

**Note:** In view of the pandemic, [the PSA has called](#) for rapid and impactful study proposals on COVID-19, 66 proposals were submitted. Three studies have been selected and will be conducted in a global data collection effort. ZPID's PsychLab supports the PSA in the following countries: Austria, Switzerland, Sweden, Russia, Romania, Japan, South Korea, Mexico, and China. This is the pre-registration plan relating to the project [PSA COVID-19 Rapid Project 003](#) for data collection in South Africa.

**1) Data collection.** Have any data been collected for this study already?

No, no data have been collected for this study yet.

**2) Hypothesis.** This study has two primary hypotheses:

*Hypothesis 1.* Compared to the controlling message condition, those in the no message and autonomy-supportive message condition will display:

- 1a. Higher levels of internalization of, or autonomous motivation for, social distancing
- 1b. Lower feelings of defiance toward social distancing
- 1c. Higher immediate (1 week) and delayed (6 month) behavioral intentions to socially distance

*Hypothesis 2.* Autonomous and controlled motivation for social distancing will predict feelings of defiance and behavioral intentions to socially distance. Specifically,

- 2a. Autonomous motivation for social distancing will predict lower feelings of defiance and higher immediate (1 week) and delayed (6 month) behavioral intentions to socially distance.
- 2b. Controlled motivation for social distancing will predict higher feelings of defiance and lower immediate (1 week) and delayed (6 month) behavioral intentions to socially distance.

**3) Dependent variable.** Describe the key dependent variable(s) specifying how they will be measured.

**Autonomous Motivation**

Participants will respond to the stem “I plan to follow social distancing recommendations [in this article] because:” with four autonomous and four controlled reasons for doing so.

Example items assessing controlled motivation are “because others would disapprove of me if I did not” and “I would feel guilty if I did not follow the recommendation”. Example items assessing autonomous motivation include “the recommendations reflect my values” and “it is personally important to me to follow them”. These items, paired with a scale from 1 = *strongly disagree* to 7 = *strongly agree*, were adapted from a previous measure of Perceived Locus of Causality (Ryan & Connell, 1989; Soenens et al., 2009) so that the motivations are appropriate in the context of social distancing and the contents of the article. Autonomous and controlled motivation items will be aggregated into two separate variables to be used in analyses.

## **Defiance**

Feelings of defiance will be measured with four items from Vansteenkiste et al. (2014). Items measured feelings of defiance about “recommendations [in this article] on social distancing, or staying home as much as possible” rated on a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*). The items are “make me feel like I want to do exactly the opposite”, “feel aggravating”, “feel like an intrusion”, and “make me want to resist attempts to influence me”.

## **Behavioral Intentions**

Behavioral intention items were adapted from McGarrity and Huebner (2014) to assess participants’ short-term and long-term intentions to “follow social distancing recommendations [in the article]”. Specifically, we will measure short term intentions within the next week, and long-term intentions over the next 6 months, in line with experts’ predictions of the duration of the pandemic (Kayyem, 2020; Yong, 2020).

***Within the next week.*** Participants will be asked how likely they are to “follow recommendations [in this article]” to participate in social distancing, or staying at home as much as possible, in general. They will also be asked how likely they are to avoid gatherings with friends, going in crowded areas, or taking non-essential shopping trips. The response scale ranges from 1 = *extremely unlikely* to 7 = *extremely likely*.

***Over the next 6 months.*** Participants will be asked, “assuming the guidelines [described in the article] last for 6 months, how long do you intend on avoiding the following in-person places and activities” including restaurants, gatherings with friends, traveling, going in crowded areas, non-essential shopping trips, getting a haircut or going to the salon, and going to the gym or fitness classes. These items will be rated in one-week increments using a dropdown menu from 0 to 24 weeks. An average score will be calculated for the activities that show adequate internal consistency.

**4) Conditions.** How many and which conditions will participants be assigned to?

Participants will be randomly assigned to one of three conditions: autonomy supportive message, controlling message, or no message. The design is fully between-subjects.

**5) Analyses.** Specify exactly which analyses you will conduct to examine the main question/hypothesis.

We anticipate collecting data from over 50 countries around the world. To account for the nested structure of the data, we will examine the condition effects using mixed-effects models. Specifically, we will construct a mixed-effects model predicting each outcome (autonomous motivation, defiance, short-term behavioral intentions and long-term behavioral intentions), as well as the manipulation check, from condition as a fixed effect, nested within country (using dummy codes as specified below). We will estimate random intercepts at both person and country level and random slope for the condition. If this model fails to converge, we will remove the random slope.

To test Hypothesis 1, we will create two dummy variables, D1 and D2, where both the autonomy-supportive message and no message conditions are coded 1, with the controlling

message condition being the reference group (coded 0). By entering D1 and D2 simultaneously into the mixed-effects model, this approach will allow us to observe whether no message and autonomy supportive conditions differ from the controlling condition, testing Hypothesis 1. We will set the interval null (the region of practical equivalence) as  $d = -0.05$  to  $0.05$ . If an effect and its 95% confidence interval (CI) is fully within the interval null, the hypothesis is deemed unsupported; if the effect and its CI is fully outside the interval null, the hypothesis is deemed supported; overlap of the effect and the interval null would be deemed equivocal.

	D1	D2
Autonomy supportive message	0	1
Controlling message	0	0
No message	1	0

For Hypothesis 2, we will examine relations between autonomous and controlled motivation predicting outcomes (defiance, and behavioral intentions at 1 week as well as 6 months) using the same mixed-effects model, and the same interval null of  $ds = -0.05$  to  $0.05$ .

**6) Outliers and Exclusions.** Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.

Two quality checks will be performed to increase our confidence that the obtained results are able to provide a fair test of the stated hypotheses. First, the pre-manipulation items (i.e., current adherence of social distancing recommendations prior to manipulation) will be used to determine condition equivalence within each country. Determining condition equivalence will allow us to see whether conditions did not differ at the onset in terms of initial social distancing adherence. As per the analytic strategy below, we will examine condition effects on initial adherence using mixed-effects models, nested within countries. If effects for initial adherence surpass a cutoff of  $f = .02$  (equivalent to an  $r = .02$ ), we will control for initial adherence in confirmatory analyses.

As this study will be bundled with one other experiment in the Psychological Science Accelerator COVID-19 project, we will also examine potential carryover effects based on the order in which participants completed this study. We will create a dummy code based on whether our study was presented first (coded 0) or second (coded 1). This dummy code will be tested as a main effect, as well as an interaction with experimental manipulations (only the autonomy supportive and controlling conditions will be considered) on the manipulation check (to examine whether the order effect differentially impacts the effect of condition). If carryover effects surpass a cutoff  $f = .02$  on the manipulation check (perceptions of the manipulation being autonomy supportive, coded 1, relative to controlling, coded 0), we will run analyses restricting the sample to only those who took this study first (or who only took this study), and focus results on this sub-sample (though we will also present results for the full sample).

**7) Sample Size.** How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the number will be determined.

Sample size will primarily be determined by the availability of resources amongst members of the Psychological Science Accelerator (PSA). At the time of submitting this pre-registration, 194 research groups from 55 countries speaking 42 languages have signed up to collect data as part of the PSA COVID-19 Rapid Project. Data collection is expected to end on June 15th, 2020. We expect 25,448 participants to complete the current study. Out of these 25,448 participants, 4,050 will be recruited through semi-representative paneling (based on sex, age, and sometimes ethnicity) from the following countries: Egypt, Kenya, Nigeria, South Africa, Mexico, United States, Austria, Romania, Russia, Sweden, Switzerland, United Kingdom, China, Japan, and South Korea (270 participants per country). The remaining participants will mostly be convenience samples recruited by the 194 research groups.

**8) Other.** Anything else you would like to pre-register?  
(e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)

On the reliability of self-report measures: Composite variables will be created for all multi-item measures (with items being reverse-scored when appropriate) by calculating the mean of items assuming the items demonstrate an acceptable level of reliability ( $\alpha$  or  $\omega > .70$ ). If items show less than acceptable reliability on any composite variable, we will accept all items in the scale with corrected item-total correlations exceeding .3.

**9) Name.** Give a title for this AsPredicted pre-registration  
Suggestion: use the name of the project, followed by study description.

PSA COVID-19 Rapid Project 003