Rethinking Low-Level Affordances of Social Media Platforms -

The Role of Dislikes in Influencing Credibility Judgments of Political Content on YouTube

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1. Introduction

Being one of the largest video streaming and user-generated content sharing platforms, YouTube is an incredibly important source of news, political commentary and opinions for the world. The penetration of social media platforms in politics is especially consequential in the United States, where 26% of adults say that they get their news on YouTube, among whom 72% consider it an important way for them to get news. Both **mainstream and established news organizations**, and **independent news creators** thrive on the platform, with 49% being established news organizations, 42% being independent channels, and 9% other types of organizations. Independent news channels are more likely to be centered around a specific personality, and are more likely to focus on conspiracy theories. [3]

YouTube's interface design provides a fixed set of indicators and information on a video's page - the title, the description, upload date, the source channel and number of subscribers, the view count, the like count and button, the dislike button, and the comments (discussed further in Section 2.3). Before a change in the interface in 2021, the likes and dislikes were an aggregate of engagement by individual users, displayed as their counts; a combination of the two, the dislike ratio, was displayed using a ratio bar. It indicated the ratio of positive and negative engagement that can be interpreted by a viewer on their own terms. Viewing the dislike ratio repeatedly across videos allowed users to develop an intuition for what ratios signal general approval or disapproval from the audience. This intuition was informed by comparing videos to each other and the general like-dislike patterns on YouTube as a whole. How the meaning of the dislike ratio was interpreted by a user was fluid, depending on the type of video, the source of the video, and a combination of other indicators of quality (the view count, and the comment section).

In 2021, YouTube announced that the **dislike count** will be made private across the platform, while the button would remain, and would only be visible to the video's publisher. In addition to the dislike count, this change also removed the **like-dislike ratio** bar, hereinafter referred to as the **dislike ratio**. This decision to remove the dislike count and dislike ratio was controversial, and was not received well by users and creators overarchingly. YouTube explained the removal of the dislike count, one of the very few indicators of content quality and public opinion, by saying that it was an attempt to *"protect creators from harassment, and reduce dislike attacks — where people work to drive up the number of dislikes on a creator's videos",* usually for malicious reasons*.* YouTube CEO Susan Wojcicki also defended the decision in 2022, saying that the change did reduce dislike attacks. [19]

What role does the dislike button serve in the YouTube interface now? Since creators can still view the dislike count on their own published videos, they have some insight into the feedback the dislike feature provides. Whether viewers still engage with the dislike button as frequently or with the same intentions is unclear. Another way the dislike button could still be useful would be if dislikes are used by the YouTube algorithm to improve content recommendations and discovery. However, a recent study by Mozilla disproves this, showing that the dislike button rarely shifts recommendations. [18] Does this change accomplish the stated goal of reducing dislike attacks? Conceivably, there is no incentive to pursue dislike attacks, apart from hoping that the recommendation algorithm drives it out of visibility. However, as a large number of users, creators, and critics have pointed out, this change impedes the user's ability to judge the quality of a video. YouTube has failed to provide insight into how removing the dislike count affects user information processing and perception of content being presented.

One obvious effect of removing the dislike count and dislike is its impact on users' ability to identify reliable educational and instructional videos. For example, a video from a popular cooking channel with a bad recipe that has 60% likes now requires a closer examination of the comment section to recognize the flaws. Without doing so, a user has no way of knowing how good/bad, helpful/unhelpful, accurate/inaccurate a video is. Moreover, creators can choose to hide the comment section completely, effectively removing any public feedback apart from the views and absolute like count. If users can only use the view count as an indicator of public perception, they run the risk of conflating popularity with quality. The perception of the dislike ratio and its resulting meaning changes for different kinds of videos. For example, a high dislike ratio signaling disapproval on Math educational videos is perceived differently than a high dislike ratio on a news video from CNN. In the former, it likely implies that the content is inaccurate or lacking in explanation. In the latter, it might mean that the video has inaccuracies or is misleading or isn't produced well. Or, depending on users' political and partisan identity, they might believe that the video is being wrongfully disliked by political opponents, and might actually be trustworthy. Similarly, a video liked by the majority might be even more untrustworthy if it comes from a source that the user perceives as biased against their own political identity.

How do these dynamics change in the absence of the dislike ratio, which was the most visible and palatable indicator of public opinion? How does the new combination of indicators act as a cue that triggers various heuristics[1], such as the bandwagon effect[2], and how is it different when the dislike count and ratio is present? What guides users' judgment of trust and bias in news and

[1] Heuristics are mental shortcuts we use to solve problems and make decisions.
[2] The term "bandwagon effect" denotes a phenomenon of public opinion impinging upon itself: In their political preferences and positions people tend to join what they perceive to be existing or expected majorities or dominant positions in society. [19]

political content, and how does this interact with political and partisan identities on the platform? I argue that the very intentional design choices of a platform like YouTube must be studied with more nuance as they shape the collective cognition of communities and the political landscape of countries. This understanding can help design and build platforms that disrupt the polarization of news and politics on social media. To this effect, I design and run an experiment to evaluate how users' perception of trust and bias in presented content is informed by popularity indicators, and how it changes with and without a dislike count and ratio. To understand the processes that lead to diverging interpretations about common events, narratives, and ideas, it is necessary to understand how a user perceives, interacts, and engages with information that the platform presents. This requires firm grounding in the cognitive processes that a user undergoes. [4, 5]

Through this thesis, I take an interdisciplinary approach, building on knowledge in Human Computer Interaction (HCI) and Cognitive Science to study how the dislike count and, more importantly, the dislike ratio, affects a user's perception of news and political content on YouTube.

2. Background

2.1 Affordances of Social Media Platform and Political Polarization

Although popular social media platforms like Youtube have allowed for the democratization of information and opinion sharing, there has also been considerable research that shows the existence of radicalization pipelines, echo chambers, and rampant misinformation on these

platforms. [1,2,11] They have also been linked to increasing political polarization not only in the US, but across the world. Understanding the role of social media and ICTs (Information and Communication Technology) has become a subject of immense public, academic, and political attention [14]. Gerbaudo [17] argues that there exists an 'elective affinity' between social media and political populism, made possible due to the mass networking capabilities and new communication channels presented by social media platforms. Hopster [13] expands on these arguments by focusing on the specific factors of the current social media ecology amenable to populism by looking at ***affordances***. He defines an affordance as a possibility for action which describes how a given technological setting, such as the social media environment, invites people to act in specific ways. He describes four populist affordances of social media platforms, one of which is the **low-level affordance** design of social media. Low-level affordances are '*affordances embedded in the concrete user interface and specific buttons and indicators of online media, which both enable and constrain communicative practices.*' On the other hand, he defines **high-level affordances** as affordances that '*concern possibilities for action that have become more salient through changes in the overall media ecology'*. For example, the highly localized networking possibilities of social media platforms is a high-level affordance that influences the entire media ecology and adds new abilities to human communication capabilities. The comment section on YouTube is a low-level affordance, embedded in the user interface and molding the communication practices of users on the platform.

While recent research has studied political polarization - both affective[3] and ideological[4] - with an overwhelming focus on platforms, not enough progress has been made in understanding the

[3] The extent to which people like (or feel warmth towards) their political allies and dislike (or feel lack of warmth towards) their political opponents. [16]
[4] The divergence of political opinions, beliefs, attitudes, and stances of political adversaries [15]

communication constraints of their low-level affordances. In comparison to platforms such as Twitter and Facebook, the body of work focusing on YouTube and its affordances as a social media platform for political exchange has been significantly limited.

2.2 YouTube's Low-Level Affordances

Unlike other platforms that solely rely on an algorithmically curated feed to deliver content to users, YouTube has many spaces for content discovery, the important ones being the home page, the search results, and suggested videos on a video's page. YouTube emphasizes its search feature and gives users agency in determining which video to watch. This design choice means users are frequently offered a list of choices from which they pick the video they want to watch. This list of videos is curated by the YouTube algorithm, which works differently for different content discovery spaces. The algorithm bases its decisions on a user's watch history, preferences, and other inferences made based on the users' activity, used by the opaque intricacies of the machine learning model that combines it all.

On the home page as well as the suggestions panel on a video page, YouTube lists videos with their thumbnails, title, channel name, view count, and upload date (Figure 1). In addition to these indicators, a truncated description is shown for each video on the search results page.

Figure 1. How YouTube recommendations are listed

A user assesses these affordances to pick a video to watch, which leads them to the video's page. On a video's page, YouTube shows users the view count, upload date, like count, channel name, subscriber count, video description, comment section, and recommendation panel. Before a user commits to watching the video, they will often spend some time assessing the reliability of the video by interacting with the affordances of the page. A user may decide to not watch a video in response to negative feedback from the dislike count or the comment section. In fact, YouTube recognizes this dynamic and only counts a view when a user has watched a video for at least 30 seconds.[5] A user may also assess the affordances after watching a video, which can update their credibility judgment. They may also choose to engage with the content by giving it a like, a dislike, or leaving a comment.

Figure 2. The evolution of the YouTube Likes and Dislikes metric

[5] https://www.tubics.com/blog/what-counts-as-a-view-on-youtube

2.3 Perceived Credibility and Low-Level Affordances as Cues

Credibility is usually a quality attributed to a message source and can be based on a number of factors, such as trustworthiness, expertise, bias, accuracy, etc. It is not an inherent property that a video or source holds, but is based on the consumer's perception of information. Perceived credibility has long been of interest to researchers, especially for traditional media, and recently digital media. Amidst the rise of digital media as the primary source of news and political information, questions about the relative credibility of online media compared to traditional sources of media have been the center of attention. While research has mostly shown that people perceive traditional media as more credible than digital sources, over the last decade, the credibility of traditional news media has also been called into question. It is more and more evident that people are willing to trade credibility for the sheer amount of diverse information that digital media presents, along with other attractive features. [9]

Measuring credibility is tricky as it builds on a multitude of factors. However, measures for trustworthiness, bias, and accuracy have been the most commonly used by researchers. By measuring how low-level affordances of platforms affect these measures of perceived credibility for different kinds of information, we can better understand how digital media platforms may improve their design to move towards more accurate and fruitful information exchange.

In his paper 'The MAIN Model: A Heuristic Approach to Understanding Technology Effects on Credibility [6]', S. Shyam Sundar explains that '*technological affordances in digital media trigger cognitive heuristics that aid credibility judgements by offering both new functions and new metrics that are rich in cues.*' He argues that affordances trigger certain heuristics that allow users to take mental shortcuts in evaluating the credibility of content, and presents the

MAIN (Modality-Agency-Interactivity-Navigability) model - an inexhaustive list of four broad affordances that have shown significant psychological effects.

On YouTube, heuristics that lead to credibility judgements are complex and multi-layered, and can be triggered by a variety of cues influenced by the design of affordances. For example, the name of the channel can act as an expertise cue, the view and like count can be bandwagon cues, thumbnails might be a trendiness cue, etc. Different heuristics are invoked when a user, mostly subconsciously, assesses the various cues offered by the affordances. Combining individual experiences and context,, a user then infers how believable or credible the content is, ultimately making a judgment regarding its quality. Certain heuristics, when triggered, might also directly lead to snap judgments. For instance, upon seeing that the dislike-ratio is too high, a user might decide to not watch the video at all. If they choose to watch the video, the heuristics invoked by the high dislike-ratio cue will certainly affect how the information is processed.

This is the crux of my investigation into the dislike count and ratio: important low-level affordances of YouTube that deserve discussion of their influence as indicators of credibility, especially since they were recently removed. Modifying user interfaces without adequate deliberation on the influence of low-level affordances in cognitive patterns highlights a more general trend from social media platforms in recent years. It reveals a shift in focus from studying the cognitive effects of affordances and platform design that cue credibility judgments to instead emphasizing the content itself as the source for credibility judgment. Recent efforts like adding ‘misinformation warning’ or other content flags have had mixed results. Research has shown the severe limitations of design choices aimed at combating misinformation that, superficially, seem like they should work. [12] Understanding the underlying cognitive processes triggered by

low-level affordances inform design choices that reinforce against **belief echoes** [20] and other unintended effects of presented information. Clearly, it is fruitful to study low-level affordances and harness knowledge of their psychological effects to aid design that allows users to make accurate credibility evaluations.

3. Research Questions and Study Design

RQ: Does the dislike count and dislike ratio on YouTube influence credibility judgment for news and political videos? How does this manifest users identifying across the political spectrum in the US?

To prove this overarching research question, I designed a study to measure credibility in the form of trust and bias ratings for videos, the dependent variables, through two surveys - one that includes the dislike count and dislike ratio, and one that does not. Assessing these measures for different kinds of news and political videos that a user might encounter on YouTube can improve our understanding of low-level affordance design and their relation with different political identities and cognitive biases. The independent variables are categorical, denoting the political leaning of the source, whether the source is a mainstream/established media organization or an independent/personality-driven channel, and if the dislike ratio is high or low (showing negative or positive public opinion respectively). These three independent variables were factorially combined to define the characteristics of 8 videos to be listed, and broadly encompass the variety of news and political content on YouTube. Table 1 lists the variables and gives a brief description of them and Table 2 lists the sources chosen for the videos along with their defined characteristics.

Each video was also assigned a view count (either around 70k or 1.2M), an approximate of the total number interactions (like and dislikes) was calculated (around ~15% of the number of views), and this number was split into the like and dislike count based on the the defined range for a **low dislike ratio (~5% dislikes)** or a **high dislike ratio (25-30% dislikes).** The choice of assigning different view counts is built on the assumption that there is no difference in credibility perception whether a video has ~1.2M views or ~70k views. This variability in views, I believe, was important for the survey to be taken seriously by participants. Without a view count, participants would likely discover the premise of the study, thereby biasing the results.

Variable	Description
Perceived political bias of the video (DV)	Perceived political bias of the videos on a 5 point scale (-2 to 2) *(Large Liberal Bias, Slight Liberal Bias, No Bias, Slight Conservative Bias, Large Conservative Bias)*
Perceived trust in the accuracy of the video (DV)	Perceived trust in the videos on a 5 point scale (-2 to 2) *(Untrustworthy, Slightly Untrustworthy, Neutral, Slightly Trustworthy, Trustworthy)*
Channel type (IV)	Mainstream media channels or Independent personality-driven channel
Dislikes and dislike-ratio (IV)	A categorical variable, (dislikes and ratio present, dislikes and ratio not present)
Political Leaning of Source (IV)	Conservative leaning or Liberal leaning
Dislikes Ratio (IV)	Low dislike ratio (less dislikes) or High dislike ratio (more dislikes)
View Count (IV)	Either ~70K or ~1.2M
Channels recognized (BV)	Prior knowledge of the source (yes/no for each)

Time spent on Youtube - overall (BV)	# hours spent on average on Youtube overall /week.
Time spent on Youtube - news/politics (BV)	# hours spent on average on Youtube for news/political content /week.
Political Identity of Participant (BV)	To account for participants' political leaning, a 7-point Likert scale ranging from extremely liberal to extremely conservative. Option for self defining.
Age (BV)	Categorical Age
Gender (BV)	Categorical Gender

Table 1. Research variables
DV: Dependant variable, IV: Independent variable, BV: Background variable

Video Source	**Political Leaning**	**Source Type**	**Dislike Ratio**
Newsmax	Conservative	Established	High
Fox News	Conservative	Established	Low
Ben Shapiro	Conservative	Independent	High
Steven Crowder	Conservative	Independent	Low
BBC	Liberal	Established	High
CNN	Liberal	Established	Low
John Oliver	Liberal	Independent	High
Trevor Noah	Liberal	Independent	Low

Table 2. Sources of the 8 listed videos and their characteristics (combination of IVs)

Based on this research question and study design, I devise the following hypotheses -

H1: Users will take more time to complete the survey with dislikes compared to the survey without dislikes, implying users take more time to process the information from the like-dislike ratio to make credibility judgments.

Based on the fact that one survey presents more information to the subjects in the form of the dislike count and ratio, one can expect them to take more time to accurately assess trust and bias for the videos for that survey. If such is the case, it would provide evidence that the information added by the dislike count and dislike ratio is significant enough to play a part in credibility assessment. However, this might not be the case in real life, where users don't have to actively make and quantify their perception of trust and bias.

H2: Conservatives, Moderates, and Liberals differ in what videos and sources they deem trustworthy, as well as their bias.

To understand how the dislike count and ratio affects credibility assessment for news and political content across the spectrum of political identities in the United States, it is important to see how significant the difference is between the three major groups - conservatives, moderates, and liberals. There is enough evidence, and also intuition, to show that perception of trust by conservatives and liberals would be significantly different for different videos and sources, with extreme opinions in the two directions for sources that are known to lean either conservative or liberal. The difference in perception of bias might be subtler. It is probable that liberals would perceive less bias in liberal leaning media than conservatives, or vice versa. It might also be that liberals perceive more bias in conservative media than conservatives, or vice versa. Confirming this hypothesis will set the stage for analyzing how perceptions change for different political groups when information from the dislike count and ratio is added.

H3: The presence of the dislike ratio changes the perception of trust and bias in the listed videos.

Before grouping the videos and sources based on the independent variables, this hypothesis will highlight how perception changes for individual videos and sources when the dislike count and ratio is present. The dislike ratio could act as a cue that could trigger certain heuristics for users based on their own knowledge of the source and their political identity. However, it is also possible that the relative strength of the cue is weak compared to the user's judgment based on prior knowledge of the source. Regardless, this analysis may not be comprehensive since credibility assessment for individual sources is dependent on the user's prior knowledge of the source, or how they subconsciously organize the source into categories, such as conservative leaning or liberal leaning, or mainstream or independent.

H4: Liberals, moderates, and conservatives place more trust and perceive less bias in mainstream sources than independent personality driven ones.

H4 focuses on how perception differs across the two major types of news and political channels on YouTube **-** Mainstream/Established Media Organizations, Independent/Personality-Driven Channels. This can also be combined with the political leaning of the source to create four categories - 1. Conservative leaning mainstream channels, 2. Conservative leaning independent channels, 3. Liberal leaning mainstream channels, 4. Liberal leaning independent channels. Grouping videos and sources based on the independent variables of interest and seeing how credibility judgment exists and changes because of the dislike count and ratio will be more revealing. I expect users would perceive mainstream sources as more trustworthy and less biased than independent sources, regardless of their and the source's political leaning.

H5: The presence of the dislike ratio makes mainstream sources less trustworthy

H6: The presence of the dislike ratio makes mainstream sources appear more biased.

H7: The presence of the dislike ratio makes independent sources more trustworthy.

H8: The presence of the dislike ratio makes independent sources appear less biased.

I hypothesize that the dislike count and dislike ratio can act as a mediator of trust and bias perception. A high dislike ratio can have the effect of reducing trust in mainstream sources and increasing trust in independent sources. This can be explained if users have the perception that independent sources are more biased. In this case, the high number of dislikes might act as a heuristic, telling the user that the video does not give information that is biased towards the majority. The effect in the opposite direction might be less strong if users are already primed to view mainstream sources as more trustworthy than independent sources. That is, a low dislike ratio might not increase trust significantly for mainstream videos or decrease trust in independent sources because users already perceive independent sources as less trustworthy. Similarly for bias, a high dislike ratio can have the effect of increasing perception of bias in mainstream sources and decreasing the perception of bias in independent sources. The effect in the opposite direction might be less strong if users are already primed to view independent sources as more biased than mainstream sources.

H9: The presence of the dislike ratio makes videos with a low dislike ratio (DR) appear more trustworthy, but more biased.

H10: The presence of the dislike ratio makes videos with a high dislike ratio (DR) appear less trustworthy, but less biased.

Finally, how does perception change because of the dislike count and ratio for videos with different ratios of dislikes? Since information about dislikes is completely absent if the count and ratio is removed, judgment in that case is almost completely dependent on a user's prior knowledge of the source and political leaning and bias. This hypothesis can also be thought of as analyzing the difference in trust and bias when additional information about dislikes is added. While the dislike count is an aggregate of negative engagement, the like-dislike ratio can work as a positive cue as well if the ratio of dislike is very low. This signals that the majority of viewers who engaged with the content had a positive opinion.

Because conservatives view the audience on social media platforms as liberal leaning and liberally biased, a low dislike ratio might actually increase the perception of bias in a video. The opposite can be said about participants identifying as liberal, who might perceive more trust and less bias in a video with a low dislike ratio. Similarly, a high dislike ratio might increase the perception of bias in a video for conservatives, and decrease it for liberals.

4. Method

Two identical surveys with only one difference, the presence of the dislike count and dislike ratio, were designed in Qualtrics, and responses were collected from participants through Amazon MTurk. Both surveys included a reCAPTCHA and two attention check questions to filter bots or inauthentic responses common on MTurk. Figure 3 and 4 show the design of the interface for getting trust and bias ratings with and without the dislike ratio respectively. All videos were given a title on the topic 'inflation', chosen from a real video published by the source on YouTube. The view count, likes, dislikes, and their ratio was chosen according to the design discussed in the previous section. The sources were chosen based on their popularity, channel type, and political leaning. While the sources don't entirely represent the categories they are placed in, they are some of the biggest and most popular ones. For example, Steven Crowder and Ben Shapiro are both hugely popular conservative-leaning independent/personality-driven news/politics channels. Sources' political leaning was determined using information from Ad Fontes Media[6] and AllSides[7]. The only exception here is BBC, which was rated as having fairly neutral bias, but is categorized as liberal-leaning in this study, because of its popularity and perceived liberal-leaning as one of the biggest mainstream news organizations. Table 3 lists the 8 sources and the title given to their listed video.

250 participants completed the task for each of the surveys. Bots or inauthentic responses were removed if - 1. The total hours spent on YouTube was less than the hours spent only watching political content[8], 2. If either of the attention check questions were answered incorrectly, 3. There

[6] https://adfontesmedia.com/
[7] https://www.allsides.com/unbiased-balanced-news
[8] Two questions separately asked users how much time they spent on YouTube per week, and how much time they spent watching news/political content on YouTube per week. The assumption here is that if users are paying attention to the survey, time spent on YouTube overall must be more than time spent only watching news/politics.

was suspicious text in an optional open ended final question, 4. If completion time was less than 90 seconds or more than 1200 seconds, or 5. If the MTurk worker had done the other survey already. The final cleaned dataset contained 143 responses for the survey with dislikes and 154 responses for the survey without dislikes. The data was then analyzed in Python using various statistical and plotting libraries. Demographics are included in the appendix. The following section discusses the results.

Video Source	**Video Title**
Newsmax	Breaking: Inflation spike shatters expectations, recession may be next
Fox News	Inflation hits new 40-year high: 'Out of control'
Ben Shapiro	Shapiro Breaks Down HORRIFYING Statistics Showing MASSIVE Inflation
Steven Crowder	I'M BACK! The Economy Isn't Bad, You're Just Stupid!!! | Louder with Crowder
BBC	US prices rising at fastest rate for 40 years - BBC News
CNN	'Tough number to swallow': Romans breaks down inflation data
John Oliver	Inflation: Last Week Tonight with John Oliver (HBO)
Trevor Noah	Inflation Soars | The Daily Show

Table 3. Chosen sources for 8 videos and their respective titles taken from a video published by the source on YouTube

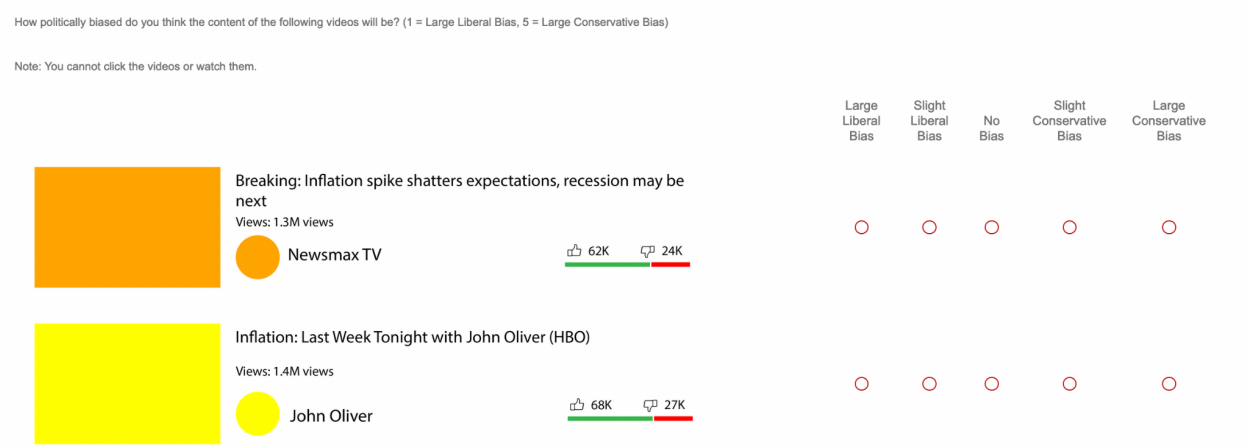


Figure 3. Example of the survey interface with dislikes

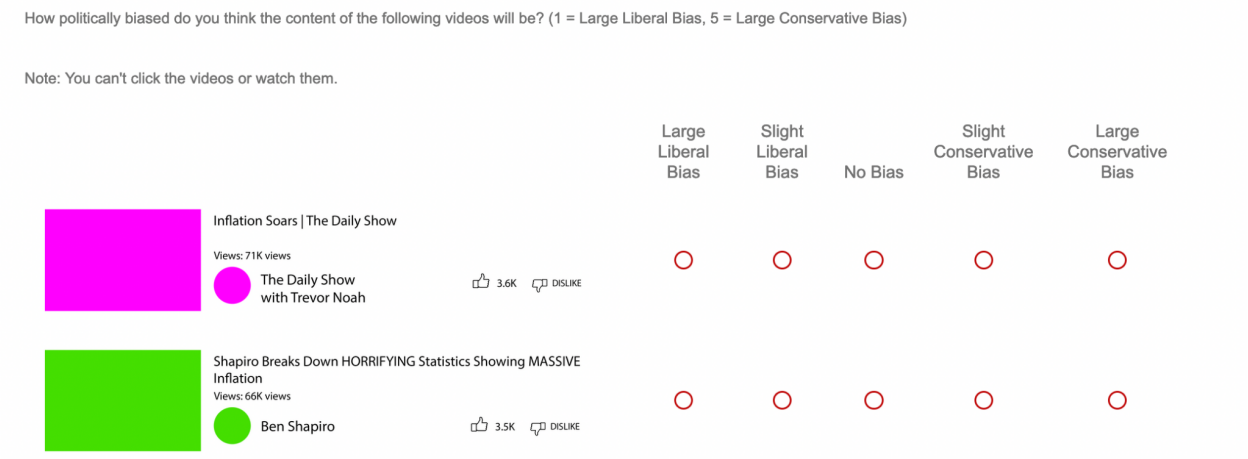


Figure 4. Example of the survey interface without dislikes

5. Results

This section discusses the results for each of the hypotheses and is figure and table heavy. Trust and bias measures are reported on a -2 to 2 as described in Table 11. Results from significance tests are included in the Appendix. As individual hypothesis results are hard to remember, the next section summarizes the significant effects observed.

H1: Users will take more time to complete the survey with dislikes, implying users take more time to process the information from the like-dislike ratio to make credibility judgments.

	Mean	**Median**	**Standard Deviation**
Survey with Dislikes	301.49 secs	244.0 secs	182.99
Survey without Dislikes	242.12 secs	202.0 secs	140.73

Table 4. Descriptives for time taken for both surveys

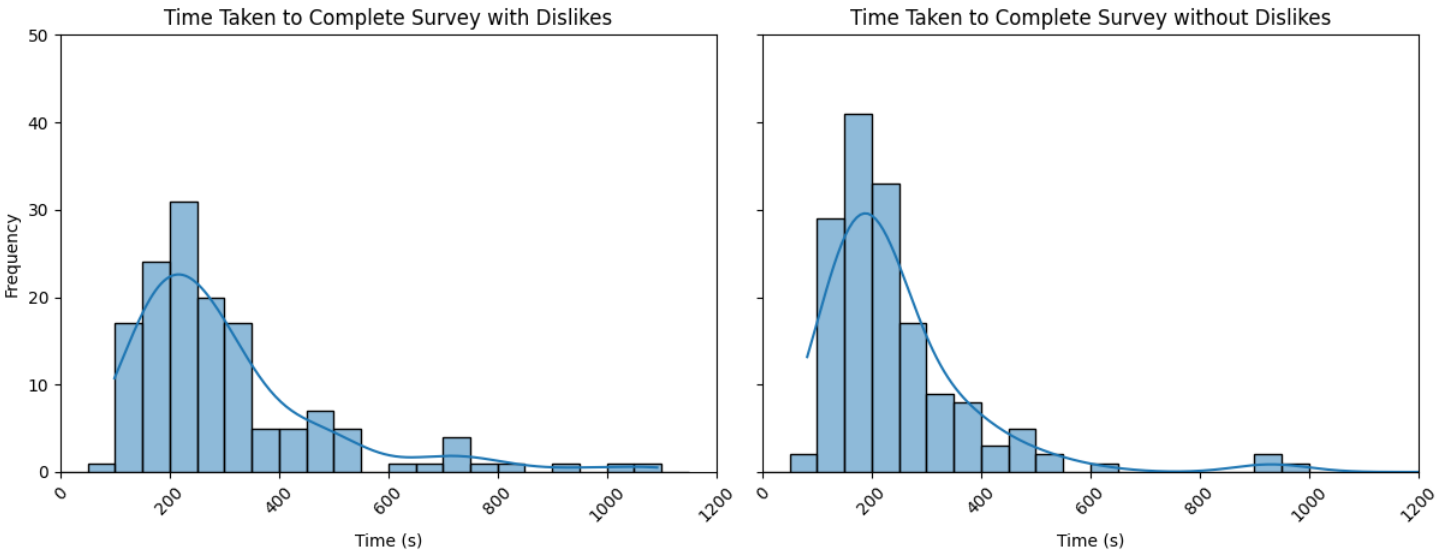


Figure 5. Time taken to complete both the surveys, in seconds

Table 4 shows the descriptives for the duration of survey responses and Figure 5 shows the distribution of response time. A two sample t-test on the duration (in seconds) of survey responses shows a significant effect - with means of 301.49s for the survey with dislikes and 242.12s for the survey without dislikes. Since the only difference between the two surveys was the presence of the dislikes count and the dislike ratio, this result points towards users spending more time to make judgements about trust and bias in the presence of this affordance. This proves that the dislike count and ratio are considered seriously by users when they are nudged to make credibility judgements. Whether users consider them as seriously when browsing the platform themselves and making subconscious credibility assessments cannot be directly inferred. Regardless, it seems evident that the dislikes count and the dislike ratio both add information that users consider, taking time in doing so.

H2: Conservatives, Moderates, and Liberals differ in their perception of trust and bias of the listed video videos.

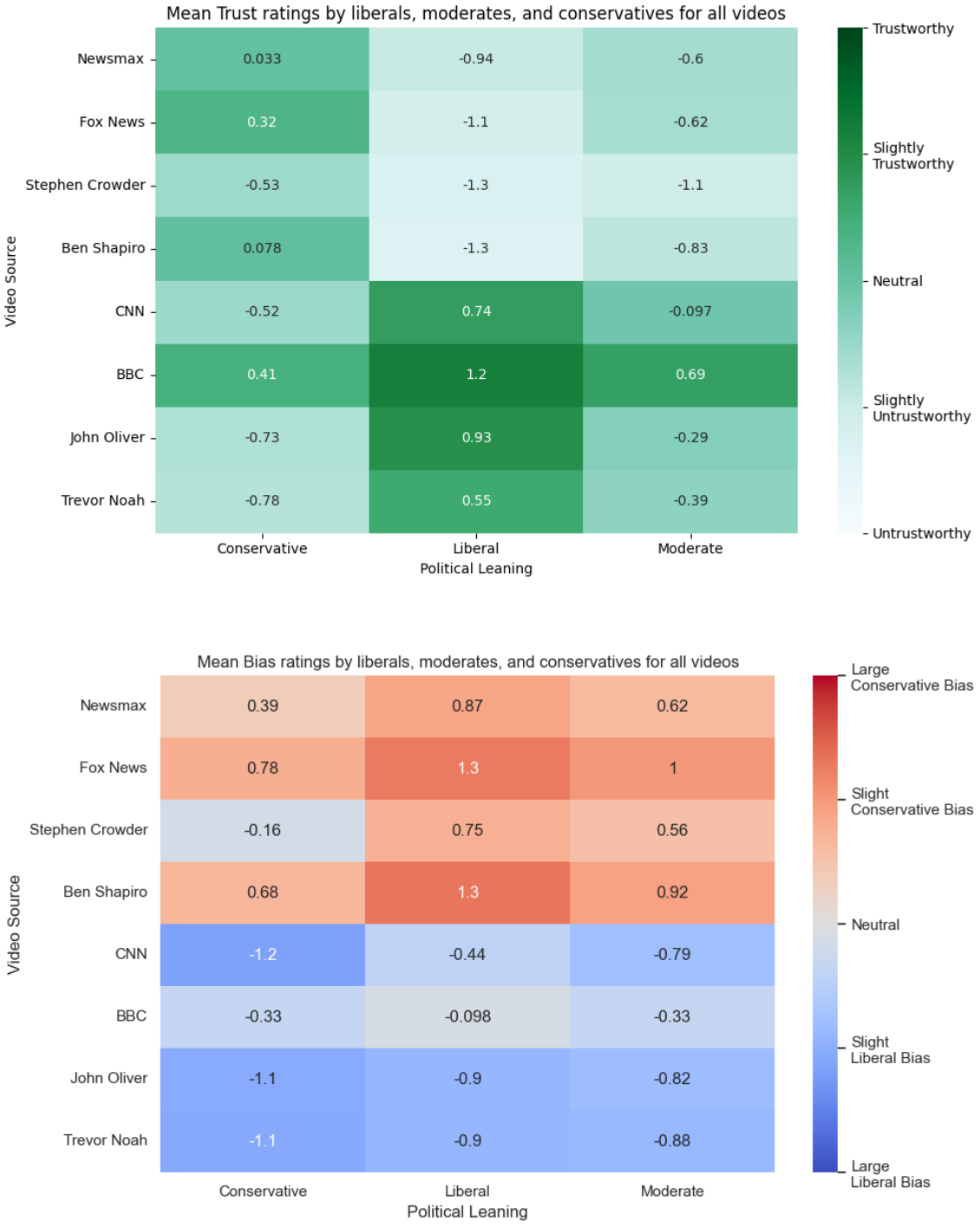


Figure 6. Mean trust and bias ratings for each video, shown as their source, from participants identifying as conservative, moderate, or liberal.

Video Source	Trust - Conservative	Trust - Liberal	Trust - Moderate	Bias - Conservative	Bias - Liberal	Bias - Moderate
Newsmax	**0.033** 1.36	**-0.94** 1.27	**-0.6** 1.36	**0.39** 1.22	**0.87** 1.14	**0.62** 1.14
Fox News	**0.32** 1.37	**-1.1** 1.21	**-0.62** 1.40	**0.78** 1.11	**1.3** 1.15	**1** 1.13
Stephen Crowder	**-0.52** 1.30	**-1.3** 1.06	**-1.1** 1.06	**-0.16** 1.52	**0.75** 1.44	**0.56** 1.42
Ben Shapiro	**0.078** 1.29	**-1.3** 1.07	**-0.83** 1.07	**0.68** 1.31	**1.3** 1.20	**0.92** 1.44
CNN	**-0.52** 1.50	**0.74** 1.04	**-0.097** 1.04	**-1.2** 1.03	**-0.44** 0.88	**-0.79** 1.02
BBC	**0.41** 1.34	**1.2** 1.08	**0.69** 1.08	**-0.33** 0.83	**-0.098** 0.64	**-0.33** 0.86
John Oliver	**-0.73** 1.14	**0.93** 1.09	**-0.29** 1.09	**-1.1** 0.93	**-0.9** 0.89	**-0.82** 1.00
Trevor Noah	**-0.78** 1.29	**0.55** 1.04	**-0.39** 1.04	**-1.1** 1.12	**-0.9** 0.91	**-0.88** 1.06

Table 5. Means (in bold) and standard deviations of trust and bias ratings for each video split for conservatives, liberals, and moderates. Videos with significant differences across political identities are highlighted.

This hypothesis confirms the basic assumption I make throughout this work - that conservatives, moderates, and liberals differ in their credibility judgment of news and political sources. The analysis for this hypothesis confirms this assumption. Table 5 shows the means and standard deviations of trust and bias ratings for each video and source, split across conservatives, liberals, and moderates. Significant differences across political identities are highlighted. Figure 6 visualizes these ratings for each video and source. Difference in trust ratings across participants of different political identities is significant for all videos, and difference in bias is significant for all videos except those from John Oliver and Trevor Noah, the two liberal leaning independent

personality-driven sources. This means that the level of liberal bias of these sources is perceived much more uniformly than other sources across political identities. It is also noteworthy that liberals seem to have a more polarized judgment of trust, having more trust in liberal leaning sources and more distrust in conservative leaning sources, than conservatives and moderates. They also perceive more conservative bias in conservative leaning videos than any other group.

H3: The presence of the dislike ratio changes the perception of trust and bias in the listed videos.

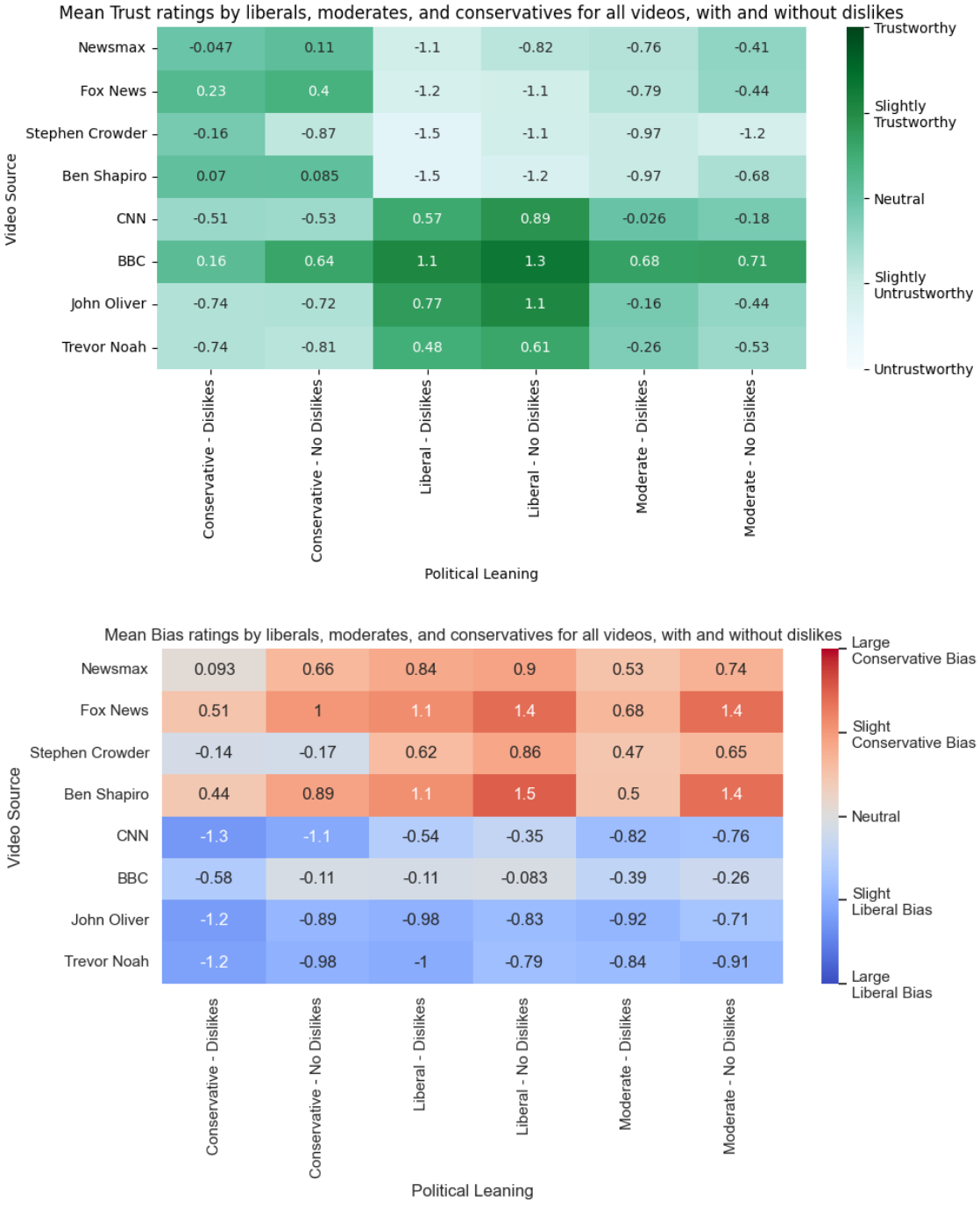


Figure 7. Mean trust and bias ratings for each video, shown as their source, from participants identifying as conservative, moderate, or liberal; with and without the dislike ratio

Video Source	Conservative - Dislikes	Conservative - No Dislikes	Liberal - Dislikes	Liberal - No Dislikes	Moderate - Dislikes	Moderate - No Dislikes
Newsmax	**-0.047** 1.25	**0.11** 1.29	**-1.1** 1.23	**-0.82** 1.30	**-0.76** 1.32	**-0.41** 1.40
Fox News	**0.23** 1.43	**0.4** 1.33	**-1.2** 1.09	**-1.1** 1.31	**-0.79** 1.36	**-0.44** 1.46
Stephen Crowder	**-0.16** 1.38	**-0.87** 1.15	**-1.5** 0.98	**-1.1** 1.11	**-0.97** 1.37	**-1.2** 1.14
Ben Shapiro	**0.07** 1.42	**0.085** 1.18	**-1.5** 0.96	**-1.2** 1.15	**-0.97** 1.10	**-0.68** 1.49
CNN	**-0.51** 1.56	**-0.53** 1.46	**0.57** 1.18	**0.89** 0.91	**-0.026** 1.37	**-0.18** 1.40
BBC	**0.16** 1.45	**0.64** 1.21	**1.1** 1.21	**1.3** 0.94	**0.68** 1.25	**0.71** 1.38
John Oliver	**-0.74** 1.16	**-0.72** 1.14	**0.77** 1.26	**1.1** 0.92	**-0.16** 1.37	**-0.44** 1.24
Trevor Noah	**-0.74** 1.42	**-0.81** 1.17	**0.48** 1.15	**0.61** 0.94	**-0.26** 1.31	**-0.53** 1.26

Table 6. Means (in bold) and standard deviations of **trust** ratings for each video split for conservatives, liberals, and moderates; with and without dislikes. Videos with significant differences in trust when dislikes are shown vs not are highlighted.

By comparing the trust and bias ratings between the two surveys (with dislikes and the dislike ratio, and without), we can observe how the affordance affects users' perception of the news/political sources. Table 6 and Table 7 show the means and standard deviations of trust and bias ratings for each video and source for each political identity category for the surveys with and without dislikes; significant effects are highlighted.

Video Source	Conservative - Dislikes	Conservative - No Dislikes	Liberal - Dislikes	Liberal - No Dislikes	Moderate - Dislikes	Moderate - No Dislikes
Newsmax	**0.09** 1.27	**0.66** 1.11	**0.84** 1.21	**0.90** 1.08	**0.53** 1.27	**0.74** 0.99
Fox News	**0.51** 1.26	**1.02** 0.90	**1.11** 1.21	**1.40** 1.08	**0.68** 1.30	**1.38** 0.78
Stephen Crowder	**-0.14** 1.44	**-0.17** 1.61	**0.62** 1.56	**0.86** 1.34	**0.47** 1.41	**0.65** 1.45
Ben Shapiro	**0.44** 1.37	**0.89** 1.24	**1.10** 1.34	**1.51** 1.03	**0.50** 1.64	**1.38** 1.02
CNN	**-1.28** 0.96	**-1.06** 1.09	**-0.54** 0.85	**-0.35** 0.91	**-0.82** 0.95	**-0.76** 1.10
BBC	**-0.58** 0.88	**-0.11** 0.73	**-0.11** 0.58	**-0.08** 0.71	**-0.39** 0.89	**-0.26** 0.83
John Oliver	**-1.23** 0.81	**-0.89** 1.01	**-0.98** 0.94	**-0.83** 0.86	**-0.92** 1.00	**-0.71** 1.00
Trevor Noah	**-1.16** 1.07	**-0.98** 1.17	**-1.03** 0.82	**-0.79** 0.98	**-0.84** 1.10	**-0.91** 1.03

Table 7. Means (in bold) and standard deviations of **bias** ratings for each video split for conservatives, liberals, and moderates; with and without dislikes. Videos with significant differences in trust when dislikes are shown vs not are highlighted.

Figure 7 visualizes the means. The analysis shows that there is no significant change in trust for individual videos and sources apart from Stephen Crowder's video being perceived as significantly more trustworthy in the presence of the dislike ratio by conservatives. This may be explained by the fact that the video had a low dislike ratio, which is affirming of trust, was from the least known source, which denies trust, and had a relatively more inflammatory title.

It is more complicated to discern how the dislike ratio changes perception of bias for these individual sources. For liberals, the dislike ratio significantly decreased how biased Ben Shapiro's

video was perceived to be, even though it had a high dislike ratio. For moderates, the dislike ratio significantly decreased the perceived bias for Fox News (low DR) and Ben Shapiro (high DR). Finally for conservatives, the dislike ratio significantly decreased the perceived bias for Fox News (low DR) and Newsmax (high DR), but increased it for BBC (high DR). While these differences are significant, this analysis cannot tell us much and it would be more insightful to assess the influence of the dislike ratio on videos and sources grouped based on their characteristics - the independent variables of interest.

H4: Liberals, moderates, and conservatives place more trust and perceive less bias in mainstream sources than independent personality driven ones.

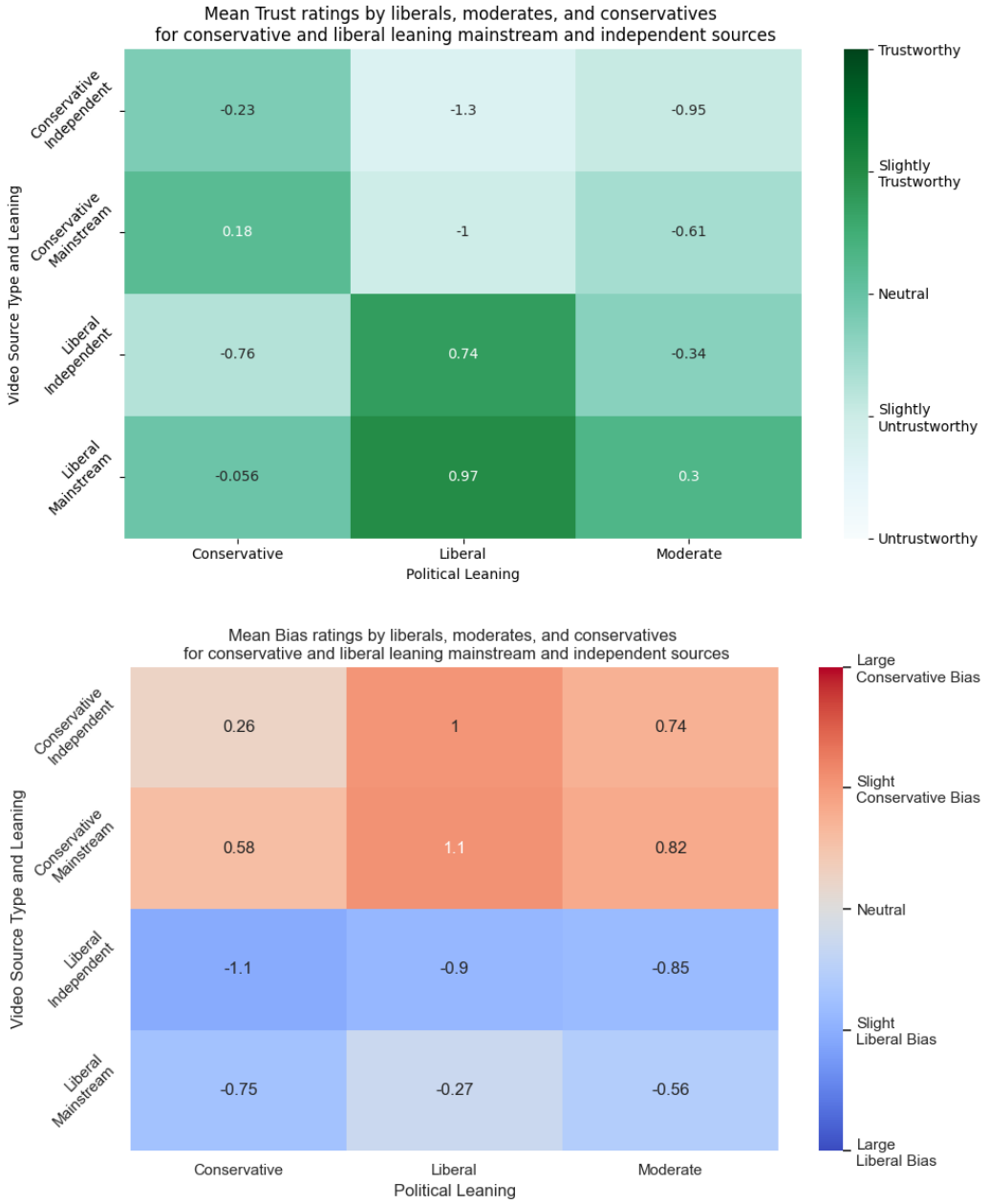


Figure 8. Mean trust and bias ratings for conservative leaning and liberal leaning mainstream and independent sources from participants identifying as conservative, moderate, or liberal

Video Source Type	Trust - Conservative	Trust - Liberal	Trust - Moderate	Bias - Conservative	Bias - Liberal	Bias - Moderate
Conservative Independent	**-0.23** 1.33	**-1.3** 1.06	**-0.95** 1.28	**0.26** 1.48	**1** 1.35	**0.74** 1.44
Conservative Mainstream	**0.19** 1.33	**-1** 1.24	**-0.61** 1.38	**0.58** 1.18	**1.1** 1.16	**0.82** 1.15
Liberal Independent	**-0.76** 1.21	**0.74** 1.08	**-0.34** 1.29	**-1.1** 1.03	**-0.9** 0.9	**-0.85** 1.03
Liberal Mainstream	**-0.056** 1.49	**0.97** 1.08	**0.3** 1.39	**-0.75** 1.02	**-0.27** 0.79	**-0.56** 0.97

Table 8. Means (in bold) and standard deviations of **trust and bias** ratings for conservative and liberal leaning mainstream and independent sources; Source types with significant differences in trust and bias between political identities are highlighted

To assess how trust and bias perception differs from participants identifying as conservative, moderate, or liberal across mainstream and independent sources, the videos were grouped into four categories - liberal leaning mainstream, liberal leaning independent, conservative leaning mainstream, and conservative leaning independent. Table 8 shows the means and standard deviations of trust and bias ratings for each source type. Significant differences between ratings of mainstream and independent sources of similar leaning are highlighted. Figure 8 further visualizes this information.

For trust, **mainstream sources are uniformly seen as significantly more trustworthy than independent sources**, from participants identifying as conservative, moderate, or liberal, both for sources with a similar or different political leaning as the participant.

For bias, **liberal leaning mainstream sources are perceived as less biased than liberal leaning independent sources from participants across political identities**. **Conservatives perceive conservative mainstream sources as significantly less biased than conservative independent sources**. However, participants identifying as moderate or liberal do not significantly perceive conservative leaning mainstream sources as less biased than conservative independent sources. Analyzing the mean ratings shows that liberals' perception of conservative bias in conservative mainstream sources (actually, just slightly more than conservative independent sources) is higher than any other group.

H5: The presence of the dislike ratio makes mainstream sources less trustworthy

H6: The presence of the dislike ratio makes mainstream sources appear more biased.

H7: The presence of the dislike ratio makes independent sources more trustworthy.

H8: The presence of the dislike ratio makes independent sources appear less biased.

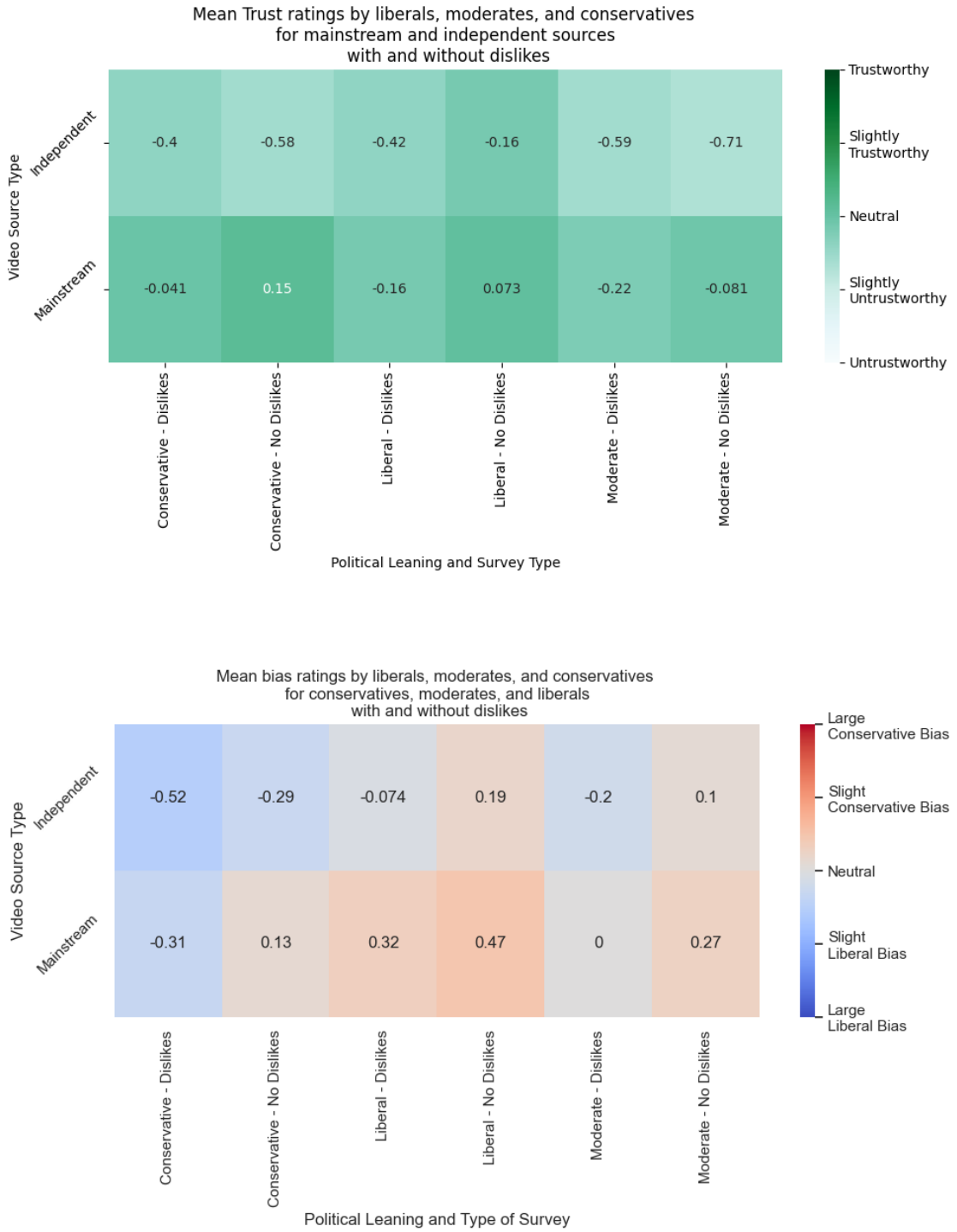


Figure 9. Mean trust and bias ratings for mainstream and independent sources from participants identifying as conservative, moderate, or liberal; with and without the dislike ratio

Source Type	Conservative - Dislikes	Conservative - No Dislikes	Liberal - Dislikes	Liberal - No Dislikes	Moderate - Dislikes	Moderate - No Dislikes
Independent	**-0.4** 1.38	**-0.58** 1.21	**-0.42** 1.51	**-0.16** 1.45	**-0.59** 1.33	**-0.71** 1.33
Mainstream	**-0.04** 1.44	**0.15** 1.38	**-0.16** 1.54	**0.07** 1.53	**-0.22** 1.45	**-0.08** 1.47

Table 9. Means (in bold) and standard deviations of **trust** ratings for mainstream and independent sources split across political identities; for the survey with dislikes and without dislikes

Source Type	Conservative - Dislikes	Conservative - No Dislikes	Liberal - Dislikes	Liberal - No Dislikes	Moderate - Dislikes	Moderate - No Dislikes
Independent	**-0.52** 1.38	**-0.29** 1.47	**-0.07** 1.53	**0.19** 1.48	**-0.2** 1.47	**0.1** 1.48
Mainstream	**-0.31** 1.29	**0.13** 1.25	**0.32** 1.2	**0.47** 1.19	**0.0** 1.27	**0.27** 1.25

Table 10. Means (in bold) and standard deviations of **bias** ratings for mainstream and independent sources split across political identities; for the survey with dislikes and without dislikes

Figure 9 shows mean trust and bias ratings for mainstream and independent sources from participants identifying as conservative, moderate, or liberal, for the two types of surveys - with and without the dislike ratio. Table 9 and 10 respectively show the means and standard deviations for mainstream and independent sources for conservatives, liberals, and moderates, from both interfaces - with and without dislikes.

For trust, there was significant change only for videos from independent sources, and only by participants identifying as liberal, who viewed videos from independent sources as less

trustworthy in the presence of the dislike ratio. The null hypotheses for trust (H5, H7) can then be accepted.

For bias, the presence of the dislike ratio significantly changed the perception of participants identifying as conservative for videos from mainstream sources, who saw mainstream sources as having more liberal bias. Moreover, it also changed the perception of participants identifying as liberal for videos from independent sources, who saw them as having less conservative bias.

However, this analysis is insufficient without knowing what exactly is driving this change. To further probe this question, I split mainstream and independent sources based on their political leaning.

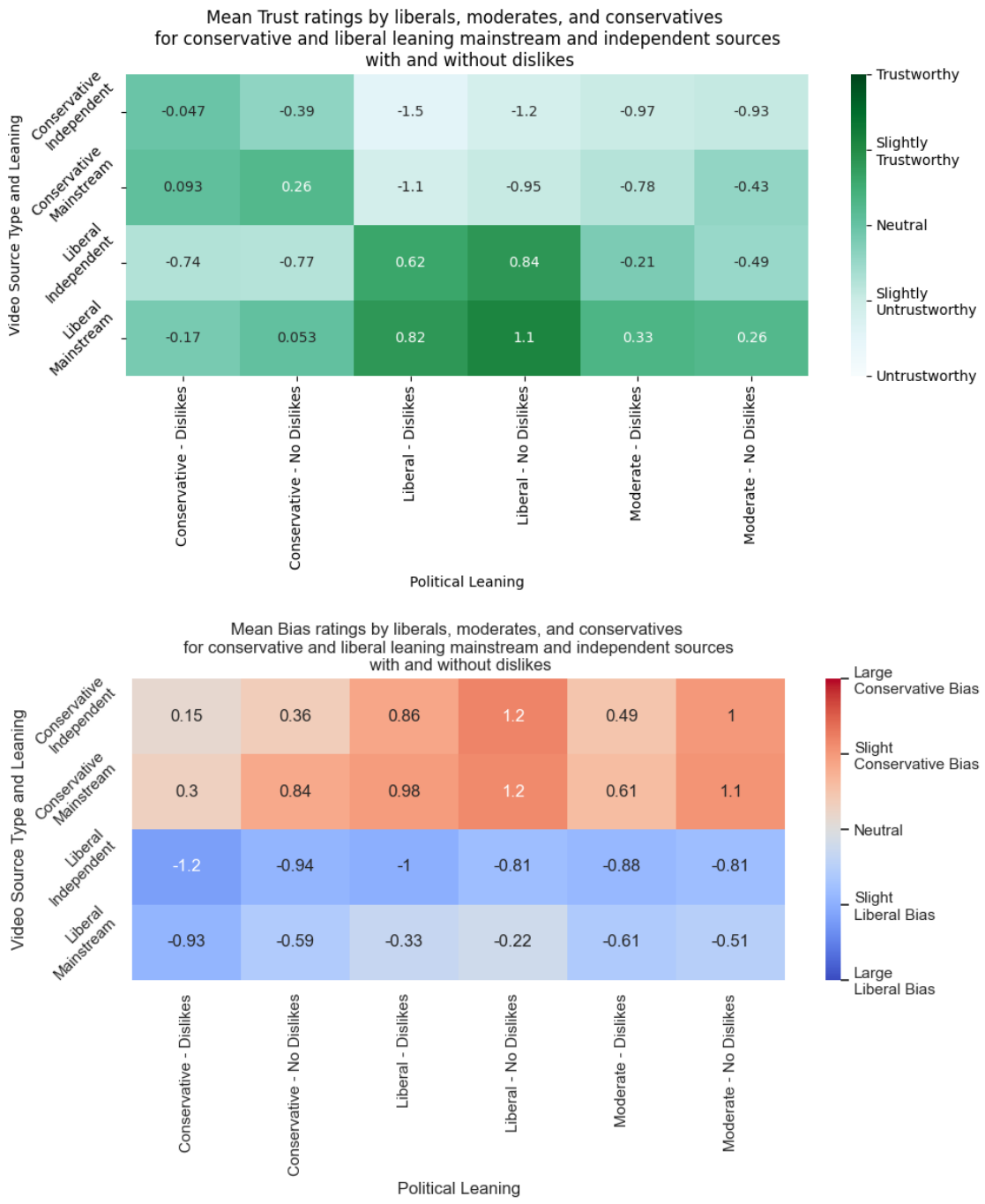


Figure 10. Mean trust and bias ratings for conservative and liberal leaning mainstream and independent sources from participants identifying as conservative, moderate, or liberal; with and without the dislike ratio

Source Type	Conservative - Dislikes	Conservative - No Dislikes	Liberal - Dislikes	Liberal - No Dislikes	Moderate - Dislikes	Moderate - No Dislikes
Conservative Independent	**-0.05** 1.4	**-0.39** 1.25	**-1.46** 0.96	**-1.17** 1.13	**-0.97** 1.23	**-0.93** 1.34
Conservative Mainstream	**0.09** 1.34	**0.26** 1.31	**-1.14** 1.16	**-0.95** 1.31	**-0.78** 1.33	**-0.43** 1.42
Liberal Independent	**-0.74** 1.29	**-0.77** 1.15	**0.62** 1.21	**0.84** 0.96	**-0.21** 1.33	**-0.49** 1.24
Liberal Mainstream	**-0.17** 1.54	**0.05** 1.45	**0.82** 1.21	**1.1** 0.95	**0.33** 1.35	**0.26** 1.45

Table 11. Means (in bold) and standard deviations of **trust** ratings for conservative and liberal leaning mainstream and independent sources split across political identities; for the survey with dislikes and without dislikes

Source Type	Conservative - Dislikes	Conservative - No Dislikes	Liberal - Dislikes	Liberal - No Dislikes	Moderate - Dislikes	Moderate - No Dislikes
Conservative Independent	**0.15** 1.43	**0.36** 1.52	**0.86** 1.47	**1.19** 1.23	**0.49** 1.52	**1.01** 1.3
Conservative Mainstream	**0.3** 1.27	**0.84** 1.02	**0.98** 1.22	**1.15** 1.11	**0.61** 1.28	**1.06** 0.94
Liberal Independent	**-1.2** 0.94	**-0.94** 1.09	**-1.01** 0.88	**-0.81** 0.92	**-0.88** 1.05	**-0.81** 1.01
Liberal Mainstream	**-0.93** 0.98	**-0.59** 1.04	**-0.33** 0.75	**-0.22** 0.82	**-0.61** -0.94	**-0.51** 1.0

Table 12. Means (in bold) and standard deviations of **bias** ratings for conservative and liberal leaning mainstream and independent sources split across political identities; for the survey with dislikes and without dislikes

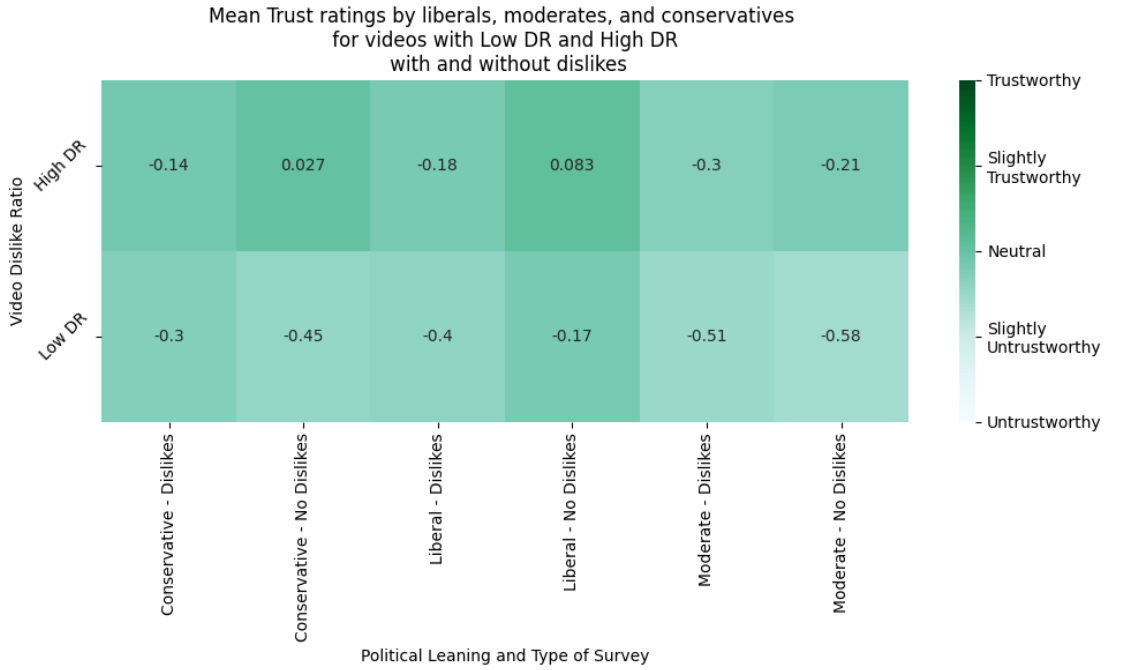
Figure 10 shows mean trust and bias ratings for conservative and liberal leaning mainstream and independent sources from participants identifying as conservative, moderate, or liberal, for the two types of survey - with and without the dislike ratio. Table 11 and 12 respectively show the

means and standard deviations of trust and bias ratings for conservative and liberal leaning mainstream and independent sources from different political identities - with and without dislikes. Significant differences in ratings between the survey with dislikes and without dislikes are highlighted.

This analysis shows that perception of **trust decreased significantly from participants identifying as liberal if it was from a conservative leaning independent source, or a liberal leaning mainstream source**, in the presence of the dislike ratio.

Perception of conservative bias in conservative leaning independent sources decreased significantly for participants identifying as liberal in the presence of the dislike ratio. **Perception of conservative bias in both conservative leaning mainstream and independent sources decreased significantly for participants identifying as moderate** because of the dislike ratio. Similarly, **perception of conservative bias in conservative leaning mainstream sources decreased significantly for participants identifying as conservative** in the presence of the dislike ratio. Another curious observation is that **perception of liberal bias in liberal leaning mainstream sources increased significantly for participants identifying as conservative** because of the dislike ratio.

H9: The presence of the dislike ratio makes videos with a low DR appear more trustworthy, but more biased.
H10: The presence of the dislike ratio makes videos with high DR appear less trustworthy, but less biased.



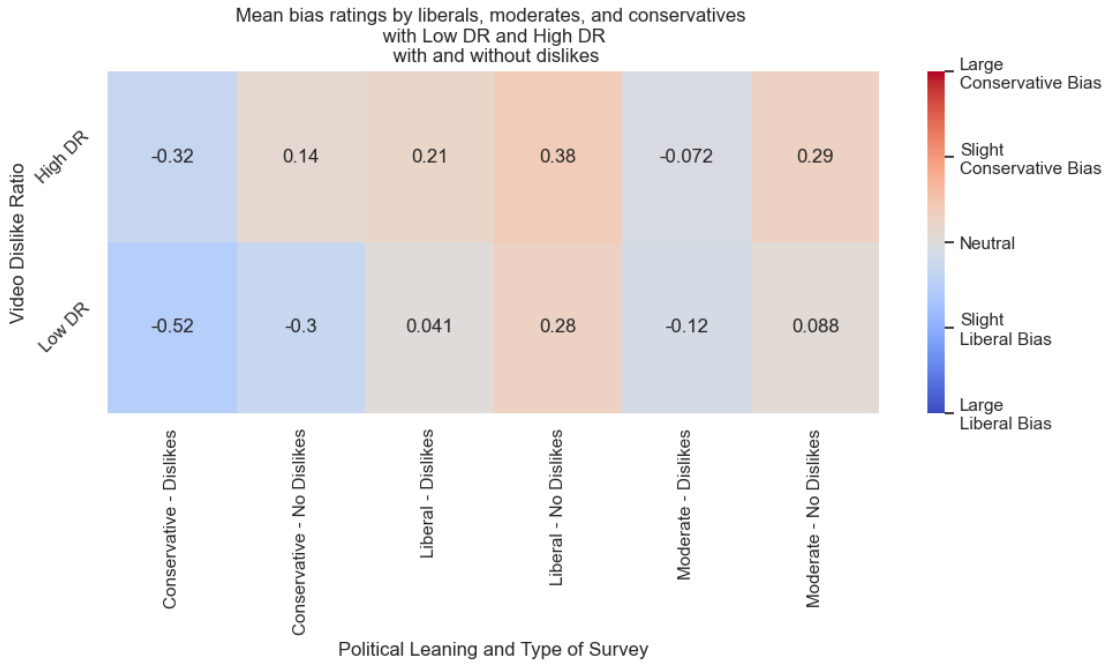


Figure 11. Mean trust and bias ratings for videos with high and low dislike ratio from participants identifying as conservative, moderate, or liberal; with and without dislike

Source Type	Conservative - Dislikes	Conservative - No Dislikes	Liberal - Dislikes	Liberal - No Dislikes	Moderate - Dislikes	Moderate - No Dislikes
High DR	**-0.14** 1.36	**0.03** 1.29	**-0.18** 1.61	**0.08** 1.56	**-0.3** 1.41	**-0.21** 1.47
Low DR	**-0.3** 1.48	**-0.45** 1.37	**-0.4** 1.44	**-0.17** 1.42	**-0.51** 1.39	**-0.58** 1.36

Table 13. Means (in bold) and standard deviations of **trust** ratings for videos with a high dislike ratio and low dislike ratio; for survey with dislikes and survey without dislikes

Source Type	Conservative - Dislikes	Conservative - No Dislikes	Liberal - Dislikes	Liberal - No Dislikes	Moderate - Dislikes	Moderate - No Dislikes
High DR	**-0.32** 1.27	**0.14** 1.25	**0.21** 1.34	**0.38** 1.29	**-0.07** 1.37	**0.29** 1.26
Low DR	**-0.52** 1.4	**-0.3** 1.47	**0.04** 1.43	**0.28** 1.4	**-0.12** 1.39	**0.09** 1.47

Table 14. Means (in bold) and standard deviations of **bias** ratings for videos with a high dislike ratio and low dislike ratio; for survey with dislikes and survey without dislikes

Figure 11 visualizes the mean trust and bias ratings for the two types of videos from participants across political identities, with and without dislikes. Table 13 and 14 show the means and standard deviations for trust and bias ratings respectively for videos with a high dislike ratio and low dislike ratio - for survey with dislikes and survey without dislikes.

For trust, there is no significant change for conservatives, moderates, or liberals for videos with a high dislike ratio or low dislike ratio. Videos with a high dislike ratio are slightly less trusted in the presence of the dislike ratio, but the number of samples prevents it from being significant. Another explanation might be that trust is based more on the perception of the source's

expertise, and therefore the dislike ratio on individual videos doesn't affect trust that much and acts merely as an echo of the user's own beliefs.

For bias, there is significant change in perception of videos with a high dislike ratio for participants identifying as conservative or moderate. Videos with a high dislike ratio were perceived as having much less conservative bias if the dislike ratio was present.

This analysis is insufficient and more insight can be gained by splitting the videos on the basis of their political leaning as well.

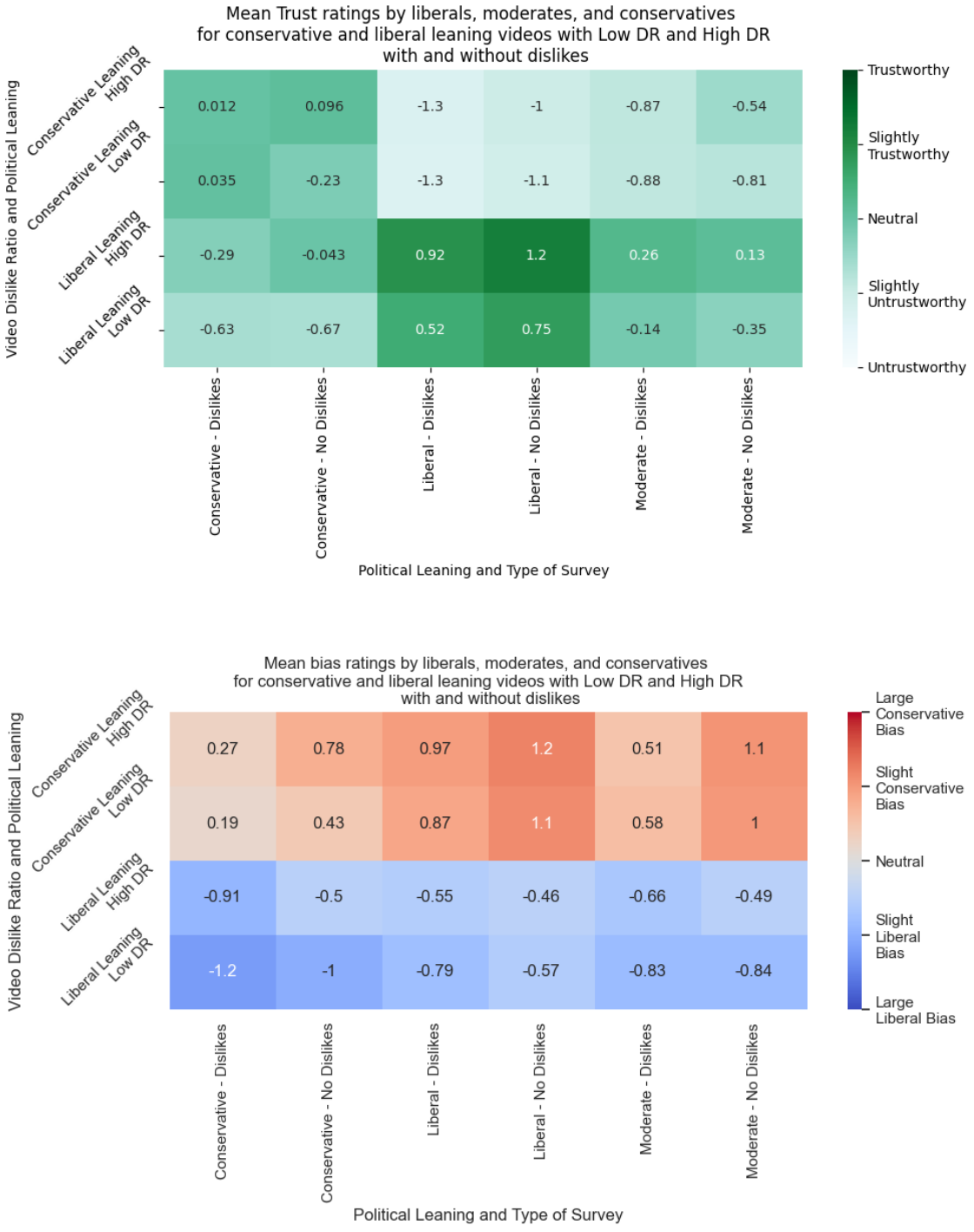


Figure 12. Mean trust and bias ratings for conservative and liberal leaning videos with high and low dislike ratio from participants identifying as conservative, moderate, or liberal; with and without dislike

Source Type	Conservative - Dislikes	Conservative - No Dislikes	Liberal - Dislikes	Liberal - No Dislikes	Moderate - Dislikes	Moderate - No Dislikes
Conservative Leaning - High DR	**0.01** 1.33	**0.1** 1.23	**-1.27** 1.11	**-1.02** 1.24	**-0.87** 1.21	**-0.54** 1.44
Conservative Leaning - Low DR	**0.03** 1.41	**-0.23** 1.39	**-1.33** 1.04	**-1.1** 1.21	**-0.88** 1.36	**-0.81** 1.35
Liberal Leaning - High DR	**-0.29** 1.38	**-0.04** 1.35	**0.92** 1.24	**1.19** 0.94	**0.26** 1.37	**0.13** 1.42
Liberal Leaning - Low DR	**-0.63** 1.49	**-0.67** 1.32	**0.52** 1.16	**0.75** 0.93	**-0.14** 1.33	**-0.35** 1.34

Table 15. Means (in bold) and standard deviations of **trust** ratings for conservative and liberal leaning videos with high dislike ratio and low dislike ratio split; for the survey with dislikes and without dislikes

Source Type	Conservative - Dislikes	Conservative - No Dislikes	Liberal - Dislikes	Liberal - No Dislikes	Moderate - Dislikes	Moderate - No Dislikes
Conservative Leaning - High DR	**0.27** 1.32	**0.78** 1.17	**0.97** 1.28	**1.21** 1.1	**0.51** 1.46	**1.06** 1.05
Conservative Leaning - Low DR	**0.19** 1.38	**0.43** 1.43	**0.87** 1.41	**1.13** 1.24	**0.58** 1.35	**1.01** 1.22
Liberal Leaning - High DR	**-0.91** 0.9	**-0.5** 0.96	**-0.55** 0.89	**-0.46** 0.87	**-0.66** 0.97	**-0.49** 0.94
Liberal Leaning - Low DR	**-1.22** 1.01	**-1.02** 1.13	**-0.79** 0.86	**-0.57** 0.97	**-0.83** 1.02	**-0.84** 1.06

Table 16. Means (in bold) and standard deviations of **bias** ratings for conservative and liberal leaning videos with high dislike ratio and low dislike ratio split; for the survey with dislikes and without dislikes

Table 15 and 16 show the means and standard deviations of trust and bias ratings respectively for conservative leaning and liberal leaning videos with a high dislike ratio and low dislike ratio - for the survey with dislikes and survey without dislikes. Videos were grouped into high dislike ratio and low dislike ratio and then further into conservative leaning and liberal leaning. The sample was divided into different political identities. Figure 12 visualizes this information.

This grouping reveals some significant effect on trust perception - both **conservatives and liberals, but not moderates, perceived liberal leaning videos with a high dislike ratio as less trustworthy in the presence of the dislike ratio**. Moreover for liberals, trust decreased in all four categories of videos, however not significantly.

Conservatives' and moderates' perception of conservative bias in conservative leaning videos with a high dislike ratio decreased significantly because of the dislike ratio. Moreover, **conservatives' perception of liberal bias in liberal leaning videos with a high dislike ratio increased significantly** because of the dislike ratio. Finally, **moderates' perception of conservative bias in conservative leaning videos with a low dislike ratio fell significantly** as well in the presence of the dislike ratio.

6. Summary of Results

The analyses of this study's results highlight and confirm the differences in credibility judgment for the same videos and sources from people identifying as conservative, moderate, or liberal in the United States. Differences in trust ratings exist for each individual video and source across different political identities. Differences in bias ratings were also present for all videos and sources apart from liberal independent sources, which were identified as having significant liberal bias by almost everyone. Moreover, evaluation of trust was more extreme from liberals than conservatives or moderates.

Grouping sources based on the two major types of news/political channels on YouTube - mainstream/established and independent/personality-driven - revealed how credibility perceptions differ based on the type of source. Conservative and liberal leaning mainstream sources were perceived as more trustworthy than independent sources of the corresponding leaning. Interestingly, conservatives viewed liberal leaning mainstream sources as more trustworthy than conservative independent sources. Conservatives also perceived both conservative and liberal leaning mainstream sources as less biased than independent sources of the same political leaning respectively. However, neither liberals nor moderates saw a significant difference in the amount of bias in conservative leaning mainstream and independent sources. They saw both as having significant conservative bias.

How did these differences in credibility perceptions across political identities change because of the dislike count and ratio? The significant observations from results that highlight the influence of dislikes and the dislike ratio as an affordance on credibility judgment are summarized below. It is useful to think of the dislike count and ratio as adding additional information, and the

heuristics triggered because of it as additive. It adds onto the presumptions of the user, the information from the title, source, views, and likes. The question is then about how this additional information interacts with other cues and influences the resulting credibility judgment.

1. The dislike count and dislike ratio significantly increases the time taken to make active judgments of trust and bias (**H1**). This makes sense intuitively, as participants would take more time to process the additional information added by these affordances. While the difference in mean duration of 50 secs seems surprisingly large, the extra time would surely add up when assessing trust and bias 16 times (8 for trust, 8 for bias).

2. Table 17 organizes the significant changes observed in trust and bias measures when the dislike count and dislike ratio is added.

Political Identity	**Change when dislike count and ratio is added**
Liberal	1. Decreased trust in conservative independent sources and liberal mainstream sources. 2. Decreased perception of conservative bias in conservative independent sources. 3. Decreased trust in liberal leaning source videos with a high dislike ratio.
Moderate	1. Decreased perception of conservative bias in conservative leaning videos and sources. 2. Decreased perception of conservative bias in conservative leaning source videos with a high dislike ratio.

	3. Decreased perception of conservative bias in conservative leaning source videos with a low dislike ratio.
Conservative	1. Decreased perception of conservative bias in conservative mainstream sources. 2. Decreased trust in liberal leaning source videos with a high dislike ratio. 3. Decreased perception of conservative bias in conservative leaning source videos with a high dislike ratio. 4. Increased perception of liberal bias in liberal leaning source videos with a high dislike ratio.

Table 17. Summary of the effect of the dislike count and ratio on credibility judgment on different political identities

3. For liberals, a high dislike ratio decreased trust in liberal mainstream sources. Interestingly, the dislike ratio decreased trust but also decreased perception of conservative bias in conservative leaning videos from independent sources.
4. For moderates, it reduced the perception of conservative bias, regardless of high ratio or low ratio. In this case, the dislike ratio triggers different heuristics if the ratio is low or high that both result in perceiving less conservative bias.
5. For conservatives, it reduced trust and increased perception of bias in videos with a liberal leaning source with a high dislike ratio. However, it also decreased the perception of conservative bias in conservative leaning videos with a high dislike ratio, without significantly affecting trust.

7. Discussion and Future Directions

The data collected proves that the study design was effective in revealing changes in the patterns of credibility judgment due to the low-level affordances of the dislike count and ratio on YouTube. However, the exact heuristics triggered by these affordances and its generalization in the context of political polarization is obscured by the low number of responses, caused by issues with bots and inauthentic responses on MTurk, and the limited count of videos and sources given the number of independent variables. Even still, the analysis is able to uncover many significant effects that can be further studied to contextualize it in the current polarized political environment in the US. These effects cannot be constructively understood without more extensive socio-political research, and as such I refrain from drawing such connections and conclusions in this paper.

What heuristics might be getting triggered by the dislike ratio remains unclear because of the complexity of responses based on political identity. Further analysis can target specific categories of videos and sources constructed in this study, or focus on a single political identity, to more accurately and specifically measure cognitive effects and heuristics triggered by low-level affordances on YouTube. Another thing to keep in mind is that a randomized controlled experiment about social media usage that measures variables about a user's perception, like trust, cannot make certain claims about how these measures manifest in real life use of social media; the dynamics, setting, and motivations are vastly different. Moreover, since participants were recruited through MTurk, there is selection bias as it does not reflect demographics and communities of users that do not exist on MTurk as workers.

Sources for the 8 videos were chosen based on their popularity, perceived political leaning, and channel/organization type. Given the small number of listed sources, analysis about mainstream sources and independent sources might be weak and skewed because of the specific choice of channels. Moreover, because videos listed to a user on YouTube are determined by their own activity and the machine learning algorithm, they might not often encounter videos that have a different political leaning.

YouTube's seemingly endless flow of videos come from a variety of categories, sources, and goals. YouTube's low-level affordance design has always been uniform across all videos, apart from giving the publisher the ability to turn off comments. The void created by the removal of the dislike count and ratio in the platform's interface design is an opportunity to rethink how to best design low-level affordances that adequately allow a user to parse through the huge amount of content on YouTube. Videos of different types and with different goals would likely benefit from different low-level affordances that fit the needs of the information. For example, having the dislike count and ratio on news videos might be detrimental if the evidence is strong that it worsens the belief-echo effect. For educational videos, however, the case is strong for including a dislike count and ratio to allow users to assess quality. Assessing perception for different types of videos, and designing better indicators through the lens of cognitive science is surely a gainful direction. The incentive of platforms such as YouTube, however, is less focused on design informed by our knowledge of communication systems, cognitive science, and sociotechnical systems, but rather on increasing the time users spend consuming content on the platform, to increase revenue.

8. Conclusion

Through this thesis, I explored the low-level affordance design of YouTube in the context of rising political polarization in the world, attributed to the profound impact of social media platforms on information sharing and political societies. I discussed YouTube's recent decision to remove the dislike count and ratio from public videos, and how seemingly simple interface design choices can affect users' perception through various heuristics and cognitive processes. To that effect, I successfully designed a study and methodology to study the effects of low-level affordances on credibility judgment. Specifically, by manipulating the presence of the dislike count and ratio in an interface, I measured perceptions of trust and bias in political content on YouTube. Analysis and results show how perception changes for conservatives, liberals, and moderates on videos and grouped on the basis of political leaning - liberal or conservative, dislike ratio - low vs high, and source type - mainstream vs independent. Significant results are described for different political groups, but an understanding of the overarching heuristics is still needed. Directions for further study, discussed in the previous section, can help build platforms with low-level affordances that allow for more accurate information exchange.

9. References

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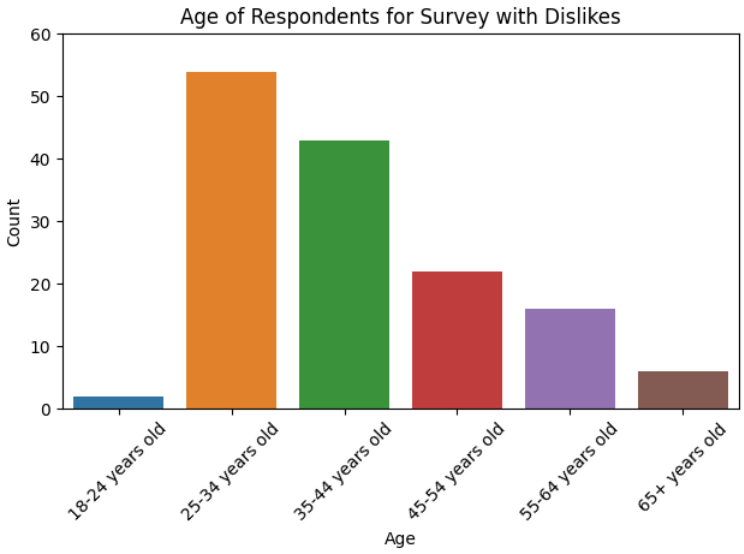
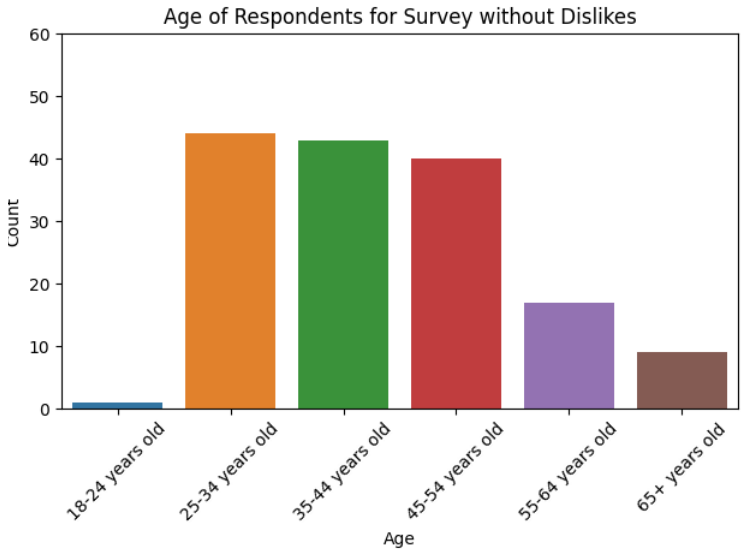
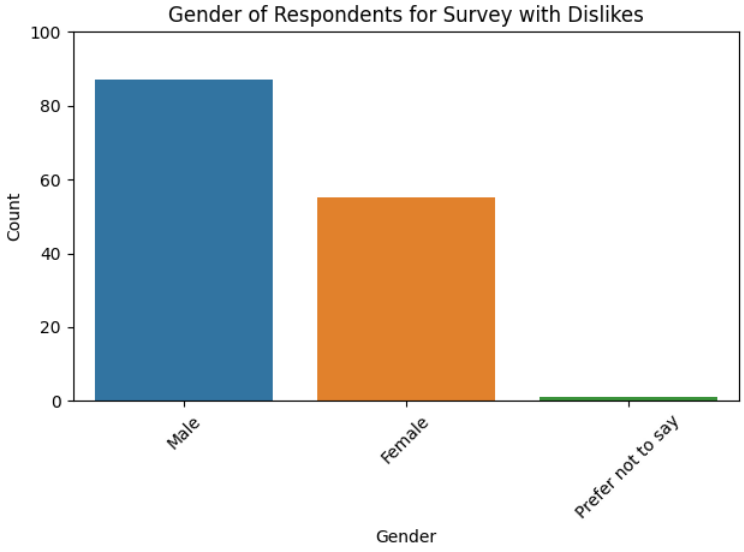
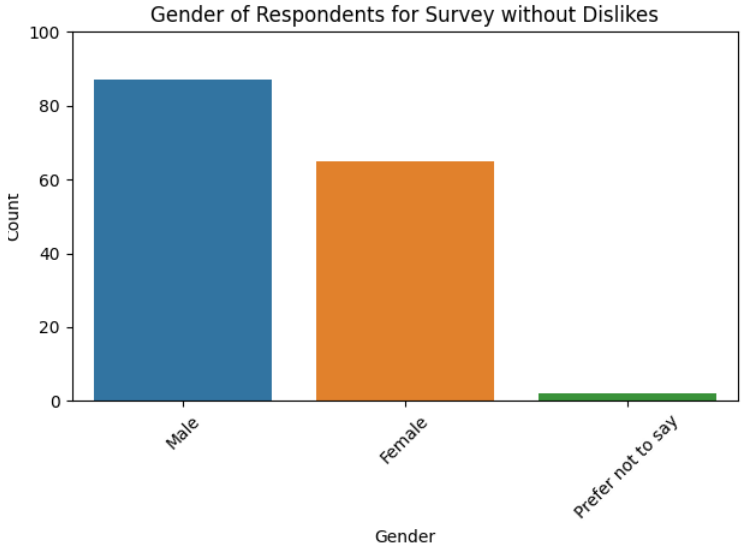
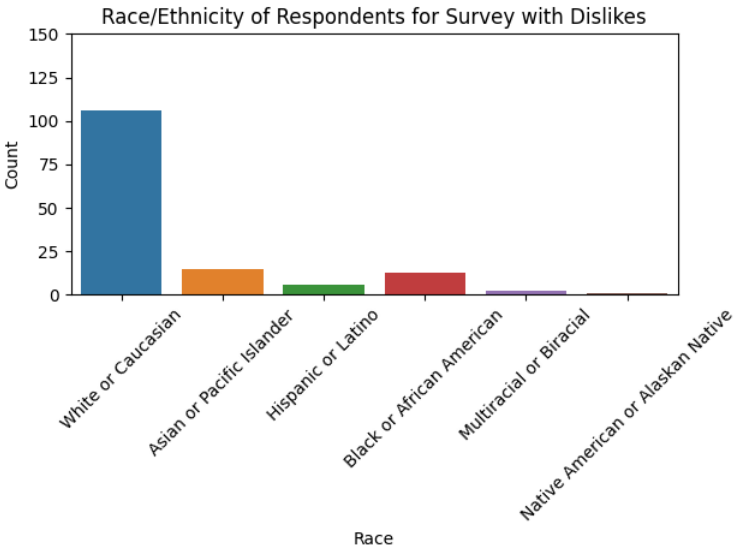
Appendix

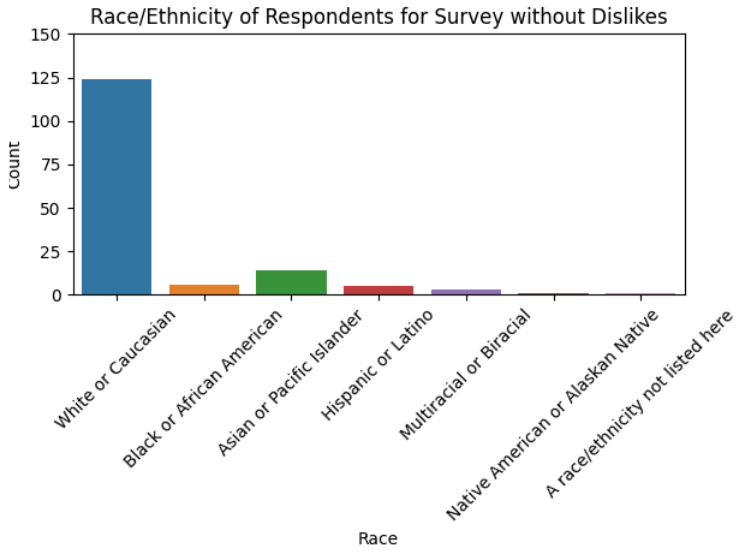

Age of Respondents for Survey with Dislikes
Count
Age
18-24 years old
25-34 years old
35-44 years old
45-54 years old
55-64 years old
65+ years old

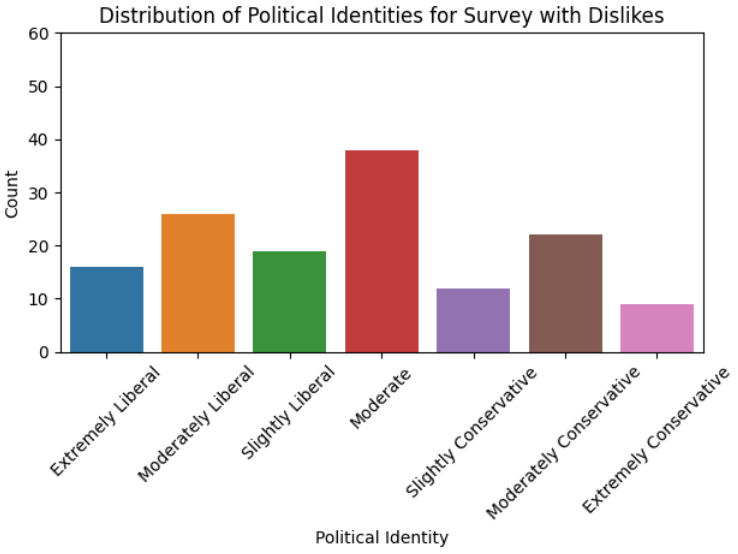

Age of Respondents for Survey without Dislikes
Count
Age
18-24 years old
25-34 years old
35-44 years old
45-54 years old
55-64 years old
65+ years old

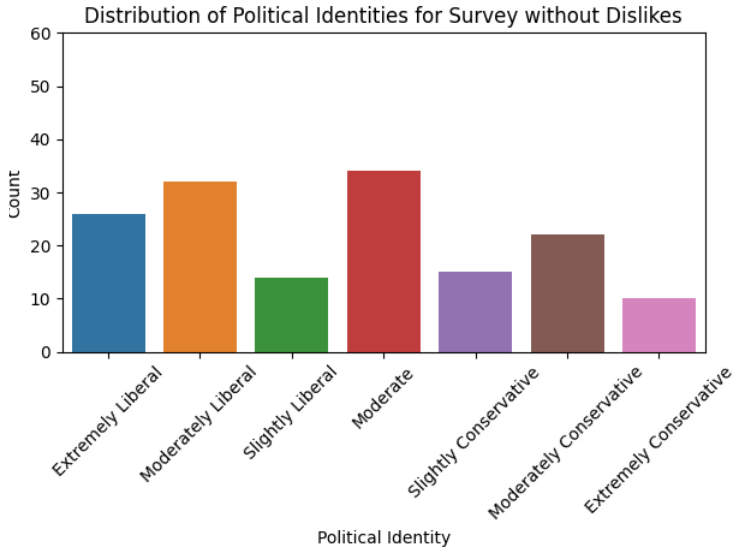

Gender of Respondents for Survey with Dislikes
Count
Gender
Male
Female
Prefer not to say


Gender of Respondents for Survey without Dislikes
Count
Gender
Male
Female
Prefer not to say


Race/Ethnicity of Respondents for Survey with Dislikes
Count
150
125
100
75
50
25
0
White or Caucasian
Asian or Pacific Islander
Hispanic or Latino
Black or African American
Multiracial or Biracial
Native American or Alaskan Native
Race


Race/Ethnicity of Respondents for Survey without Dislikes
Count
150
125
100
75
50
25
0
White or Caucasian
Black or African American
Asian or Pacific Islander
Hispanic or Latino
Multiracial or Biracial
Native American or Alaskan Native
A race/ethnicity not listed here
Race


Distribution of Political Identities for Survey with Dislikes
Count
60
50
40
30
20
10
0
Extremely Liberal
Moderately Liberal
Slightly Liberal
Moderate
Slightly Conservative
Moderately Conservative
Extremely Conservative
Political Identity


Distribution of Political Identities for Survey without Dislikes
Count
60
50
40
30
20
10
0
Extremely Liberal
Moderately Liberal
Slightly Liberal
Moderate
Slightly Conservative
Moderately Conservative
Extremely Conservative
Political Identity

Video Source	p-value (Trust)	p-value (Bias)
Newsmax	4.98e-07	9.91e-03
Fox News	9.73e-14	6.33e-03
Stephen Crowder	3.99e-05	3.27e-05
Ben Shapiro	4.30e-15	1.07e-03
CNN	7.54e-12	3.87e-07
BBC	1.25e-05	3.19e-02
John Oliver	6.39e-23	0.25
Trevor Noah	4.78e-15	0.39

H2: One-way ANOVA p-values for trust and bias ratings across liberals, moderates, and conservatives. (significance value = 5e-2 | blue = significant)

	Trust - Conservatives	Trust - Moderates	Trust - Liberals	Bias - Conservatives	Bias - Moderates	Bias - Liberals
Newsmax	5.70e-01	2.76e-01	2.36e-01	**2.62e-02**	4.42e-01	7.37e-01
Fox News	5.56e-01	2.98e-01	5.92e-01	**2.86e-02**	**8.03e-03**	1.50e-01
Stephen Crowder	**9.40e-03**	4.99e-01	5.89e-02	9.24e-01	6.09e-01	3.44e-01
Ben Shapiro	9.55e-01	3.36e-01	2.05e-01	1.03e-01	**8.54e-03**	**4.56e-02**
CNN	9.49e-01	6.47e-01	8.43e-02	3.25e-01	8.33e-01	2.08e-01
BBC	9.27e-02	9.44e-01	2.01e-01	**6.30e-03**	5.23e-01	7.82e-01
John Oliver	9.31e-01	3.61e-01	1.17e-01	8.36e-02	3.64e-01	3.36e-01
Trevor Noah	8.14e-01	3.83e-01	4.55e-01	4.39e-01	7.83e-01	1.29e-01

H3. One-way ANOVA p-values on trust and bias ratings for each video, listed as its source, with and without the dislike ratio separated for participants identifying as conservative, moderate, or liberal.

Video Source Type ↓	Trust - Liberal Leaning	Trust - Conservative Leaning	Bias - Liberal Leaning	Bias - Conservative Leaning
Conservatives	**1.59e-06**	**4.0e-03**	**4.22e-03**	**2.26e-2**
Moderates	**7.04e-05**	**3.09e-02**	**1.59e-2**	0.587
Liberals	**1.50e-02**	**8.97e-3**	**6.85e-17**	0.757

H4. One-way ANOVA p-values for trust and bias ratings from participants identifying as conservative, moderate, or liberal, across videos from liberal leaning and conservative leaning mainstream and independent sources

	Trust - Conservatives	Trust - Moderates	Trust - Liberals	Bias - Conservatives	Bias - Moderates	Bias - Liberals
Mainstream	1.91e-01	4.07e-01	8.21e-02	**1.08e-03**	6.86e-02	1.63e-01
Independent	1.78e-01	4.66e-01	**4.79e-02**	1.18e-01	8.52e-02	**4.58e-02**

H5, H6. One-way ANOVA test p-values for mainstream and independent sources by participants identifying as conservative, moderate, or liberal on two samples - with and without dislike ratio

	Trust - Conservatives	Trust - Moderates	Trust - Liberals	Bias - Conservatives	Bias - Moderates	Bias - Liberals
Conservative Leaning - Mainstream	4.13e-01	1.29e-01	2.19e-01	**1.97e-03**	**1.76e-02**	2.14e-01
Conservative Leaning - Independent	8.07e-02	8.26e-01	**2.52e-02**	3.40e-01	**2.74e-02**	**4.95e-02**
Liberal Leaning - Mainstream	3.08e-01	7.83e-01	**3.73e-02**	**2.35e-02**	5.76e-01	2.48e-01
Liberal Leaning - Independent	9.04e-01	2.03e-01	1.03e-01	8.75e-02	6.72e-01	7.77e-02

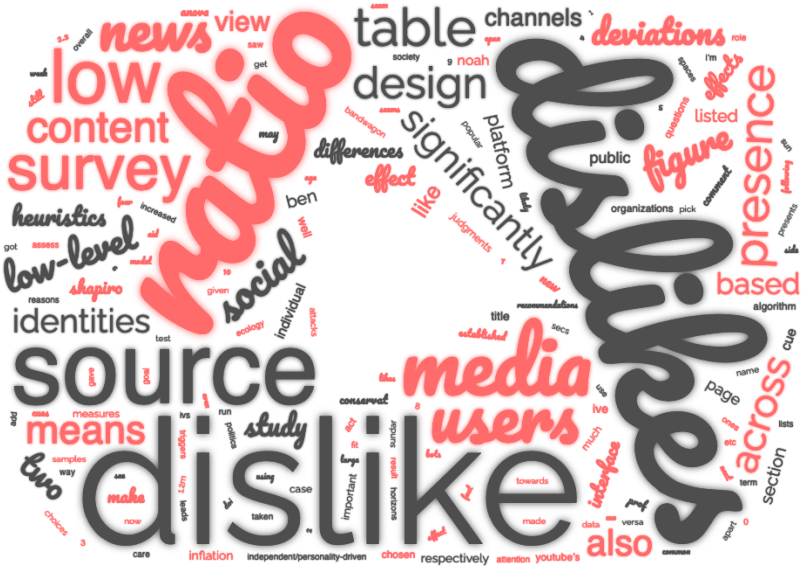
H7, H8. One-way ANOVA test p-values for conservative and liberal leaning mainstream and independent sources by participants identifying as conservative, moderate, or liberal on two samples - with and without dislike ratio

	Trust - Conservatives	Trust - Moderates	Trust - Liberals	Bias - Conservatives	Bias - Moderates	Bias - Liberals
High DR	2.35e-01	5.68e-01	5.97e-02	**6.33e-04**	**2.15e-02**	1.46e-01
Low DR	3.01e-01	6.76e-01	6.71e-02	1.48e-01	2.06e-01	5.15e-02

H9, H10. One-way ANOVA test p-values for videos with high and low dislike ratio by participants identifying as conservative, moderate, or liberal on two samples - with and without dislike ratio

	Trust - Conservatives	Trust - Moderates	Trust - Liberals	Bias - Conservatives	Bias - Moderates	Bias - Liberals
Conservative Leaning - High DR	6.59e-01	1.44e-01	8.81e-02	**6.87e-03**	**1.17e-02**	9.88e-02
Conservative Leaning - Low DR	2.00e-01	7.48e-01	9.95e-02	2.55e-01	**4.45e-02**	1.07e-01
Liberal Leaning - High DR	**2.24e-02**	5.75e-01	**4.46e-02**	**3.89e-03**	2.81e-01	4.01e-01
Liberal Leaning - Low DR	8.40e-01	3.51e-01	8.03e-02	2.13e-01	9.57e-01	5.60e-02

H9, H10. One-way ANOVA test p-values for videos with high and low dislike ratio by participants identifying as conservative, moderate, or liberal on two samples - with and without dislike ratio



Finally, a word cloud of this thesis, for fun.