Exploring the State Space of Ideological Possibility

WATERLOO INSTITUTE
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Exploring the State Space of Ideological Possibility:

A Research Report Prepared for the Waterloo Institute for Complexity and Innovation

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Author's Biography

Matto Mildenberger is a PhD candidate at Yale's School of Forestry and Environmental Studies. A political scientist by training, Matto's research focuses on the comparative politics of climate change. He has a particular interest in the application of complex systems theory to political science and environmental policy. Matto co-directs the Program on Climate Governance and Policy in the Yale School of Forestry & Environmental Studies Governance, Environment and Markets (GEM) lab, and is affiliated with the Yale Project on Climate Change Communication. Matto previously completed an MA (Global Governance) at the University of Waterloo, and an Hon. B.Sc. (Botany and International Relations) at the University of Toronto. With Stephen Clarkson, he is the author of *Dependent America?: How Canada and Mexico Construct US Power* (Toronto: University of Toronto Press, 2011).

Executive Summary

This literature review summarizes recent political psychology literature on ideology. The report was commissioned by the Waterloo Institute of Complexity and Innovation (WICI) to inform a broader project on ideological change. It proceeds in four sections. Part I reviews spatial accounts of ideological structure, interrogating the number of dimensions necessary to fully describe ideological positioning. Part II considers the individual-level determinants of ideological attachment, including genetic, physiological, cognitive, social, and institutional factors. Part III surveys theories of ideological change and persistence. A concluding section suggests a series of foundational questions that WICI's research on ideology should engage.

Introduction

F rom Marx to Mannheim, ideology was once a conceptual workhorse of political theory. While early scholars disagreed about many critical issues, from the sources of ideology to the structure of ideological content, their work collectively emphasized processes through which shared mental representations of the political world emerged and the social and political consequences of these representations. Many emphasized how ideologies stabilized specific social and power structures.

Yet, by the mid-20th century, the study of ideology had declined, "defined away" as an object of legitimate study (Jost, 2006). Psychologists and political scientists argued that the public's mental models lacked structure and consistency, questioning the existence of systematic differences between the cognitive and affective content of different ideological positions. Simultaneously, the post-War collapse of Fascism, Stalinism and other high-profile "ideologies" left more fragmented ideational systems in their wake that seemed poorly described by existing theory (Freeden, 2003).

Of course, vigorous debates about ideology persisted in political theory and political history, particularly in Europe. However, scholarship that took ideology as its dependent variable became rare within American political science; instead, the term came to narrowly signify individual placement on a left-right political values scale. Popular usage was similarly unkind to the concept: ideology continues to have a broadly negative connotation, echoing early political philosophers who linked ideology with social control (Hammack, 2008).

It has only been over the last decade that the explicit study of ideology has been renewed by political psychologists. This new literature speaks to many of the same puzzles that animated the earlier political theory agenda, but is motivated from a more psychological and often methodologically individualist starting point.

Scope of report

This report informs the Waterloo Institute for Complexity and Innovation's (WICI) research on ideological change by summarizing a selection of recent political psychology and political behavior literature. It adopts the WICI's working definition of ideology as a "system of ideas, beliefs, and values used in a community to understand, justify, or challenge its social, political, and economic arrangements."

In some areas, the paper's coverage is marginal. It remains largely silent about the rich literature on ideology in both political theory and sociology. Interested readers can find excellent overviews of this literature in Freeden (2003) and Maynard (2012). Second, ideology-specific research projects are largely ignored here, for example the influential treatment of authoritarianism by Adorno and colleagues (1950) and its descendent literature (e.g., Feldman, 2003). Of course, this review also neglects an immense literature in political science that engages ideology as an independent variable to explain variation in political institutions, processes and behaviors.

This report is not intended as a meta-analysis, and it does not aspire to arbitrate between competing literatures. The quality of the academic work described in this report varies considerably. Many findings in the literature on ideology are not causally identified or are plagued by serious methodological limitations. While lab experiments motivate many political psychology findings, the external validity of these results remains open to question. This report believes that WICI's attempts to conceptualize ideological change will benefit from the broadest possible survey; ultimately, even flawed research can suggest theoretical propositions worthy of more empirically sophisticated consideration.

Report overview

Several existing volumes on ideology present material on the political psychology of ideology as a debate between a handful of core theories (e.g., system justification theory, terror management theory and moral foundations theory). This report eschews such self-contained descriptions and focuses instead on side-by-side comparisons of how different scholars address three fundamental issues. First, how do they map and describe ideologies? Second, how do they predict ideological attachment? Third, how do they explain ideological change?

The organization of the report parallels these questions. Part I describes the many ways in which ideologies have been mapped, focusing on the dimensions used to classify ideological content. Part II surveys the determinants of ideological attachment across diverse levels of analysis. Part III reviews a sparse literature that attempts to predict ideological change and persistence. A concluding section suggests the most important questions that a future research agenda on ideology must answer.

Part I: Mapping the ideological state space

This paper uses the organizing metaphor of an ideological state space. A state space is a multidimensional virtual space in which the full set of system outcomes can be positioned. Each dimension in a state space describes one parameter along which a system can vary. For instance, suppose that two separate dimensions describe a system. Then its state space is a plane, with each axis represented by one of the system's dimensions. Any point on the plane describes a unique combination of values over both dimensions. By contrast, a three-dimensional state space has a cubic form. The shapes of higher-dimensional state spaces have no intuitive geometric form, but are extensions of this same framework. An n-dimensional state space maps the total combinatorial space created by the potential values of its n parameters. In an ideological state space, a specific ideology can be understood as occupying a discrete position. Points in the state space that are more closely located describe system outcomes that are more closely related.

Many attempts to describe ideologies have taken a spatial approach that is consistent with this metaphor. While scholars continue to debate the appropriate number of dimensions necessary to describe ideological content, many visualize ideological positions using Cartesian coordinate systems, where each axis represents one dimension of a proposed ideational space.

> **"A state space is a multidimensional virtual space in which the full set of system outcomes can be positioned."**

In this section, the report sorts the literature on ideology by proposed dimensional structure. It also raises foundational questions about the appropriateness of using spatial metaphors to conceptualize ideological content.

1.1 A one-dimensional state space

Ideologies have been described along a single left-right dimension for over a century. Despite repeated attempts to supplant one-dimensional characterizations of the ideological state space with more complex characterizations, the approach retains significant academic support. For instance, almost all literature that evaluates the determinants of ideological positioning, described in Part II, maps ideologies on a one-dimensional liberalism-conservatism scale.

Among the most vocal advocates of a one-dimensional state space is Jost, who advances a largely instrumentalist argument. While conceding that the left-right distinction does not capture the full range of ideological possibility, he suggests that it captures most of the important information about political attitudes in a parsimonious way (Jost, 2009; Jost, Nosek, & Gosling, 2008). Jost concedes two distinct sub-dimensions that shape ideological orientation: a

tendency to advocate or resist social change, and a tendency to accept or reject inequality (Jost, 2009). However, as a practical matter within Western political arenas, Jost contends that these two dimensions have converged into a single dimension. This is because most societies have been highly unequal historically and thus attempts to generate change have centered on reduction of inequality.

Other scholars (e.g., Greenberg & Jonas, 2003) have criticized this argument, pointing to mismatches between the two sub-dimensions when conservatives support change. However, Jost counters that change must be understood as relative to the "perceived distance from desired behavior". Most changes advocated by conservatives are, in fact, either incremental in that they avoid bigger changes or retrograde, in that they restore a previous status quo (Jost, 2009; Jost, Glaser, Kruglanski, & Sulloway, 2003a). An interesting extension of this argument is a rejection of the claim that 'desire for big government' has any systematic relationship with left-leaning ideological preferences. Instead, this belief is described as a misleading artifact of right-wing political rhetoric (Jost, 2009).

Because the field of political behavior has been most richly elaborated within American scholarship, the two-party system in the United States looms large throughout the literature where it provides implicit support for a one-dimensional conceptualization of the ideological state space. Thus, US political behavior and public opinion can generally be mapped along one-dimension. For instance, congressional roll call votes are best described using a single-dimension since the relative positioning of representatives across different issue domains remains constant over time. Only the issues of slavery and civil rights briefly necessitate a second dimension to fully map congressional voting behavior (Poole and Rosenthal, 2007). Other scholars suggest that mapping political attitudes among voters only requires a "one plus" dimension. The dominant dimension describes preference for size of government/welfare state and has the largest explanatory power. A second, weaker dimension appears to describe "hard-line" vs. "soft-line" preferences, for instance with respect to crime policy. However, this dimension is more difficult to interpret and may simply be a mathematical artifact of political issues that have not yet been projected onto the dominant ideological cleavage (Stimson 2004).

A related variant more common in popular discussions than in the academic literature adopts a single left-right dimension, but varies an individual's left-right placement by issue domain. An individual can be thus described as economically conservative but socially liberal. However, this approach relies on an implicit multidimensional state space, with one dimension for each salient issue domain. Furthermore, there is little empirical evidence that the public's attitude is actually structured by distinct social and economic dimensions (Stimson 2004, 70).

By far the most frequent criticism of the one-dimensional perspective is that it abstracts too heavily, concealing more than it reveals. A common argument points out that several prominent ideologies are poorly captured on a left-right scale, notably libertarianism; in fact, even the psychological underpinnings of libertarianism appear distinct, with suggestions that libertarians

structure their ideology along far less affective terms, holding a belief system with less emotional components (Iyer, Kolev, Graham, Ditto, & Haidt, 2010).

1.2 A two-dimensional state space

Two-dimensional characterizations of the ideological state space are also common. Rokeach provided one of the early influential mappings of political values, highlighting two dimensions: one measuring relative support for equality and the other measuring relative support for freedom (1973). He famously associated the resulting quadrants with political systems: fascism (low freedom, low equality), capitalism (high freedom, low equality), communism (high equality, low freedom), and socialism (high freedom, high equality). Follow-up investigation of Rokeach's factors provides a mixed picture, with his equality dimension holding up well but his freedom dimension failing on a number of fronts (Braithwaite, 1997; also Cochrane, Billig, & Hogg, 1979). Another early but influential two-dimensional mapping contended that political attitudes could be classified along both a radicalism-conservatism dimension and a tough-mindedness-tender-mindedness dimension (Eysenck, 1954).

More recently, researchers have increasingly used two personality factors as dimensions along which political attitudes can be distributed. Social dominance orientation (SDO) ranks "preference for inequality among social groups" (Pratto, Sidanius, Stallworth, & Malle, 1994), and right-wing authoritarianism (RWA) captures aggression, submissiveness to authority, and respect for tradition and norms (Altemeyer 1981). The SDO and RWA measures were developed to describe personality traits. However, *dual process theory* proposes that RWA and SDO scores can also allow a two-dimensional mapping of an individual's "sociological or ideological attitude" (Sibley & Duckitt, 2008). Further research has disaggregated these measures to explore the range of political behavior that they predict. For instance, different RWA and SDO scores generate distinct classes of authoritarianism (Akrami & Ekehammar, 2006).

Inglehart proposes still another two-dimensional system, drawing on decades of cross-national values research. This research maps political values on two axes. A first contrasts traditional and secular-rational value systems. A second axis contrasts value systems focused on survival with those focused on self-expression (Inglehart & Welzel, 2010). This approach builds on previous work that identified a materialism/post-materialism dimension as critical to understanding changes in cross-national political attitudes. The materialism dimension contrasts material values such as economic prosperity with post-material values such as self-expression and quality of life (Inglehart, 1997).

Braithwaite has developed a map of the social and political that proposes a preference-for-security dimension and a preference-for-harmony dimension, with each dimension operationalized as a cluster of related goals (Braithwaite, 1997). This schema attempts to improve on Rokeach, working from the idea that the "freedom" in the Rokeach scale is an

ambiguous dimension (Braithwaite, 1997; Braithwaite, 1998a). This work also identifies two additional values (*religiosity and personal restraint* and *personal accomplishment*) that have some additional explanatory salience (Braithwaite, 1998b). These axes define four quadrants of political values that are described as security-oriented, harmony-oriented, dualist and moral relativist (Braithwaite, 1998a). While the first two quadrants map nicely onto right vs. left distinctions, the latter two quadrants do not, combining elements usually associated with both positions.

Still another two-dimensional schema is Cultural Theory, a framework proposed by Douglas to classify individual orientation towards risk that has since been used to describe individual worldviews more generally (Douglas, 1970). Here, one axis ("group") describes the salience of group membership to personal identity, while the second ("grid") describes the acceptance of rules or regulations in everyday life. Individuals can then be placed in one of four worldview quadrants that are: individualists (low group/low grid), fatalists (low group/high grid), egalitarians (high group/low grid) and hierarchs (high group/high grid).

1.3 A multidimensional state space

A smaller group of ideological theories invoke multi-dimensional state spaces. Since, these theories do not lend themselves well to spatial mapping; the language of these theories tends to move away from explicit use of spatial metaphors. As with the two-dimensional theories, these theories are oriented towards somewhat incompatible objects of study and can be difficult to compare.

Haidt's moral foundations theory holds that ideologies are rooted in moral intuitions, deep-rooted reactions to social organization that are hard-wired by evolution into our minds (Haidt 2012). In particular, Haidt has identified five core moral foundations: Harm/care, fairness/reciprocity, in-group/loyalty, authority/respect, and purity/sanctity. More recently, he added a sixth foundation: liberty/oppression (Haidt 2012). These values are derived from a thorough review of the primary literature in anthropology and evolutionary psychology, rather than from factorial analysis survey data.

Haidt groups his six foundations into two overarching sets: individualizing norms and binding norms. These two sets can be described as a two-dimensional state space that maps loosely onto Rokeach's equality-freedom model: (Haidt, Graham, & Joseph, 2009). Using the binding/individuating axes, moral foundations theory highlights four worldviews, each attached to one quadrant: secular liberalism, libertarianism, the religious left, and social conservatism (Haidt et al., 2009).

In another theory that draws from extensive cross-national work, Hofstede proposes five dimensions to classify national cultures. These dimensions are *power distance*, which describes the degree of societal inequality, *uncertainty avoidance*, *individualism vs. collectivism*,

masculinity vs. femininity, and *long-term vs. short-term orientation* (Hofstede 2001). The anomalous use of gendered dimensions deserves some explanation. In Hofstede's conceptualization, societies described as masculine have gendered expectations about appropriate emotional behavior, including an apparent male focus on material success and a female focus on quality of life. By contrast, in societies described as feminine, there are no such gendered expectations (Hofstede 2010). Drawing from work on the World Values Survey (Inglehart's data set), Hofstede's more recent work suggests a sixth dimension that captures social *indulgence vs. restraint*.

Other multidimensional constructs exist, though their relevance to the question of the structure of the ideological state space is less clear. For example, relational model theory suggests four dimensionless categories to describe the cognitive models that individuals use to evaluate their social relationships (Haslam & Fiske, 1999).

Still another approach can be found within the political values literature. For example, Zaller argues against a one-dimensional characterization of ideological content, instead reframing ideology as a "constellation of related value dimensions" (Zaller 1992, 26). At the same time, Zaller argues that individual scores in these different dimensions still tend to be at least moderately correlated and thus, while dimension specific measurements of attitudes are preferable, a one-dimensional left-right construct still captures a meaningful part of the variation in political beliefs.

In fact, building from a seminal article by Converse (1964), there are a number of studies that suggest that the relationship between different issue domains becomes tighter with increasing political sophistication. From this perspective, ideological thinking is synonymous with well-organized attitudes, where the relationship between different dimensions is "constrained" (Luskin, 1987). This is because political knowledge allows individuals to understand the relationship between different issue domains and relate these to abstract ideological labels. Thus, partisan elites have the most ideologically consistent belief structures, and politically active individuals have more coherent attitudinal beliefs than a politically inactive public (Jennings, 1992). By contrast, other scholars believe that mass public opinion is far more structured than this research suggests, and attribute the instability in public attitudes to survey techniques and measurement error (e.g. Achen, 1975; Ansolabehere et al., 2008).

In the context of the state space metaphor, this literature nonetheless raises the intriguing idea that the structure and dimensionality of the state space varies by individual and degree of political sophistication. However, the relationship between the literature on mass public opinion and the political psychology literature on ideology remains ambiguous, partly because the conceptual relationship between "values", "attitudes" and "ideology" is not always clear.

1.4 Interrogating spatial approaches to mapping ideologies

Clearly, the current scholarship provides little guidance on the appropriate number of dimensions necessary to map ideological positions. It is also difficult to arbitrate between competing characterizations of the ideological state space. Few scholars explicitly articulate the relationship between their frameworks and competing dimensions, except to criticize the others' inadequacy. In part, this fragmentation is a function of the subtly different domains that each attempts to describe. For instance, among two-dimensional proposals, Cultural Theory is focused on classifying risk worldviews, RWA/SDO axes classify personality dispositions, and Inglehart is focused on differences in national value systems. There is no reason to believe that such different psychological domains should have identical structures and, yet, each speaks to critical cognitive and affective differences that could shape ideological attachment. Much more work is needed to evaluate these different descriptions of the ideological state space proposals in a comparative perspective and sort the useful from the misleading.

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Further work is also required to validate the assumption that a spatial approach is the appropriate way to conceptualize ideology. The nature of dimensionality has received some attention in the literature. The left-right distinction tends to be framed as a *bipolar* dimension, in that left-wing and right-wing positions are defined as opposing belief systems (Federico, 2007). However, an alternative position argues that "left" and "right" ideological positions are better understood as *bivariate*: distinctive sets of beliefs that are not inherently opposite. This idea was first seriously advanced by Kerlinger (1967) who argued that ideologies were clusters of attitudes that respond to sets of "criterial referents," understood as classes, categories or phenomenon in the world that trigger individual attitudinal judgments. To Kerlinger, liberal and conservative ideologies are not defined in relation to one another, but instead have independent meaning in relation to independent sets of referents. He thus suggests that conservatism responds to such social referents as private property, religion, tradition, discipline, individual initiative, neighborhood schools, patriotism and loyalty. By contrast, liberalism emerges in relation to such referents as social progress, social change, civil rights, racial equality, separation of church and state, government aid to education, and rationality. In practice, Kerlinger argues that some dichotomous sorting of ideologies can occur, but this is post-hoc and derives from our need to parse the universe of referents into criterial and non-criterial spaces. For example, he suggests that children within a conservative household will "interiorize" referents that are associated with conservative ideology, and then classify all other referents as non-criterial. Note that non-criterial referents for any specific individual can thus apparently include both referents that are criterial to the ideology of others and referents that have no ideological content (Kerlinger, 1967).

The tendency to assume bipolarity of ideological dimensions is sometimes attributed to a cognitive preference for bipolar mappings. In practice, individuals with higher levels of expertise

and a higher tendency to engage in evaluative thinking can move beyond this default position, and conceive of political attitudes in less bipolar terms (Federico, 2007).

In fact, a propensity to classify ideology along a limited number of dimensions may be a function of the ease with which humans can relate to low-dimensional spaces. From this perspective, we map the abstract terrain of ideologies using low-dimensional spatial maps, not because this approach is well suited to the representation of ideological content, but because such maps are the tools we are most comfortable with. More optimistically, ideologies, as cognitive constructs themselves, may be shaped by the same cognitive limits as our representations of ideologies. In a best scenario, ideologies may be the low-dimensional structures we attribute to them by convenience. However, such possibilities remain speculative and are flagged here primarily as avenues for further research.

Symmetry is a final property of dimensions that deserves consideration. Symmetry is best understood not as a descriptive feature of the dimension itself, but instead as a property of the realized distribution of ideological adherents across a dimension. Thus, symmetric distributions have an equal number of ideological adherents at equal distances from the center of the dimension. For example, there has been a long debate in political science on the equivalence of left-wing and right-wing extremism. The most recent meta-analysis of this topic finds evidence of asymmetry between the left and right, suggesting that right wing authoritarian beliefs must be understood as more extreme (Jost, Glaser, Kruglanski, & Sulloway, 2003b). This finding is best understood by suggesting that right-wing extremists are located further out along the right-wing side of the dimension than their left-wing counterparts.

Deeper issues about the appropriateness of the state space metaphor must also be confronted. Critics cast doubt on the appropriateness of thinking about ideologies within a spatial framework at all. For example, to Conover and Feldman ideologies are most important for their symbolic role (Conover & Feldman, 1981). Rather than focusing on the architecture of the ideological state space and the effects of ideological content, Conover and Feldman would focus exclusively on treating ideologies as a political symbol, and focus on the social differentiation that ideological attachment provides. A full treatment of this literature is beyond the scope of this current draft, but it is worth flagging that the very notion of an ideological state space meets with resistance from some scholars.

A related problem is that appropriate dimensions may be culturally-dependent and historically-contingent. Earlier we saw that the salience of the left-right distinction as an organizing framework may be rooted in Western political history. For example, economic conservatism has been flagged as a culturally-dependent belief system (Kossowska & Hiel, 2003) while both Inglehart and Hofstede's work (see above) explicitly models this type of cross-cultural variation.

This raises the importance of separating cultural differences in ideological expression from cultural differences in the dimensionality of the ideological state space. As long as culture is

simply determining which parts of the state space are salient, then it does not threaten the state space metaphor. Hence, cultural dependence simply reduces the state space of possibility to the set of existing points within that space. In this framing, we should interpret Jost's defense of the left-right continuum as misleading. The state space he describes is actually described by his two sub-dimensions, but only a part of that state space is available to contemporary actors. On the other hand, if cultural change can also change the ideological dimensions themselves, then the conceptualization of a state space of ideological possibility becomes significantly more complex.

Part II: The determinants of ideological attachment

Describing the structure of the ideological state space is only the first task in deriving a theory of ideological change. A second critical task is to understand the determinants of ideological attachment. Specifically, what factors predict the ideological positions that individuals adopt?

A wide variety of genetic, physiological, cognitive, social, material, and political factors have

> **"A second critical task is to understand the determinants of ideological attachment."**

been suggested as determinants of ideological attachment. Of course, no factor is fully independent of others, and the determinants of ideology bridge all of these levels of analysis through complex cross-scale interactions. These interactions have been understudied. This report summarizes the evidence at each level in turn, but leaves research that describes their integration to Part III.

It is also worth emphasizing that, despite the diverse work proposing complex categorizations of political attitudes described in Part I, most work on the determinants of ideological attachment assumes that ideology is a bipolar dependent variable, measuring ideology using a simple liberal-conservative scale.

2.1 Genetic determinants of ideological attachment

A growing body of literature suggests a genetic basis for political attitudes, drawing from both twin studies (Alford, Funk, & Hibbing, 2005; Bell, Schermer, & Vernon, 2009) and genome-wide analyses (Hatemi et al., 2011).

That political attitudes and ideology should have a genetic component is hardly surprising. An individual's genetics at least partly influences most psychological traits (Bouchard, 2004). Further, disposition towards order and rules may have a biological basis (Smith et al., 2011).

Twin studies have found suggested links between genetics and political attitudes (Alford et al., 2005), though not always to political party identification (Bell et al., 2009). Generally, when comparing identical and non-identical twins, as much as half of the variance in partisanship can be explained by genetic factors (Settle, Dawes, & Fowler, 2009). Some researchers have expressed skepticism about these results, arguing that they can be entirely explained by non-genetic factors (Joseph, 2010). By contrast, exploratory genome-wide analyses have identified genetic regions on chromosomes 2, 4, 6, and 9 that might help predict liberalism or conservatisms (Hatemi et al., 2011). These regions suggest a potential role for NMDA and glutamate receptors (often linked to cognition in terms of information processing and abstract

learning) in determining political ideology, as well as serotonin receptors (Hatemi et al., 2011). More speculatively, this research intimates a potential role for dopamine receptors and the genes related to the olfactory system, which are speculated to indirectly shape ideology through their effects on relationship and reproductive choices (Hatemi et al., 2011).

That there is a genetic or phenotypic component to political attitudes could help explain the relative durability of ideological cleavages over time (Alford et al., 2005). One proposal speculates that there may be two ideological phenotypes, one with a social orientation that prioritizes in-group solidarity and moral rigidity and another that is more communitarian and morally flexible. These are described as "absolutist" vs. "contextualist" positions, and are mapped onto a diverse range of societal fault lines (Alford et al., 2005). An interesting consequence of conceiving of the ideological state space as influenced by biological factors is that it troubles constructivist arguments that ideologies emerge as bipolar ideational constructs. Instead, it suggests that an individual's ideological attachment is, at least in part, rooted in fixed biological attributes that place scope conditions on the potential for migration across the ideological state space.

2.2 Physiological determinants of ideological attachment
A related literature has investigated the physiological basis of political attitudes, (Amodio, Jost, Master, & Yee, 2007; Chiao, Mathur, Harada, & Lipke, 2009). For instance, liberals appear to have more gray matter in the anterior cingulated cortex, while conservatives have more gray matter in the right amygdala (Kanai, Feilden, Firth, & Rees, 2011). These differences may be largely genetic in origin, or they could reflect a combination of genetic and environmental determinants.

In one study, participants were subject to a Go/No-Go study, where an habitual response is cultivated, and where an only occasional No-Go signal is provided, prompting avoidance of the habitual response. Conservatives had a higher persistence of the habitual response behavior, associated with a lower anterior cingulate activity(Amodio et al., 2007). The authors conclude that conservatives are better adapted to tasks in which a "fixed response style" is appropriate. Heightened neural responses within the left anterior insula and anterior cingulated cortices were also predictive of a preference for egalitarian versus hierarchical societies (Chiao et al., 2009). Heightened amygdala activity in response to simulated electoral situations appears consistent cross-culturally (Rule et al., 2010). However, within the US amygdala activity is stronger in Republicans, while insula activations are stronger in Democrats (Schrieber et al., 2005).

Effects have also been identified at the level of the body. Individuals with lower sensitivity to threatening images and noises, measured by skin conductance and automatic blinking responses, were more likely to support a cluster of policies typically framed as liberal.

Conversely, heightened sensitivities predicted increased attachment to more conservative positions (Oxley et al., 2008a).

Other scholars contest the idea that the physiological precursors of complex political beliefs can be reduced to a single liberal-conservative dimension. In one fMRI study, researchers identified three separate dimensions of political attitudes, each associated with neural activation in a different region of the brain: individualism in the medial prefrontal cortex and temporoparietal junction, conservatism in the dorsolateral prefrontal cortex, and radicalism in the ventral striatum and posterior cingulated (Zamboni et al., 2009).

2.3 Psychological determinants of ideological attachment

The field of political psychology has offered a number of explanations for ideological attachment. These can be crudely grouped by their focus on cognition/affect, morality, and personality.

Cognition/Affect

According to one influential position, conservatism should be understood as a form of motivated social cognition. Drawing from a meta-analysis, positive predictors of conservatism are: death anxiety; system instability; intolerance of ambiguity; need for order, structure, and closure; and fear of threat or loss. Negative predictors of conservatism are: openness to experience; uncertainty tolerance; integrative complexity; and, weakly, self-esteem (Jost, Glaser, Kruglanski, & Sulloway, 2003b). This suggests that, through a variety of mechanisms, conservatism can be understood as helping uncertainty avoidance and threat management. While these functions are often framed as psychologically beneficial, other consequences of conservatism may well be harmful to psychological health and wellbeing, including increased incidences of depression and trauma (Bonanno & Jost, 2006).

Of these predictors, the issue of integrative complexity deserves special attention. Integrative complexity arises when an individual has to reconcile competing values in their evaluation of a policy issue (Tetlock, 1986). Thus, there is a basic distinction between monistic ideologies that prioritize single values and pluralistic ideologies that prioritize many values.

If integrative complexity is higher in liberals – meaning more complex cognitive constructs are necessary to justify liberal positions - it is also worth asking whether there is anything inherently complex about liberalism. The record here is less clear. It is possible that the integrative complexity of liberalism is a function of social context, rather than being general to liberalism across time. Thus, for example, some evidence suggests that in Antebellum US, moderates (free-soil Republicans/Buchanan Democrats) held a higher level of integrative complexity than either leftist abolitionists or right-wing slavery supporters. This difference is linked to the increased

incoherence of the moderate conservative position in relation to established economic and social practices at the time (Tetlock, Armor, & Peterson, 1994). Similarly, there is mild evidence for a similar effect in US politics about homosexuality. Liberals easily integrate their belief in gay rights with their distaste for unfair discrimination against homosexuals. However, conservatives struggle to reconcile issues of gay marriage with gay rights, with beliefs about individual liberty conflicting with conservative beliefs about family structure (Haidt & Hersh, 2001).

Morality

If the picture painted by these theories is largely unsympathetic to conservatism, moral foundations theory is far more generous. Haidt finds substantial differences between the moral concerns that underlie conservative and liberal beliefs. Liberals only use individualizing foundations, but conservatives rely on both individualizing and binding foundations and thus have a more variegated moral domain (Graham, Haidt, et al., 2009). Similarly, while liberals and conservatives can correctly identify the direction of moral differences, both groups, liberals particularly, exaggerate the size of these ideological differences (Graham, Nosek, & Haidt, 2009). Further, there is also some evidence that, because liberal moral concerns are a subset of conservative moral concerns, conservatives are able to understand liberal positions better than liberals can comprehend conservative positions (Graham, Nosek & Haidt, 2009).

Moral foundation theory argues that affective reactions precede rational considerations (Haidt, 2007). Humans evolved well-developed affective capabilities earlier than deliberative faculties. Consequently, affective reactions continue to be the primary mechanism humans use to process experiences (Haidt 2007). Thus, in the domain of morality, deliberative moral reasoning is largely a post-hoc explanation for affective, moral intuitions (Haidt, 2001). In practice, there are three ways to "override" moral intuitions: conscious verbal reasoning, reframing of the situations, or "talk[ing] with people" who might bring new intuitions or facts to bear. However, these faculties do not appear to be well developed, except within the minds of Western, educated liberals (Haidt, 2007).

Personality

A rich literature has also developed linking personality psychology and ideology. In particular, one of the big-five traits – openness to experience – is well correlated with liberalism, which personality psychologists often understand as a dispositional factor. There is also limited evidence that agreeableness can predict political positions, but this correlation is weaker and secondary (McCrae, 1996).

Other types of political behavior have distinctive personality correlates. For example, political and civic engagement is particularly related to extraversion (Gerber, Huber, Doherty, & Dowling, 2010). However, we know less about how civic engagement affects ideological attachment. We

thus lack a robust theoretical understanding of how these different relationships piece together into a wider theory of political behavior, though the links between personality and political behavior is an area of significant ongoing research (see in particular Mondak, 2010). Generally, a theoretical explanation for the distinct ways in which personality shapes ideological attachment across different levels of analysis is still needed.

RWA and SDO personality factors also correlate with political attitudes (Sibley & Duckitt, 2008). In turn, both factors are linked to the big-five personality traits: RWA loads onto low openness to experience and high conscientiousness, and SDO onto low agreeableness and low openness to experience (Sibley & Duckitt, 2008). In examining the effects on prejudice, SDO accounts for the effects of Agreeableness on political attitudes and RWA accounts for the effects of Openness to experience (Sibley & Duckitt, 2008). A separate study found openness-to-experience to be the best predictor of RWA, and both openness-to-experience and agreeableness as important to SDO (Akrami & Ekehammar, 2006). Again, while these individual findings are clearly relevant to an integrated theory of ideological attachment, we lack such an integrated account of personality and political behavior.

2.4 Material, social, and institutional determinants of ideological attachment

The material determinants of ideological attachment have been studied extensively in political science. However, the results remain ambiguous. For instance, the relationship between affluence and beliefs is difficult to identify causally since – despite a general association between wealth and higher levels of conservatism – it is unclear whether affluence leads to more conservative attitudes or conservative attitudes help accumulate wealth, or whether both are true to some degree. One recent article used income increases from lottery winnings to assess the causal effect of affluence on political attitudes. While increased wealth changed preferences for certain specific redistributive policies (e.g., estate taxes), it did not shift political attitudes generally (Doherty, Gerber, & Green, 2006).

There is also a growing body of work that assesses the ways in which social relationships shape political attitudes. Early work focused on the transmissions of ideologies through families, which appear most pronounced by late adolescence and early adulthood, persisting unless social dynamics change (Jost, citing Alwin, Cohen, & Newcomb, 1991).

Researchers are also beginning to untangle the complex genetic-environmental links that mediate social influences on ideological attachment. For instance, among those individuals who possess one particular dopamine receptor gene variant, increased numbers of friendships in late adolescence predict subsequent adoption of liberal values; however, for those individuals lacking the gene variant, no such association is observed (Settle, Dawes, Christakis, & Fowler, 2010).

Of course, any study of the determinants of ideological attachment also needs to address the growing literature across the social sciences that describes the considerable influence of our social networks and friend groups on our habits, beliefs and values, from obesity (Christakis & Fowler, 2007) to happiness (Fowler & Christakis, 2008). The role of social networks in shaping the transmission of ideologies is still underdeveloped, but the issue seems to be increasingly on the research agenda for scholars working with network analysis.

We can also consider the ways in which system-wide political or institutional structures shape ideological attachment. System justification theory argues that ideological attachment is contingent on an individual status within prevailing political and economic institutions. Broadly, individuals tend to adopt ideological positions that rationalize prevailing social arrangements (Jost, Banaji, & Nosek, 2004). For instance, disadvantaged individuals adopt ideological positions that rationalize their status, often through adopting beliefs about their inferiority. Conservatism is then understood to be a form of "system justification" (Jost, Glaser, Kruglanski, & Sulloway, 2003b). This theory also has implications for social determinants of ideological positioning since it predicts with increased conservatism, high-status individuals are more inclined to favor in-groups and low-status groups will favor out-groups (Jost, Banaji, et al., 2004).

Braithwaite provides another sophisticated account that links political attitudes with political institutions (see Part I for model details). While individuals generally hold both harmony and security values, institutional constraints and a combative political arena force individuals to trade off their preferences and, in effect, choose one side of the more traditional left-right scale (Braithwaite, 1998a). Put otherwise, institutional constraints force individuals to reduce a multidimensional ideological set of attachments into a one-dimensional space of political possibility. One interesting extension of this conceptualization is that the values underlying otherwise incompatible political positions may be fairly compatible (Braithwaite, 1998a). If individuals attach themselves to the left-right continuum because of the constraints of political institutions, then new institutions could allow other value configurations to surface in the broader social and ideological discourse with different policy implications.

Few psychological theories of ideology speak directly to these political and institutional issues that were central to the early concerns of political theorists. However, political and institutional factors are richly discussed in the literature on public opinion, political parties, and attitudes within political science. This is a literature that covers hundreds of articles and cannot be adequately treated here. However, it is worth emphasizing that when US political science moved away from ideology as a concept, it did not abandon efforts to understand political behavior. This literature has carefully studied the relationship between institutions and political values. For instance, it can be easier to build stable political coalitions within US political institutions by projecting issues onto a single dimension of political debate (Poole and Rosenthal, 2007).

Similarly, much more work is necessary to elaborate the relationship between debates on mass public opinion and the recent political psychology scholarship on ideology. For example, one of

the key debates in the public opinion literature centers on whether public opinion is driven by elite cues (Zaller 1992) or by more individualized judgments. Evidence is mixed, with suggestions that group beliefs dominate the individual (Cohen, 2003) or that individuals continue to actively determine their own political opinions through reflection and evaluation (Bullock, 2011). These debates have broad relevance to discussions of the determinants of ideological positioning and should be more formally canvassed moving forward.

2.5 The effects of ideological diversity

A topic that has received only marginal attention but which deserves much more focus is the potential value that ideological diversity might have to a society. For instance, in discussions of the links between genetic diversity and ideology, some authors speculate that "divergent" individual-level behaviors might increase group fitness, intimating that there is social utility to divergent ideological positions (Alford & Hibbing, 2004; Alford et al., 2005). Other political scientists emphasize that perverse political outcomes can be triggered by too little ideological diversity. In the absence of distinct ideological differences, politicians can have to resort to less ethical practices, such as vote-buying, in order to gain political support (Stokes, 2005). At the same time, we should not assume that ideological diversity is necessarily a positive feature of a social system. For example, moral diversity can create social tensions reducing desire for social interactions and thus weakening social capital (Haidt, Rosenberg, & Hom, 2003).

Part III: The dynamics of ideological change

Having reviewed research that attempts to describe the ideological state space and the determinants of ideological attachment, we can now discuss theories of ideological change. Surprisingly, work that directly addresses how ideologies change over time is sparse within the political psychology literature.

This section begins by consolidating material presented in Part II, describing theories that describe cross-scale interactions and that often include a dynamic element. The section then concludes by describing more limited existing literature on ideological change and persistence.

"…work that directly addresses how ideologies change over time is sparse…"

3.1 Cross-scale theories of ideological attachment

Few of the determinants of ideological attachment described in Part II can be understood as independent causal drivers. Instead, they combine interactively to shape an individual's ideological outcomes. Few scholars have confronted these interactions explicitly.

One proposal, advanced by system justification theorists, relies on the idea of "elective affinities": forces that connect people with the ideologies that suit them (Jost, 2009). These forces are a combination of top-down and bottom-up processes. Top down-processes include traditional determinants at political and institutional levels, including elite communication, political parties, and media messaging. Bottom-up processes describe factors at the psychological and biological level (Jost, 2009). This is an appealing metaphor but one that does not enrich our understanding of the ideological state space. Instead, it seems intended to reassert the importance of bottom-up psychological processes in shaping ideological attachment, in response to skeptics within more traditional political science literature. Assertions that political attitudes are a joint function of personality, genetics and contextual factors, with disposition interacting with environmental stimuli seem increasingly common (e.g. Mondak et al., 2010). However, unless these claims can be delivered in more specific terms that are sensitive to specific causal and theoretical pathways, it is unclear how far they advance the understanding of ideological change.

Another research direction emphasizes the role of narrative in shaping ideological attachment. By creating meaning, narratives provide ideologies with their psychological resonance (Hammack, 2008). The most sophisticated example of this approach is an attempt to integrate moral foundations theory and a "three level account of personality". This theory holds that there are three levels of personality. Level 1 consists of dispositional traits, which are decontextualized and universal and include the big 5 personality traits. Level 2 consists of

characteristic adaptations, which include goals, values and other more context-specific and pliable individual traits. Finally, Level 3 consists of integrative life stories , which are essentially narrative meaning-making structures (Haidt et al., 2009; McAdams, 1995; McAdams & Pals, 2006). Haidt portrays the left-right continuum and much work in political psychology as chiefly concerned with describing Level 2, manipulating Level 2, or linking levels 1 and 2. By contrast, he argues that moral foundations theory is a Level 2 construct that provides the link to Level 3 narrative identities. Ideologies are implicitly understood as emergent Level 3 narratives (Haidt et al., 2009).

This framework can be used to construct coherent pathways that might describe an individual's development and migration across the ideological state space. For instance: people with low disgust and high openness to experience (Level 1) will be more drawn to liberalism (Level 2). However, if they also have individualism and low empathy, they may feel uncomfortable with the altruistic and redistributive complex within liberalism. Then, a very strongly developed libertarian master narrative (Level 3) feeds back to shape their Level 2 goals (Iyer et al., 2010). Note the causal arrows move across scales and in both directions.

3.2 Migration through the ideological state space

By contrast, there is surprisingly little literature that directly confronts the issue of migration through the ideological state space.

Some of the work that skirts the issues does so in a fairly narrow sense. For example, system justification theory holds that when people feel more threatened and face increasing uncertainty, they become more conservative (Jost, 2009). Even liberals, under threat, think more like conservatives, both politically and psychologically (Nail, McGregor, Drinkwater, Steele, & Thompson, 2009). Ironically, accounting for close-mindedness can reduce the apparent importance of threat to ideological change (Jost et al., 2007).

Similarly, systemic threats, by increasing uncertainty, increase the salience of conservative ideology. High-exposure survivors of 9/11 were found to be more likely to shift towards conservatism (Bonanno & Jost, 2006). Further this threat avoidance and uncertainty management seem to be a function of conservatism, not ideological extremism more generally (Jost et al., 2007) Similar effects can be identified at the level of political preferences, although this literature is too large to review here.

Yet more evidence on this front comes from terror management theory, which argues that reminders of our mortality cause worldview defense and ingroup solidarity with those who share an individual's worldview (Greenberg et al., 1990) Such mortality "primes" also increase the salience of symbols associated with a worldview, for instance nationalistic symbols (Arndt, Greenberg, & Cook, 2002). Further, under the related uncertainty management theory,

uncertainty appears to have a more powerful psychological effect than mortality reminders (Vandenbos et al. , 2005).

Terror management theory also emphasizes the impact of traumatic life events. The death of a loved one reinforces existing ideological beliefs. Although the effect was stronger for conservatives, liberal participants did tend to become more strongly committed to their liberal worldview, rather than moving towards conservatism (Chatard, Arndt, & Pyszczynski, 2010). Alternatively, secure interpersonal relationships switch the apparent impact of mortality reminders: attached people move towards liberalism under threat, whereas less securely attached individuals move towards conservatism (Weise et al., 2008).

Still, these various studies examine changes in ideological attachment at the margins. In practice, ideological commitments appear fixed at the individual level. Thus, conservative and liberal adult attitudes can be broadly predicted by preschool personality characteristics. Young children who develop into liberals tend to be described as "developing close relationships, self-reliant, energetic, somewhat dominating, relatively under-controlled, and resilient." By contrast, children who become conservative tend to be described as "feeling easily victimized, easily offended, indecisive, fearful, rigid, inhibited, and relatively over-controlled and vulnerable" (Block & Block, 2006). Here again, some subtle differences across genders are reported. The implication, though, is that political attitudes predate conscious understanding of the political domain. The same results also hold more generally for political attitudes, which appear extremely stable over time (Sears and Funk, 1999).

This stability is also present over multiple generations. A great example is the surprising stability in political voting patterns over time in the face of significant disruptions. For example, the best predictor of political preferences in Hungary after the collapse of the Warsaw pact was pre-Communist electoral results, even though the Hungarian Communist state had disrupted economic, institutional and political lives over decades and generations. Here, the persistence of religious institutions can help explain this variation (Wittenberg, 2006), but this specific conclusion speaks more generally to the apparent stickiness of political attitudes over long time-periods, even in the face of otherwise enormous social changes. Of course, a complementary research stream links the persistence of political attitudes to the physiological and genetic basis for their expression, suggesting they might, in effect, be biologically sticky because they are rooted in a population's genetic pool (Oxley et al., 2008b).

Stickiness is even present over centuries. In particularly dramatic examples, medieval pogrom locations are a strong predictor of 20th century anti-semitic violence and Nazi support (Goldin et al., 2011), and social organization in medieval Italy appears to predict economic performance in the 20th century (Putnam 1993). Many of these results emphasize the importance of social capital and political institutions as important to long-term stasis, and these would seem to have the potential to shape movement in the ideological state space at similar levels of analysis. However, accounts of this sort move into the domain of culture, and are more easily integrated

with sociological treatments of ideology, as presented by Freeden (2003) and Maynard (2012). These literatures, such as the work of Skinner (2002), describe ideological change directly as a function of shifts in political power configurations. However, this work speaks more uncertainly to the individualist and psychological account of ideology summarized in this paper.

Finally, it is worth very briefly considering the role of new issues in shaping pre-existing ideologies. This matter has rarely been studied at a population scale but has been the topic of considerable research at the individual issue scale. For example, when such new political issues as environmentalism emerge onto the political agenda, beliefs about these political issues split according to pre-existing ideological cleavages, rather than creating new ideological divisions (Anderson & Stephenson, 2011).

Stimson provides one of the best-developed accounts of this phenomenon, suggesting that new political issues become somewhat arbitrarily ideologically bundled with existing ideological structures. Up to a critical point, a diversity of positions is held within a given political party. However, symbolic events cause a sorting of individuals between parties as the issue becomes defined as a partisan or ideological belief. Critically, this sorting is not immediately absolute. Party members who joined before the sorting often retain their earlier issue belief alongside their party membership. However, new generations of politicians and publics hold much more homogenous views on the ideological issue. This means that, over time, issues polarize into competing ideological bundles (Stimson, 2004).

Conclusion: Towards an integrated theory of ideology

This report emphasizes three nested questions that are foundational to any integrated theory of ideology. First, how should we map ideological content? Second, what determines individual ideological attachment? Third, how can we explain ideological change?

Answers to these questions are necessarily interrelated. To develop an account of ideological change, we need to understand the determinants of ideological attachment. To understand ideological attachment, we need to have some understanding of the structure of the space in which these ideologies are located. Put otherwise, we cannot describe movement without first understanding the initial position of a moving object and the structure of the space in which the object moves. Thus, the literature's fragmented understanding of ideological change may be rooted in scholars' continued inability to appropriately map ideological content and predict ideological attachment.

The elucidation of cross-scale linkages is critical to this effort. Genetic, physiological, cognitive, social, material, and political factors all need to be brought together into an integrated cross-scale theory of ideology. No explanatory level is independent and the true determinants of ideology bridge all of these levels of analysis through complex cross-scale interactions. Some preliminary cross-scale findings are already apparent in the current literature, such as the complex relationship reported between genetics, social networks and ideology (Settle, Dawes, Christakis, & Fowler, 2010). Alternatively, the psychological focus on threat and fear management as crucial to ideological positioning resonates with conclusions from the biological determinants of ideological attachment, since the amygdala is believed to be involved in fear conditioning (Phillips et al. 1992; Rogan et al. 1997). Uncovering such cross-scale linkages for genetic, physiological and psychological determinants of ideology is increasingly a focus of political psychology. However, social, political and institutional factors remain more marginal to these research efforts and need to be brought into cross-scale accounts of ideological positioning.

"The elucidation of cross-scale linkages is critical…"

At the same time, individualist approaches to conceptualizing ideology must account for the relationship between individual mental states and the collective beliefs of groups. They also need to understand the specific role of political and social institutions in structuring mental representations. Here, the individualist literature on ideology would benefit deeply from a more thoughtful engagement with the sociological and political theory literature on ideology. The promise of such dialogue is already apparent in the complex interplay between political institutions and ideology. For example, we might hypothesize that institutional constraints force

individuals to reduce a multidimensional ideological set of attachments into a one-dimensional space of political possibility.

Other approaches to categorizing the literature on ideology have been proposed. Maynard (2012) classifies the literature on ideology by its methodological orientation, sorting scholarship by its commitment to a conceptual, discursive, or quantitative approach. Within Maynard's typology, this report can be understood as disaggregating a quantitative approach, although the material presented here makes clear conceptual claims as well. Yet, bundling the diverse literature reviewed here into a single category on the basis of shared epistemology masks critical differences in approach and substance.

In approach, at least three major intellectual cleavages structure the broader literature on ideology:

- First, we can contrast descriptive from causal work. The former tends to map the landscape of ideological possibility, proposing frameworks that can classify and structure the full set of extant political beliefs. The latter literature theorizes about the causal mechanisms that shape ideological phenomenon.
- Second, we can distinguish between scholars who study the determinants of ideological attachment and those who study the consequences of ideological attachment. The former treat ideology as their dependent variable, and are interested in the psychological, social, and political determinants of ideological adoption. The latter treat ideology as an independent variable, focusing on the effects of ideology on social and political outcomes.
- Third, scholars differ on their choice of the individual or group as the appropriate unit of analysis. Fueled by the place of psychology in driving new literature on ideology, much current research is framed at the individual level. By contrast, other scholars still retain a more sociological approach and see ideology as an emergent group phenomenon.

In substance, this report has clearly highlighted the significantly different positions that different scholars have taken on such critical issues as mapping ideologies, understanding the determinants of ideological attachment, and theorizing ideological change.

On both fronts, there is no clear reason to believe that similar differences in approach and substance are not systematically present in the discursive and conceptual literatures that Maynard summarizes. This offers the enticing possibility that theories of ideology across these domains can be better integrated into a shared intellectual starting point.

Any such research effort will also need to confront perennial issues on how to appropriately bound its scope of study. At its broadest level, research on ideology can be understood to encompass any research that links the mental and emotional state of an individual with their political behavior. For its part, WICI's working definition of ideology is broad, clearly combining sociological and psychological functions. However, the relationship between this working definition and other concepts remains ambiguous. A better understanding of the relationship

between such concepts as "attitudes", "values", and "ideology" will help WICI's ideology team leverage insights from related research.

A theory of ideology that includes too many distinct types of social and mental phenomena risks succumbing to the analytical ambiguities that pushed earlier political scientists away from the concept of ideology. We need a theoretically-grounded understanding of what counts as an ideology and what can better be described as a non-ideological attitude or belief. Similarly, an integrated theory of ideology will need to grapple with the issue of historically-contingent and culturally-dependent ideological state spaces, including the ways in which the cognitive demands associated with holding an ideology are sensitive to social context. Finally, any integrated theory of ideology must grapple with the appropriateness of spatial metaphors to describe ideological content.

Despite these significant challenges, an accurate understanding of the state space of ideological possibility is essential for effectively modeling complex political debates. Confronting these conceptual problems, WICI's work on ideological change could make significant contributions to a still developing literature.

Bibliography

Achen, C. H. (1975). Mass Political Attitudes and the Survey Response. *American Political Science Review*, *69*(4), 1218–1231.

Akrami, N., & Ekehammar, B. (2006). Right-Wing Authoritarianism and Social Dominance Orientation. *Journal of Individual Differences*, *27*(3), 117-126. doi:10.1027/1614-0001.27.3.117

Adorno et al. 1950. *The authoritarian personality*. New York: Harper Press.

Alford, J., & Hibbing, J. (2004). The Origins of Politics : An Evolutionary Theory of Political Behavior. *Perspectives on Politics*, *2*(4), 707-723.

Alford, J., Funk, C., & Hibbing, J. (2005). Are political orientations genetically transmitted? *American Political Science Review*, *99*(2), 153-167.

Altemeyer, Bob. 1981. *Right-wing authoritarianism*. Winnipeg: University of Manitoba Press.

Alwin, D. F., Cohen, R. L., & Newcomb, T. M. (1991). *Political attitudes over the life span: the Bennington women after fifty years* (p. 422). Madison, WI: Univ of Wisconsin Press.

Amodio, D. M., Jost, J., Master, S. L., & Yee, C. M. (2007). Neurocognitive correlates of liberalism and conservatism. *Nature neuroscience*, *10*(10), 1246-7. doi:10.1038/nn1979

Ansolabehere, S., Rodden, J., & Snyder, J. M. (2008). The Strength of Issues: Using Multiple Measures to Gauge Preference Stability, Ideological Constraint, and Issue Voting. *American Political Science Review*, *102*(02), 215–232. doi:10.1017/S0003055408080210

Arndt, J., Greenberg, J., & Cook, A. (2002). Mortality Salience and the Spreading Activation of Worldview-Relevant Constructs : Exploring the Cognitive Architecture of Terror Management. *Journal of Experimental Psychology*, *131*(3), 307-324. doi:10.1037//0096-3445.131.3.307

Bell, E., Schermer, J. A., & Vernon, P. a. (2009). The Origins of Political Attitudes and Behaviours: An Analysis Using Twins. *Canadian Journal of Political Science*, *42*(04), 855. doi:10.1017/S0008423909990060

Block, Jack, & Block, J. (2006). Nursery school personality and political orientation two decades later. *Journal of Research in Personality*, *40*(5), 734-749. doi:10.1016/j.jrp.2005.09.005

Bonanno, G., & Jost, J. (2006). Conservative Shift Among High-Exposure Survivors of the September 11th Terrorist Attacks. *Basic and Applied Social Psychology*, *28*(4), 311-323. doi:10.1207/s15324834basp2804_4

Bouchard, T. J. (2004). Genetic influence on human psychological traits: A survey. *Current Directions in Psychological Science*, *13*(4), 148-151.

Braithwaite, V. (1994). Beyond Rokeach's Equality-Freedom Model: Two-Dimensional Values in a One-Dimensional World. *Journal of Social Issues*, *50*(4), 67-94. doi:10.1111/j.1540-4560.1994.tb01198.x

Braithwaite, V. (1997). Harmony and Security Value Orientations in Political Evaluation. *Personality & social psychology bulletin*, *23*(4), 401-414.

Braithwaite, V. (1998a). The value balance model of political evaluations. *British Journal of Psychology*, *89*, 223-247.

Braithwaite, V. (1998b). The value orientations underlying liberalism-conservatism. *Personality and Individual Differences*, *25*, 575-589.

Braithwaite, V., Makkai, T., & Pittelkow, Y. (1996). Inglehart's Materialism-Postmaterialism Concept: Clarifying the Dimensionality Debate Through Rokeach's Model of Social Values1. *Journal of Applied Social Psychology*, *26*(17), 1536-1555. doi:10.1111/j.1559-1816.1996.tb00085.x

Bullock, J. G. (2011). Elite Influence on Public Opinion in an Informed Electorate. *American Political Science Review*, *105*(03), 81-118. doi:10.1017/S0003055411000165

Chatard, A., Arndt, J., & Pyszczynski, T. (2010). Loss Shapes Political Views? Terror Management, Political Ideology, and the Death of Close Others. *Basic and Applied Social Psychology*, *32*(1), 2-7. doi:10.1080/01973530903539713

Chiao, J. Y., Mathur, V. a, Harada, T., & Lipke, T. (2009). Neural basis of preference for human social hierarchy versus egalitarianism. *Annals of the New York Academy of Sciences*, *1167*, 174-81. doi:10.1111/j.1749-6632.2009.04508.x

Christakis, N., & Fowler, J. (2007). The Spread of Obesity in a Large Social Network over 32 Years. *Network*.

Cochrane, R., Billig, M., & Hogg, M. (1979). Politics and values in Britain: A test of Rokeach's two-value model. *British Journal of Social and Clinical Psychology*, *18*(2), 159-167.

Cohen, G. (2003). Party over policy: The dominating impact of group influence on political beliefs. *Journal of personality and social psychology*, *85*(5), 808-22. doi:10.1037/0022-3514.85.5.808

Conover, P. J., & Feldman, S. (1981). The Origins and Meaning of Liberal/Conservative Self-Identifications. *American Journal of Political Science*, *25*(4), 617. doi:10.2307/2110756

Converse, P. (1964). ''The Nature of Belief Systems in Mass Publics.'' In Ideology and Discontent, ed. David E. Apter. New York: The Free Press, 206–61.

Doherty, Daniel, Gerber, A. S., & Green, D. (2006). Personal Income and Attitudes toward Redistribution : A Study of Lottery Winners. *Political Psychology*, *27*(3), 441-458.

Douglas, M. (1970). *Natural Symbols: explorations in cosmology*. New York: Pantheon Books.

Eysenck, H. (1954). *The psychology of politics*. London, UK: Routledge.

Federico, C. M. (2007). Motivation, and the Structure Evaluative Expertise, Commitments of Citizens ' Ideological. *Political Psychology*, *28*(5), 535-561.

Feldman, S. (2003). Enforcing Social Conformity : A Theory of Authoritarianism. *Political Psychology*, *24*(1), 41-74.

Fowler, J. H., & Christakis, N. (2008). Dynamic spread of happiness in a large social network: longitudinal analysis over 20 years in the Framingham Heart Study. *Bmj*, *337*(dec04 2), a2338-a2338. doi:10.1136/bmj.a2338

Freeden, M. (2003). *Ideology: A Very Short Introduction*. Oxford: Oxford University Press.

Gerber, A. S., Huber, G. A., Doherty, D., & Dowling, C. M. (2010). Personality and Political Attitudes : Relationships across Issue Domains and Political Contexts. *American Political Science Review*, (February). doi:10.1017/S0003055410000031

Goldin, C., Greif, A., Helpman, E., Hornbeck, R., Jha, S., Kahn, M., Katz, L., et al. (2011). "Persecution Perpetuated: The Medieval Origins of Anti-Semitic Violence in Nazi Germany," National Bureau of Economic Research Working Paper 17113 (NBER: Cambridge, MA).

Graham, J., Haidt, J., & Nosek, B. a. (2009). Liberals and conservatives rely on different sets of moral foundations. *Journal of personality and social psychology*, *96*(5), 1029-46. doi:10.1037/a0015141

Graham, J., Nosek, B. A., & Haidt, J. (2009). "The Moral Stereotypes of Liberals and Conservatives", draft manuscript available from authors.

Greenberg, J., & Jonas, E. (2003). Psychological and political orientation--The left, the right, and the rigid: Comment on Jost et al. (2003). *Psychological Bulletin*, *129*(3), 376-382. doi:10.1037/0033-2909.129.3.376

Greenberg, J., Pyszczynski, T., Solomon, S., & Rosenblatt, A. (1990). Evidence for terror management theory II: The effects of mortality salience on reactions to those who threaten or bolster the cultural worldview. *Journal of Personality and Social Psychology*, *58*(2), 308-318. doi:10.1037/0022-3514.58.2.308

Haidt, J. (2012). *The Righteous Mind: Why *Good* People are Divided by Religion and Politics*. New York: Pantheon.

Haidt, J. (2001). The emotional dog and its rational tail- A social intuitionist approach to moral judgment. *Psychological Review*, *108*(4), 814-834.

Haidt, J. (2007). The new synthesis in moral psychology. *Science (New York, N.Y.)*, *316*(5827), 998-1002. doi:10.1126/science.1137651

Haidt, J., & Hersh, M. a. (2001). Sexual Morality: The Cultures and Emotions of Conservatives and Liberals. *Journal of Applied Social Psychology*, *31*(1), 191-221. doi:10.1111/j.1559-1816.2001.tb02489.x

Haidt, J., Graham, J., & Joseph, C. (2009). Above and Below Left-Right: Ideological Narratives and Moral Foundations. *Psychological Inquiry*, *20*(2), 110-119. doi:10.1080/10478400903028573

Haidt, J., Rosenberg, E., & Hom, H. (2003). Differentiating diversities: Moral diversity is not like other kinds. *Journal of Applied Social Psychology*, 1-36.

Hammack, P. L. (2008). Narrative and the cultural psychology of identity. *Personality and Social Psychology Review*, *12*(3), 222-47. doi:10.1177/1088868308316892

Hanson, S. (2010). *Post-Imperial Democracies: Ideology and Party Formation in Third Republic France, Weimar Germany, and Post-Soviet Russia*. Cambridge: Cambridge University Press.

Haslam, N., & Fiske, A. P. (1999). Relational models theory- A confirmatory factor analysis. *Personal Relationships*, *6*, 241-250.

Hatemi, P. K., Gillespie, N. a., Eaves, L. J., Maher, B. S., Webb, B. T., Heath, A. C., Medland, S. E., et al. (2011). A Genome-Wide Analysis of Liberal and Conservative Political Attitudes. *The Journal of Politics*, *73*(01), 271-285. doi:10.1017/S0022381610001015

Hetherington, M. J. (2002). Resurgent Mass Partisanship: The Role of Elite Polarization. *American Political Science Review*, *95*(03), 619-631. doi:10.1017/S0003055401003045

Hofstede, G. (2001). *Culture's Consequences: Comparing Values, Behaviors, Institutions and Organizations Across Nations*. 2nd Edition, Thousand Oaks CA: Sage Publications.

Hofstede, G. (2010). *Cultures and Organizations: Software of the Mind*. 3rd Edition, Columbus, OH: McGraw-Hill USA.

Inglehart, R. (1997.) *Modernization and postmodernization: cultural, economic, and political change in 43 societies*. Princeton: Princeton University Press.

Inglehart, R., & Welzel, C. (2010). Changing Mass Priorities: The Link between Modernization and Democracy. *Perspectives on Politics*, *8*(02), 551-567. doi:10.1017/S1537592710001258

Iyer, R., Kolev, S., Graham, J., Ditto, P., & Haidt, J. (2010). Understanding libertarian morality: The psychological roots of an individualist ideology.

Jennings, M. K. (1992). Ideological thinking among mass publics and political elites. *Public Opinion Quarterly*, *56*(4), 419–441.

Joseph, J. (2010). The Genetics of Political Attitudes and Behavior: Claims and Refutations. *Ethical Human Psychology and Psychiatry*, *12*(3), 200-217. doi:10.1891/1559-4343.12.3.200

Jost, J. (2006). The end of the end of ideology. *The American psychologist*, *61*(7), 651-70. doi:10.1037/0003-066X.61.7.651

Jost, J. (2009). "Elective Affinities": On the Psychological Bases of Left-Right Differences. *Psychological Inquiry*, *20*(2), 129-141. doi:10.1080/10478400903028599

Jost, J., Banaji, M., & Nosek, B. A. (2004). A Decade of System Justification Theory: Accumulated Evidence of Conscious and Unconscious Bolstering of the Status Quo. *Political Psychology*, *25*(6), 881-919. doi:10.1111/j.1467-9221.2004.00402.x

Jost, J., Fitzsimons, G., & Kay, A. (2004). The ideological animal. *Handbook of experimental existential psychology*, 263–283. The Guilford Press. Retrieved from http://books.google.com/books?hl=en&lr=&id=j_KMRe9wK2MC&oi=fnd&pg=PA263&dq=the+ideological+animal&ots=1vWw2z_n68&sig=R6jfgWJA1KBVTUE1Q2fIMtVvTBY

Jost, J., Glaser, J., Kruglanski, A. W., & Sulloway, F. J. (2003a). Exceptions that prove the rule-- Using a theory of motivated social cognition to account for ideological incongruities and political anomalies: Reply to Greenberg and Jonas (2003). *Psychological Bulletin*, *129*(3), 383-393. doi:10.1037/0033-2909.129.3.383

Jost, J., Glaser, J., Kruglanski, A. W., & Sulloway, F. J. (2003b). Political conservatism as motivated social cognition. *Psychological Bulletin*, *129*(3), 339-375. doi:10.1037/0033-2909.129.3.339

Jost, J., Napier, J. L., Thorisdottir, H., Gosling, S. D., Palfai, T. P., & Ostafin, B. (2007). Are needs to manage uncertainty and threat associated with political conservatism or ideological extremity? *Personality & social psychology bulletin*, *33*(7), 989-1007. doi:10.1177/0146167207301028

Jost, J., Nosek, B. a., & Gosling, S. D. (2008). Ideology: Its Resurgence in Social, Personality, and Political Psychology. *Perspectives on Psychological Science*, *3*(2), 126-136. doi:10.1111/j.1745-6916.2008.00070.x

Kanai, R., Feilden, T., Firth, C., & Rees, G. (2011). Political orientations are correlated with brain structure in young adults. *Current Biology*, *21*(8), 677-680.

Kerlinger, F. N. (1967). Social attitudes and their criterial referents: a structural theory. *Psychological review*, *74*(2), 110-22. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/5342346

Kossowska, M., & Hiel, A. V. (2003). The Relationship Between Need for Closure and Conservative Beliefs in Western and Eastern Europe. *Political Psychology*, *24*(3), 501-518. doi:10.1111/0162-895X.00338

Luskin, R. (1987). Measuring political sophistication. *American Journal of Political Science*, *31*(4), 856–899.

Maynard, J. (2013). "A map of the field of ideological analysis," J*ournal of Political Ideologies* (18): 3.

McAdams, D. P. (1995). What Do We Know When We Know a Person? *Journal of Personality*, *63*(3), 365-396. doi:10.1111/j.1467-6494.1995.tb00500.x

McAdams, D. P., & Pals, J. L. (2006). A new Big Five: fundamental principles for an integrative science of personality. *The American psychologist*, *61*(3), 204-17. doi:10.1037/0003-066X.61.3.204

McCrae, R. (1996). Social consequences of experiential openness. *Psychological bulletin*, *120*(3), 323-37. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/8900080

Mondaj, J. (2010). *Personality and the foundations of political behavior.* Cambridge, UK: Cambridge University Press.

Mondak, J. J., Hibbing, M. V., Canache, D., Seligson, M. a., & Anderson, M. R. (2010). Personality and Civic Engagement: An Integrative Framework for the Study of Trait Effects on Political Behavior. *American Political Science Review*, *104*(01), 85. doi:10.1017/S0003055409990359

Nail, P. R., McGregor, I., Drinkwater, A. E., Steele, G. M., & Thompson, A. W. (2009). Threat causes liberals to think like conservatives. *Journal of Experimental Social Psychology*, *45*(4), 901-907. doi:10.1016/j.jesp.2009.04.013

Oxley, D. R., Smith, K. B., Alford, J. R., Hibbing, M. V., Miller, J. L., Scalora, M., Hatemi, P. K., & Hibbing, J. R. (2008a). Political attitudes vary with physiological traits. *Science*, *321*(5896), 1667-70. doi:10.1126/science.1157627

Oxley, D. R., Smith, K. B., Alford, J. R., Hibbing, M. V., Miller, J. L., Scalora, M., Hatemi, P. K., & Hibbing, J. R. (2008b). Political attitudes vary with physiological traits. *Science*, *321*(5896), 1667-70. doi:10.1126/science.1157627

Phillips, R & J. LeDoux. (1992). Differential contribution of amygdala and hippocampus to cued and contextual fear conditioning. Behavioral Neuroscience, 106(2), 274-285.

Poole, K. and H. Rosentahl.(2007). *Ideology and Congress*. New Brunswick, NJ: Transcation Publishers.

Pratto, F., Sidanius, J., Stallworth, L. M., & Malle, B. F. (1994). Social dominance orientation: A personality variable predicting social and political attitudes. *Journal of Personality and Social Psychology*, *67*(4), 741-763. doi:10.1037/0022-3514.67.4.741

Putnam, R. (1993). *Making democracy work: Civic traditions in modern Italy.* Princeton: Princeton University Press.

Rogan, Michael, Stäubli, U. & J. LeDoux. (1997). Fear conditioning induces associative long-term potentiation in the amygdala. Nature 390, 604-607.

Rokeach, M. (1973). *The Nature of Human Values*. New York: The Free Press.

Rule, N. O., Freeman, J. B., Moran, J. M., Gabrieli, J. D. E., Adams, R. B., & Ambady, N. (2010). Voting behavior is reflected in amygdala response across cultures. *Social cognitive and affective neuroscience*, *5*(2-3), 349-55. doi:10.1093/scan/nsp046

Schrieber, D., Simmons, A., Dawes, C., Flagan, T., Fowler, J., & Paulus, M. (2005). Red Brain, Blue Brain: Evaluative Processes Differ in Democrats and Republicans. *American Political Science Review*, *99*(153-167).

Sears, D. O., & Funk, C. L. (1999). Evidence of the Long-Term Persistence of Adults ' Political Predispositions. *Journal of Politics*, *61*(1), 1–28.

Settle, J. E., Dawes, C. T., & Fowler, J. (2009). The Heritability of Partisan Attachment. *Political Research Quarterly*, *62*(3), 601-613.

Settle, J. E., Dawes, C. T., Christakis, N., & Fowler, J. (2010). Friendships Moderate an Association Between a Dopamine Gene Variant and Political Ideology. *The journal of politics*, *72*(4), 1189-1198. doi:10.1017/S0022381610000617

Sibley, C. G., & Duckitt, J. (2008). Personality and prejudice: a meta-analysis and theoretical review. *Personality and social psychology review : an official journal of the Society for Personality and Social Psychology, Inc*, *12*(3), 248-79. doi:10.1177/1088868308319226

Skinner, Q. (2002) *Visions of Politics – Volume 1* (Cambridge: Cambridge University Press).

Smith, K. B., Oxley, D. R., Hibbing, M. V., Alford, J. R., & Hibbing, J. R. (2011). Linking Genetics and Political Attitudes: Reconceptualizing Political Ideology. *Political Psychology*, *32*(3), 369-397. doi:10.1111/j.1467-9221.2010.00821

Stimson, J. (2004). *Tides of consent: How public opinion shapes American politics.* Cambridge: Cambridge University Press.

Stokes, S. C. (2005). Perverse Accountability: A Formal Model of Machine Politics with Evidence from Argentina. *American Political Science Review*, *99*(03), 315–325. doi:10.1017/S0003055405051683

Tetlock, P. (1986). A value pluralism model of ideological reasoning. *Journal of Personality and Social Psychology*, *50*(4), 819-827.

Tetlock, P. E., Armor, D., & Peterson, R. S. (1994). The slavery debate in antebellum America: Cognitive style, value conflict, and the limits of compromise. *Journal of Personality and Social Psychology*, *66*(1), 115-126. doi:10.1037/0022-3514.66.1.115

Vandenbos, K., Poortvliet, P., Maas, M., Miedema, J., & Vandenham, E. (2005). An enquiry concerning the principles of cultural norms and values: The impact of uncertainty and mortality salience on reactions to violations and bolstering of cultural worldviews. *Journal of Experimental Social Psychology*, *41*(2), 91-113. doi:10.1016/j.jesp.2004.06.001

Vigil, J. (2008). Facial expression processing varies with political affiliation, 1-8.

Weise, D. R., Pyszczynski, T., Cox, C. R., Arndt, J., Greenberg, J., Solomon, S., & Kosloff, S. (2008). Interpersonal politics: the role of terror management and attachment processes in shaping political preferences. *Psychological science : a journal of the American Psychological Society / APS*, *19*(5), 448-55. doi:10.1111/j.1467-9280.2008.02108.

Zaller, J. (1992). *The nature and origins of mass opinion*. Cambridge: Cambridge University Press.

Zamboni, G., Gozzi, M., Krueger, F., Duhamel, J.-R., Sirigu, A., & Grafman, J. (2009). Individualism, conservatism, and radicalism as criteria for processing political beliefs: a parametric fMRI study. *Social neuroscience*, *4*(5), 367-83. doi:10.1080/17470910902860308