

# My title\*

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First author

Another author

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## 1 Introduction

In recent years the United States has experienced a shift in racial framing and valence within media and society concerning drug epidemics. Despite similar rates of illicit drug use among Black and White Americans throughout history, Black Americans are significantly more likely to be incarcerated for drug offenses. This phenomenon is particularly pronounced in the context of the war on drugs (Bobo and Johnson 2004). In contrast, White Americans, especially in the context of the opioid crisis, experience a more lenient, medicalized approach to their drug use, revealing a racialized American drug policy (Netherland and Hansen 2017).

This shift in the racial framing of drug use and policy within media and societal discourse is a direct result of White Americans and the the opioid epidemic. As a result, drug abuse has been met with a more sympathetic, medicalized response, highlighting a stark contrast in how drug use has historically been conceptualized and addressed throughout the country. A 2022 paper by Tanika Raychaudhuri, Tali Mendelberg, and Anne McDonough in *The Journal of Politics* Volume 85, Number 1 (January 2023), titled “The Political Effects of Opioid Addiction Frames” delves into the impact of media coverage on public support for drug treatment policies, focusing on how the racial framing and valence of opioid abuse influence White Americans’ policy views. Unlike previous drug epidemics portrayed negatively and associated with non-White users, the opioid crisis is often framed sympathetically and as predominantly affecting White Americans. This sympathetic portrayal is thought to contribute to the broad public support for treating opioid abuse as a public health issue rather than a criminal one (Raychaudhuri, Mendelberg, and McDonough 2022).

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\*Code and data are available at: <https://github.com/Bellamaclean7/Ideological-Influences-of-Opioid-Addiction-Media-Frames>; Replication on Social Science Reproduction platform available at: <https://doi.org/10.48152/ssrp-5x1j-c733>

The study revealed that when opioid users, both White and Black, were shown in a sympathetic light, White people’s support for treatment options rose. This supportive attitude was noticeably stronger when the users depicted were White, pointing to a bias in empathy based on race. On the other hand, portrayals lacking sympathy didn’t really change opinions, regardless of the user’s race (Raychaudhuri, Mendelberg, and McDonough 2022).

This paper aims to replicate the study conducted by Raychaudhuri, Mendelberg, and McDonough, focusing on their original research question: “Is sympathy for drug users racially selective among White Americans?” However, it will extend the inquiry by examining the role of political ideology in shaping White Americans’ reactions to sympathetic media portrayals of opioid abuse. Specifically, it will investigate whether political ideology conditions the extent of racial selectivity in empathetic responses to drug users. The paper will reveal that there is some indeed some level of interaction effect between media frames and the ideological spectrum on support for treatment related policy.

This reproduction was conducted using the statistical programming language R (R Core Team 2023). To further enable the analysis, the following packages were employed: knitr (Xie 2023) for dynamic report generation and kableExtra (Zhu 2023) to enhance the presentation of tables with advanced formatting options. The broom package (Robinson et al. 2023) for converting statistical analysis objects into tidy formats, aiding in more effective and efficient data handling and interpretation. dplyr (Wickham et al. 2023) For data manipulation and preparation. ggplot2 (Wickham 2023) for creating effective and well presented data visualizations, enabling proper communication of findings. Lastly, tidyverse (Wickham et al. 2019).

## **2 Data**

### **2.0.1 Source**

The paper used for replication is from the The Journal of Politics Volume 85, Number 1 (January 2023) which examines whether sympathy for drug users is racially selective among White Americans (Raychaudhuri, Mendelberg, and McDonough 2022). This Reproduction seeks to utilize one of the studies major findings and then asses whether ideological tendencies influences the response to sympathetic media frames about opioid abuse, potentially conditioning the effect of racial selectivity in sympathy. This could help understand if conservative and liberal individuals are equally affected by the racial framing of opioid abuse stories.

### **2.0.2 Literature**

Much of the studies literature review draws on Michelle Alexander’s 2010 book that focuses on mass incarceration in the age of colourblindness (Alexander 2010). The paper also draw upon Michael Collins 2019 Article Titled “No Gentler War on Drugs: How Race Made the Opioid Crisis” (Collins 2019). These peices of literature aid in theorizing that historically, drug

abuse focuses on the racial impact of the “War on Drugs,” a punitive policy response to crack cocaine. Unlike the opioid crisis, the crack cocaine crisis led to the incarceration of millions, most of whom were non-White Americans (Raychaudhuri, Mendelberg, and McDonough 2022). Media coverage of cocaine often depicted Black users in an unsympathetic light, linking their drug use to involvement in other crimes. Julie Netherland and Helena Hansen’s article titled “White opioids: Pharmaceutical race and the war on drugs that wasn’t” aids in proving that by contrast to the crack epidemic, news coverage now frames opioid abuse largely as a crisis affecting White Americans and when doing so it also tends to use a positive valence. By contrast, the Black “face” often carries negative overtones (Raychaudhuri, Mendelberg, and McDonough 2022). Overall, the literature aids in building the study’s foundation argument that the racialization of drug epidemics can not merely be looked at as a matter of public health crises but also as an issue deeply intertwined with socio-political narratives and racial prejudices.

### 2.0.3 Methodology

This paper will replicate the survey data that was originally collected for the (2022) paper by Raychaudhuri, Mendelberg, and McDonough. The study constructed a hypothetical newspaper story about opioid abuse, varying the race of the users (Black or White) and the valence of the frame (sympathetic or unsympathetic). The focus on Black and White radicalized groups was guided by the White “face” of the opioid epidemic in contrast to the Black “face” of other drug epidemics (Raychaudhuri, Mendelberg, and McDonough 2022). The authors then conducted two randomized between-subjects survey experiments on two separate samples. The main sample consists of 1,517 White American adults from the NORC Amerispeak Panel, a national probability based sample. The other sample was from the survey firm Dynata. The authors describe the process as follows: “Each participant was randomly assigned to one of four treatments or a no-story control. In the treatments, respondents read a hypothetical news story about drug use, varying the race of users (White or Black) and the valence of the frame (sympathetic or unsympathetic)” (Raychaudhuri, Mendelberg, and McDonough 2022).

## 3 Features

The original survey data assessed participants on 45 variables, being representative of geographical location, education level, political affiliation, ideology, and racial attitudes and affiliations. The main sample consists of 1,517 White American adults from the NORC Amerispeak Panel, a national probability based sample. The other sample was from the survey firm Dynata. The original paper includes three data sets; data from pre-test (Dynata panel), data from main experiment (NORC Amerispeak Panel), and data for the state-level opioid mortality analysis (CDC). However, this reproduction is focused solely on the data from the main experiment and includes variables only found in the main experiment data set. This reproduction omits data for the state-level opioid mortality analysis (CDC) and the data from the pre-test (Dynata

Table 1: ?(caption)

sympathetic\_white  
sympathetic\_black  
no\_story  
unsympathetic\_white  
unsympathetic\_black  
policy  
conservative  
moderate  
liberal

panel). This reproduction also changed the name of some of the main experiments variables in the data set for better clarity. The data set was then cleaned to include only relevant variables applicable to this reproduction. ?@tbl-cleaned\_\_data shows a sample of the cleaned data set.

## 4 Model

### 4.0.1 Model Set-Up

This analysis seeks to understand the influence of political ideology and media framing on the public’s policy support concerning opioid abuse treatment. A logistic regression model was constructed to predict the likelihood of favouring government-funded treatment over favouring arrest (**policy**) as a function of political ideology and media framing. The model includes two main ideology predictors: **conservative** and **liberal**. Additionally, the model incorporates media framing variables: **sympathetic\_white** and **sympathetic\_black** which represent sympathetic media narratives towards opioid users of different races, and **unsympathetic\_white** and **unsympathetic\_black**, representing unsympathetic narratives.

The terms **conservative:media\_frames** and **liberal:media\_frames** are designed to detect whether the relationship between media framing and policy support differs across the ideological spectrum. The response variable **policy** is binary, indicating whether an individual supports or rejects treatment-focused intervention for opioid abuse. Therefore, a logistic regression model (logit model) is employed to predict the probability of policy support, which is suitable for binary outcome data. The logit model is defined as:

```
policy ~ conservative + liberal + sympathetic_white + sympathetic_black +
  unsympathetic_white + unsympathetic_black + conservative *
  sympathetic_white + conservative * sympathetic_black + conservative *
  unsympathetic_white + conservative * unsympathetic_black +
  liberal * sympathetic_white + liberal * sympathetic_black +
```

`liberal * unsympathetic_white + liberal * unsympathetic_black`

The next step after setting up the logistic regression model is understanding how people’s ideological beliefs and the various ways the media frames opioid use impact their support for policy . To do this, a coefficient table (Table 3) was produced to capture the essence of the relationships between predictor variables. The goal is to quantify the relationship between each predictor variable (ideological beliefs, media framings, etc.) and interaction term (like conservative:media\_frames) and the corresponding likelihood of policy support.

The coefficients, for instance, point to whether a factor, like political leaning or a specific type of media narrative, nudges public opinion towards or away from a certain policy stance, and importantly, how strong that nudge is. It also looks at standard errors, z-values, and p-values to check the confidence in these effects—are they solid or could they be just chance findings? And those 95% confidence intervals give a ballpark figure, showing where the true effect likely falls. Table 2 summarizes each term found in the coefficient table. Furthermore, the model’s fit statistics (Table 4), including AIC and BIC among others, offer a snapshot of the model’s overall performance and suitability for the data at hand.

Table 2: Explanation of Terms in the Coefficient Table

Term	Description
Estimate	The coefficient estimate indicates the change in the log odds of the outcome for a one-unit increase in the predictor. Positive values indicate an increase in the likelihood of policy support, while negative values suggest a decrease.
Std.Error	The standard error of the coefficient estimate provides a measure of the estimate’s precision. Smaller values indicate more precise estimates.
Statistic	The test statistic (usually a Z-value) used to assess the significance of the predictor is derived from the coefficient estimate divided by its standard error.
P.Value	The p-value associated with the test statistic indicates the probability of observing the data, or something more extreme, under the null hypothesis that the coefficient is zero. A p-value below a certain threshold (e.g., 0.05) suggests statistical significance.
Conf.Low	The lower bound of the 95% confidence interval for the coefficient estimate provides a range within which we are 95% confident that the true coefficient value lies.
Conf.High	The upper bound of the 95% confidence interval for the coefficient estimate, together with the lower bound, offers insight into the estimate’s uncertainty; narrower intervals indicate more precise estimates.

Table 3: Logistic regression coefficient estimates, standard errors, z-values, p-values, and 95% confidence intervals.

term	estimate	std.error	statistic	p.value	Confidence Interval	
					conf.low	conf.high
(Intercept)	0.6678294	0.2750291	2.4282132	0.0151734	0.1411158	1.2259861
conservative	-0.9814869	0.3481201	-2.8193920	0.0048115	-1.6774510	-0.3086062
liberal	0.4097295	0.3428255	1.1951547	0.2320266	-0.2703181	1.0788210
sympathetic_white	0.6990469	0.4149361	1.6847099	0.0920446	-0.1051626	1.5311750
sympathetic_black	0.5217547	0.4108634	1.2698982	0.2041209	-0.2772228	1.3422341
unsympathetic_white	0.0741080	0.3865883	0.1916974	0.8479793	-0.6862842	0.8352658
unsympathetic_black	-0.1859913	0.3907324	-0.4760068	0.6340696	-0.9565777	0.5808922
conservative_sympathetic_white	0.3550107	0.5151322	0.6891643	0.4907199	-0.6640394	1.3613041
conservative_sympathetic_black	0.1246086	0.5094497	0.2445945	0.8067704	-0.8819534	1.1203956
conservative_unsympathetic_white	0.0819206	0.4901231	0.1671430	0.8672575	-0.8802856	1.0445048
conservative_unsympathetic_black	0.4996488	0.4897806	1.0201482	0.3076582	-0.4599725	1.4633501
liberal_sympathetic_white	0.8624515	0.6059047	1.4234113	0.1546170	-0.3056957	2.0873183
liberal_sympathetic_black	0.0299270	0.5200971	0.0575411	0.9541142	-0.9955244	1.0492711
liberal_unsympathetic_white	0.1620568	0.4920280	0.3293650	0.7418798	-0.8028944	1.1298208
liberal_unsympathetic_black	0.2950135	0.4894581	0.6027349	0.5466851	-0.6644274	1.2579679

Table 4: Model fit statistics including Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), and other relevant measures.

null.deviance	df.null	logLik	AIC	BIC	deviance	df.residual	nobs
1675.942	1356	-769.6327	1569.265	1647.461	1539.265	1342	1357

Note: Control condition for media frames = ‘no story’, control condition for ideology = ‘moderate’

#### 4.0.2 Model Justification

The remainder of this paper will specifically examine the interaction effects to understand how the influence of media framing on policy support for opioid abuse treatment varies according to the political ideology of respondents. This approach aims to uncover how different ideological perspectives (conservative versus liberal) shape the effect that sympathetic or unsympathetic media narratives about opioid users have on an individual’s likelihood to support treatment-focused policies. This analysis is guided by the following hypotheses:

$H_0$ : There is no interaction effect between political ideology (conservative or liberal) and media framing (sympathetic or unsympathetic, towards white or black opioid users) on the support for policy regarding opioid abuse treatment. The effect of media framing on policy support does not differ across the ideological spectrum (conservative versus liberal).

$H_1$ : There is a significant interaction effect between political ideology and sympathetic media framing on policy support for opioid abuse treatment, with liberals showing a stronger positive response towards treatment-focused policies than conservatives when exposed to sympathetic narratives (towards white or black opioid users). This suggests that sympathetic framing will be more effective in increasing support for treatment-focused policies among liberals compared to conservatives.

$H_2$ : There is a significant interaction effect between political ideology and unsympathetic media framing on policy support for opioid abuse treatment, with liberals again expected to have a stronger response towards treatment-focused policies (i.e., moving towards supporting treatment over arrest) than conservatives when exposed to unsympathetic narratives. However, in this context, the “stronger response” could be interpreted as being less swayed by unsympathetic framing towards punitive measures and maintaining or increasing their support for treatment-focused interventions.

## 5 Results

### 5.0.1 Policy Support by Media Frame

Figure 1 is a replication of Raychaudhuri, Mendelberg, and McDonough’s “Figure A5: Mean outcome values across experimental conditions (raw values, 83% CIs)”, found in the Appendix in A.5. This replication is focused on only the first graph of the quadrant (A.5.A). The purpose of this graph is to visualize the mean policy preference for each media frame, essentially determining the proportion of respondents in each category whom support treatment. This

replication attempts to simplify the original by demonstrating the findings in graph that is more easily digestible to the average audience.

The graph exposes that there is a higher proportion of support for treatment over support for arrest in all categories. This trend is consistent for both sympathetic and unsympathetic views towards both racial groups. However, the difference between the proportion of support for treatment versus arrest is more pronounced in the sympathetic categories, indicating a stronger inclination towards treatment over arrest when the respondents feel sympathy towards the individual, regardless of race. While the support for treatment still dominates in the unsympathetic categories, the margin is narrower, suggesting that lack of sympathy reduces the difference in policy support preferences.

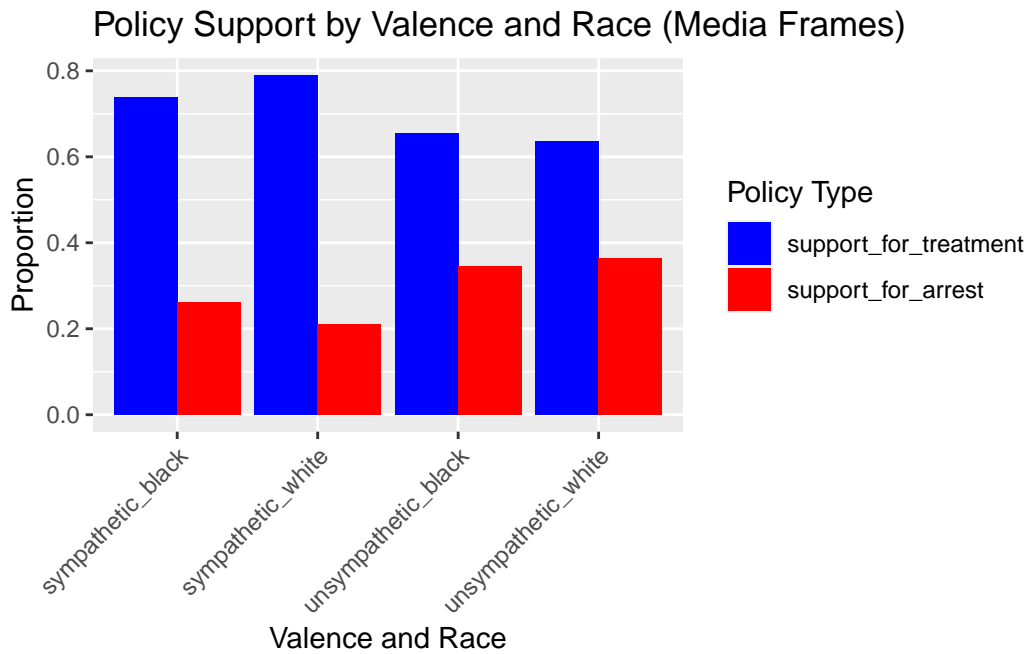


Figure 1: Policy Support by Valence and Race (Media Frames)

### 5.0.2 Interaction Effects Between Political Ideology and Media Framing on Policy Support

In examining the interaction effects between political ideology and media framing on policy support for opioid abuse treatment, the results indicate positive associations across all examined variables. Each point estimate, representing the effect size, is situated to the right of the zero point line, shown in Figure 2. This positioning suggests that each interaction variable tends to increase the log odds of supporting policy measures for opioid abuse treatment.



The statistical significance of these effects varies. The confidence intervals for most variables intersect the vertical zero line, implying that the effects are not statistically significant at the 95% confidence level. This suggests that one cannot be confident these interaction variables have a true effect on policy support within the broader population.

The exceptions to this are the interaction terms `liberal:sympathetic_white` and `conservative:unsympathetic_black`, whose confidence intervals do not cross the zero line. This indicates a statistically significant effect. Specifically, it suggests that liberals are more likely to support treatment policies when the narrative is sympathetically framed towards white opioid users, and conservatives show significant support for treatment policies when presented with unsympathetic narratives towards black opioid users.

Figure 2 replicates the forests plots used in Raychaudhuri, Mendelberg, and McDonough’s study. This replication uses the new model outlined in this paper by visualizing the interaction effects between political ideology (conservative or liberal) and media framing (sympathetic or unsympathetic, towards white or black opioid users) on the support for policy regarding opioid abuse treatment.

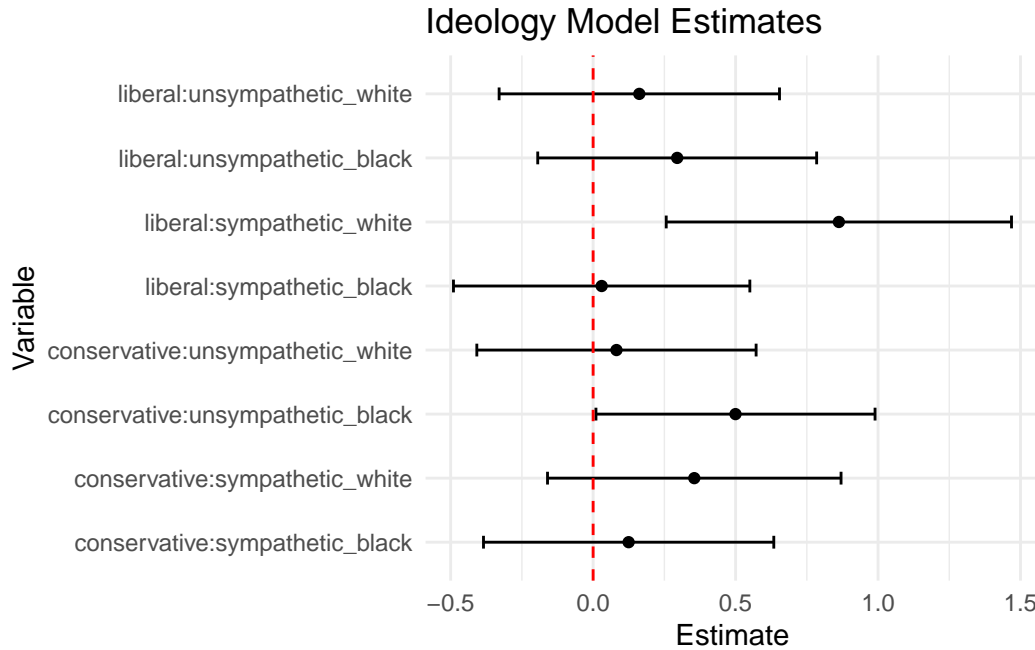


Figure 2: Interaction effects of political ideology and media framing on policy support

## 6 Discussion

The interest to examine the interaction effects between political ideology (conservative or liberal) and media framing (sympathetic or unsympathetic, towards white or black opioid users)

on the support for policy regarding opioid abuse treatment was heavily influenced by the reading of Pyra M, Taylor B, Flanagan E, Hotton A, Johnson O, Lamuda P, Schneider J, and Pollack H's study titled "Support for evidence-informed opioid policies and interventions: The role of racial attitudes, political affiliation, and opioid stigma" Pyra et al. (2022). The significance of the study was that it emphasized that despite the opioid epidemic being portrayed as less racially and politically divisive compared to previous drug crises, underlying racial and political attitudes remain influential Pyra et al. (2022). Their study revealed that Democratic Party affiliation (political ideological outlook of "liberal" in the sense of this paper) correlated with greater support for these measures and mandatory treatment, possibly as an alternative to more punitive approaches.

Building upon the insights from Pyra et al. and Raychaudhuri, Mendelberg, and McDonough, this discussion contributes to the understanding of how political ideologies intertwine with media framings that influence public support for opioid abuse treatment policies.

### 6.0.1 Findings

The null hypothesis ( $H_0$ ) stated that there would be no interaction effect between political ideology and media framing on support for opioid abuse treatment policy. However, Figure 2 shows varying estimates across different combinations of political ideology and media framing. This suggests that there may be an interaction effect. This is because the estimates for both liberal and conservative ideologies when paired with certain sympathetic framings are positive and do not overlap with the zero line, indicating a significant effect. This suggests that there is indeed some interaction effect, which leads to the rejection of the null hypothesis.

$H_1$  stated there would be a significant interaction effect between political ideology and sympathetic media framing, with liberals showing a stronger positive response towards treatment-focused policies than conservatives. The graph indicates that both liberals and conservative have a positive estimate for both `:sympathetic_white` and `:sympathetic_black`. This suggests that liberals and conservatives indeed show more support for treatment-focused policies when exposed to sympathetic narratives, regardless of the race of the opioid user. However, the liberal estimate for `:sympathetic_white` is the only variable to not overlap with zero, a sign of a strong positive response towards treatment-focused policies when framed in a white, sympathetic lens. This aids in supporting  $H_1$ , however,  $H_1$  stated that liberals would show a stronger positive response towards treatment-focused policies than conservatives when exposed to sympathetic narratives, regardless of the users race, and this is only true when discussing sympathetic narratives toward white opioid users.

The confidence intervals of the estimates for `conservative:sympathetic_white`, `conservative:sympathetic_black`, and `liberal:sympathetic_black` all cross the zero point, meaning that while their point estimates are positive, suggesting a positive effect, there is not enough statistical evidence to conclude that the effect is significantly different from zero at the chosen level of confidence (95%).

$H_2$  stated there would be a significant interaction effect between political ideology and unsympathetic media framing, expecting that liberals would be less swayed by unsympathetic narratives towards punitive measures. However, `conservative:unsympathetic_black` is the only unsympathetic media frame to show a positive effect and whose confidence intervals do not cross the zero point, disproving this hypotheses. `liberal:unsympathetic_white`, `liberal:unsympathetic_black`, and `conservative:unsympathetic_white` all show a positive effect, however, their confidence intervals all cross the zero point. at this point it is acceptable to reject  $H_2$ , as the data does not show a clear differential impact of unsympathetic framing between the ideologies.

### 6.0.2 Accounting for Bias

Accounting for bias is a critical component of research arise naturally when collecting quantitative and qualitative data. Raychaudhuri, Mendelberg, and McDonough took important steps to mitigate bias in their experiments by pre-registering their methods and employing a fully controlled design with realistic news stories. This approach helps prevent confirmation bias, meaning that the authors were not influenced by their own beliefs and values to unintentionally back their hypotheses because of the way their studies were conducted. While the authors did present measures to control for bias, there are still potential areas where bias could be present. This could include sampling bias as the authors make no mention to whether the study captures a diverse cross-section of White Americans in terms of factors like socioeconomic status, education level, or demographics.

Other accounts for bias could be present in the media content used for the study. The authors state that the generated news stories used in the study were constructed based on realistic, pre-existing new stories. Therefore, If the realistic news stories used in the study are based on actual content that already has a bias, then the study could inadvertently measure the effects of existing media bias rather than pure racial or valence framing effects. Furthermore, the wording of news stories used in the experiment could influence respondents' answers. Subtle language cues can lead to different interpretations, affecting the study's outcomes. In fact, the entire piece of media is left to interpretation.

### 6.0.3 Limitations

While the research offers significant insights into the impact of media framing on policy views, it focuses primarily on White Americans' responses. Future research could explore how different racial groups respond to such framing and whether the effects observed in this study hold across diverse demographics. Exploring the effects across multiple racial groups could aid in strengthening the papers conclusions. Therefore, being a reproduction, this paper faces the same limitation. The potential existence of sampling bias discussed above can also be seen as a limitation and therefore effects the integrity of this paper.

#### **6.0.4 Future Research**

Future research could look into the psychological mechanisms that may explain why and how political ideologies modulate responses to media framing of opioid users. It is also imperative to understand the role of individual identity, such as race and personal experience with opioid abuse, in shaping one's reaction to policy framing. Could it be that personal connections to the opioid crisis, either through community impact or personal acquaintance with sufferers, are powerful enough to override political predispositions? Personal experience could play a significant role in an individual's views on media framing and policy and seems like a strong future area of research regarding both this paper and the original.

### **7 Conclusion**

This study contributes to the growing body of literature that seeks to understand the opioid crisis not just as a public health issue, but as a societal issue that is deeply intertwined with race, politics, ideology, and media. By replicating and extending the work of Raychaudhuri, Mendelberg, and McDonough, this paper sheds light on the ways in which these factors interact to shape policy preferences, offering insights that could inform more effective and equitable approaches to addressing the opioid epidemic.

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