

# Multiple social identities cloud norm perception: Responses to COVID-19 among university aged Republicans and Democrats

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## Abstract

Most work on social identity, defined as one's sense of self derived from membership to social groups, focuses on a single identity and its behavioural consequences. But a central insight of social identity theory is that people belong to multiple social groups, derive self-esteem from multiple identities and care to conform to the norms for those identities. However, very little work has turned its attention to understanding when and how multiple social identities interact. We motivate hypotheses with a framework that extends a social identity model to include multiple identities. Using a longitudinal sample ( $N > 600$ ) of university students located throughout the US, we use university social identity, and the associated university norms, to characterize COVID related

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social distancing norms between April and October of 2020 and then unpack how another identity, the student's political identity, impacts perception of those norms. Despite incentives to do otherwise, we find that beliefs about university norms differ depending on the respondent's political identity. We relate our results back to a model of social identity.

**Significance Statement:** During the wake of the COVID-19 pandemic, norms surrounding precautionary behavior, i.e. hand washing, mask wearing, and so on, quickly emerged and subsequently became highly politicized. In this study, we find evidence that political identity affects one's ability to perceive university-level norms even when there are incentives in place to focus on those norms and when there are, through government enforced restrictions, forces coordinating behaviour. These results suggest that one's identities may impact each other, such that one identity obscures an actor's ability to accurately perceive the norms of another identity, even when there are salient incentives for accurate judgment.

**Keywords:** COVID-19; Norms; Preferences; Social Identity

**JEL Classification:** D81, D91, C83

# Introduction

Social identity is defined as one's sense of self derived from membership to social groups (Akerlof and Kranton 2005; Tajfel et al. 1979). Central insights of Social Identity Theory are that people belong to multiple social groups, derive self-esteem from their social groups and that they care to conform to the norms for their social groups. Since the introduction of social identity into economics, work has focused on establishing the importance of social identity in being able to explain conflict between groups, human capital investment decisions, in and outgroup bias, and differences in time and risk preferences (Akerlof and Kranton 2000; Akerlof and Kranton 2002; Benjamin et al. 2010; Charness and Chen 2020; Chen and Li 2009; Whitt et al. 2021). However, very little work has turned its attention to the consequences of having multiple social identities that may intersect in ways that impact how we understand and experience the world.

In the present study we test for the impact of a student's political identity on their beliefs about COVID related norms for their university identity. We motivate our predictions with a framework provided by social identity theory (Akerlof and Kranton 2000) and use panel data collected between April and October 2020 at three universities in Texas to test these predictions.

We begin with the "behavioral" premise that precautionary behaviour is both a personal decision and a social interaction. Within the social identity framework, people hold multiple identities simultaneously and, therefore, are aware of multiple group-norms (Akerlof and Kranton 2005). **Injunctive** norms ascribe appropriateness to sets of actions one could take in a particular situation and are defined for each specific identity (or group) and apply to all members of the social group for that situation. The beliefs that support injunctive norms are second-order beliefs (beliefs about what others believe is appropriate or inappropriate).<sup>1</sup> **Descriptive** norms ascribe expectations of frequency to sets of actions and beliefs are group specific. The beliefs that support descriptive norms are second-order beliefs (beliefs about what others believe is most commonly done).

The theory of social identity also assumes that some identities (and their norms) are

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<sup>1</sup>These are different from first-order beliefs of appropriateness, which instead are beliefs about what the individual personally considers appropriate or inappropriate. This distinction is important and discussed in Nosenzo and Gorges 2020.

more influential to the decision maker than others (Tajfel et al. 1979). Prior work suggests that political identity is likely to be among the more strongly influential identities relative to other identities.<sup>2</sup> However, recent studies demonstrate that context, and incentives can make one identity more salient over another in a decision maker's mind (Akerlof and Kranton 2005; Benjamin et al. 2010; Burks and Krupka 2012; Chang et al. 2019; Shih et al. 2006). In our study we will use both incentives (in the form of cash payments to make accurate guesses) and context (in the form of evolving state mandated COVID restrictions) to increase the salience of *non-political* identity norms in a context where political identity may matter.

The setting for our study, the emergence of COVID-19, is particularly well suited to this analysis for two reasons. In late December of 2019 COVID-19 emerged as a significant health threat.<sup>3</sup> As Haushofer and Metcalf 2020 note, for most of 2020 the only approaches to reducing transmission were behavioural (hand washing, social distancing, masks, etc.). Thus, in the early months, COVID-19 could only be combated with changes in social norms and collective action on a large scale (Van Bavel et al. 2020).<sup>4</sup> However, responses to the virus also became highly politicized (Allcott et al. 2020; Druckman et al. 2021; Gollwitzer et al. 2020; Kahane 2021; Kushner Gadarian et al. 2020). With our data collection strategy, we use incentives to make the university identity norms for social distancing salient. We leverage the politicization of pandemic mediation efforts during our window of observation, as well as state-mandated COVID-19 restrictions, to test for the impact of an identity we do not make salient in the study, political identity, on perception of norms for our salient identity.

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<sup>2</sup>Though studies vary in terms of sampling strategy (population or specialized samples) and methodology (individual-level surveys, mobility data by locality, as well as county or state level compliance or mortality data), political affiliation remains an important correlate of behaviour and policy preferences in the US. Democrats are more likely to comply with COVID restrictions and more likely to support policies designed to limit the spread of the virus or mitigate its impact (Allcott et al. 2020; Druckman et al. 2021; Gollwitzer et al. 2020; Kahane 2021; Kushner Gadarian et al. 2020; Milosh et al. 2020; Pickup et al. 2020). Responses to Governors' recommendations are similarly partisan (Grossman et al. 2020). The disparities are magnified as the two groups express greater dislike for one another (Druckman et al. 2021), and trusted news sources and political messaging may have exacerbated differences (Pennycook et al. 2021; Zhao et al. 2020).

<sup>3</sup>In the space of little over a year, the virus infected and killed over half a million people in the US. In addition, COVID-19 contributed to the most rapid change in the unemployment rate in modern American history (Chetty et al. 2020).

<sup>4</sup>Social change is often supported by social norms that are grounded in community values and articulated around collective objectives (Hardin 2015; Ostrom 2000; Sherif 1988).

## Theory and Experimental Design

To motivate our empirical approach, we adopt a framework inspired by Benjamin et al. 2010. In this framework decision makers wish to comply with the norm for their social identity and increasing salience of the identity reveals the marginal effect of increasing the strength of affiliation with that category (Benjamin et al. 2010).<sup>5</sup> We extend this framework to a scenario where there are multiple identity considerations.<sup>6</sup>

Let  $x$  be some action choice, in our case, the level of COVID-19 precautionary behavior. Individuals belong to two social categories, university ( $U = \{Rice, TAMU, PVAMU\}$ ) and political identity ( $P = \{Republican, Democrat, Independent\}$ ) with strength  $s_U \geq 0$  and  $s_P \geq 0$ . Denote action  $x_0$  as the subject's preferred action in the absence of any identity considerations. Let  $x_U$  denote the action prescribed for members of the social category  $U$  and let  $x_P$  denote the action prescribed for members of social category  $P$ . The individual chooses to maximize the following equation:

$$U = -w_0(x - x_0)^2 - w_U(s_U)(x - x_U)^2 - w_P(s_P)(x - x_P)^2 \quad (1)$$

where  $0 \leq w_U(s_U)$  is the weight placed on the university social category  $U$  and  $0 \leq w_P(s_P)$  is the weight placed on political identity social category.<sup>7</sup> We assume that  $w_K(0) = 0$ ,  $w'_K > 0$  for  $K = U, P$ . In other words, the disutility of deviating from one's category is an increasing function of the strength of that category. We assume that  $s_U$  and  $s_P$  have steady-state

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<sup>5</sup>The idea that actors wish to comply with identity-dependent social norms has been advanced in multiple papers elsewhere (Akerlof and Kranton 2005; d'Adda et al. 2020). For example, Akerlof and Kranton 2005 note that "... much of utility depends not only on what economists normally think of as *tastes*, but also on *norms* as to how people think that they and others *should* behave ..."

<sup>6</sup>We take a reduced-form approach to model norm compliance. We start with the assumption that individuals care about behaving in a manner consistent with norms rather than developing a theory of norm compliance based on underlying preferences and refer to Bénabou and Tirole 2011 and Andreoni and Bernheim 2009 for micro-foundations.

<sup>7</sup>For ease of interpretation, one may include a normalizing constant of  $\left[ \frac{1}{w_0 + w_U(s_U) + w_P(s_P)} \right]$  in the utility function. This common factor, which is 1 over the sum of the three weights, ensures that the weights determine the relative rather than the absolute importance of each norm. Because utility functions are invariant to linear transformations the inclusion of this constant does not change the optimal solution in (2). We include this footnote as it may be more intuitive for some readers.

values  $\bar{s}_U$  and  $\bar{s}_P$ . It is possible that  $s_U$  and  $s_P$  can be perturbed away from  $\bar{s}_U$  and  $\bar{s}_P$  by a social category prime or through increased identity salience  $\varepsilon_U$  and  $\varepsilon_P$ .<sup>8</sup> For example the strength of the identity affiliations might follow an AR(1) process such as:  $s_{U,t} = (1 - \phi)s_{U,t-1} + \phi\bar{s}_U + \varepsilon_U$  and  $s_{P,t} = (1 - \lambda)s_{P,t-1} + \lambda\bar{s}_P + \varepsilon_P$ . The first-order condition provides the following optimal action:

$$x^*(s_U, s_P) = w_0x_0 + w_U(s_U)x_U + w_P(s_P)x_P \quad (2)$$

Intuitively, the agent’s optimal action depends on their ideal action, the university-level social norm and the political-affiliation social norm, for example. Over the three waves of data collection, we may see the agents take different levels of precautionary behavior. More specifically, for those with different political affiliations, we expect that behavioral differences will be driven by  $w_P(s_P)$ , conditional on  $x_0$  being equal across political affiliations. In our theoretical model, perception of an unrelated identity-specific social norm is independent from another social identity. This leads us to our main hypothesis of interest:

**Hypothesis 1.** Elicited university-identity social norm  $x_U$  is independent of political identity considerations ( $P$ ).

We provide direct incentives to coordinate on the university social norm. Thus, if political identity influences responses in the coordination game or if it influences responses in the face of state-wide imposed COVID restrictions, then this feature is not included in our model.<sup>9</sup>

### Three waves of data collection

The project builds on samples of students from Rice University, Prairie View A&M University (PVAMU) and Texas A&M University (TAMU) that were recruited to participate in two prior

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<sup>8</sup>We use the assumption of steady-state identity saliently and the process of being temporarily perturbed as described in Benjamin et al. 2010.

<sup>9</sup>Though there are multiple reasons why individuals might report inaccurate beliefs of the university-level social norm - they may hold inaccurate beliefs due to motivated beliefs (Mobius et al. 2011; Thaler 2021) or they have a biased representation of the university social norm due to the belief formation process (Prentice and Miller 1993; Pronin et al. 2004; Ross et al. 1977) - finding that norm perception is influenced by an other identity (here political identity) would be an important contribution for how we model social identity.

studies which began in 2016.<sup>10</sup> The same battery of questions were asked over three waves, which were administered two months apart in time. The first wave began in early April 2020, the second wave began in late July, and the last wave began mid-October 2020.<sup>11</sup> Altogether 633 respondents participated in all three waves of the study. In our preferred specification, we rely on the subsample of subjects who completed all three waves of the survey to avoid issues of attrition.<sup>12</sup>

## **Eliciting and constructing the norms indices in each wave**

The norm elicitation modules elicit beliefs about the injunctive and descriptive norms and, when aggregated, provide an empirical proxy for the respective university norms. The procedure follows the method developed in Krupka and Weber 2013; just as in their paper, respondents were incentivised to coordinate their answers with other participants from the respondent's same university. We describe a specific action (social distancing, of avoiding religious services, and of avoiding hanging out with friends), and ask subjects to coordinate on rating the appropriateness (in the case of the injunctive norm) and prevalence of the action (in the case of the descriptive norm) with another subject who is a randomly chosen participant from their university. See the appendix for the exact phrasing of the norm elicitation questions.

Respondents play a coordination game over four possible appropriateness ratings: “very socially appropriate,” “socially appropriate,” “socially inappropriate,” and “very socially inappropriate.” This description, along with the four-category scale, follows that of Krupka and Weber 2013. In the case of eliciting beliefs about the descriptive norm, respondents play a coordination game over four possible levels of activity: “Most are not doing this (<20%)”, “some are not doing this (<50%)”, “some are doing this (>50%)”, and “most are doing this (>80%)”.<sup>13</sup> Subjects

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<sup>10</sup>Rice University is a private research university in Houston, Texas; Texas A&M is a large public land-grant research university in College Station, Texas and the flagship institution of the Texas A&M University system; and PVAMU is a historically black university also in the Texas A&M University System. See the Appendix for additional information on these prior studies.

<sup>11</sup>During that time, universities closed and students moved. We discuss this and further study details in the Appendix and in Figure ??

<sup>12</sup>Table ?? in the Appendix reports the differences in mean demographic variables of those who complete all three waves and those who did not complete all three waves.

<sup>13</sup>Krupka and Weber 2013 provide evidence that collectively-recognized social norms create focal points in these

have an incentive to anticipate and match how other participants from their university will rate an action.<sup>14</sup>

We construct an individual index for beliefs about the injunctive and descriptive norm. We build this index in each wave by taking the average of the subject's beliefs about the university norms. A respondent's belief (inj.) norm index ranges from 0 (very inappropriate) to 100 (very appropriate). The belief (desc.) norm index ranges from 1 (most are not doing this) to 100 (most are doing this).

## Results

### The participants

We limit our analysis to 633 subjects who completed all three waves of the survey. We summarize the time invariant controls in Table ?? by reporting the means (along with standard errors in parentheses) and the number of observations per university in our sample.

The majority of our subjects (79%) attend Rice University, with the remaining 12% and 9% attending Texas A&M and Prairie View A&M University, respectively. Our sample consists of 18% black respondents and less than half male respondents (38%).<sup>15</sup> About 80% of all students in our sample identify themselves as Democrats, 16% as Republicans and 4% as Independents. A large majority of students from Prairie View A&M (88%) and Rice University (81%) report that they identify with the Democratic Party. In comparison, there is more heterogeneity among the students from Texas A&M University where about 70% report identifying with the Democratic Party and 26% with the Republican Party.<sup>16</sup>

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matching game (see also Goerg and Walkowitz 2010; Schelling 1980; Mehta et al. 1994; Sugden 1995).

<sup>14</sup>Details of the experimental design can be found in the appendix.

<sup>15</sup>For Prairie View A&M University, only 8% of the respondents were men. When we loosen the inclusion restriction of our sample and allow for individuals which do not have all three wave observations, we see that 19% of the Prairie View A&M University respondents are male, in comparison to 46% for Rice University and 39% for Texas A&M University. This gender difference for Prairie View, however, may be attributable to the fact that 60.9% of the incoming freshmen in 2016 were females.

<sup>16</sup>Table ?? in the Appendix shows that the in-sample and out-sample group statistically differ across university and race, but not among political-identity.



In all regressions we control for COVID-19 infection data from the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University (Dong et al. 2020). Seven-day moving averages of daily new cases and deaths are computed at the county-level and are merged with respondents by both location and date completed in each of the waves of the study.

## **Elicited university norms are clouded by political identity**

Figure 1 plots the average norm index by political affiliation across each survey wave.<sup>17</sup> Overall, we find a downward trend in the norm indices; subjects beliefs about the university injunctive norm (what one ought to do) are softening such that actions in wave 3 are viewed as less strongly prescriptive than in wave 1. We also see that the university descriptive norm (what others are doing) to prevent the spread of COVID-19 is becoming weaker such that respondents believe fewer people are taking precautionary measures in wave 3 than wave 1.

When looking at the norm index level by political affiliation, the injunctive norm index is not significantly different between Democrats and Independents. For Republicans, however, they report a university injunctive norm index that is significantly lower than the university injunctive norms index reported by Democrats in wave 1 and wave 3, although not significantly lower for wave 2 ( $p < 0.01$  for wave 1,  $p > 0.1$  for wave 2, and  $p < 0.1$  for wave 3; see appendix Table ??). In other words, Republican student respondents believed the university injunctive norm for COVID-19 precautionary behavior was lower than what Independent and Democrat students believed.

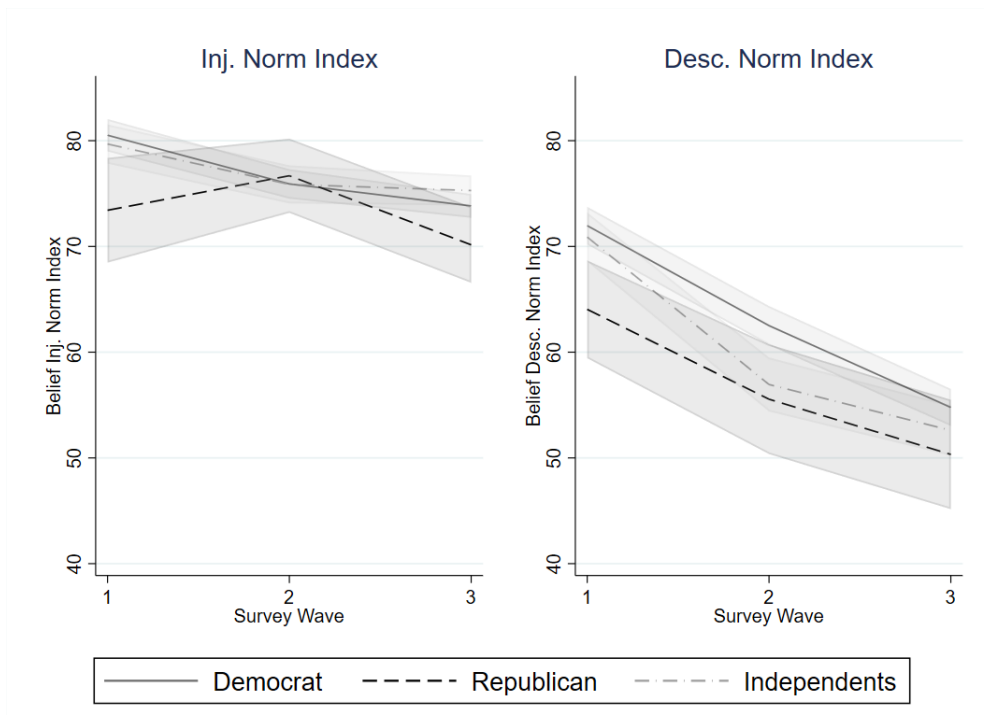
For the descriptive norm index, we see a strong ordering of beliefs: Students who identify as Democrats believe more people are engaging in precautionary behavior than students who identify as Independents, and than students who identify as Republicans. This difference in ranking is statistically significant for wave 1 and wave 2 between Democrats and Republicans but not for other waves ( $p < 0.05$  for wave 1,  $p < 0.05$  for wave 2, and  $p > 0.1$  for wave 3; see Table ??

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<sup>17</sup>The numbers used in the figure can be found in the appendix in Table ?? which reports the injunctive norm and descriptive norm index by political identity across all three waves.

in the appendix). When we look at the norm index separately for each University, (Figure ??, Figure ??, Figure ?? in the Appendix) we see similar trends. Across survey waves, injunctive norms were higher than descriptive norms.

Figure 1: *Injunctive and Descriptive Norm Indices by Wave and Political Identity*



Note: Gray areas indicate 95% confidence intervals

**Result 1.** Student respondents who are Republicans or Democrats hold different beliefs about the university injunctive norms in wave 1 ( $p < 0.01$ ) and wave 3 ( $p < 0.10$ ). Student respondents who are Republicans and Democrats hold different beliefs about university descriptive norms in wave 1 ( $p < 0.05$ ) and wave 2 ( $p < 0.05$ ).

One possibility for why political identity is correlated with university norm perception is that perhaps the incentives to use university norms as focal points in our coordination games were not salient *enough* to motivate subjects to disregard the political identity norms while playing the coordination game. We can test this critique by using the emerging COVID restrictions over our observation window. COVID restrictions should make coordination in the norms task easier, and lead to less miscoordination, since the restrictions should cause *more* people to take *similar* social

distancing actions. Subjects who want to maximize earnings in the coordination game should be able to use those restrictions to inform their guesses and especially so when forming guesses around the descriptive norm; as a result, we should see lower miscoordination in the presence of restrictions.

To test the impact of restrictions on perceptions of the norms we merge restrictions data onto our data set. The restrictions data comes from the Oxford COVID-19 Government Response Tracker (OxCGRT) maintained by the University of Oxford's Blavatnik School of Government (Hale et al. 2020). Governmental restrictions are recorded at the state-level and reported daily. We utilize their reported stringency index which is composed of nine policy measures.<sup>18</sup> Using these measures, and re-weighting based on if the restriction policy is targeted or general, the stringency index is re-scaled such that the minimum and maximum values are between 0 and 100.<sup>19</sup>

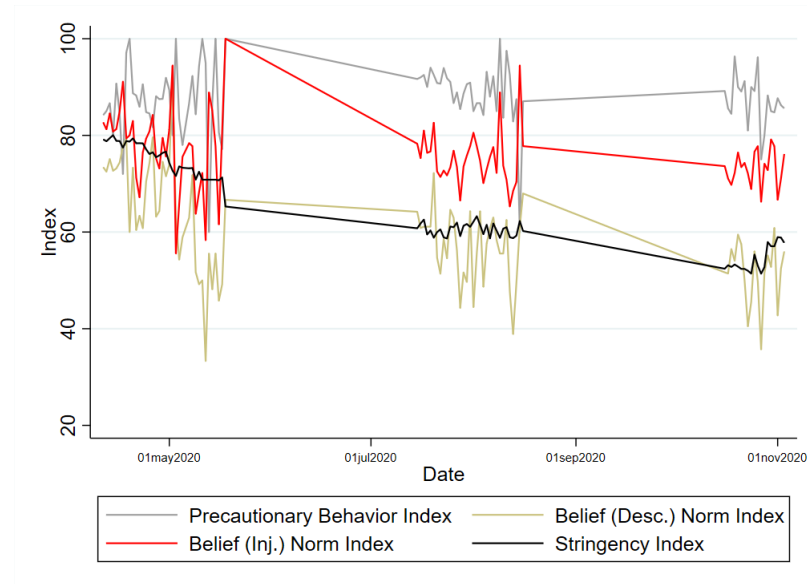
In Figure 2 we plot the stringency index (black line) along with the precautionary behaviour index (gray), beliefs (desc.) norm index (light green), and the beliefs (inj.) norm index (red line) over time for wave 1. Visually, we see that the stringency index is declining over our observation window as is the descriptive and injunctive norm. Note that this figure shows movement within a wave, as data collection was in process, as well as between waves. Smooth lines connect the three waves of data collection.

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<sup>18</sup>These include school closing, workplace closing, cancelling of public events, restrictions on gathering size, closure of public transport, restrictions on internal movement, restrictions on international travel, and public information campaigns.

<sup>19</sup>Several papers have used other sources for policy restrictions, such as data provided by the National Association of Counties (NACo) - County Explorer (Amuedo-Dorantes et al. 2021; Brodeur et al. 2021). We opt to use the Oxford COVID-19 Response Tracker as policies are reported throughout our entire time period of interest whereas the NACo data was last updated on April 15 2020.

Figure 2: *Daily Average Stringency Index, Beliefs About Norm Indices, and Precautionary behaviour*



*Note: The straight lines in the graph above correspond to the time periods between the survey waves.*

Our preferred method of measuring miscoordination is the difference between individual-level second order beliefs about the norm and the weighted modal response of the respondent’s respective university within each wave.<sup>20</sup> From the inferred level of miscoordination in each of these three questions, we compute the average level of miscoordination for descriptive norms and injunctive norms. For example, if a survey taker’s responses perfectly coincided with the university-level modal response, their level of miscoordination would equal 0. The summary statistics of this constructed descriptive and injunctive norm miscoordination by political affiliation is located in Table ?? in the appendix.

**Result 2.** *We fail to find that COVID restrictions reduce miscoordination among respondents. For Republican student respondents, COVID restrictions lead to an increase in descriptive norm miscoordination, such that a 1 unit increase in the stringency index increases miscoordination by*

<sup>20</sup>For Texas A&M, the observed modal response does not correspond to the university-level modal response, as the survey intentionally over-sampled Black students from a previous study. To correct for this over-sampling, we calculate survey weights by iterative proportional fitting (raking) and use the race distribution of each university in Fall of 2020. The sum of the weights, as opposed to the sum of the observations, is used to determine the modal response of each norm elicitation task. Our results are robust to the specification were we use the observed modal response to calculate miscoordination instead of the weighted modal response.

*0.01 percentage points for the descriptive norm.*

We use a random effects OLS model to test for correlations between changes in miscoordination and the stringency index. The results of this regression are found in Table 1. Columns (2) and (4) contain stringency index and party affiliation interaction terms which allows for heterogeneous effects of the stringency index on miscoordination.

By looking at the estimated coefficients on the party indicator variables, we see that Republicans and Democrats have the same level of miscoordination on the injunctive norm ( $\beta = 0.03$ ,  $p > 0.1$ , (1);  $\beta=0.07$ ,  $p > 0.1$ , (1)). When we include party affiliation and stringency index interaction terms, we find no evidence that this model specification fits closer to true data generating process (Vuong Statistic = -1.03,  $p > 0.1$ , (2)). Furthermore, we find no differences in injunctive norm miscoordination by party affiliation in response to the stringency index ( $\beta = 0.00$ ,  $p > 0.1$ , (2)).

When we look at the descriptive norm, however, we see different levels of descriptive norm miscoordination. Republicans report lower levels of descriptive norm miscoordination ( $\beta = -0.68$ ,  $p < 0.01$ , column (4)). Moreover, we find that Republicans respond to changes in the stringency index by increasing their level of descriptive norm miscoordination, such that a one unit increase in the stringency index increases miscoordination by 0.01 percentage points ( $p < 0.01$ , column (4)). Neither Independents nor Democrats respond in such a way (0.00,  $p > 0.1$ , column (4); 0.00,  $p > 0.1$ , column (4)).<sup>21</sup>

This positive coefficient on the interaction term for Republicans and the stringency index is surprising at first glance but can be explained. Intuitively, COVID-19 restrictions should result in more people doing the same thing and thus, make coordinating on prevalence of social distancing easier rather than harder. However, Republicans are the most pessimistic about the prevalence of others engaging in precautionary behaviour at their university (relative to Democrats and Independents) and their beliefs remain relatively stable across waves (we see this in the means of the descriptive norms index reported in Table ?? in the appendix). This implies that most of the change

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<sup>21</sup>We also find that controlling for the heterogeneous response to the stringency index by political affiliation is influential to the model fit, given the Vuong statistic of -2.37 ( $p < 0.05$ , column (4)).

in miscoordination is being driven by changes in the norm rather than Republicans altering their beliefs.<sup>22,23</sup>

In sum, we find that descriptive and injunctive norm miscoordination increases between waves 1 and 3 for Democrats and Independents while Republicans are mostly stable. Restrictions are loosening (per the visual evidence presented in Figure 2) and as such one might expect increased miscoordination by wave 3. However, we find that Republican beliefs regarding the descriptive norm remain largely unchanged during our observation window. Said differently, this analysis suggests that even with incentives (in the coordination game) to coordinate on university norms and with local restrictions that make behaviour more uniform (affecting precisely the descriptive norm), Republicans are unable to correct for the impact of their political identity.

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<sup>22</sup>This can also be seen in Table ?? in the appendix. As a robustness check, we run an alternative regression with an multiordinal logit with mixed effects. The results are quantitatively similar and can be found in appendix Table ?. We also run specifications utilizing the unweighted norm miscoordination measures to demonstrate the robustness of our results. These regression results are contained Table ?? in the appendix.

<sup>23</sup>In the appendix we also show that this ‘clouding’ of perception of university norms does not happen when the context is a-political. A description of the robustness check and the results of these tests are presented in Table ?.

Table 1: *Relationship between Precautionary Behaviour, Miscoordination, and Stringency Index*

	Inj. Norm Miscoord. (1)	Desc. Norm Miscoord. (2)	Desc. Norm Miscoord. (3)	Desc. Norm Miscoord. (4)
Precautionary Behaviour Index	-0.00*** (-3.17)	-0.00*** (-3.16)	-0.00** (-2.07)	-0.00** (-2.13)
Stringency Index	0.00 (1.22)	0.00 (0.73)	-0.00 (-0.60)	-0.00 (-1.11)
Democrat	0.03 (1.48)	-0.08 (-0.65)	-0.01 (-0.26)	-0.17 (-1.15)
Republican	0.07 (1.48)	-0.13 (-0.55)	0.06 (1.03)	-0.68*** (-3.26)
Stringency Index x Dem.		0.00 (0.95)		0.00 (1.15)
Stringency Index x Rep.		0.00 (0.81)		0.01*** (3.57)
Observations	1797	1797	1797	1797
Vuong Statistic		-1.03 (0.30)		-2.37** (0.02)
Dem. = Rep.	-0.03 (0.46)	0.06 (0.81)	-0.06 (0.21)	0.51** (0.01)
Dem. × Stringency = Rep. × Stringency		-0.00 (0.71)		-0.01*** (0.00)
Controls	Yes	Yes	Yes	Yes

Note: All columns contain controls. Controls include college, race, major choice, risk tolerance, political party, motivation for precautionary behaviour, survey week and state indicators. Estimation includes survey respondent random coefficients. Standard errors are clustered at the survey-respondent level. Coefficients are reported with t-statistics in parentheses. Co-linear observations are dropped. The linear combination of marginal effects is reported with p-values in parentheses underneath. \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01.

## Conclusion

Our contributions are to characterize the important role that multiple identities can play in shaping beliefs. We show that social identities may impact each other, such that one identity obscures an actor’s ability to accurately perceive the norms of another identity even when there are salient incentives for accurate judgment. In our study, the target population is that of college students. We

leverage the unique situation created by the presence of COVID (for which there was no vaccine at the time). COVID demanded rapid changes in norms and became highly politicized during our observation window. As such, it provides an empirical test of how multiple social identities can interact with resulting differences in behavior.

Overall the theoretical framework provided by social identity theory allows for both heterogeneous relationships between norms and behaviour (different weights, for example, on injunctive and descriptive norm conformity by reference group) and could allow for multiple identities. However, the latter aspect of the model is rarely explored. We provide evidence that joins a chorus of other findings which substantiate the claim that identity matters for behaviour and that conformity to norms for identity adds additional explanatory power to organize observational data (see for example Akerlof and Kranton 2005; Benjamin et al. 2010; Chang et al. 2019; Chen and Li 2009).

We extend this literature by providing a first empirical insight into how multiple identities interact. Akerlof and Kranton 2002 develop a theoretical model in which people have multiple identities (“looks”, “jocks”, and “burnouts” in a fictional high school setting), and focus on when someone, who could belong to multiple identities, chooses one over the other. Choice is modeled as a function of characteristic match and differential returns to identities. We show that there may be identities (which we are more attached to or are more salient in our minds) that affect our ability to perceive the norms associated with other identities. One implication for theory is that there may be super-identities (eg. race, gender, politics) that sufficiently predict behaviour. Thus, appellations to one’s identity as “a good citizen” may fall on deaf ears when political identity is a super-identity.

## **Authors’ Contributions**

Erin directed the research question and wrote the paper; Hanna conducted the data analysis and aided in writing the paper; Catherine, Oluwagbemiga, and Rick designed and administered the study, and provided feedback in the writing process. Tanya aided in creating the theoretical model.



Nishita contributed to the design of the study and the data analysis.

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