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Moderating political polarization through affect labeling: An experiment

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Abstract

Affect labelling, the process of putting feelings into words, has been shown to have a calming effect on the brain. This study examines the impact of affect labelling on political polarization over Covid-mitigation measures, an emotionally-charged topic that led to large differences of opinion. We conducted an online experiment in which participants in a treatment group, randomly assigned, underwent a questionnaire to label their feelings before reporting their opinions. We found that affect labeling reduced polarization for young individuals, up to the age of 29, a demographic characterized by intense emotional responses due to increased activity in the amygdala, the region of the brain whose activity is reduced by affect labeling.

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1. Introduction

Political polarization has become a major concern in many societies. Several papers have investigated the determinants of polarization, ranging from fake news and social media (Azzimonti and Fernandes 2023, Allcott et al. 2020) to non-Bayesian update of beliefs (Fryer et al. 2019) to trade exposure (Autor et al. 2020). In this paper, we build on the notion that polarization, and opinion formation in general, may have emotional causes (Sloman and Rabb 2019, Jung et al. 2014).

Specifically, we study the role of affect labeling (AL), a psychological technique involving the verbalization of emotions, in moderating political polarization. Previous research has shown that AL decreases self-reported anxiety and stress (Lieberman et al. 2011, Hemsley and Pavão 2024), and has a significant impact on one's emotional state (Lieberman 2019, Fan et al. 2019). Lieberman et al. (2007) show that AL reduces activity in the amygdala, a region of the brain responsible for processing emotions such as fear and anxiety.

We ask whether this calming effect also influences political opinions, leading to more moderate views. We choose an emotionally-charged topic that led to major differences of opinion: mitigation measures against Covid-19.[1] Our focus is on young individuals, particularly those under the age of 29, a demographic characterized by more intense emotional responses due to a more activated amygdala (Fuhrmann et al. 2015).

We conducted an online experiment, randomly assigning participants to either a treatment group or a control group. The treatment group participated in an affect labeling exercise. Additionally, we randomized a second treatment: the presentation of referenced information about the Covid-mitigation measures we ask about, since information is a possible determinant of opinion formation (for a discussion, see Barrera et al. 2020).

Our findings indicate that affect labeling significantly reduced political polarization in the younger demographic for the Covid-related topics of social distancing and mask usage, with no effect for older individuals. Referenced information also had no impact, in line with previous research (Fryer et al. 2019 is a recent example). This suggests that affect labeling could be used as tool in reducing polarization among young people, potentially fostering more balanced and less emotionally charged political discourse.

2. Experimental design and sample

We conducted an online survey on September 23, 2021, with 600 participants from the United States, recruited from Amazon's Mechanical Turk. The reward for participation was set at US$0.45. Respondents were not permitted to participate more than once and we only accepted workers who had previous experience and had at least a 90 percent approval rating. The questionnaire design and data collection from respondents were conducted through the Qualtrics platform.

[1] See Allcott *et al*. (2020) for an analysis of partisan differences concerning social distancing.

The study began with participants answering socio-demographic questions via an online link. Next, they were informed that we could ask questions about the Covid-19 pandemic, an emotionally-charged topic that led to major differences of opinion. Participants were then randomly split into four groups: one control group and three treatment groups.

The first treatment group underwent an affect labeling questionnaire, designed for unrestricted emotional expression. This questionnaire combined items from various scales that assess emotional states (detailed in the appendix). The objective is to give participants a structured framework to identify and express their feelings, with simple implementation, taking around one minute to complete.[2]

The second treatment group received referenced information about the effectiveness of social distancing and mask-wearing, including hyperlinked sources for reference. The third treatment group received both the referenced information and completed the affect labeling questionnaire, while the control group received neither.

Then all groups were directed to the concluding questions of the questionnaire and rated their agreement or disagreement on the efficacy of measures to control the spread of COVID-19 on a scale of -8 to 8. We choose this scale to have a natural center: zero.

Specifically, participants gave their opinions about the following statements:

1- Social distancing is a relevant measure to limit the spread of the coronavirus.
2- Wearing masks is a relevant measure to limit the spread of the coronavirus.

The appendix presents the complete questionnaires. We should stress that these statements above are politically charged, and people usually have defined opinions about them, or at least are familiar with them.

Of the 600 respondents, 4 were excluded due to a wrong response in a verification question, resulting in a valid sample of 596 subjects. The ages were divided as follows: 24,5% aged 29 years or younger, 61,6% between 30 and 49 years, and 13,9% aged 50 or older. Regarding gender, all participants declared themselves as male or female, with 69% male and 31% female. Regarding education, 13,3% fell into the low education category, while 86,6% were in the high education group. In terms of employment, 92,6% of participants reported being employed. Politically, 16,4% identified as Democrats, 14,4% as Centrists, and 69,1% as Republicans. Lastly, of the 596 respondents, 146 were allocated to treatment 1, 150 to treatment 2, 150 to treatment 3, and 150 to the control group. Descriptive statistics for these subjects can be found in Table I.

[2] This questionnaire was originally developed in Hemsley and Pavão (2024). We refer the reader to this paper for details.

Table I. Summary Statistics (%)					
	Full Sample	**Treatment 1**	**Treatment 2**	**Treatment 3**	**Control Group**
Gender					
Female	31,0	30,1	31,3	26,7	36,0
Male	69,0	69,9	68,7	73,3	64,0
Age					
29 or Less	24,5	24,0	22,7	20,7	30,7
30 to 49	61,6	64,4	62,7	63,3	56,0
50 or more	13,9	11,6	14,7	16,0	13,3
Education					
Incomplete High School or Less	0,2	0,7	0,0	0,0	0,0
High School Graduate	5,9	6,8	6,0	6,0	4,7
College with no degree	7,2	10,3	4,0	9,3	5,3
Bachelor's Degree	71,0	69,2	71,3	69,3	74,0
Graduate Degrees	15,6	13,0	18,7	15,3	15,3
Other/Prefer not to answer	0,2	0,0	0,0	0,0	0,7
Employment Status					
Employed	92,6	94,5	92,0	92,0	92,0
Retired	1,3	0,0	2,7	0,7	2,0
Student	1,2	0,7	0,0	0,7	3,3
Unemployed	3,0	2,1	2,7	6,0	1,3
Not Formally Employed	0,8	1,4	1,3	0,7	0,0
Other/Prefer not to answer	1,0	1,4	1,3	0,0	1,3
Political Spectrum					
Democrat	16,4	19,9	16,7	16,7	12,7
Center	14,4	15,8	12,7	17,3	12,0
Republican	69,1	64,4	70,7	66,0	75,3
Observations	596	146	150	150	150

3. Results

To check whether affect labeling had an impact on polarization, taking into account differences among age groups, we run the following OLS (Ordinary Least Squares) regression.

$$|Y_{ij}| = \beta_0 + \beta_1 \times AL_i + \beta_2 \times Info_i + \beta_3 \times Above29_i \times AL_i + \gamma' X_i + u_i \qquad (1)$$

Y_{ij}: participant's position about each statement $j = 1,2$. $|Y_{ij}|$ is the absolute value. We interpret it as a measure of polarization: the larger it is, the farther subject i is from the center, for a given statement j.

AL_i: dummy variable equal to one for participants in the affect labeling group, zero otherwise.
$Info_i$: dummy variable equal to one for participants in the referenced information group, zero otherwise.

$Above29_i$: dummy variable equal to one for participants with age above 29, zero otherwise.

X_i: socio-demographic controls: gender, age, education, employment status, and political position.[3]

As a result of the random assignment, the treatments do not have any correlation with other factors that might influence participant responses to each question. This allows to identify any effect of affect labeling and referenced information. Tables II and III present the results.

Table II. Regression Results (Y1)

Variables	(1)	(2)	(3)	(4)
AL	-0,259	-1,251***	-1,176**	-1,171**
	(0,176)	(0,357)	(0,397)	(0,395)
Above29		-0,069	-0,065	-0,165
		(0,268)	(0,267)	(0,409)
Above29*AL		1,281**	1,286**	1,328**
		(0,409)	(0,408)	(0,403)
Info			-0,041	-0,046
			(0,237)	(0,234)
AL*Info			-0,156	-0,204
			(0,346)	(0,345)
Constant	Yes	Yes	Yes	Yes
Controls	No	No	No	Yes
Observations	596	596	596	596
R-squared	0,004	0,031	0,032	0,057
Adjusted R-squared	0,002	0,026	0,024	0,033

Note: Robust standard errors in parentheses. *** p < 0,001, ** p < 0,01

Table III. Regression Results (Y2)

Variables	(1)	(2)	(3)	(4)
AL	-0,208	-1,232**	-1,297**	-1,256**
	(0,180)	(0,376)	(0,405)	(0,403)
Above29		-0,166	-0,136	-0,329
		(0,298)	(0,297)	(0,417)
Above29*AL		1,328**	1,304**	1,291**

[3] The appendix describes how these variables were defined.

		(0,427)	(0,426)	(0,421)
Info			-0,296	-0,259
			(0,253)	(0,254)
AL*Info			0,165	0,086
			(0,356)	(0,352)
Constant	Yes	Yes	Yes	Yes
Controls	No	No	No	Yes
Observations	596	596	596	596
R-squared	0,002	0,027	0,029	0,062
Adjusted R-squared	0,0005	0,022	0,021	0,038

Note: Robust standard errors in parentheses. ** p < 0,01

Our coefficient of interest is β_1, the impact of affect labeling on the absolute value of a subject's opinion, for the age group below 29. We see that it is negative and significant for both statements, in all specifications: for young people, affect labeling leads to less polarization concerning Covid-mitigation policies. After expressing their feelings, participants tend to give responses closer to the center.[4]

The coefficient for the age group above 29 is $\beta_1 + \beta_3$, and it is non-significant. As indicated in Fuhrmann et al. (2015), older people already have reduced activity in the brain amygdala. Hence affect labeling, which works exactly through a decrease in amygdala activity, tends to have a lower impact. In other words, the determinants of polarization for this demographic may be different.

Notice that our previous discussion on affect labeling does not suggest that it should cause participants to become more favorable to a given Covid-mitigation measure – that is, there is no expected sign for the impact of AL on Y_{ij}. If affect labeling decreases amygdala activity and fight-or-flight responses, the subject will think more calmly about each statement before forming his opinion, whatever it is. The role of AL is to reduce overreactions, in any direction.

4. Concluding remarks

This study has explored the impact of affect labeling, a psychological technique for emotional expression, on political polarization among young adults under the age of 29. Our findings indicate that a simple implementation of affect labeling reduces polarization in this demographic regarding two politically charged Covid-19 topics —social distancing and mask usage. This reduction suggests that affect labeling may help moderate extreme views, especially in younger individuals, who tend to exhibit a more reactive amygdala.

[4] The estimated coefficient of β_1 is similar across specifications, as expected due to the random assignment of affect labeling. In particular, it does not change with the inclusion of controls in column 4. We include controls to take into account possible imbalances in the randomization process. Athey and Imbens (2017, section IV) discuss controls in randomized experiments.

In practical terms, our study suggests that affect labeling could be considered as a policy tool to foster more balanced political discussions among young people – e.g., it might be integrated into educational and social media platforms.

5. References

Allcott, H., L. Boxell, J. Conway, M. Gentzkow, M. Thaler, and D. Yang (2020) "Polarization and Public Health: Partisan Differences in Social Distancing During the Coronavirus Pandemic" *Journal of Public Economics* **191**, 104254.

Athey, S., and G. Imbens (2017) "The Econometrics of Randomized Experiments" In *Handbook of Economic Field Experiments* by Duflo, E, and A. Banerjee, Eds., Elsevier: Amsterdam **(1)**, 73–140.

Autor, D., D. Dorn, G. Hanson, and K. Majlesi (2020) "Importing Political Polarization? The Electoral Consequences of Rising Trade Exposure" *American Economic Review **110*** **(10)**, 3139-3183.

Azzimonti, M., and M. Fernandes (2023) "Social Media Networks, Fake News, and Polarization" *European Journal of Political Economy* **76**, 102256.

Barrera, O., S. Guriev, E. Henry, and E. Zhuravskaya (2020). "Facts, Alternative Facts, and Fact Checking in Times of Post-Truth Politics" *Journal of Public Economics* **182**, 104123.

Fan, R., O. Varol, A. Varamesh, A. Barron, I. A. van de Leemput, M. Scheffer, and J. Bollen (2019) "The Minute-Scale Dynamics of Online Emotions Reveal the Effects of Affect Labeling" *Nature Human Behaviour* **3 (1)**, 92–100.

Fryer Jr, R. G., P. Harms, and M. O. Jackson (2019) "Updating Beliefs When Evidence is Open to Interpretation: Implications for Bias and Polarization" *Journal of the European Economic Association **17*** **(5)**, 1470-1501.

Fuhrmann, D., L. Knoll, and S. J. Blakemore (2015) "Adolescence as a Sensitive Period of Brain Development" *Trends in Cognitive Sciences* **19 (10)**, 558–566.

Hemsley, P., and L. Pavão (31 Jan 2024) "Affect Labeling as A Buffer: Reducing Anxiety in the Face of Violent News" *Applied Economics Letters.*

Jung, N., and K. Hamburger (2014) "How Emotions Affect Logical Reasoning: Evidence from Experiments with Mood-Manipulated Participants, Spider Phobics, and People with Exam Anxiety" *Frontiers in Psychology **5***, 73445.

Lieberman, M. (2019) "Affect Labeling in the Age of Social Media" *Nature Human Behaviour* **3 (1)**, 20–21.

Lieberman, M., T. Inagaki, G. Tabibnia, and M. Crockett (2011) "Subjective Responses to Emotional Stimuli During Labeling, Reappraisal, and Distraction" *Emotion* **11 (3)**, 468.

Lieberman, M., N. Eisenberger, M. Crockett, S. Tom, J. Pfeifer, and B. Way (2007) "Putting Feelings into Words: Affect Labeling Disrupts Amygdala Activity in Response to Affective Stimuli" *Psychological Science* **18 (5)**, 421–428.

Sloman, S. A., and N. Rabb (2019) "Thought as A Determinant of Political Opinion" *Cognition* ***188***, 1-7.

6. Appendix

A1. Questionnaire

Socio-Demographic Questionnaire

What is your gender?
Male
Female
Other
Prefer not to answer

What is your age?
29 or Less
30-39
50 or more

What is your level of education?
Incomplete High School or Less
High School Graduate
College with no degree
Bachelor's Degree
Graduate Degrees (Master, PhD, etc)
Other
Prefer not to answer

What is your employment status?
Employed
A Student
Unemployed and seeking work
Not formally employed and not seeking formal employment
Retired
Other
Prefer not to answer

How do you classify yourself in the political spectrum in a scale from -8 to 8?
-8: "Very left wing "
-7
-6
-5

-4
-3
-2
-1
0: “Center”
1
2
3
4
5
6
7
8: “Very right wing”

Note: based on the questions above, we built the variables used in our regression in the following way:

Age: variable equal to one for 29 years old or less, to two for 30 to 39 years old, to three for 40 to 49 years old, and four to 50 years old or more.
Gender: variable equal to one if the individual's gender is male and zero otherwise.
Education: variable equal to one for High School or less, to two for High School, to three for College with no degree, to four for Bachelor's degree and to five for Graduate degrees.
Employment status: Employed - variable equal to one if the individual is employed and zero otherwise; Retired - variable equal to one if the individual is retired and zero otherwise; Not Formally Employed - variable equal to one if the individual is not formally employed and zero otherwise.
Political: participant’s self-reported political spectrum, ranging from -8 to 8.

Mention of the Topic Concerning COVID-19

The COVID-19 pandemic has affected the lives of people all over the world.
We will ask you some questions related to the pandemic.

Factual information about the Measures for Controlling the Spread of the Coronavirus

Research indicates that there is no effective cure among available treatments, but masks and social distancing are relevant measures to limit the dissemination of the virus that causes the disease. Reference: World Health Organization (https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/myth-busters)

Affect Labeling Questionnaire

Please answer the following questions about your emotional state.

What have you felt most frequently during the Covid-19 pandemic? Please choose as many options as you want.
Anger
Fear
Sadness
Anxiety
Helplessness
Disgust
Neutral
Other. Please describe in as many details as you want.

What are your feelings about the future of the pandemic? Please choose as many options as you want.
Satisfaction
Happiness
Sadness
Fear
Apprehension
Anxiety
Confidence
Neutral
Other. Please describe in as many details as you want.

Have you felt helpless at some moment over the last month, either because you were unable to solve some problem on your own, or because you did not have support from others?
0-Not at all
1-Several days
2-More than half of the days
3-Nearly every day
Would you like to describe how you felt at some specific moment, or during the whole period?

Have you been bothered by feeling down, depressed, or hopeless over the last month?
0-Not at all
1-Several days
2-More than half of the days
3-Nearly every day

Please indicate your agreement with the sentence: In most ways my life is close to my ideal.
7-Strongly agree
6-Agree
5-Slightly agree
4-Neither agree nor disagree
3-Slightly disagree
2-Disagree
1-Strongly disagree

How often have you been upset because of something that happened unexpectedly in the last month?
0-Never
1-Almost Never
2-Sometimes
3-Fairly Often
4-Very Often

Please indicate how strongly you agree or disagree with the statement: On the whole, I am satisfied with myself.
4-Strongly Agree
3-Agree
2-Disagree
1-Strongly Disagree

In general, I consider myself:
1 – not a very happy person 2 3 4 5 6 7 – a very happy person

Verification Question

This is just a verification statement. Please choose option 5.
1
2
3
4
5

Questions Related to the COVID-19 Pandemic

Please choose for each statement below the option that best describes your opinion about COVID-19.

1. Social distancing is a relevant measure to limit the spread of COVID-19.
-8: “Totally disagree”
-7
-6
-5
-4
-3
-2
-1
0: “Neutral”
1
2
3
4

5
6
7
8: “Totally agree”

2. Wearing masks is a relevant measure to limit the spread of COVID-19.
-8: “Totally disagree”
-7
-6
-5
-4
-3
-2
-1
0: “Neutral”
1
2
3
4
5
6
7
8: “Totally agree”