the examples they provide themselves. While this means that there is no possibility of controlling what is generated, only the methods by which judgments are made, the possibility of patterns emerging would provide

a valuable insight because of the high number of factors outside of experimental control. Also, as mentioned, in previous work participants were presented with scenarios generated by others, regarding which they gave ratings such as level of manipulation, free choice, control, concern, and responsibility. Those findings suggested that when instructional manipulations are introduced to increase the personalisation of the scenarios, then this in turn increases the strength of the negative relationship between judged level of manipulation and judged level of free choice. Therefore, it may be the case that, by rating the examples participants have themselves generated, the association between the ratings would become even stronger.

Third, in an attempt to explain the weak relationship between unconscious manipulation and free choice, we also consider a new judgment that investigates the relationship between the level of awareness of the manipulative technique and the level of free choice. To the authors knowledge, this relationship has yet to be explored in the arguably more valid context of examples participants volunteer themselves.

Methods

Participants: A total of 1019 participants were recruited but due to some respondents not completing all judgments, and some errors generated by the crowdsourcing platform where some respondents took part in the study twice, a total of 961 participants remained that generated unique scenarios. Participants were from 46 different nationalities and living in 27 different countries (for details of sampling see https://osf.io/dnpc5).

In the final analysis 874 participants were included (for details see https://osf.io/dnpc5) for reasons of comparability. A proportion of participants (n = 87) generated multiple scenarios in their examples, so to be able to compare across judgments analyses were based only on those that generated a single example. Split by continent, 167 reside in Europe, 131 in North America, 140 in South America, 170 in Africa, 132 in Oceania, and 134 in Asia (https://osf.io/29xuc). The average age of the sample was $M = 31.81$ ($SD = 10.53$), and ranged

from 19-69, with 429 males, 432 females and 13 preferring not to say. For full details of age, gender, ethnicity, political affiliation, education level, and religiosity see Table 1.

The study was presented via Qualtrics (https://www.qualtrics.com/), an online platform for hosting experiments, while participants were recruited through Prolific (https://www.prolific.co/), a crowdsourcing platform. To take part in the study, the initial set of criteria were that participants were born and currently reside in the Australia, Canada, UK, US, that their age ranged between 18 and 80, and their first language was English. The initial inclusion criteria were designed to be identical to Osman's (2020, Study 1) in order to replicate the original sample for comparison. In addition, to ensure that the sample was also global, participants were also recruited from Asia, Africa and South America (full details regarding the settings used for recruitment can be found https://osf.io/dnpc5).

All participants were financially compensated for their time (1.40 USD). When taking part in the study, participants were asked to give a free text response to the open question requesting an example of a context where they suspect manipulation outside of awareness is taking place, along with ratings for six questions, and 5 demographic questions (age, gender, education level, political affiliation, religiosity) which are summarized in Table 1; note that for analytic purposes details of ethnicity were included based on the participant profile details that Prolific automatically collects. The present study received ethical approval from Judge Business School, University of Cambridge ethics board, JBS/23-02/11.01.2023.

Insert Table 1 about here

Design and Materials: In the present study there were three sets of variables that each participant generated: responses to five demographic questions (i.e. Age, Gender, Education level, Political affiliation), ratings to six judgment probes (See Table 2), free text generated in response to the open question (see Table 2) concerning an example where manipulation outside of awareness was suspected to have occurred. For each demographic question participants were

provided with the option "prefer not to say". The six ratings were: ratings of Awareness of Unconscious Manipulation, ratings of Free Will, ratings of Others' Experience, ratings of Concern, ratings of Ultimate Control, and ratings of Success of the Manipulation, each of which were on a scale ranging from 0 to 10 (see Table 2). The presentation of the open question was fixed, and always presented first to every participant and, thereafter, the order of presentation of the six judgment probes was randomized for each participant.

Insert Table 2 about here.

Procedure: Participants were first asked to provide their consent in order to take part in the study. They were told they would be presented with an open question and six follow-up questions. They were informed that after they had completed all ratings, and filled five demographic questions, the study would be complete.

Ratings

To establish reliability, approximately one third of the total sample of volunteered free text scenarios were coded independently by two researchers (n = 376). Specifically, each researcher assigned a context to each example, by choosing from one of the following categories, taken from Osman (2020): 'Marketing', 'Research', 'Media', 'Political', 'Therapy' and 'Other'. There was an 84% agreement between the coders. Most disagreements were due to participants providing more than one example (which the first researcher coded as 'multiple', while the second coded based on the first example); excluding 'multiple' examples, the agreement rose to 87%. The remaining disagreements were due to ambiguity, e.g. an example of a marketing manipulation taking place in social media. To resolve these disagreements both coders reviewed where disagreements had occurred and finalised the classification of the examples according to a consistent coding frame that focused on the primary source of manipulation by context (e.g. marketing), rather than where the manipulation had occurred (social media). The remaining two thirds of scenarios were coded by a single researcher. Since

some of the participants (n = 74) volunteered more than one example in their free text responses, to ensure comparisons with the original study (Osman, 2020, study 1), and for later analysis, only single examples that were reported were used to conduct analyses presented in the results section (n=874).

Results

The analyses were focused on exploring two factors: 1) the extent to which the contexts volunteered in the present study are consistent with those reported by Osman (2020) which were initially generated in 2018, and what, if any, new contexts emerged; 2) the strength of the relationship between judgments of awareness and free choice overall, as well as by context and demographics.

Contexts volunteered: The noteworthy patterns highlighted here concern the location of similarities between the present study and the original, and then where there are key differences (see Table 3). First, by far the most common context volunteered in the present sample overall (n =874), as well as by the four countries (n = 184) that were directly comparable to the replicated study (Osman, 2020) was marketing and advertising (present study overall (n = 874) 44.9%, present study sub-sample (n = 184, Australia, Canada, UK, US) 51.6%, Osman (2020) (n = 399) 45.6%). This suggests that marketing and advertising is likely the most salient and perhaps the most prototypical context that people call to mind when thinking about where they are manipulated without their conscious awareness.

Unlike Osman's (2020) study (18%) for which 'Research' was the next most common context volunteered, in the present study it was 'Media' (incl. entertainment media, news media, social media) (present study overall 10.7%, present study sub-sample 14.2%). It is hard to draw any firm conclusions as to why this is the case. The only difference between studies is when they were conducted (i.e. original study was ran in 2018, and the present study was run

in 2023), given that the sampling method, and the question presented to both samples itself were identical.

Given that the context Media generated more examples from the present sample compared to the original study, the responses falling under the category of Media were examined in more detail. From this, the examples clustered into two sub-categories of media coded according to whether they explicitly referred to social media (SM), separate from conventional forms of media (i.e. news media, entertainment media) (CM). Splitting the responses by countries comparable to the original study (Osman, 2020) there does appear to be some further differences between countries; Australia (n = 48, SM = 10.4%, CM = 6.3%); Canada (n = 45, SM = 4.4%, CM = 8.9%); UK (n = 48, SM = 6.3%, CM = 4.2%); US (n = 43, SM = 7%, CM = 9.3%). If the general split between social media and conventional media is applied to the overall sample of the present study, then the distribution of examples is approximately equal (n = 874, SM = 5.3%, CM = 5.4%). Overall, what this may reveal is that as more people treat social media and conventional media as different entities, their experiences of what they see as manipulative tactics employed in each becomes more nuanced. Nonetheless, other than being a pattern to highlight, without exploring this in depth in future research, we hold forth on speculating any further, or drawing an conclusions.

The second main difference between the present study and the original is the proportion of examples that were volunteered that fell under the category "other", in the original sample (18.3%) and the replicated sample (present study overall 28.1%, present study sub-sample 25%). Given that close to a third of the overall sample generated contexts that do not fall under the five categories original identified in Osman (2020), this required further exploration. A detailed analysis of the examples generated under the "other" category revealed two overall clusters based on those that explicitly referred to other agents in social contexts, often around interpersonal interactions with family, friends, dating partners, spouses, children. This

corresponds to situations referred to by Deci and Ryan (2012) in their Self-Determination theory. Social pressures were identified in informal settings where conforming behaviours were expressed, or reciprocal behaviours were performed but were not ones that were intended by the participant themselves (Deci & Ryan, 2012). Social pressure of this kind often identified social agents that were highly familiar to the participant describing the scenario, and emotional manipulation (e.g. guilt) was the tactic often employed that could be construed as subtly coercive. Additionally, social pressures were described in reference to hierarchically structured relationship where conformity to social norms was expected (e.g. in religious, educational, military, management settings where authority figures were present). The second type described scenarios where the mechanism of influence or process that was being influenced did not explicitly included reference to people (e.g. sleeping, driving, dreaming). For the purposes of analysis, the examples initially coded as "other" were recoded as 'other – non-social" (55%) and 'other – social" (45%) to distinguish between examples that explicitly referred to another agent from those that did not (see Table 3). This suggests that a nontrivial proportion of examples (~12%) volunteered by participants reflected beliefs that others employed tactics attempting to influence them, which at least at the time, they were deemed to be outside of their awareness.

Relationship between rating, and by context: The pattern indicated in Figure 1 suggests that participants still rated that they had some degree of free choice ($M = 5.28$, $SD =2.49$, $t(874)=3.353$, $p < 0.001$, $d = 0.11$, 95% CI [5.12, 5.45][1]) and control ($M = 5.86$, $SD = 2.53$, $t(874)=10.019$, $p<0.0001$, $d = 0.34$,   95% CI [5.69, 6.02]), despite the fact that the manipulations they described were deemed to be relatively successful ($M = 6.16$, $SD = 2.21$, $t(874)=15.531$, $p <0.0001$, $d = 0.53$, 95% CI [6.01, 6.31]).

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[1] The one-sample t-tests are against the midpoint of the scale (5), on the assumption that participants may use it to represent uncertainty.
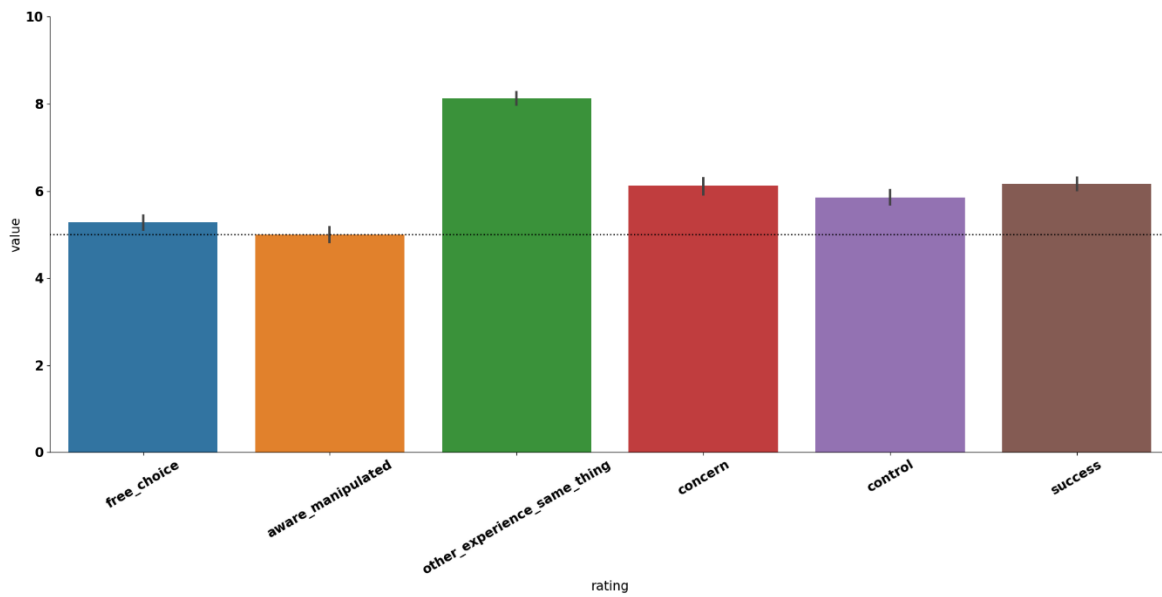
Figure 1: mean ratings for the six judgements collapsed across the contexts volunteered (errors bars represent 95% confidence intervals)

Turning specifically to the correlations between judgments (see Figure 2) overall and by context. Across all contexts there was a consistently strong correlation between free choice and control (r(872)=0.503, p<.001). In most contexts, but for social media, there was a moderate correlation was found between awareness and control (r(872)=0.245, p<.001) indicating that the more aware someone is of a manipulation the more control the retain. Ratings of free choice are weakly negatively correlated with concern (r(872) = -0.113, p<.001), indicating that the less free choice one has, the more concerned they are (not found in research and politics). Free choice is also weakly positively correlated with awareness (r(872) = 0.167, p<.001), meaning that that the more aware someone is of the manipulation the more free their choice is thought to be.
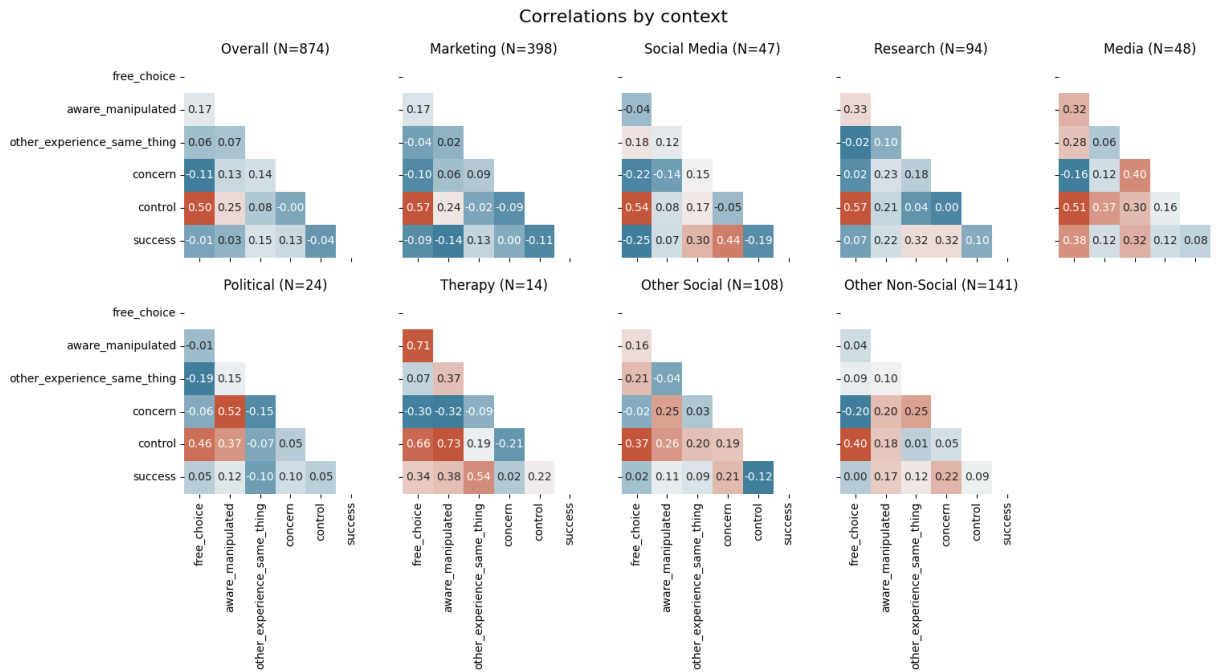
Figure 2. Full Matrix of correlations between the 6 judgments probes (awareness, free choice, others experiencing the same thing, concern, control, success), the color coding is from dark blue (-1) to dark brown (+1) correlation with lighter shades indicating weaker or no correlations

Clearly the relationship between awareness and free choice is unreliable and varies by the context in which the manipulation has occurred, such that it is stronger in therapeutic contexts and conventional media, but not so for social media and political contexts. Given that the relationship between awareness and free choice is a novel avenue, we examined this further. In particular, the interest was to examine whether at extreme ends of the scale the relationship was more distinct or was a consistently weak relationship. To address this, responses '0' or '1' were classified as 'low awareness' (n = 111) and those responses '9' or '10' were classified as 'high awareness' (n = 80). Applying the same rationale, responses '0' or '1' (n = 68) were classified as 'restricted free choice' and responses '9' or '10' were classified as 'unrestricted free choice' (n = 103). Comparing mean ratings of Free Choice by low (*M* = 4.21, *SD* = 3.04)

and high aware respondents ($M = 6.09$, $SD = 3.23$), $t(189) = 4.10$, p < .001, $d' = .61$, 95% CI [2.78, .98] reveals a distinct pattern in line with a view that high awareness is associated with higher free choice compared with low awareness. Complementing this, comparing mean ratings of Awareness by low restricted free choice ($M = 3.91$, $SD = 3.48$) and unrestricted free choice ($M = 5.75$, $SD = 3.11$), $t(169) = 3.60$, p < .001, $d' = .56$, 95% CI [2.84, .83] also indicates a reasonably distinct difference in the expected direction.

Finally, several demographic details were collected (age, ethnicity, gender, continent of residence, education, political affiliation, religiosity) and these were used as predictor variables in a single regression analysis for every rating. The only significant predictors (a=0.01) were age for awareness, age for concern and age for control ($F(1, 850) < 7.459$, $p<.006$, partial eta<.033). Also, the continent that participants currently resided in predicted the judged generality of their offered example. Put simply, the continent predicted the extent to which participants judged that their examples were experienced by others ($F(5, 850) = 5.770$, $p<.001$).

Conclusion

Previous work has examined folk beliefs regarding situations where psychological tactics are suspected to subvert our ability to make choices freely because they target our unconscious. The findings from that research suggest that the relationship between judged level of manipulation and free choice is highly labile, and particularly sensitive to the context on which judgments are made (e.g., political, marketing, media, therapy). The findings from the present study reveal that the lability also extends to the relationship between amount of awareness of the manipulative tactics used at the time, and the level of free choice that can still be maintained. The current sample of participants were drawn from a wider range of countries compared to the original (Osman, 2020) so as to expand the range of cultural perspectives that participants would likely be drawing from. Consistent with previous research, and now

extended to a different judgement (namely awareness of manipulation at the time of choice) overall the relationship between judged awareness and free choice is weak but does strengthen when looking at specific contexts (e.g. marketing and advertising). In addition, consistent with previous research, the examples that participants volunteered were similar to those generated in a previous study (Osman, 2020), for which the most common illustration where manipulative tactics directed at the unconscious was marketing and advertising contexts.

A new insight revealed in the present study is that approximately 15% (n = 107) of the sample provided examples of social situations where they described manipulative tactics (e.g. emotional manipulation) that they interpreted as an illustration of a psychological technique that targeted their unconscious. This is consistent with Deci and Ryan's (2012) Self-Determination theory which asserts that unless people believe that they are no external coercive influences from others, then their actions are not free, and they cannot attribute to themselves personal responsibility. In addition, work by philosophers (e.g. Kligman, & Culver, 1992; Susser, Roessler, & Nissenbaum, 2019) that treat manipulation as something that is covert or a hidden influence on the recipient includes examples such as gaslighting, guilt tripping, deception and misdirection consider the interpersonal domain of manipulation. Recent developments in the philosophical domain (e.g. Racher, 2023) also consider this from the view of boundary conditions in contexts where reciprocal actions occur. Where it is expected that both agents have aligned intentions, because there are shared interpersonal obligations, manipulation is a means of subverting social conventions to serve one's own ends at the expense of others. While this was not an area of focus in the present study, the findings help reveal how sensitive people are when it comes to actions in interpersonal settings. Participants volunteered examples of an interpersonal nature as an illustration of where psychological tactics target the unconscious. This in turn suggests that even when reciprocity in social

interactions is expected to occur, the intentions behind socially oriented actions are not aligned, and in turn free choice is impacted.

Finally, regardless of whether psychological manipulative tactics are successful in changing behavior, and regardless of whether they are judged as substantively impacting free choice, from a folk beliefs point of view the most common examples given are negative in nature. In philosophical (e.g. Barnhill, 2022) and psychological (e.g. Sunstein, 2016) research manipulation has also been conceptually analyzed from different moral positions that include neutral and positive illustrations. Therefore, it is important to recognise that the term 'manipulation' is loaded, and this may be a limitation of the present line of work. For instance, if the main study question posed was framed as "influence" rather than "manipulation" it may well be that more neutral or even positive examples would be volunteered. Thus a further area of investigation is to examine how sensitive folk beliefs are to different framings of the key question posed. Were definitions are provided, it may be the case that, this in turn impacts the judged moral status of psychological manipulative (otherwise referred to as influential) tactics designed to operate outside of awareness.

Table 1. Participants Profile

Sample	**World Sample**
Total participants	*N* = 961
Females	480 (49.9%)
Males	467 (48.6%)
Prefer not to say	14 (1.5%)
Age	Mean 31.90 (*SD* = 10.57) ranging from 19-69
Educational background	15.9 completed education at 16 or 18 years, 56.8% qualified with a degree (bachelor degree), 17.5% qualified with a postgraduate degree (Masters or PhD), 9.9% other/prefer not to say .
Political affiliation	43.2% identifying as liberal, 21.2% as centre, 17.3% as conservative, and 18.3% as unsure/other
Religiosity	31% religious, 55.6% not religious, 13.4% unsure/other
Ethnicity	7.1% Asian, 16.3% Black, 13.3% Mixed race, 55.3% White, 8% other/prefer not to say.

Table 2. Judgment probes alongside the main open-ended question

Open ended question	*"…, in psychology the unconscious is taken to mean many things. The simplest description is that the unconscious is a type of process that influences what we do (thoughts, feelings, behaviours, attitudes, beliefs, judgments) in some way without us being consciously aware of HOW it influences what we do. That is, there is something that is guiding what we are doing at the back of our minds, but we can't easily explain what it is, and how it might be doing that. In the space provided below, all you need to do is describe a TYPICAL context, it could be any context, in which you tend to think that psychological research on the unconscious has been used in some way to manipulate behaviour. This question is left deliberately open so that you can answer in whichever way you think captures a typical experience in which you think the unconscious was influenced in some way that would in turn have changed your behaviour. There is no right or wrong answer, and the answers that you will provide will be extremely informative."*
Judgment Probes	All judgment probes begat with the sentence *"Based on the example you just described, respond to the following question. Imagine you are in the situation you described…"*
Awareness of unconscious manipulation at the time	To what extent are you aware at the time that you are being unconsciously manipulated through the processes you described? (0 = I have NO IDEA that something could be influencing me to 10 = I have A STRONG FEELING that something could be influencing me)
Level of Free Choice	To what extent do you think your critical choices in this situation are FREE, given that they are being unconsciously manipulated? (0 = NOT AT ALL Free to 10 = COMPLETELY Free)
Extent to which other would experience the same situation	To what extent do you think the experience you just described is an experience that is also experienced by others? (0 = I DO NOT think anyone else experiences what I described to 10 = I DO think that that everyone experiences what I described)
Level of Concern	To what extent do you care given that your critical choice in the experience you described has been unconsciously manipulated? (0 = DO NOT Care at all to 10 = I Care HUGELY)
Level of Control	To what extent do you have ultimate control over your critical choice in the experience you just described, given that the choice is being unconsciously manipulated? (0 NO CONTROL AT ALL to = 10 COMPLETE CONTROL)
Extent to which the unconscious manipulation was successful	To what extent do you think your critical choices are being SUCCESSFULLY unconsciously manipulated through the processes you described? (0 = NOT AT ALL SUCCESSFUL to 10 = ENITRELY SUCCESSFUL)

Table 3. Proportion of respondents volunteering examples correspondent with the main contexts by study (Present study overall sample n = 887, Present study sub-sample n = 184, Osman, 2020, study 1).

(%)	Marketing/ Advertising	Research	Therapy	Media	Political	Other	None /Don't know
Overall (O, 2020, N = 399) Australia, Canada, UK, US	45.1	18	4.3	4.8	6.3	18.3	3.3
Present (N = 184) Australia, Canada, UK, US	51.6	5.4	1.6	14.2	2.2	25	0
Overall (Present, N = 887)	44.9	10.6	1.6	10.7	2.7	28.1 Social = 45 Non-social = 55	.7
Breakdown of individual countries for comparison between present study and Osman (2020)							
Australia (O, 2020, N = 96)	51	20.8	3.1	4.2	6.3	11.5	3.1
Australia (Present, N = 48)	50	2.1	0	16.7	2.1	29.2 Social = 25 Non-social = 75	0
Canada (O, 2020, N = 104)	43.3	21.2	1.9	3.8	5.8	22.1	1.9
Canada (Present, N = 45)	51.1	8.9	6.7	13.3	2.2	17.8 Social = 37.5 Non-social = 62.5	0
UK (O, 2020. N = 100)	44	10	6.0	9.0	6.0	19	6.0
UK (Present, N = 48)	47.9	2.1	0	10.5	2.1	37.5 Social = 50 Non-social = 50	0
US (O, 2020, N = 99)	42.4	20.2	6.1	2.0	7.1	20.2	2.0
US (Present, N = 43)	58.1	9.3	0	16.3	2.3	14 Social = 16.7 Non-social = 83.3	0

References

Barnhill, A. (2022). How philosophy might contribute to the practical ethics of online manipulation. In *The philosophy of online manipulation* (pp. 49-71). Routledge.

Clark, C. J., Baumeister, R. F., & Ditto, P. H. (2017). Making punishment palatable: Belief in free will alleviates punitive distress. *Consciousness and cognition*, *51*, 193-211.

Deci, E. L., & Ryan, R. M. (2012). Self-determination theory. In P. A. M. Van Lange, A. W. Kruglanski, & E. T. Higgins (Eds.), *Handbook of theories of social psychology* (pp. 416–436). Sage Publications Ltd. https://doi.org/10.4135/9781446249215.n21

Hagger, M. S., Chatzisarantis, N. L., & Biddle, S. J. (2002). The influence of autonomous and controlling motives on physical activity intentions within the Theory of Planned Behaviour. *British journal of health psychology*, *7*(3), 283-297.

Holton, R. (2009). *Willing, wanting, waiting*. Oxford University Press.

Kligman, M., & Culver, C. M. (1992). An Analysis of Interpersonal Manipulation. Journal of Medicine and Philosophy, 17(2), 173–197. https://doi.org/10.1093/jmp/17.2.173

Lefebvre, V. (2001). Algebra of conscience. Norwell, MA: Kluwer Academic Publishers.

Levy, N. (2011). Resisting 'weakness of the will'. *Philosophy and phenomenological research*, *82*(1), 134-155.

Levy, N. (2014). Consciousness, implicit attitudes and moral responsibility. *Noûs*, *48*: 21-40.

Mudrik, L., Arie, I. G., Amir, Y., Shir, Y., Hieronymi, P., Maoz, U., ... & Roskies, A. (2022). Free will without consciousness?. *Trends in Cognitive Sciences*. https://doi.org/10.1016/j.tics.2022.03.005

Noggle, R. (2020). Pressure, trickery, and a unified account of manipulation. American Philosophical Quarterly, 57(3), 241-252

Osman, M. (2020). Overstepping the boundaries of free choice: Folk beliefs on free will and determinism in real world contexts. *Consciousness and cognition*, *77*, 102860

Osman, M., & Bechlivanidis, C. (2021). Public perceptions of manipulations on behavior

    outside of awareness. *Psychology of Consciousness: Theory, Research, and*

    Practice. Advance online publication. https://doi.org/10.1037/cns0000308

Osman, M., & Bechlivanidis, C. (2022). Impact of personalizing experiences of

    manipulation outside of awareness on autonomy. *Psychology of Consciousness:*

    Theory, Research, and Practice. Advance online publication.

    https://doi.org/10.1037/cns0000343

Owens, D. J. (2000). *Reason without freedom: The problem of epistemic normativity*.

    Psychology Press.

Rachar, M. (2023). Conditional intentions and shared agency. *Noûs*, 57,1-18.

    https://doi.org/10.1111/nous.12452

Schooler, J. W., Nadelhoffer, T., Nahmias, E., & Vohs, K. D. (2014). Measuring and

    manipulating beliefs and behaviors associated with free will. In A. R. Mele (Ed.),

    Surrounding free will: Philosophy, psychology, neuroscience (pp. 72–94). Oxford

    University Press.

Shepherd, J. (2012). Free will and consciousness: Experimental studies. *Consciousness and*

    cognition, *21*(2), 915-927.

Sunstein, C. R. (2016). *The ethics of influence: Government in the age of behavioral science*.

    Cambridge University Press.

Susser, D., Roessler, B., & Nissenbaum, H. (2019). Technology, autonomy, and

    manipulation. Internet Policy Review, 8(2).

    DOI: https://doi.org/10.14763/2019.2.1410.

Tallis, F. (2002). *Hidden minds: A history of the unconscious*. Arcade Publishing.