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**POLITICAL IDEOLOGY, GROUPNESS, AND ATTITUDES TOWARD  
MARIJUANA LEGALIZATION**

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## **Abstract**

Prior literature has demonstrated that liberals and conservatives often diverge on policy issues partly because they have different psychological characteristics and partly because they are influenced by in- and out-groups (e.g., parties). In the present work, we investigate a relatively under-investigated topic, namely marijuana legalization, and test whether groupness affect opinion toward this policy over and above potential differences in psychological traits and states (e.g., personality, cognitive processing). Additionally, building on literature on morality and divergence from reference groups, we propose that part of the right-wing's opposition to this policy comes from moral repugnance against out-groups. Results are consistent with our predictions. Study 1 validated an important assumption: individuals strongly associate marijuana legalization as a leftist policy. Importantly, study 2 showed that when marijuana legalization was endorsed by a center-right politician, individuals along the political spectrum expressed similar support for the policy; nevertheless, political ideology became a significant predictor of policy support when a leftist politician was behind the policy. This interaction was mostly due to right-wing individuals becoming less favorable toward the policy when a left-wing politician was behind it. Left-wing individuals, in turn, did not significantly shift their opinion. Finally, we discuss limitations, alternative explanations, and avenues for future research, while also proposing a third study which could more precisely test our theory.

**Keywords:** Political Ideology, Group Influence, Marijuana Legalization, Moral Repugnance.

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## Introduction

Political ideology has been shown to influence (or correlate with) attitudes, choices, and behaviors in multiple domains. Public policy issues are classic examples. Democrats tend to hold more favorable views than Republicans on issues as diverse as government spending (Rudolph and Evans, 2005; Jacoby, 1994), national health insurance (Sears, Lau, Tyler, and Allen, 1980), implementation of carbon tax (Ehret, Van Boven, and Sherman, 2018), free trade agreements, imposition of tighter gun restrictions, and marijuana legalization (Pew Research Center, 2017a, 2017b, 2018). Apart from policy issues, political ideology has also been shown to shape, for example, consumer decisions (Jost, 2017a). Conservatives prefer buying products from established national brands as opposed to their generic substitutes and present a lower likelihood of trying newly launched products (Khan, Misra, and Singh, 2013). They also exhibit stronger preferences for vertical differentiation as compared with horizontal differentiation (e.g., prefer buying Ralph Lauren to Urban Outfitters; Ordabayeva and Fernandes, 2018). Further, liberals are more likely than conservatives to report complaints against companies (Jung, Garbarino, Briley, and Wynhausen, 2017), to engage in sustainable consumption (Watkins, Aitken, and Mather, 2016) and to keep in their bedrooms objects like art supplies, music recordings, and movie tickets, as opposed to conservatives, who store more items such as laundry baskets and ironing boards (Carney, Jost, Gosling, and Potter, 2008).

In attempting to explain these pervasive differing attitudes and behaviors along the political ideology spectrum, scholars have identified important differences between conservative (i.e., rightist) and liberal (i.e., leftist) individuals in personality traits (Carney, Jost, Gosling, and Potter, 2008; Hirsh, DeYoung, Xu, and Peterson, 2010; see Sibley, Osborne, and Duckitt, 2012 for a meta-analysis), cognitive processing styles (Jost, 2017a), motivations (Jost, Federico and Naiper, 2009; Hennes, Nam, Stern, and Jost, 2012), and moral values (Graham, Haidt, and Nosek, 2009). Broadly speaking, research reveals that political orientation reflects, at least in part, personal needs to manage uncertainty and threat, such that conservatives exhibit such needs in higher levels than liberals (Jost, Federico and Naiper, 2009). Along these lines, according to Jost and colleagues (2007; 2017b), conservatives have natural incentives to support policies that preserve the status quo (i.e., that maintain what is known and reject social change) and to

choose products that protect their environment (i.e., that help keeping their setting in an ordered fashion) and signal social dominance.

In fact, researchers have found that individuals high in need for closure, a trait associated with aversion to ambiguity, tend to support military action against Iraq (to manage the threat posed by that country against the established American status quo), particularly when they report higher levels of nationalism (Federico, Golec, and Dial, 2005; Golec and Federico, 2004). Also, people low in need for cognition, and therefore more intolerant with uncertainty, endorse punitive measurements such as death penalty to a greater extent than their high need for cognition counterparts (Sargent, 2004). Finally, disgust, an emotion characterized by certainty appraisals (Smith and Ellsworth, 1985; Tiedens and Linton, 2001), has been found to be associated with political conservatism and to significantly explain purity-related issues such as opposition to abortion and gay marriage (Inbar, Pizarro, and Bloom, 2009). In short, psychological characteristics related to threat management and to uncertainty avoidance, found to manifest more strongly among conservatives, have been demonstrated to predict policy preferences favoring status quo maintenance.

Interestingly, a different research stream has argued that over and above potential differences in psychological traits and states, the differences in preferences between right- and left-wing individuals can be strongly influenced by groupness. Drawing upon social identity theory (Tajfel, 1982; Huddy, 2001), researchers have argued that liberals and conservatives categorize themselves and others into distinct groups (e.g., parties), which reflect their ideological identity (Green, Palmquist, and Schikler, 2002). As a result, they tend to indicate stronger preferences for policies supported by in-groups and stronger opposition for preferences supported by out-groups. In other terms, keeping constant the content of the policy, people shift their opinion when faced with cues attached to policies in a way that approaches their in-group position and distances from the out-group preference (e.g., Goren, Federico, and Kittilson, 2009; Samuels and Zucco, 2013; Cavari and Freedman, 2017).

The present research addresses this phenomenon in a relatively under-investigated policy context where the conservatives are notoriously less in favor than the liberals: marijuana legalization (Pew Research Center, 2018; Dias, 2017). Although one could easily argue that much of the differences in preference for this particular policy results from differences in psychological tendencies (e.g., conservatives are fonder of the status quo), we suspect that social identity and group bias can also play a substantial role. This



thesis also allows us to provide initial assessment regarding a possible driver of the effect of groupness on policy opinion: moral repugnance. Specifically, building on Moral Foundations Theory (Haidt and Graham, 2007) and on literature about divergence and reference groups (Berger and Heath, 2007, 2008; White and Dahl, 2006), we argue that when a policy is strongly associated with one side of the political spectrum (e.g., marijuana legalization is a leftist policy), and the out-group favors additional policies in-groups may perceive as morally repugnant (e.g., abortion, gay marriage), group bias will result mostly from out-group avoidance. If this is true, then out-group cues perceived as morally-repugnant by in-groups should polarize opinion.

We aim to start investigating this phenomenon in two studies. To set the stage, study 1 shows that people do hold a strong association of marijuana legalization as a leftist policy. The effect is so strong that people may mistakenly state that a center-right politician (Fernando Henrique Cardoso) is against marijuana legalization when he is not and to state that a center-left politician (Marina Silva) is in favor when she is not. Moreover, the study also demonstrates that the politician most often perceived as leftist (Marcelo Freixo) was the most likely one to be indicated as a marijuana supporter among the politicians presented and that an unknown politician is more likely to favor marijuana if he is from PT (a leftist party) than from PSDB (a center-right party).

Critically, study 2 documents an interaction between political ideology and policy endorser. When the proposed marijuana legalization policy is endorsed by a center-right politician (Fernando Henrique Cardoso from PSDB), the association between political ideology and attitude toward marijuana legalization is weak. However, when a leftist politician (Jean Wyllys from PSOL) known to support the LGBT cause among other moral-sensitive issues is the endorser of the proposed marijuana policy, the participants' political ideology becomes a strong predictor of attitude toward marijuana legalization. Further, consistent with our account, the effect is most due to self-declared right-wing participants becoming significantly less supportive of the policy, whereas left-wing endorsement remained largely unaltered. We conclude by highlighting the limitations of the current studies, while also proposing a third study which could more precisely assess the relative influence of in- and out-group biases and also rule out alternative explanations for our results.

Finally, it is worth noting that despite growing research on the pros and cons of marijuana legalization and the antecedents of drug use (e.g., Chatwin, 2016; Gonçalves, Lourenço, & Nogueira, 2015; Kalant, 2016; Borodovsky, Crosier, Lee, Sargent, &

Budney, 2016; Dragone, Prarolo, Vanin, and Zanella, 2018; Thomson, 2016), little has been done to understand what influences people's opinions about marijuana legalization (Dias, 2017), a gap we also seek to fill in the present paper.

## **Theoretical Framework**

In spite of considerable debate concerning the dimensional structure of the concept of 'political ideology'<sup>1</sup>, more agreement has been reached on its core definition (Knight, 2006; Jost, Federico, and Naiper, 2009). Political ideologies are sets of beliefs shared by groups of individuals that provide an interpretation of society and a prescription as to how it should be ordered (Denzau and North, 1994; Jost, Federico, and Naiper, 2009). Hence, political ideology entails both psychological aspects, in that it consists of beliefs concerning society's structure, and social aspects, in that these beliefs are shared by groups.

### **Political Ideology and Its Psychological Aspects**

A stream of research has concentrated on the identification of psychological differences between left- and right-wing individuals and on how these differences can explain opposing preferences, including, but not restricted to, those related to policy issues. The finding that political ideology is heritable and genetically transmitted (Alford, Funk, and Hibbing, 2005; Bouchard, Segal, Tellegen, McGue, Keyes, and Krueger, 2003) suggests that it holds a connection with personality. Indeed, researchers interested in personality traits have shown that while leftist individuals exhibit higher levels of openness to experience, rightist individuals score higher on conscientiousness, especially in items measuring orderliness (Carney, Jost, Gosling, and Potter, 2008; Sibley, Osborne, and Duckitt, 2012). This finding is consistent with a study conducted by Carney et al. (2008), which has investigated what types of personal belongings liberals and conservatives kept in their bedrooms. They have found that liberals' bedrooms contained more items related to travel, art supplies, music recordings, and movie tickets, objects

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<sup>1</sup> In the current work, we do not aim to fuel this debate. We use here the traditional left-right (or liberal-conservative) one dimensional structure because it simply is the most meaningful indicator of ideological positioning (Power and Zucco, 2009) and has been found to strongly predict vote intentions (Jost, 2006).

generally associated with open-mindedness, whereas rooms occupied by conservatives were more organized, neat, clean, and contained more laundry baskets and ironing boards, indicating stronger preference for order. Hence, conservatives, as opposed to liberals, present a combination of personality traits – low openness and high conscientiousness – that reflect preferences for ordered and stable environments (Hirsh, DeYoung, Xu, and Peterson, 2010).

In addition to personality traits, left- and right-wing individuals may also rely to different extents on heuristic processing (Jost, 2017a). Specifically, while the former exhibit more tolerance for ambiguity, need for cognition, and integrative complexity, the latter typically have personal needs for cognitive closure, cognitive order, and are modestly more likely to bullshit receptivity, i.e., to accept statements that are superficially meaningful but actually meaningless (Adorno, Frenkel-Brunswik, Levinson, and Sanford, 1950; Jost, 2017b; Jost, Glaser, Kruglanski, and Sulloway, 2003a, 2003b; Sterling, Jost, and Pennycook, 2016). Taken together, these findings suggest that conservatives seem to rely more on heuristic, automatic thinking as compared with liberals.

Finally, distinct ideologies have also been linked to distinct moral values. Drawing on Moral Foundations Theory (Haidt and Graham, 2007), authors have found that while liberals tend to agree more than conservatives with moral statements related to fairness and harm, the latter load higher than the former on the in-group loyalty, authority, and purity dimensions of morality (Graham, Haidt, and Nosek, 2009). In other words, leftist individuals favor justice and condemn rights' violations to a greater extent than rightists, which suggests that the former are more concerned about equality (Anderson and Singer, 2008). By contrast, the latter worry more about social dominance, respect to norms, certainty, threat avoidance, and order (Kugler, Jost, and Noorbaloochi, 2014).

Overall, research has revealed that different personality traits, cognitive processing styles, and moral values manifest asymmetrically in subjects with diverging ideologies. In general, left-wing individuals are more opened to experience, have a more flexible cognitive thinking, favor equality, and exhibit stronger preferences for social change than right-wing individuals. These, in contrast, are more conscientious, have higher needs for order, stability, familiarity, certainty, and social dominance. Scholars have argued that such characteristics reflect higher-order needs to avoid uncertainty and to manage threat, which are particularly strong among conservatives (Jost, Napier, Thorisdottir, Gosling, Palfai, and Ostafin, 2007; Jost, Glaser, Kruglanski, and Sulloway,

2003a, 2003b; Jost, Federico and Naiper, 2009; Jung, Garbarino, Briley, and Wynhausen, 2017). Hence, conservatives have natural incentives to support policies predicated on the preservation of the status quo, i.e., that maintain and protect the current social order.

In fact, research has demonstrated that those characteristics related to uncertainty and threat avoidance predict conservative opinion on policy issues. For example, participants who score high on the need for closure scale, which measures the desire for knowledge that is clear and unambiguous as opposed to confusing or uncertain (Webster and Kruglanski, 1994), are significantly more likely to support American involvement in the Iraq War, in order to safeguard the country against threats to the dominant position it exerts worldwide (Federico, Golec, and Dial, 2005). Furthermore, reliance on the purity foundation of Moral Foundations Theory significantly explains attitudes about culture war issues, such as gay marriage, abortion, cloning, and euthanasia (Koleva, Graham, Iyer, Ditto, and Haidt, 2012), reflecting a desire to preserve the stability of the status quo since these issues violate traditional social norms. In yet another study, conducted in the aftermath of the 9/11 terrorist attack, Davis and Silver (2004) have found that liberals, as opposed to conservatives, are less likely to trade-off civil liberties over personal security as measured by support for policies proposing privacy restriction (e.g., monitoring telephones and e-mails, requiring national IDs, indefinitely detaining non-citizens suspected of belonging to a terrorist organization without properly charging them with crime). They explain this result by highlighting that while the former favor the protection of individuals' rights, the latter have greater concerns for maintaining the social order. Interestingly, as people's perceived threat of other terrorist attacks increases, their willingness to trade-off civil liberties over personal security rise regardless of political ideology. In other words, they become more conservative as threat increases. In conclusion, dispositional and situational measures associated with the desire to avoid threat and uncertainty explain, in part, rightist and leftist diverging preferences on policy issues.

### Political Ideology as Social Identity

Another body of research has investigated whether, over and above potential differences in psychological traits and states, diverging policy positions between liberals and conservatives could be explained by groupness. Researchers have argued that partisan identification, which largely reflects people's political ideology, is a form of

social identity, especially in moments of political polarization (Greene, Palmsquit, and Schikler, 2002; Abramowitz and Saunders, 2008; Levendusky, 2009). According to Social Identity Theory (e.g., Tajfel, 1982; Huddy, 2001), individuals categorize themselves and others who share a similar characteristic as members of a (in-)group and those who do not share that characteristic as members of another (out-)group. People exhibit positive attitudes toward in-group members and negative feelings against out-group members. In the political context, partisanship and political ideology are the obvious form of social categorization: liberals and conservatives perceive themselves as members of distinct groups. Hence, in- and out-group biases are likely to operate in judgments of policy issues if individuals have incentives to accentuate intergroup differences (Brewer, 1991, 2007).

In fact, researchers have documented that party cues exert a significant influence on people's policy preferences, regardless of the content of the policy. Specifically, when individuals are told about their party position on a specific policy issue, they tend to become more favorable toward it. When, in turn, people learn the position of the out-party, they become more favorable toward the opposite position (Cohen, 2003; Nicholson, 2012; Goren, Federico, and Kittilson, 2009; Samuels and Zucco, 2013). Therefore, both in-group favoritism and out-group derogation have been found to explain policy opinion, irrespective of the content of the policy.

In addition to documenting in- and out-group effects, scholars have also debated which of them, if any, predominate. Some suggest that in-group biases are relatively more important than out-group biases (Brewer 2007; Zaller, 1992). In fact, Ehret et al. (2018) proposed and tested whether the effect of source cues on opinion about a specific environmental policy could be explained by normative perceptions of policy support among democrats and republicans. Consistent with the notion that group biases in judgements of policies result mostly from in-group favoritism, they found that perceptions of normative in-group behavior significantly drive the effect of partisan cues on policy opinion, but perceived behavior out-groups ought to take do not.

By contrast, other authors have found that out-group biases may exert greater influence than in-group biases on political values and policy opinion (Goren, Federico, and Kittilson, 2009; Nicholson, 2012). According to Nicholson, this result stems from the competitive nature of the political environment, particularly in an era of political polarization (e.g., Abramowitz and Saunders, 2008; Levendusky, 2009), in which group members are led to follow normative perceptions of what attitudes a group member ought

to hold and how these attitudes should differ from out-groups (Hogg, 2005). Along these lines, because people view in-groups as holders of heterogeneous opinions but out-groups as holders of homogeneous opinions (Quattrone and Jones, 1980), knowledge of an out-group's position may be more informative of the normative in-group preference than learning the opinion of an in-group member. As a result, out-group biases may overwhelm in-group biases in the presence of group competition.

Another explanation for the possible predominance of out-group effects is that negative information is more consequential for information processing and judgement than equally extreme and likely positive information (Baumeister, Bratslavsky, Finkenauer, and Vohs, 2001; Lau, 1985). According to this line of reasoning, a cue displaying an out-group politician (negative information) is likely to generate stronger out-group avoidance than the in-group approach generated by a cue displaying an in-group politician (positive information).

Finally, it is possible that neither effect predominate over the other. Indeed, by examining the power of source cues in Brazil, a highly fragmented multi-party system, Samuels and Zucco (2013) have found that in- and out-group cues produced similar effects on policy positions, and concluded by inviting for more research to unveil the mechanisms through which group influence affects policy preferences.

## Group Influence and The Role of Moral Repugnance

Thus far, we have discussed about why left- and right-wing individuals hold opposing positions toward a number of policy issues. Prior literature has found that people evaluate policies by responding to their needs to mitigate uncertainty and threat, by following the position of the group (e.g., party) they identify with, and/or by opposing the opinion of the group they perceive as a competitor. While many drivers related to people's needs to manage uncertainty and threat have been proposed to explain diverging policy preferences, less is known about the underlying mechanisms through which groupness influence policy opinion. We propose, in the current work, that moral repugnance against the out-group is a likely one.

People judge others as morally repugnant based on the extent to which these others violate moral values highly relied upon by the former. Moral Foundations Theory (Graham, Nosek, Haidt, Iyer, Koleva, and Ditto, 2011; Graham, Haidt, and Nosek, 2009; Haidt and Graham, 2007) proposes five core innate values, or intuitions (Haidt, 2001),

that give rise to people's moral judgements: harm/care, fairness/reciprocity, in-group loyalty, authority, and purity/sanctity. While the first refers to intuitions of physical or emotional suffering to others, the second is related to issues of justice, i.e., to the extent that one's rights are violated. These two foundations are usually deemed the "individualizing" foundations because they focus on the protection and fair treatment of individuals (Graham, Haidt, and Nosek, 2009). The third moral foundation refers to issues of loyalty to the group (e.g., acts of betrayal of one's group would be condemned on the basis of this moral foundation), whereas the fourth relates to respecting its hierarchical structure (e.g., disobeying group authority would be deemed morally wrong) and the fifth to the extent that acts violate the body as a sacred entity. These last three foundations are often referred to as the "binding" foundations because they focus on the group as the locus of moral value (Graham, Haidt, and Nosek, 2009).

Past research has shown that liberals and conservatives rely on different sets of moral foundations: while liberals endorse the individualizing foundations more than conservatives do, conservatives endorse the binding foundations more than liberals do (Graham, Haidt, and Nosek, 2009). This finding has helped to explain why culture war issues are so divided along ideological lines. Conservatives tend to oppose, for example, abortion and gay marriage because these policies violate mostly the purity dimension of the moral foundations, on which they heavily rely when making moral judgements (Koleva, Graham, Iyer, Ditto, and Haidt, 2012). Liberals, conversely, endorse this foundation much less and are, therefore, more supportive of such issues.

However, it is possible that conservatives not only evaluate negatively these policies that violate the binding foundations (e.g., abortion and gay marriage), but also deem immoral those who positively evaluate them, such that the immorality of the policies are transmitted to the group who typically supports them. In more general terms, an out-group which violates moral values in-groups heavily rely on may be judged as immoral by these in-groups. It is not hard to find anecdotal evidence consistent with this claim. Consider, for example, Silas Malafaia, a rightist evangelical Brazilian congressman alerting for the possible dangers of voting in leftist politicians in the 2016 municipal elections: *"This corrupted left that has economically destroyed Brazil now wants to destroy the family. (...) These people defend gay marriage, abortion, they want to erotize children in school."* He continues: *"I want to see them now [during the campaigns] opening their mouth to defend the moral garbage they have defended for 4 years"* (Malafaia, 2016). In a similar vein, we quote Joseph Farah, editor-in-chief and

CEO of an American conservative website named WorldNetDaily: “*The national Democratic Party is immoral to the core. (...) The leaders of this party are severely out of touch with mainstream, traditional American values. They are crusaders for perversion, for licentiousness, for nihilism and worse. (...) I could write about the party’s stands on various issues of the day – from unrestricted abortion on demand to its effort to foster public division over the war in Iraq.*” (Farah, 2003). He then criticizes the Democratic Party for receiving members of a television series about gay men.

These quotes suggest that because conservatives consider such policies as immoral, those who endorse them (i.e., typically liberals) are also deemed immoral by extension. This effect might occur through emotional reaction against violations of the moral foundations (Haidt and Joseph, 2004). For example, research has linked violations of *care* (e.g., bullying) to compassion and violations of *purity* (e.g., incest) to feelings of disgust (Landmann and Hess, 2017). Along these lines, the negativity of these emotions is likely to be transmitted to the source. In fact, this idea is consistent with past research showing that people from both sides of the political spectrum hold moral stereotypes of each other based on which policies each side support (Graham, Nosek, and Haidt, 2012). Hence, political elites that have historically supported such highly salient policies like abortion and gay marriage fit well in these moral stereotypes held by right-wing individuals, and therefore generate moral repugnance among those who fiercely oppose these policies on the moral basis.

In the present paper, we argue that this phenomenon polarizes preferences of policy issues. Individuals take attitudes and behave in ways that distinguish them from dissimilar out-groups (Berger and Heath, 2007, 2008; White and Dahl, 2006; Berger and Rand, 2008), and some conservatives do not want at all to be associated with the “morally repugnant” liberals. Thus, when evaluating a policy (e.g., marijuana legalization) strongly associated with the left and proposed by a leftist politician known to support the LGBT cause among other issues that violate the binding foundations of morality, conservatives are expected to be significantly less supportive of the policy compared with liberals, who, in turn, belong to the same group as that politician. By contrast, when the policy is endorsed by a center-right politician who is less likely to be viscerally questioned on moral values by neither groups, we expect that the effect of political ideology on policy opinion will be largely reduced (but not reversed). If moral repugnance indeed explains the effect, this attenuation will be due to conservatives shifting more their opinion across group cues (i.e., out-group cue vs in-group cue) as compared with liberals.



## The Current Research

The present paper directly tests whether and how the effect of political ideology on policy opinion shifts with different group cues. We chose marijuana legalization because, despite growing debate about its pros and cons (Chatwin, 2016; Gonçalves, Lourenço, & Nogueira, 2015; Kalant, 2016; Dragone, Prarolo, Vanin, and Zanella, 2018) and the determinants of drug use (Borodovsky, Crosier, Lee, Sargent, & Budney, 2016; Thomson, 2016), little is known about the factors that influence people's position on this topic, a knowledge we wish to expand. One of the few works investigating the socio-psychological aspects of support for marijuana legalization has focused on the moral foundations on which liberals and conservatives rely when judging this policy. Specifically, Dias (2017) has shown that conservatives generally oppose this policy partly because of their greater reliance on the authority and purity foundations of morality. In this work, we seek to expand it by investigating morality through the lens of groupness.

In the first study, we administered surveys in flow points of Rio de Janeiro, Brazil, to test our assumption that people associate marijuana legalization as a leftist policy. Although not always true, this association emerges because it is often observed (i.e., people on the left support this policy more often than those on the right; Pew Research Center, 2018), which is not surprising from a psychological point of view given that smoking marijuana violates traditional social norms, and more precisely the purity and authority foundations of morality (Dias, 2017; Lovering, 2015). Thus, we expect that individuals will be more likely to indicate leftist politicians, as compared with rightist ones, as supporters of marijuana legalization.

Next, we proceed to study 2, in which we test whether and how the effect of political ideology on policy opinion shifts with different source cues. A leftist politician known to support the LGBT cause, among other issues the right condemns on the moral account, endorsing marijuana legalization is likely to be morally questioned by right-wing individuals. Thus, a cue of such a leftist politician should generate polarization among right- and left-wing individuals, mainly driven by the conservatives who will more strongly oppose a policy sponsored by a morally liberal left-wing politician. Further, if this effect is driven by moral issues against the out-group, then a politician not judged as such by neither in- nor out-groups are expected to attenuate the effect of political ideology on policy opinion. Also, this attenuation is likely to come from right-wing individuals shifting their opinions more forcefully than those at the left. In the following sections, we

describe both studies, discuss their results, and finally conclude with limitations and future research avenues.

## Study 1: Association Between Political Ideology and Support for Marijuana Legalization

Before examining the interaction between group cues and political ideology, we first wanted to test the prediction that people associate marijuana legalization as a leftist policy. We did this through an experiment in Brazil, in which we asked people to categorize politicians, presented together with their party, along the political spectrum, and to indicate which they think support marijuana legalization.

This study also enables us to test whether partisanship reflects political ideology in a highly fragmented party system. In the United States, the political system is bipartisan and, in such a context, it is more clear that partisan differences do reflect ideological differences (Greene, Palmsquit, and Schikler, 2002). By contrast, Brazil has a multi-party system in which their main parties have moved towards the political center in recent years (Power and Zucco, 2009). As a result, one may argue that people do not regard partisan cues as a diagnostic information to judge politicians' political ideology and their opinion toward marijuana legalization. We address this concern in this study by examining whether people indeed use partisan cues to infer politicians' political ideologies and their opinion about legalizing marijuana in Brazil (for another study on group cues conducted in Brazil, see Samuels and Zucco, 2013).

### Method

*Participants.* We conducted an experiment with 304 participants (51% male,  $M_{\text{age}} = 36.78$ ) in favelas of wealthy and impoverished areas of Rio de Janeiro, Brazil. Participants had, on average, 12.33 years of education and a household income of R\$ 8,479.87. Roughly half of them was white (48%) and they had an average score of 2.88 on a 5-point scale of religious attendance (1 = never; 2 = once a year; 3 = sometimes a year; 4 = once a month; 5 = once a week). Further, 46 participants reported being conservative, 86 liberal, and 172 were moderate or did not know how to describe their political view.

*Procedure.* Participants were approached by research assistants and asked whether they would like to take part in an academic survey about perceptions and opinion regarding several current topics. After answering some filler questions, those who agreed to participate read a definition of marijuana legalization for recreational purposes and were asked their opinion about the legalization of marijuana in Brazil. Then, all participants were shown a list of 4 politicians, presented together with their respective political parties. Three of them are well known politicians in Brazil - Fernando Henrique Cardoso, a former ex-president from PSDB, the Brazilian Social Democracy Party; Marina Silva, who has run for president twice and is currently affiliated to REDE, or Sustainability Network; and Marcelo Freixo, the most voted state representative in the Brazilian 2014 elections and currently in his third consecutive term from PSOL, the Socialism and Liberty Party.

*Manipulation.* In order to eliminate potential endogeneity in people's evaluations of politicians (e.g., trustworthiness, credibility, prior positioning on other issues etc; Mondak, 1993; Petty and Cacioppo, 1996), a fourth politician was invented and participants were randomly assigned to one of two conditions. João Aparecido Andrade could be either from the Worker's Party (PT) or from the PSDB, the two parties that have dominated and competed over presidential elections since the Brazilian redemocratization, running on somewhat opposing agendas. While the former usually relies on a largely leftist platform, the latter is more aligned with right-wing ideals (Samuels and Zucco, 2013).

Participants were asked to indicate which of the four politicians they thought supported marijuana legalization and also to place the politicians more to the right or more to the left along the political spectrum (no "moderate" option was provided). Finally, subjects completed a demographic questionnaire and were thanked for their participation.

## **Results and Discussion**

As reported in table 1, no significant differences in participants' demographic characteristics emerged across conditions. In order to analyze whether marijuana legalization is perceived as a leftist policy, we proceed with two stages. First, we check whether people use party cues as information to infer political ideological leaning. Then,

we examine whether participants are more likely to indicate perceived leftist politicians as more supportive of marijuana legalization, as opposed to perceived rightist ones.

Table 1 - Demographic characteristics per condition in Study 1

Observable characteristics	PSDB	PT	P - Value
Male (%)	52.87	48.98	0.50
White (%)	45.86	51.02	0.37
Age	35.49	38.16	0.13
Religious Attendance	2.94	2.82	0.52
Household Income (R\$)	7805.86	9507.09	0.14
For Marijuana Legalization (%)	43.95	48.30	0.45
Conservatives (%)	14.01	16.33	0.57
Liberals (%)	28.66	27.89	0.88
Observations	157	147	304

Notes: Age, religiosity, and household income p-values were computed based on two-tailed t-tests. The remaining statistics were calculated through chi-square tests. Religious attendance was measured using a 5-point Likert scale.

Concerning the first point, we found, as expected, that respondents were more likely to place Andrade, our made-up politician, on the left of the political spectrum when he was from the PT (72.1%) relative to when he was from the PSDB (27.4%,  $\chi^2(1, N = 304) = 60.75, p < 0.01$ ). This result suggests that, even in a highly fragmented multi-party system as Brazil, partisanship does reflect political ideology. In other terms, partisan cues convey important information regarding people's political ideology, such that individuals utilize them to categorize politicians along the political spectrum. Indeed, as expected, most of the respondents associated Marcelo Freixo (83.2%) and Marina Silva (58.9%) with the left, and only nearly one-fourth considered Fernando Henrique Cardoso a leftist politician (23.7%).

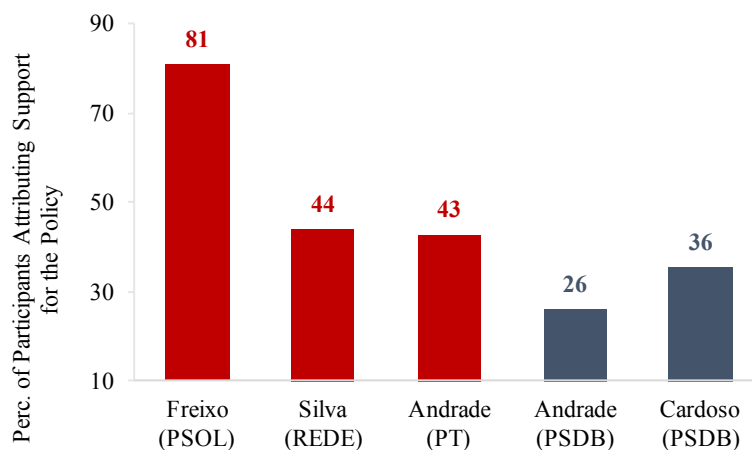
Capitalizing on these associations between party and ideology, we turn to the point concerning marijuana legalization. Figure 1 shows the percentage of participants that indicated each of the politicians as supporters of marijuana legalization. As can be observed, politicians more often perceived as leftist (Freixo, Silva, and Andrade-PT), displayed in red, were more likely to be considered supporters of marijuana legalization than those more often perceived as rightists (Cardoso and Andrade-PSDB), displayed in blue.

Specifically, our manipulation to remove potential endogeneity from the analysis supports our prediction. Participants were significantly more likely to indicate João Aparecido Andrade as a supporter of marijuana legalization when he was from the PT

(42.9%), i.e., when he was associated with the left, than when he was from the PSDB (26.1%,  $\chi^2(1, N = 304) = 9.46, p < 0.01$ ), in which most participants categorized him as a rightist politician.

People associated left-wing politicians as endorsers of marijuana legalization so strongly that a very interesting finding emerged: since Marina Silva is considered a center-left politician and Fernando Henrique Cardoso a center-right politician, individuals were significantly more likely to indicate Marina as a marijuana supporter (44%) than they were to indicate Fernando Henrique as such (36%;  $z = 2.15, p = 0.03$ ). However, in reality, the opposite is true: while Marina is against the legalization of marijuana, FHC is actually a strong advocate of this policy<sup>2</sup>. Lastly, our results also show that Marcelo Freixo, a politician known to support causes deemed immoral by the right, was the politician most often perceived as leftist (83%) among the options presented and also the most likely one to be considered an endorser of marijuana legalization (81%).

Figure 1 - Attribution of Support for Marijuana Legalization for Each Politician



In conclusion, our first study provides solid evidence that people associate marijuana legalization as a leftist policy. Participants used partisan cues to infer politicians' political leanings and position toward marijuana legalization. The pattern is quite clear: people think that leftist politicians are more likely to support this policy as opposed to rightist politicians. Curiously, we also show that by systematically using cues to judge politicians' opinion, people are likely to make mistakes. In fact, since Marina

<sup>2</sup> Cardoso is a member of the Latin American Commission on Drugs and Democracy and of the Global Commission on Drug Policy.

Silva is perceived as a center-left politician and Cardoso as a center-right one, people tend to indicate that the former is more likely to support marijuana legalization than the latter. Actually, though, the opposite is true: while FHC advocates for this policy, Marina Silva has remained contrary to it. Finally, Marcelo Freixo, a politician known to support policies that violate moral values onto which rightists heavily rely, was the politician most often perceived as leftist and the most likely one to be considered an endorser of marijuana legalization among those presented.

## Study 2: Political Ideology, Group Cues, and Attitudes toward Marijuana Legalization

In the first study, we have presented evidence that people hold a strong belief that marijuana legalization is a leftist policy (i.e., that this policy is more likely to be endorsed by left-wing politicians as opposed to right-wing ones). In study 2, we seek to investigate how groupness impact people's opinion toward the same policy. Specifically, we test how right- and left-wing subjects shift their opinion toward a policy to legalize marijuana when they are exposed to in- vs out-group cues, in which the out-group cues are differentially perceived by each group. A leftist politician known to support the LGBT cause, among other issues the right condemns on the moral account, endorsing marijuana legalization is likely to generate moral questioning among right-wing individuals. Hence, political ideology is expected to be a strong predictor of policy opinion when this leftist politician is the endorser of the marijuana policy. Nevertheless, when a center-right politician endorses the policy, the effect should be attenuated. Further, if repugnance to morally sensitive issues help explain the effect of groupness, the interaction is likely to emerge from right-wing (vs. left-wing) individuals becoming much less supportive of a policy sponsored by an out-group politician.

### Method

*Participants.* We conducted an experiment with 226 participants in flow points of Rio de Janeiro, Brazil. Participants were mostly female (56%), had a mean age of 38 years old ( $SD = 12.7$ ), and self-identified as predominantly conservative (59%).

*Procedure.* Subjects were approached by research assistants and asked whether they would like to take part in an academic survey about news and questions about public

policy issues. After answering unrelated questions and demographics, those who agreed to participate were assigned to one of two conditions. Respondents read a text in which they were told about a bill to legalize marijuana that was going through Brazilian Congress. In the “JW” condition, they were told that the bill was authored by Jean Wyllys, a well-known congressman affiliated to the Socialism and Liberty Party (PSOL) and member of commissions in defense of the LGBT community, human rights, and racial equality. Jean Wyllys is from the same party as Marcelo Freixo, the politician who was the “most leftist” one in our study 1, and both support roughly the same policies. We could not include Freixo here because we wanted to remain truthful to reality, and Jean Wyllys has, in fact, authored a bill to legalize marijuana, which is still running in Congress. We do not believe, though, that the results would differ.

In the “FHC” condition, in turn, participants were told that the bill was endorsed by the ex-president Fernando Henrique Cardoso (FHC), who is affiliated to the PSDB and has acted in defense of privatizations and trade openness in Brazil. They also read (truthful) statements that Cardoso strongly advocates the legalization of marijuana and is currently a member of the Global Commission on Drug Policy. A picture of both politicians was displayed together with the text in the respective condition. The content of the bill (its objective and some specific regulations) was kept constant across conditions.

After reading the text, participants reported on a 5-point scale their opinion on the bill (1 = strongly against; 2 = probably against; 3 = not sure; 4 = probably for; 5 = strongly for). Finally, they were asked about their position about abortion and gay marriage and placed themselves on a 4-point forced choice scale of political ideology (0 = clearly left; 1 = more left than right; 2 = more right than left; 3 = clearly right). It is worth noting that, since in study 1 most of the participants reported holding moderate political views, we chose to suppress that option to force them to take a side. Responses about abortion and gay marriage were collected to test whether our scale of political ideology correctly predicts opinion on these policies, as suggested by previous research (Koleva, Graham, Iyer, Ditto, and Haidt, 2012).

## **Results and Discussion**

Descriptive statistics show that participants do not significantly differ on socio-demographics across conditions, as reported in Table 2. Before we conduct our main

analysis, we should evaluate the predictive validity of our political ideology scale on abortion and gay marriage preferences in our sample. Logit regressions with individuals' position on these policies as dependent variables and the political ideology scale as independent measure reveal that the more identified with the right, the less likely is the individual to support abortion ( $b = -0.63, p < 0.01$ ) and gay marriage ( $b = -0.82, p < 0.01$ ). When we exclude participants on the extremes, we find that, as expected, moderate rightists are significantly less likely to support abortion than moderate leftists ( $b = -0.83, p < 0.02$ ), but, surprisingly, both sides are equally likely to support gay marriage ( $b = 0.58, p = 0.16$ ). Overall, despite forcing participants to choose one side of the political spectrum, our scale of political ideology does have some, though not perfect, predictive validity regarding other typical culture war issues, which does not solve but mitigates the concerns posed by this limitation.

Table 2 - Demographic characteristics per condition in Study 2

<b>Observable characteristics</b>	<b>FHC</b>	<b>JW</b>	<b>P - Value</b>
Age	38.89	37.06	0.28
Male	44.44	43.12	0.84
Left- dummy (%)	41.88	40.37	0.82
Political Ideology (scale)	1.64	1.66	0.88
Time to Read The Text (sec)	26.68	26.13	0.80

Notes: Political Ideology is a 4-point scale anchored on 0 = clearly left and 3 = clearly right.

P-values for age, 'Political Ideology', and 'time to read the text' were calculated based on two-tailed t-tests. The remaining statistics were computed through chi-square tests.

In this study, we are interested in investigating the interaction of source cues and political ideology in affecting opinion about marijuana legalization. We performed a series of regressions in order to evaluate our hypothesis and report the results in Table 3. To begin with, a main effect of political ideology on policy opinion emerged as expected, such that the more to the right people self-located at the political spectrum, the less supportive of marijuana legalization they were (Model 1, Table 3:  $b = -0.31, p < 0.01$ ). No main effect of the manipulation was observed (Model 1, Table 3b:  $b = -0.18, p > 0.3$ ). Because in our sample older participants were more likely to self-report as rightists, as evidenced by regressing political ideology on age ( $b = 0.01, p < 0.03$ ), we also performed the same regression but including age as a covariate. Results remained largely unaltered (Model 2, Table 3: political ideology:  $b = -0.27, p < 0.01$ ; manipulation:  $b = -0.23, p > 0.2$ ; age:  $b = -0.02, p < 0.01$ ).



Table 3 - Results of Study 2

Variables	(1) Legalization	(2) Legalization	(3) Legalization	(4) Legalization	(5) Legalization	(6) Legalization
Condition JW	-0.182 (0.187)	-0.225 (0.184)	0.427 (0.363)	0.395 (0.356)	-0.436* (0.246)	-0.537** (0.242)
Political Ideology (scale)	-0.311*** (0.0930)	-0.267*** (0.0922)	-0.164 (0.119)	-0.117 (0.118)		
JW x Pol. Ideology			-0.368* (0.189)	-0.376** (0.185)		
Left (dummy)					0.138 (0.265)	-0.0416 (0.264)
JW x Left (dummy)					0.620 (0.383)	0.748** (0.376)
age		-0.0233*** (0.00729)		-0.0235*** (0.00724)		-0.0256*** (0.00740)
Constant	3.450*** (0.200)	4.285*** (0.327)	3.210*** (0.234)	4.046*** (0.345)	2.882*** (0.172)	3.955*** (0.352)
Observations	226	226	226	226	226	226
R-squared	0.052	0.094	0.068	0.110	0.038	0.088

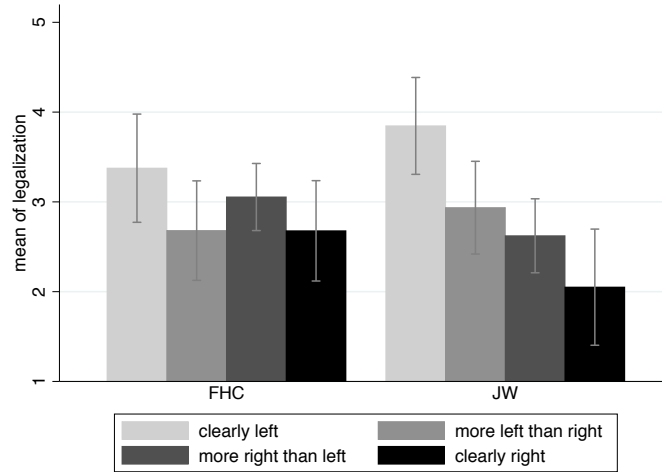
Notes: Legalization is our dependent variable (1 = strongly for; 5 = strongly against). Jean Wyllys refers to the dichotomous variable concerning the manipulation (JW = 1; FHC = 0). Political Ideology is the 4-point scale anchored on 0 = clearly left and 3 = clearly right. Left is a dummy also indicating political ideology (Left = 1; Right = 0). Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Turning to the analysis of the simple main effects and the interaction, Model 3 of Table 3 reports results of a regression in which we interact the manipulation with political ideology on the whole sample. Results reveal that the effect of political ideology on support for marijuana legalization is not significant in the FHC condition (Model 3, Table 3:  $b = -0.16$ ,  $p = 0.17$ ), meaning that, when a center-right politician endorses the policy, right- and left-wing participants support it to similar levels. However, consistent with our hypothesis, a negative and significant coefficient for the interaction emerged (Model 3, Table 4:  $b = -0.37$ ,  $p = 0.05$ ) in the JW condition, and was robust to the inclusion of age as a covariate (Model 4, Table 3:  $b = -0.38$ ,  $p = 0.04$ ). Figure 2 graphically depicts the interaction<sup>3</sup>. It shows that, in the FHC condition, i.e., when a rightist politician endorsed the bill, political ideology is just a weak predictor of policy opinion ( $b = -0.13$ ,  $p = 0.28$ , not reported). Nevertheless, in the JW condition, i.e., when a leftist politician authored the bill, the more to the right of the political spectrum individuals were located, the weaker were their support for marijuana legalization ( $b = -0.48$ ,  $p < 0.01$ , not reported).

<sup>3</sup> Different from the regression analyses, though, the figure considers each point of the political ideology scale as a dummy.

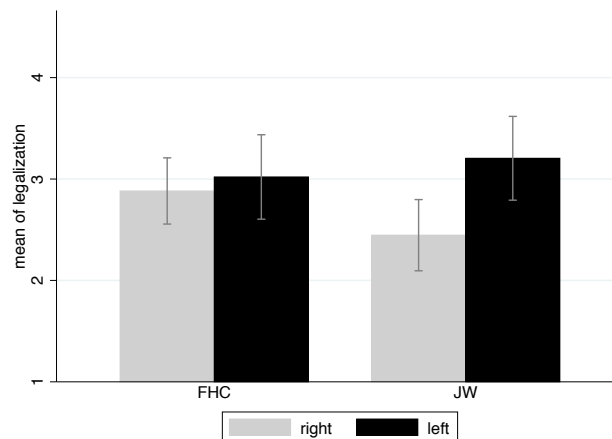
In a nutshell, the no-effect of holding a rightist ideology on marijuana support when FHC endorsed the bill turned significant when JW endorsed it.

Figure 2 - Support for Marijuana Legalization as a Function of Political Ideology (scale)



Visual inspection of the figure suggests that the effect turns significant because right-wing individuals decrease more their support for the policy than left-wing individuals increase theirs' when JW endorse it. To investigate this, we created a dichotomous indicator of political ideology. This enabled us to circumvent the problem posed by relatively small sample sizes in each point of the political ideology scale, especially on its extreme parts. Figure 3 graphically displays the results. First, we replicate previous findings: in the FHC condition, left-wing individuals are no more supportive of marijuana legalization than right-wing subjects (Model 6, Table 3:  $b = -0.04$ ,  $p > 0.8$ ), but a significant interaction emerges again (Model 6, Table 3:  $b = 0.75$ ,  $p < 0.05$ ), such that, in the JW condition, political ideology becomes a significant predictor of policy opinion. Importantly, the effect is most due to right-wing participants becoming less supportive of the policy in the JW condition compared with the FHC condition (Model 6, Table 3:  $b = -0.54$ ,  $p = 0.03$ ), as opposed to left-wing subjects, who did not significantly shift their opinion ( $b = 0.20$ ,  $p = 0.5$ ).

Figure 3 - Support for Marijuana Legalization as a Function of Political Ideology (dichotomous variable)



In sum, the results found in study 2 are consistent with our hypothesis. When people are told that a center-right politician endorses a policy to legalize marijuana, individuals along the political spectrum express similar support for the policy. However, when they learn that a leftist politician known to support moral-sensitive issues in the eyes of the right endorses marijuana legalization, a discrepancy between right- and left-wing individuals' opinions emerges: the left is significantly more supportive of the policy than the right. Further analyses reveal that this interaction is largely due to a shift in right-wing individuals' support for the policy (i.e., they become less supportive when the out-group they perceive as morally repugnant endorses it), whereas left-wing individuals, conversely, did not shift their preferences according to the source. Hence, consistent with our hypothesis, the difference in support for marijuana legalization of right-wing individuals between the in- vs out-group cues is greater than this difference for left-wing individuals arguably because the right does not want to associate with a morally-repugnant left.

Nevertheless, although we find results that are aligned with our hypothesis, at least three alternative accounts could be used to explain the very same results. First, it is possible that the observed effects are due to potential differences in the extent to which individuals rely on heuristic processing. Since partisanship/political ideology constitutes a core heuristic to make sense of politics (Samuels and Zucco, 2013; Mondak, 1993) and conservatives may be more likely to engage in heuristic processing compared with liberals (Jost, 2017a), it is possible that, in general, group cues simply affect the former more forcefully. In particular, because deliberative processing is costly and people

usually require reasons to become motivated to engage in it (Arceneaux, 2008), a source cue consistent with people's mental representations (e.g., a leftist politician proposing a policy to legalize marijuana) is likely to be processed heuristically and opinions should reflect those mental representations. By contrast, when the source cue is counter-stereotypical (i.e., when it is inconsistent with people's mental associations, such as when a rightist politician endorses that policy), individuals have an incentive to use systematic processing. But since leftist individuals might process information more systematically than rightist individuals in order to solve the apparent contradiction (Jost, 2017a), leftists may shift their opinion less than the rightists.

A second explanation for our results is based on Bayesian updating. One may argue that leftist individuals have already thought extensively on marijuana legalization, and therefore their distribution of priors is very concentrated. Rightist individuals, in turn, may have never thought deeply about the policy, and as a result may have a more spread distribution of priors. According to Bayesian models, if priors are spread and new information is available, opinions are more likely to move toward the information. If priors are concentrated, by contrast, new information inconsistent with these priors should produce smaller effects on opinion. In our studies, given the different distributions of priors between right- and left-wing subjects, a cue displaying Fernando Henrique Cardoso supporting the marijuana policy is likely to shift the opinions of right-wing individuals more than the opinions of left-wing individuals, which is consistent with our results.

Finally, while Fernando Henrique Cardoso is probably the most notorious rightist Brazilian ex-president, Jean Wyllys is a Congressman. As such, they are very likely to display differences in credibility in people's views, such that polarization is less likely to be observed under FHC endorsement for the policy than under Jean Wyllys authorship.

## **General Discussion**

Why do the opinions of right- and left-wing individuals on policy issues generally diverge? Literature on social and political psychology maintains that they do so because people have different personality traits, cognitive processing styles, and moral values. Along these lines, conservatives are more conscientious and less opened to experiences, rely more on heuristic processing, and score higher on the binding foundations of morality than liberals. These characteristics suggest that right-wing individuals have general needs to protect from threat and uncertainty in higher levels than left-wing subjects, which help

explain their predisposition to support policies that preserve the current social order, or the status quo.

Given these differences, it is perfectly plausible that the opinions of right- and left-wing individuals on marijuana legalization diverge because the former are fonder of the status-quo. However, researchers have consistently demonstrated that, regardless of the content of the policy, group biases also exert a powerful influence in shaping policy opinion. According to this body of knowledge, individuals categorize themselves and others into distinct groups based on their political views. In this context, strong in- and out-group biases are likely to emerge, thereby producing intergroup differentiation on policy issues. Along these lines, we suspect that opinions toward marijuana legalization can also be strongly influenced by groupness, a prediction we tested in the present thesis.

In particular, we also investigated a possible driver for the effect of groupness, and particularly out-group bias: moral repugnance. We hypothesized that when a policy is strongly associated with one side of the political spectrum (e.g., marijuana legalization is a leftist policy), and the out-group favors additional policies in-groups may perceive as morally repugnant (e.g., abortion, gay marriage), group bias will result mostly from out-group avoidance. If this is true, then out-group cues varying in the extent to which they are perceived as morally repugnant by the groups should differentially affect preferences.

Evidence supporting our hypothesis comes from two studies. In study 1, we validate an important assumption: that people associate marijuana legalization as a leftist policy. Specifically, subjects were more likely to indicate leftist (vs rightist) politicians as supporters of this policy. Further, we showed that the effect is so strong that they often err by doing so. Because Marina Silva is a center-left politician and Fernando Henrique Cardoso a center-right one, people tended to indicate that the former was more likely to support this policy than the latter. Yet, in reality, the opposite is true: while Marina is against marijuana legalization, FHC publicly advocates for this policy. Also, we demonstrate that the politician most often perceived as leftist was the most likely one to be indicated as a marijuana supporter.

Then, in study 2, we found that when marijuana legalization was endorsed by a center-right politician, left- and right-wing individuals expressed similar support for the policy. Nevertheless, when the policy was endorsed by a leftist politician known to support morally-sensitive issues that violate the binding foundations of morality, political ideology became a strong predictor of policy opinion. Consistent with our hypothesis, the effect was most due to right-wing individuals becoming less supportive of the policy

when the “morally-questionable” out-group was behind it, whereas left-wing subjects did not significantly shift their preference across conditions (meaning, importantly, that the effect did not reverse). In short, the difference in support for the policy across conditions was greater for right-wing subjects than for left-wing individuals.

The current thesis contributes to literature on a few fronts. First, despite growing literature on the determinants of drug use and the pros and cons of marijuana legalization, there has been surprisingly little research on socio-psychological factors explaining support for that policy. The present work represents an attempt to extend previous literature on the moral judgements of marijuana legalization (Dias, 2017) beyond the direct psychological influences, by examining the effect of groupness. Second, we gather initial evidence that moral repugnance may explain part of the impact of groups on preferences. Since people want to avoid associating with morally questionable out-groups, people change their preferences when an out-group cue is attached with the policy under scrutiny. Still, given the absence of research on this topic and its increasing importance, uncovering other drivers may be a fruitful avenue for future research.

Additionally, many public policies are related to, or have implications for, consumption (e.g., taxing plastic bags in grocery stores, subsidizing alternative fueled vehicles, etc) and marijuana legalization is no different. By investigating the determinants of people’s opinion about whether consuming marijuana should be allowed, our research contributes to the burgeoning literature investigating how political ideology shapes decisions related to consumption (Jung, Garbarino, Briley, and Wynhausen, 2017; Winterich, Zhang, and Mittal, 2012; Kidwell, Farmer, and Hardesty, 2013; Ordabayeva and Fernandes, 2018; Jost, 2017a). Finally, we demonstrate in study 1 that partisan differences do reflect ideological differences between politicians even in a highly fragmented party system such as Brazil. Participants utilized party cues to infer politicians’ side in the political spectrum and to indicate their support or not for marijuana legalization.

Our results did not come without limitations, however. First, a considerable part of the sample did not take a side on the political scale in study 1, and due to this fact we forced participants to do so in study 2. It is possible, then, that our scale of political ideology did not reliably measure what it was supposed to measure. Although we admittedly cannot ascertain that it perfectly captured people’s political ideology, it has been found to predict support for other policies that, like marijuana legalization, are part of the so-called culture war issues, namely abortion and gay marriage. Thus, we are less

concerned about this problem, but acknowledge this limitation to be addressed in future studies. Second, because our scale is self-reported, endogeneity is likely to appear. For example, older people tended to be more conservative in our sample, and hence we had to control for age in our estimations. It is possible that other variables, notably religiosity and past use of marijuana, are also simultaneously associated with political ideology and policy opinion and therefore may be biasing the results. Yet, most of the studies on political psychology have measured political ideology through a self-reported scale, and, as such, we believe this is a minor issue in our research. In any case, further studies in which political ideology is manipulated and/or those variables are controlled for could strengthen our conclusion (for an example of manipulation, see Ordabayeva and Fernandes, 2018, study 1C). Finally and most importantly, we were unable, in study 2, to precisely assess whether group effects were present for left-wing individuals as well as whether right-wing subjects approached the in-group politician and/or distanced from the out-group one. The introduction of a baseline condition in a future study can help us to more accurately assess the relative sizes of in- and out-group effects for leftists and rightists, thereby contributing to the discussion regarding the predominance of these effects.

### **A Plausible Study 3**

Given the limitations of our studies and possible alternative explanations for our results, we also propose a third study which could more precisely assess whether moral repugnance does indeed underlie the effect of groupness. This study would consist of an experiment to be conducted either in flow points of Rio de Janeiro or on Facebook, which has been demonstrated to be a viable alternative to recruit large samples with relatively low costs (Samuels and Zucco, 2013; Kosinski, Matz, Gosling, Popov, and Stillwell, 2015). It would have a 2 (political leaning: right vs left) x 2 (moral repugnance: high vs neutral) plus baseline condition between-subjects design, in which hypothetical left- or right-wing politicians supporting policies that arguably generate moral repugnance or not in the out-groups would be displayed to participants as endorsers of a policy to legalize marijuana. Then, subjects would be asked to indicate their opinion about the policy in a 7- or 9-point scale (so that we can have more variance relative to the 5-point scale used in study 2).

In the moral repugnance manipulation, the policies supported by each side should be carefully chosen to violate or not the core moral foundations on which right- and left-wing individuals rely on. Furthermore, it is important that people from both sides of the political spectrum perceive the politicians to be at symmetric points on the scale (i.e., opposite sides but same distance to the center – a challenging issue). The purpose of introducing a baseline condition is to enable us to measure the relative sizes of in- and out-group effects. We conjectured that when the out-group is perceived as morally repugnant, out-group biases should predominate over in-group biases. In this study, we would be able to test this claim. Additionally, given that in Brazil people tend to answer questions about ideological self-placement either at the middle-point or by assigning “do not know”, as found in study 1, we can include questions about personality that have been shown to strongly correlate with political ideology (e.g., Social Dominance Orientation and Right Wing Authoritarianism scales) in addition to collecting responses for a validated measure of political ideology from the literature (e.g., Jost, 2006; Tetlock, Hannum, and Micheletti, 1984). We will further collect responses about religiosity and past use of marijuana, which plausibly correlate both with political ideology and opinion toward marijuana legalization.

Finally, the main practical implication of our study is quite straightforward. People make general associations regarding some policy issues and the ideology supposed to support each of these issues. We have shown here that, by systematically relying on these associations, individuals oftentimes make mistakes. Consequently, to the extent that their own opinions are influenced by these potentially inaccurate associations, they are subject to take a position they would otherwise not take had they had perfect information. In our studies, we have provided evidence that convergence of policy opinion across right- and left-wing individuals may be achieved by informing them that a rightist leader supports a policy usually associated with the left. Given the current polarized era, this lesson may prove helpful if practitioners are interested in uniting people around consensus in public policy issues.



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