Experimental Overview and Analysis Plan

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1 Design Overview

I seek to determine firstly whether individuals pay to avoid dissonant information and secondly if the amount they are willing to pay varies based on their prior exposure to dissonant information and their beliefs. The experiment begins with a question to determine the participant's opinion on abortion rights, i.e. whether they are: Pro-choice or Pro-life.[1] Subjects are then asked to complete an effort task which includes reading a short article followed by comprehension questions based on the content of the article. Subjects are informed that they will receive 0.10 \$ per correct answer they give to these questions. The subjects are then divided into two groups with half of the subjects being randomly allocated to a consonant group (i.e. the assigned article is in line with their beliefs on abortion rights) and the other half were randomly allocated to a dissonant group (i.e. the assigned article opposes their beliefs on abortion rights) to complete the effort task. Both the content and the side of the argument that the article supports are made clear to the participants through a

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[1]The answers to this question are compared with Prolific's pre-screen variable on abortion rights which I used to filter my sample. Session 1 of the experiment includes only Pro-choice participants (filtered based on Prolific's pre-screen variable) and Session 2 includes only Pro-life participants (based on Prolific's pre-screen variable). Participants with inconsistencies between their prolific pre-screening variable and the answer they provide here are excluded from the main analysis as mentioned in Section 4.

descriptive article title and through a sentence-long summary of its content.[2] Participants are reminded that they should only answer the questions based on the text they read and should not interpret the text or use their own opinions. This comprises the first stage of the experiment.

Subsequently, in the following stage, subjects are presented with a second article in the same way as before, i.e. participants are first presented with the title of the article and a sentence-long summary. The article title and short summary provide subjects with information on the side of the argument and the content of the article (pro-life/pro-choice) before having to read it. Regardless of the treatment group participants were assigned to in the first stage, in Session 1, (which only includes Pro-choice participants) participants are given a pro-life article titled *"Fight for Defenseless - Stop Abortion!"* whereas participants in Session 2 (which only includes Pro-life participants) are given a pro-choice article titled *"Abortion: Women Should Decide for Themselves!"*. Both articles in this stage include different arguments from the articles the participants were provided in the previous stage.[3] Subjects are then given an opportunity to switch the article that is assigned to them in this stage (against their beliefs on abortion rights) with a different one that is in line with their beliefs on abortion rights. If they want to switch, they can use a pot of money (100 cents) given to them at the beginning of the experiment to use for the switch. Any unused amount of money is added on top of their bonus payments. Once they have indicated their preference to switch articles and have quantified their willingness to pay, a random number was drawn between 0 and 100. If their maximum willingness to pay to switch articles is greater than or equal to the random number drawn then the article that was initially assigned to them (an article that opposes their beliefs on abortion) is replaced with an article in agreement with their beliefs on abortion. If their maximum willingness to pay is less than the random number drawn, then the initial article, which opposes their beliefs, is not replaced with an article in agreement with their beliefs. Participants are given a clear description of this mechanism and are explicitly informed that a greater reported willingness to pay results in a greater likelihood of the articles being switched.[4] Subsequently, the subjects are shown the result of

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[2]For example, if the article is pro-choice, participants are provided with the following information before seeing the full article: "On the next page, you will be presented with an article titled "Endangering Women – Health Cost of Banning Abortion" which includes the speech of some anonymous members of Congress against banning abortions (pro-choice)." If the article is pro-life, participants are shown: "On the next page, you will be presented with an article titled "It is not a Blob of Tissue, but a Human Being – Science and Abortion" which includes speech of some anonymous members of Congress in favor of banning abortions (pro-life)."

[3]Articles are around the same length - consist of around 308 words and are created to be identical with only the main argument differing between them. I run cosine similarity and sentiment analyses on the articles in each stage to make sure that they both have the same emotional effect and carry similar implications.

[4]The subjects are also asked two comprehension questions on the mechanism following its description to

the lottery (i.e. whether their willingness to pay was greater or less than the random number that was drawn) and as a result whether or not the article had been switched. Following the reveal of the result of the lottery, subjects are provided with the new article (depending on the result of the lottery) and then asked to answer questions based on the article. In all treatments, assuming information does not have any hedonic value, participants should not use any of the money to switch articles.

Participants were then asked post-treatment questions about their posterior beliefs on abortion rights, political beliefs, media consumption, demographic information, risk preference, and information preference (IPS) (Ho et al. 2021).

2 Treatments

To generate exogenous variation in prior exposure to dissonant information, subjects are randomly allocated into two groups: dissonant and consonant groups. If a subject is randomly allocated to a dissonant group, they receive an article that opposed their beliefs on abortion rights. If a subject is randomly assigned to a consonant group, they receive an article in agreement with their belief on abortion rights. In Session 1, pro-choice participants are assigned to a pro-life article, if they are in the dissonant group, and they are assigned to a pro-choice article if they are in the consonant group. On the other hand, in Session 2, pro-life participants are assigned to a pro-choice article if they are in the dissonant group and they are assigned to a pro-life article if they are in the consonant group. Before seeing the article, participants are first presented with the title of the article and a short sentence summarising the article. These articles consist of a collection of anonymous Congress people's speeches related to abortion, supplemented with facts from related research studies.[5] Participants are then asked to answer some questions based on the article they read.

As mentioned above, Session 1 includes only Pro-choice participants and Session 2 includes only Pro-life participants. Therefore, the experiment is a 2x2 between subject (Beliefs x Opinion of the Article) (see Table 1). The first batch of data collection will provide the data for Pro-choice participants who are randomly allocated to either a Pro-choice article (consonant group) or a Pro-life article (dissonant group) to complete the task. They will then be allocated to a different Pro-life article and will be given an option to switch to a Pro-choice article by using money from a pot of money provided to them at the beginning of the experiment to pay for the switch. The second batch of data collection will provide data

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ensure that it was clear and correctly understood. Subjects that respond to both of the questions incorrectly are registered to be dropped from the main analysis.

[5]More information on how the articles were created can be found in Appendix A : Formation of Articles.

TABLE 1: Study Groups

	Belief	Opinion of the Article 1
Treatment 1	Pro-Choice	Pro-Choice
Treatment 2	Pro-Choice	Pro-Life
Treatment 3	Pro-Life	Pro-Choice
Treatment 4	Pro-Life	Pro-Life

for Pro-life participants who are randomly allocated to either a Pro-life article (consonant group) or a Pro-choice article (dissonant group) to complete the task. Once they are done with the first task, they will then be allocated to a different Pro-choice article and will be given an option to switch to a Pro-life article by using money from a pot of money given to them at the start of the experiment. Full transcripts from both Session 1 and Session 2 can be found in the Documents and Materials section of this registry.

3   Subjects

Subjects will be recruited from the Prolific platform. The restrictions on participation are:

1. Subjects located in USA

2. Subjects with minimum 95% approval rate

3. Subjects with minimum 30 previous submissions

4. Gender balanced sample

5. Only Pro-choice participants for Session 1 and only Pro-life participants for Session 2 (filtered out by using Prolific's pre-screen variable)

6. Maximum completion time for the experiment 47 minutes (This restriction is put by Prolific. Our predicted completion time for the experiment is 11 minutes. Prolific calculates the maximum allowed time as 47 minutes.)

7. No prior participation in my study

4   Inattention-Based Exclusion Criteria

I will apply four exclusion criteria ex-post:

1. Failing both of the attention check questions

2. Failing at least two out of three comprehension questions

3. Participants who declared in Prolific before that they are Pro-choice but then answer my prior belief question as Pro-life in Session 1

4. Participants who declared in Prolific before that they are Pro-life but then answer my prior belief question as Pro-choice in Session 2

Note: Items 3 and 4 will be excluded from the main analysis. However, I will use their data for a robustness check.

5 Hypotheses

Primary Hypotheses:
A standard rational benchmark predicts no subjects pay to avoid dissonant information, assuming the information has no hedonic value. I expect this prediction to fail (as the belief-based utility models suggest), however, it is unclear to what extent, in particular when related to a topic that polarises society such as abortion rights. My research will provide an estimate of that.

The remaining hypotheses are only applicable if some subjects pay to avoid dissonant information. Given that a proportion of people pay to avoid dissonant information, I will provide an estimate of the size of the effect by quantifying the amount of money participants are willing to give up to avoid dissonant information. The propensity of paying to switch articles (and the amount of money used to pay to switch articles) depends on i) participants' beliefs on abortion rights, ii) prior exposure to dissonant information in the earlier stage of the experiment.

Secondary Hypotheses:
The decision to pay to avoid dissonant information (and the amount of money used to avoid dissonant information) is associated with a subject's political opinion, state of residence, age, gender, risk and information preferences, and media consumption. Moreover, attention avoidance that stems from holding conflicting beliefs is a driving factor for information avoidance. Anticipated emotions (hedonics) are also a significant element when deciding to switch articles and therefore will contribute to information avoidance. Additionally, the instrumental benefit of information avoidance is associated with the subjects' beliefs on abortion. Finally, people are inclined to rate articles that are in line with their beliefs more positively than the ones that are opposed to their beliefs.

6   Analysis

Data will be summarized where possible by using histograms. I will also conduct statistical analyses, including those listed below.

- To test for treatment effects, difference-in-proportion tests will assess whether there are differences among treatment groups in the propensity to avoid dissonant information.

- To test for treatment effects, mean comparison test will assess if there are differences in the amount of money participants are willing to give up to switch articles. I will also quantify psychic cost of completing an effort task on an article which is against one's belief or in line with one's belief.

- I will run probit regressions to investigate the determinants of avoiding conflicting information, with the binary variable (whether dissonant information was avoided) on the left-hand side and my secondary measures on the right-hand side.

- I will run OLS regressions to investigate the determinant of willingness to pay to avoid conflicting information, with the continuous variable (amount spent to switch articles) on the left hand side and my secondary measures on the right hand side.

- In order to disentangle attention avoidance from information avoidance (and to identify attention avoidance as a possible mechanism), I will use the data from the following question: "Please list as many arguments as possible in favour of (or against) abortion rights". I will compare the number of correct statements written among treatment groups by using a mean comparison test and run a text analysis on the content of the statements.

- To understand the mechanism behind people's decisions to switch or not to switch the articles (belief-based utility), I will run a text analysis on their responses to these questions.

- I will compare the mean performance in each effort task among treatment groups by using mean comparison tests and OLS regressions. I will quantify the perceived instrumental benefit of completing an effort task on an article which is against one's belief or in line with one's belief.

- I will run mean comparison tests and OLS regressions to compare the ratings of articles in four dimensions among treatment groups.

- I will run a mean comparison test and OLS regressions to compare prior beliefs on abortion rights with posterior beliefs to investigate if the articles participants read affected their beliefs.

- To account for the demand effect, I will run a text analysis on the participants' reported opinions on the purpose of the study and also their opinion on the researcher's political bias.

- I will provide summaries of demographics and the other secondary outcome measures.

Note: Secondary measures include age (including age cohorts and generations), gender, state of residency (states where abortion is legal vs it is illegal), political beliefs (including the group, the extremism of political opinion, who they voted in the 2020 presidential election, engagement with politics), media consumption, opinion on abortion (the extremism of supporting/opposing abortion rights), risk preference, Information Preference Scale Ho et al. (2021), mean performance in tasks, attention dedicated to each task (time spent on the page of the article, number of (correct) statement written for attention question) and more.

References

Ho, E. H., Hagmann, D. & Loewenstein, G. (2021), 'Measuring information preferences', *Management Science* **67**(1), 126–145.

Miller, S., Wherry, L. R. & Foster, D. G. (2020), 'What happens after an abortion denial? a review of results from the turnaway study', *AEA Papers and Proceedings* **110**, 226–30.
URL: *https://www.aeaweb.org/articles?id=10.1257/pandp.20201107*

Appendix A : Formation of Articles

Practice Article

In order to introduce the task to the participants, I first give them a short essay that follows the structure and format of the real task but is unrelated to the topic of abortion rights. I first searched for apolitical objective essay topics and found technical essays on animal species to be suitable. I then googled descriptive essay examples and opened the first non-advertised website. The first objective descriptive article was about the orchid mantis. Subsequently, I composed a short article using the information provided on the website.[6]

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[6]https://examples.yourdictionary.com/descriptive-essay-examples.html

Articles on Abortion Rights

To run the experiment, I need four articles on abortion: two of which support abortion rights (pro-choice) and the other two to oppose abortion rights (pro-life). To create these articles, I decided to use Congress people's speeches. On the website www.congreess.gov.uk, I added "abortion" as a keyword and searched for the results. I included search results from September 2021 to May 2022. While reading the speech from Congress people, I decided to form the articles on two main dimensions: moral and scientific/health. In the end, I had one pro-choice and one pro-life article from the moral side of the discussion as well as one pro-choice and one pro-life article from the scientific side of the discussion. In order to strengthen the arguments in the articles, I used results from some research studies and articles such as the Turnaway Study (Miller et al. 2020), WHO's fact sheet on abortion[7] and BBC's news article on abortion.[8]

In order to make sure that the final articles that are used to create treatment variation convey the same emotional arousal and message, I ran text analyses on the abortion rights articles including sentiment analysis and cosine similarity analysis.

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[7]https://www.who.int/news-room/fact-sheets/detail/abortion
[8]https://www.bbc.co.uk/news/election-us-2020-54003808