Maps to Die For?

Pre-Analysis Plan[*]

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December 11, 2019

[*] *Acknowledgments*: We thank Jocelyn Bélanger, Volha Charnysh, Karen Goldfeder, Josh Kertzer, Michiel Kleiss, Melissa Lee, Katy Powers, Livia Schubiger and Yannis Vassiliades.

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Contents

1 Motivation

Citizens sacrifice, fight, and die in battle to protect the **homeland**. But what is the homeland? Why is this land "my land" and why is it worth dying for? When we study war in International Relations we often focus on states or leaders, yet ordinary citizens must turn out and do the fighting and dying. Why citizens would take such monumental risks to defend the homeland is not obvious. Explanations normally center on the role of nationalism, yet the microfoundations that link nationalism and a willingness to sacrifice for the homeland have been undertheorized and have faced few if any rigorous empirical tests.

In line with the canonical account of nationalism by Anderson (1991), we argue that maps help motivate such sacrifices. Maps motivate beliefs and attitudes regarding the proper definition of the homeland, helping to coordinate expectations about the extent of group membership by specifying a territory that requires a common defense. Citizens come to know and understand the boundaries of the homeland through maps taught in school classrooms, absorbing its geography from school atlases and geography textbooks. Maps taught in school therefore promote national identity and a willingness to sacrifice on behalf of the group.

To develop our theory we build on two literatures: the social psychological literature on social identity theory (Hogg and Abrams, 1988) and the rationalist literature on coordination (Hardin, 1995). Social identity theory proposes that individuals self-categorize (Tajfel, 1972; Tajfel et al., 1979; Turner, 1993; Hogg and Abrams, 1988; Hogg and Reid, 2006), causing "thoughts, feelings, perceptions, and behavior to conform to our prototype of the in-group ... [that] tend[s] to be shared—people in one group in the same context share their prototype of the in-group and relevant outgroup(s)"(Hogg and Reid, 2006, 11).[1] Notably, and in contrast to the alterna-

[1]Hogg and Abrams (1988, 6) provide an excellent introduction to Social Identity Theory. They define social identity as "the individual's knowledge that he belongs to certain social groups together with some emotional and value significance to him of the group membership (citing Tajfel (1972, 31)) where a social group is 'two or more individuals

tive rationalist mechanism presented below, "social identity scholars attribute the prescriptive force of group norms to their internalized self-definitional function" and not to perceived or anticipated social sanctions (Hogg and Reid, 2006, 12).

We supplement this social psychological approach with a complementary rationalist account stipulating that maps enable coordination and successful collective action. A definition of the group by area, on the map or on the ground, enables self-categorization. Indeed, Sack (1986) explicitly notes that territoriality promotes categorization by area. This categorization makes it easy to detect shirkers – people who do not abide by a group norm to defend the homeland – and thereby decreases the likelihood that people will shirk in the first place.[2] As such, the definition of homeland territory also ties the hands of political leaders. By refusing to defend homeland territory, or by asking for sacrifices to obtain non-homeland territory, a leader signals s/he may be acting out of self-interest, rather than on behalf of the group. Such signals erode group cohesion, increasing the likelihood of shirking and decreasing support for the leader. A spatial definition of group membership therefore benefits both leaders *and* followers, promoting strong group identities and powerful group norms.

To examine whether and how maps taught in schools affect citizens' willingness to sacrifice for their homeland and other key indicators of national identity, we conduct surveys with embedded experiments in South America: in Bolivia (March 2017) and Chile, Argentina, and Colombia (late 2019). Our experimental treatment manipulates the presentation of maps of these four countries to determine whether the visual representation of respondents' homelands affects their national-identity attitudes and induces them to be willing to personally sacrifice *more* on behalf of their

who share a common social identification of themselves or, which is nearly the same thing, perceive themselves to be members of the same social category'" (citing Turner (1982, 15)).

[2] As Hardin (1995, 37) notes that "successful coordination of a group may radically reduce the groups cost of action in important ways simply because its coordination induces others not to oppose it."

country. Preliminary results from Bolivia suggest that maps from school textbooks help individuals form stable conceptions of the homeland, affect group identity, and ultimately bolster individuals' willingness to sacrifice for their homeland. Our survey in Colombia allows us to test the efficacy of the map in priming national identity in a country which has suffered internal armed conflict for generations and whose citizens – according to public opinion surveys going back decades – have expressed notoriously low levels of nationalism.

We first develop a theoretical account that connects maps to national identity formation, drawing on Gellner (1983*a*), Anderson (1991), Hardin (1996) and Goemans (2006). We next introduce the survey instruments and the embedded experiments. In the third section we present our hypotheses.

2 Theoretical Framework

Why are ordinary citizens willing to make costly contributions to the public good of defense? Why, in particular, do they feel it necessary to fight and die for territory? As Alexander Murphy (1990, 534) notes:

> At minimum, some form of justification is needed to motivate large numbers of people to support an armed struggle over territory. Although people can be forced to fight in the face of immediate physical threat, most large-scale conflict between politically organized areas is carried on by people who believe, or have been led to believe, that they are fighting for some sort of cause. Throughout history, major wars have involved large numbers of people who were willing to make tremendous sacrifices, up to and including their own lives. It is simply impractical for one person or even an entire government, to garner enough support to carry on such a struggle through threat alone.

For many scholars, the cause that unites people to fight and die is nationalism or defense of the nation in its homeland. Maps are argued to play an important role in inculcating such beliefs and attitudes. Debates about the causes of nationalism have long acknowledged the power of maps: maps were recognized as propaganda devices

as early as the 16th century. As Branch (2014, 73) notes, "Thomas Elyot's 1531 *Boke named the Governour*, for example, argued that governments would benefit from using maps both as practical tools of administration and as propaganda devices to support claims of legitimacy." Benedict Anderson (1991, Chapter 10) famously underscored the role of the map – especially the map-as-logo – in national identity formation.

> the map entered an infinitely reproducible series, available for transfer to posters, official seals, letterheads, magazine and textbook covers, tablecloths, and hotel walls. Instantly recognizable, everywhere visible, the logo-map penetrated deep into the popular imagination, forming a powerful emblem for the anticolonial nationalism being born (Anderson, 1991, 175).

In this project, we test Anderson's insight about the potential power of maps to foster national identity. To do so we build on foundations laid by the social psychological literature on social identity theory, insights on territoriality from the geography literature and the rationalist literature on coordination.

The political geographer Robert Sack (1986) recognized that there are two ways to define group membership. He distinguished categorization by type (for example, language or skin color) from categorization by area (whereby inclusion in a specified area bestows group membership). Maps are a particularly powerful way to induce self-categorization by area as a member of the nation (Tversky, 1981, 1992) because they offer a clear and distinctive boundary between in-groups and out-groups.[3] In a broad sense, "[c]ategorization allows individuals to reason from the general to the specific by allowing unobserved features to be inferred on the basis of category membership" (Mishra and Mishra, 2010, 1582). Social identity theory focuses on the importance of shared prototypes of the in-group and out-group that help bolster the prescriptive force of group norms. Crucially, Brewer (1991, 478-9) has shown

[3]Anderson (2001, 19) explicitly includes the ability to communicate boundaries in his conception of territoriality.

that when self-categorized into such well-defined and distinct groups, individuals are significantly more likely to sacrifice self-interest on behalf of *collective* welfare. Thus, when maps prompt individuals to self-categorize as members of the national community, this self-categorization leads them to adopt the prototype of what it means to be a citizen. At a minimum, this implies survival of the group and thus willingness to sacrifice on its behalf.

A rationalist explanation connects how maps enable coordination with collective action. In addition to the basic argument that successful coordination of the group reduces costly coordination failure, we also build on Hardin (1995) to construct a functionalist explanation for the power and persistence of the norm to fight for the homeland. Hardin (1995, 82,132) argues that "An institution or a behavioral pattern **X** is explained by its function **F** for group **G** if and only if

1. **F** is an *effect* of **X**;
2. **F** is *beneficial* for **G**;
3. **F** maintains **X** by a causal *feedback* loop passing through **G**."

Following Hardin's notation, we conceive of **F** as the greater likelihood of successful defense of the group **G** that follows from the homeland norm **X**—e.g. that one ought to fight for the homeland. The homeland norm contributes to the power of the group, increasing the likelihood of successful common defense and a corresponding decrease in the likelihood of attacks on the homeland. This greater power is beneficial for virtually all members of the group, contributing to a positive feedback loop that makes the homeland norm enforceable in the face of the occasional defector.[4]

Both the social psychological and rationalist arguments rely on self-categorization by area. While the social identity mechanism posits that self-categorization induces individuals to behave according to group prototype, the rationalist mechanism relies on coordination and implicit reciprocity to induce individuals to abide by group

[4]See Hardin (1995, 132); also Levi (1997).

norms. Taken together, we argue that maps prompt individuals to self-categorize as members of the national community, adopt 1) the prototype or 2) the group norm of defense of the homeland, and to sacrifice on its behalf.[5] For this to work, however, the group definition and the norm – or the prototype – must be communicated to potential group members. This is the core role that maps play. We stress the importance of school atlases and maps, which are crucial for the nearly universal dissemination of the group's territorial demarcation and which permits self-categorization.

To successfully coordinate group members for a common defense, individuals must know who qualifies as a group member and who does not. Each must also know that everyone else knows, and that everyone else knows that everyone else knows, *ad infinitum*. In other words, membership in the group must be **common knowledge**.[6] Such common knowledge of the territorial specification of the homeland and thereby, group membership, is – often deliberately – created in the modern age through compulsory national education with standardized curricula (Gellner, 1983*a*; Romero et al., 2004; Escudé, 1988), in particular through the use of **maps** in classrooms, in school atlases and geography textbooks.(Sevilla Pérez, 2016; Lois, 1997, 2014) This territorial conception of the group is then reinforced through the constant repetition of the 'map-as-logo' in a myriad of ways (Anderson, 1991; Sack, 1986; Kreps, 1990; Hardin, 1995).[7]

Maps are powerful icons, indeed the very essence of "things of boundaries" (Abbott, 1995) essential for group creation, sanctioned by their supposedly objective

[5]Individuals use mental maps to navigate social space. From Mishra and Mishra (2010) we know that such maps include boundaries and that these boundaries have significant effects.

[6]As Abbott (1995, 857), so succinctly put it, "it is wrong to look for boundaries between preexisting social entities. Rather we should start with boundaries and investigate how people create entities by linking those boundaries into units. We should not look for boundaries of things but for things of boundaries."

[7]The Renaissance rediscovery of cartography and the usage of graticules (the "grids" of lines of longitude and latitude) combined with 'print capitalism' (Gellner, 1983*a*) made it possible to specify the territory of a homeland and easily and widely disseminate this knowledge (Branch, 2014; Akerman, 1995).

scientific status (Harley, 1989, 1990; Wood, 1992). Maps standardize our images of the world and shape our mental structures (Harley, 1989, 13). By offering such purportedly scientific images of the world and mental structures, maps are ideally suited to territorially define a group through the representational image of a homeland (Thongchai, 1994; Kosonen, 1999; Escudé, 1992; Sevilla Pérez, 2013).

Several historians have noted how maps played a central role in the formation of national identity. Raymond Craib (2004, 23-24) shows how maps were designed to foster a common Mexican identity in the mid-19th century. Eugen Weber (1976, 334) provides an example from late 19th century France:

> Maps of France began to be supplied soon after the Franco-Prussian War, distributed by the state. First urban schools, then rural ones, were endowed with wall maps. By 1881 few classrooms, however small, appear to have lacked a map. Some, of course, served "only as ornaments." But they inculcated all with the image of the national hexagon, and served as a reminder that the eastern border should lie not on the Vosges but on the Rhine. They were also powerful symbols, not only of the asserted fatherland, but of the abstractions young minds had to get used to.

In a thought-provoking article, Benjamin Fortna (2005, 23-24) analyzes the goals and consequences of a change in Ottoman School maps at the end of the 19th century in similar terms:

> Wall maps were on constant display in the classrooms of the burgeoning Ottoman state educational system of the late nineteenth and early twentieth centuries, a feature in the wider policy aimed at inculcating loyalty to and identification with the embattled empire. During the 1890s these maps underwent a simple but momentous change. Older maps that represented territory on a continent-by-continent basis and thus inevitably marginalized Ottoman sovereignty were supplanted with maps designed to show all Ottoman land in a single frame with Anatolia at the centre. This cartographical change had the desired effect on the empire's students, but its focus on the shape of Ottoman territory unwittingly encouraged awkward questions about Ottoman sovereignty and the effectiveness of its political leaders, given the empire's shrinking borders.

Although these anecdata are powerful, surprisingly, there is little systematic research on the connections between maps and national identity formation. The exception is a recent study by Charnysh, Lucas and Singh (2015) which uses a map of India shaded with the national tricolor flag to prime identity. Yet this visual cue makes it impossible to separate the effects of the map from the effects of the flag.[8]

To directly test the power of maps we will run surveys in three South American countries. This Pre-Analysis Plan registers our hypotheses and describes the methods we use to isolate the causal effect of priming respondents with maps on a range of attitudes, including sacrificing for the homeland.

3 Empirical Approach

This project is part of a broad research agenda that links maps to international conflict and that seeks to explain why states engage in disputes and fight over some territory but not others. The project acknowledges the realities of disputed boundaries, cartographic error, potential governmental manipulation, systematic misinformation, and non-geographic group identification. In the context of all these important factors, the goal is to understand how and whether maps affect attitudes. In late fall of 2019 we will conduct surveys in Argentina, Chile and Colombia.

To test whether and how maps affect national identity attitudes and willingness to sacrifice for the homeland ('patria'), we conduct the basic experiment on 3,000 online respondents in Chile, 3,000 online respondents in Argentina and 11,000 in-the-field respondents in Colombia. Approximately half of the respondents in each of these countries will be asked to answer the question(s) accompanied by a map of their country (treatment group), while the other half of respondents will not receive the map tretament and will only see the question(s) (control group).

In the core sacrifice question, which we include in all three countries, subjects

[8] A very promising unpublished paper by Ramey and Klingler (2018) uses maps to prime group identity to examine the effects on out-group altruism.

are presented with a 'self-sacrifice' scale, developed in collaboration with Jocelyn Bélanger et al. (2014). Subjects will be asked what they would be willing to sacrifice in defense of their homeland. All subjects, in both the treatment and control groups are asked this question:

Question 1: Throughout its history, Argentina (Chile, Colombia) has fought several wars over territory. Please indicate your level of agreement or disagreement for the following statements [Disagree (1), Somewhat disagree (2), Neither agree nor disagree (3), Somewhat agree (4), Agree (5)]:

(a) It is absurd to sacrifice my life for a cause.

(b) I would not risk my life to defend my homeland.

(c) I would be willing to pay higher taxes to support the defense of my homeland.

(d) I would be willing to endure intense suffering if it is to defend my homeland.

(e) I would be willing to give my life to defend my homeland.

The treatment consists of the presentation of a map outline of a respondent's country. We include the accompanying images for Chile, Argentina, and Colombia below.

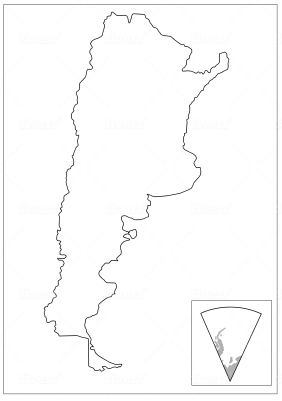

Figure 1: Argentina

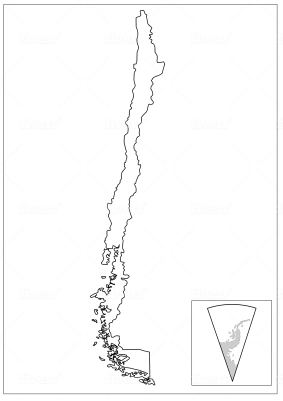

Figure 2: Chile

Figure 3: Colombia

We invert the first two items on the question to construct a 'self-sacrifice scale' (Bélanger et al., 2014) as follows:

$$Sacrifice = (5 - absurd) + (5 - not\ risk\ life) + taxes + suffer + life \quad (1)$$

The core hypothesis of the experiment is:

- **Hypothesis 1**. Respondents treated with the map will indicate a higher willingness to sacrifice than respondents in the control group.

In general, we estimate our regressions with OLS or ordered logit, in the following regression framework.

$$y_{ik} = \alpha + \beta T_{ik} + \gamma_k + \epsilon_{ik} \quad (2)$$

where y_{ik} denotes attitudes for person i located in country k, T_{ik} denotes assignment to treatment, γ_k denotes a vector of country fixed effects, and ϵ_{ik} is an individual-level error term.

For Question 1, the attitude we are interested in is the respondent's score on the self-sacrifice scale. In our first hypothesis, y_{ik} therefore corresponds to an individual in country k's score on the self-sacrifice scale. Given some uncertainty on how representative our samples will be, however, we will also estimate separate regressions

for each country.

$$y_i = \alpha + \beta T_i + \epsilon_i \tag{3}$$

where y_i denotes scores on the self-sacrifice scale for person i, T_i denotes assignment to treatment, and ϵ_i is an individual-level error term.

Our interest is in particular on the costly contribution to the collective good of self-defense. We therefore hypothesize:

- **Hypothesis 2**. Respondents treated with the map will be more willing to give their life to defend their homeland than respondents in the control group.

Following the framework laid out above, we estimate an ordered logit regression where y_i denotes the respondent's willingness to give their life to defend their homeland, e.g., their answer to Question 1(e).

3.1 Argentina and Chile

To gauge the mechanism whereby the map increases willingness to sacrifice for the homeland, in our surveys in Argentina and Chile we include the following question:[9]

Question 3: How much are you in agreement with the following statements? [Disagree (1), Somewhat disagree (2), Neither agree nor disagree (3), Somewhat agree (4), Agree (5)]:

(a) I owe duties to my fellow Argentineans (Chileans) because they owe duties to me.

(b) I owe duties to my fellow Argentineans (Chileans) because an Argentinean (a Chilean) does his/her duty.

[9]In a subsequent section we explain why we do not include this question in Colombia.

(c) I owe duties to my fellow Argentineans (Chileans) just as I owe duties to my family.

If the map affects willingness to sacrifice as argued by Social Identity Theory, respondents should agree with prototypical behavior. If, on the other hand, the map affects an individual's willingness to sacrifice through *coordination*, we should expect that expectations of reciprocity will be dominant. This distinction suggests the following hypotheses:

- **Hypothesis 3** (Prototype). Respondents treated with the map will agree more strongly with an obligation because an Argentinean does his/her duty (3(b)) than those not treated with the map.

In the framework laid out above, we estimate an ordered logit regression, where y_i denotes responses to question 3(b).

- **Hypothesis 4** (Coordination). Respondents treated with the map will agree more strongly with an obligation because they consider that others owe duties to them (3(a)) than those not treated with the map.

In the framework laid out above, we estimate an ordered logit regression, where y_i denotes responses to question 3(a).

We hypothesize that the coordination effect should be larger than the prototype effect.

- **Hypothesis 5** Respondents treated with the map will agree more strongly with an obligation because they consider that others owe duty a to them than with an obligation because others do their duty. The difference between these two potential sources of obligation will be larger for respondents treated with the map than for respondents not treated with the map.

To estimate this hypothesis, we regress the same variables as above on $y_{prototype,i}$ - $y_{coordination,i}$; e.g., on the difference between answers to 3(a) and 3(b).

To further explore the effect of the map we include three additional questions.[10] These questions probe whether the map has an effect on attitudes of national identity, and attempt to identify the mechanism through which the map produces such an effect, if one exists. As before, half of the respondents receive the question with the accompanying map (treated), while the other half sees only the question and no map (control).

Question 3: Some people say that the following things are important for being truly Argentinean (Chilean). Others say they are not important. How important do you think each of the following is (very important, important, somewhat important, not very important, not at all important):

(a) To speak Spanish.

(b) To be a Christian (Catholic or Evangelical).

(c) To be born of an Argentinean (Chilean) father or mother.

(d) To adopt basic Argentinean (Chilean) culture and values as your own.

(e) To love your homeland (patria)

We expect that in-group identity is primed by the map, and according to Social Identity Theory that respondents will identify more strongly with the prototype of their group. Note that the first two characteristics (Spanish-speaking and Christian) hold for most South Americans in the former Spanish Colonial Empire, and therefore weakly if at all distinguish Argentineans from Chileans (or Ecuadorians, Peruvians, Colombians, Uruguayans, etc). In other words, they are unlikely to be part of the prototype that distinguishes Argentineans from other South American countries

[10]This is the case in the Argentina and Chile surveys. It was not possible to include these additional questions in the Colombia survey, as we describe in detail below.

formed after the dissolution of the Spanish Colonial Empire. In contrast, love of one's patria effectively self-categorizes and distinguishes Argentineans (Chileans) from all other national groups. Thus, if the map is a particularly powerful way of establishing national identity in South America, we expect that the effect of the map will be greatest on respondents' willingness to report that love of their patria is essential to being truly Argentinean (Chilean). Thus, we anticipate that respondents will rank-order love of one's patria as more important than the ability to speak Spanish or be Christian.

- **Hypothesis 6**. Respondents treated with the map will rate the ability to speak Spanish, and being a Christian similarly as do respondents in the control group.

- **Hypothesis 7**. Respondents treated with the map will rate love of their patria higher than respondents in the control group.

All three hypotheses are estimated in the framework articulated above, where y_i denotes, respectively, answers to questions 3(a), 3(b) and 3(e).

How Argentineans (Chileans) respond to the question about how important it is to love one's homeland (patria) to be a true Argentinean (Chilean) is an important baseline indicator of the power of maps and geographic education, which inculcates love of one's homeland (patria). It is also interesting to know whether Chileans and Argentineans differ on this dimension, although we have no *a priori* reason to believe that they will. Note that the more important love of one's patria is *for the control group*, the less room there should be for an effect of the map (due to ceiling effects).

While we have no strong priors or distinct hypotheses, we include questions 3(c) and 3(d) about descent and culture to see if there exists a ranking of factors important for attitudes of national identity.

Question 4: How much are you in agreement with the following statements? [Disagree (1), Somewhat disagree (2), Neither agree nor disagree (3), Somewhat agree (4), Agree (5)]:

(a) When someone says something bad about Argentinean (Chilean) people, it is as if they said something bad about me.

(b) Being Argentinean (Chilean) affects how I see myself.

(c) What happens to Argentina (Chile) will affect my fate.

- **Hypothesis 8**. Respondents treated with the map will agree more with all these statements than respondents in the control group.

We estimate responses to each of these sub-questions as laid out in the framework above, where y_i denotes, respectively, answers to questions 4(a), 4(b) and 4(c).

Because of the large sample size (6,000 respondents across Argentina and Chile), we believe that we are well-powered to detect not only main effects of the map treatment but also heterogeneous treatment effects.

Our arguments for the effects of the map all rely on education. Children in South America, we posit, are taught the map of their country repeatedly in geography classes throughout their education. Individuals who had little or no formal education should thus not be expected to have the required exposure to the map and the required common knowledge to enable coordination.

- **Hypothesis 9**. Respondents with fewer than three years of education will not be primed by the map. For those subjects, Hypotheses 1 - 8 will be rejected.

To test this hypothesis, we estimate the following regression:

$$y_{ik} = \alpha + \kappa Education + \beta T_{ik} * Education + \gamma_k + \epsilon_{ik} \tag{4}$$

where *Education* is a dummy variable indicating whether an individual has more than three years of education or not; $T_{ik} * Education$ is an interaction term that indicates the educational status of the treated group.

Finally, we examine whether political self-identification conditions the effect of the map.

- **Hypothesis 10**. Treatment effects in Hypotheses 1 - 8 will be stronger for respondents who self-identify farther to the right.

To test this hypothesis, we estimate the following regression:

$$y_{ik} = \alpha + \kappa PoliticalOrientation + \beta T_{ik} * PoliticalOrientation + \gamma_k + \epsilon_{ik} \quad (5)$$

where *PoliticalOrientation* is where a respondents self-identifies on a 0 - 10 left–right scale and $T_{ik} * PoliticalOrientation$ is an interaction term that indicates the educational status of the treated group.

3.2 Civil war and the effect of maps in Colombia

Unlike the Argentina and Chile surveys, which are standalone surveys, the Colombia portion of the project will be conducted as part of the Monitoring attitudes, perceptions, and support of the peace process in Colombia (MAPS) project, a collaborative effort between the Universidad de los Andes, Peace Research Institute Oslo (PRIO), the University of Amsterdam, and the United Nations Development Programme (UNDP) in Colombia. The project conducts panel surveys that track ordinary civilians' experiences with the implementation of Colombia's 2016 peace agreement signed between the government and the Fuerzas Armadas Revolucionarias de Colombia (FARC). One of the PIs on the MAPS project, Michael Weintraub, is part of the team conducting the surveys described in this Pre-Analysis Plan.

The sample for the October/November 2019 wave of the MAPS surveys in Colombia will include an estimated 10,191 respondents, all situated in sub-regions highly

prioritized for the implementation of the peace agreement (Weintraub et al., N.d.), so-called "PDETs", located in 65 different municipalities. There are 16 PDETs in total, which group together 170 municipalities, all prioritized during the peace negotiations based on historic patterns of violence and poverty. Given that the MAPS project piloted its survey instrument in two of the sixteen PDETs in January 2019,[11] the data collection effort in late 2019 to which these survey experiments were added will take place in the remaining fourteen PDETs.

Our experiment in Colombia piggy-backs on the research design of Weintraub et al. (N.d.), which introduces some drawbacks and some advantages. The main drawback is that we could include only one set of questions in the Colombia survey: the experiment that examines the effect of exposure to the map of Colombia on respondents' willingness to sacrifice. As in Argentina and Chile, and as stated in **Hypothesis 1**, we expect that respondents treated with the map will indicate a higher willingness to sacrifice than respondents in the control group.

While we can ask only one set of questions – about sacrifice – the design and magnitude of the survey described in Weintraub et al. (N.d.) make it possible to examine the map treatment in a wildly different setting when compared to Argentina and Chile. Colombia's long history of civil war might attenuate or accentuate the effect of the map treatment: having suffered an internal armed conflict for generations, identification with the broader Colombian national identity is likely to be different than in the other two countries. In contexts of violence, in-group bonding among different societal factions (including ethnic, religious or political groups) is likely to mitigate collective action problems *within* groups but at the same time amplify conflict *between* them (Hardin, 1997). That is, civil war may have eroded the very common nationalist sentiment that we intend to provoke with the map treatment.

Moreover, variation in exposure to armed conflict within Colombia may produce

[11] Data were collected in Tolima and Arauca.

heterogeneous treatment effects for the map.[12] Most straightforwardly, respondents who lived in areas under prolonged rebel control may have not have been educated in the same unifying manner as those under complete state control. If rebels simply provide less education, this effect would be captured by **Hypothesis 9**. If, however, rebels systematically differ in their use of unifying symbols such as the map to promote group identification, then we would expect the map to have less of an effect in areas that experienced more rebel control.

- **Hypothesis 11**: Survey respondents in areas of longer (historical) rebel control should be less affected by the map treatment.

The purpose of geography education, we argue, is to standardize and homogenize the population from above, in line with the argument on nationalism articulated in Gellner (1983*b*). Absent geographical variation in education, therefore, we would not expect geographic variation in the effect of the map treatment. However, there might be ceiling effects with which we must contend.

3.2.1 Reasons to be skeptical

Some of the hypotheses might be affected by ceiling effects. In other words, in places where nationalism is already extremely high, we may experience ceiling effects and therefore witness no "movement" in attitudes as a result of the map treatment. Individuals living in regions on international borders, for example, may be less likely to be primed by the map treatment, as their daily exposure to international borders means that their national identity is already salient, likely reducing the size of the map treatment effect.[13] We don't believe ceiling effects are particularly worrisome, as we ran similar experiments in Bolivia during a public relations campaign to regain

[12] Given the large sample size for the Colombia survey, such effects – should they exist – are likely to be detectable.

[13] By "border regions" here we mean folllowing PDETs: Nariño, Putumayo, Norte de Santander, César/Guajira/Magdalena. Note that this does not include regions that have maritime borders.

control over access to the sea and found treatment effects of the map even under these least-likely circumstances.

The opposite may also be true. If the underlying level of nationalist sentiment is low due to social fragmentation, we should be *especially* likely to see effects when citizens are given the map. In Colombia, in other words, potentially unlike Chile and Argentina, we may witness relatively large effects from the treatment given low absolute levels of willingness to sacrifice for the homeland in the control group.

3.2.2 Estimation for the Colombian sample

To estimate the treatment effects of providing a map to a respondent in Colombia, we slightly modify our regression equation and estimate the following equation:

$$y_{ic} = \alpha + \beta T_{ic} + \gamma_c + \epsilon_{ic} \tag{6}$$

where y_{ic} denotes attitudes for person i located in municipality c, T_{ic} denotes assignment to treatment, γ_c denotes a vector of municipality fixed effects and ϵ_{ic} is an individual-level error term.

We are primarily interested in determining whether the map treatment has any effect at all on attitudes, but are also interested in understanding how the map might differentially drive attitudes towards different dimensions of nationalism. Because we test multiple hypotheses, we will report estimates both with and without Holms and Benjamini-Hochberg corrections for multiple comparisons for our primary hypotheses. Because our heterogeneous treatment effects analyses are more exploratory, we do not plan to correct for multiple comparisons in these cases.

To estimate the heterogeneous treatment effects hypotheses discussed in a prior section, we interact distance to the closest international land border and an estimate of total time under rebel rule:[14]

[14]Taken from secondary literature and maps of guerrilla presence.

$$y_{ic} = \alpha + \beta T_{ic} + \delta^{\mathbf{T}} \mathbf{X_{ic}} + \eta^{\mathbf{T}} \mathbf{X_{ic}} * T_{ic} + \lambda^{\mathbf{T}} \mathbf{D_c} + \kappa^{\mathbf{T}} \mathbf{D_c} * T_{ic} + \gamma_c + \epsilon_{ic} \quad (7)$$

where y_{ic} denotes attitudes for person i located in municipality c, T_{ic} denotes assignment to treatment, $\mathbf{X_{ic}}$ denotes a vector of individual dispositional and demographic characteristics (such as gender) which are interacted with the treatment in the following term, $\mathbf{D_c}$ denotes a vector of municipality characteristics (including time under rebel rule and distance to closest international land border) which are interacted with the treatment in the following term, γ_c denotes a vector of municipality fixed effects capturing any remaining unobserved heterogeneity, and ϵ_{ic} is an individual-level error term.

4 Conclusion

Results will be interesting.

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