# Contextualizing Political Ideology: on the Impact of Measurement, Domain, and Identity

**Dissertation**
**zur Erlangung des akademischen Grades**
**doctor philosophiae (Dr. phil.)**


vorgelegt dem Rat der Fakultät für Sozial- und Verhaltenswissenschaften der
Friedrich-Schiller-Universität Jena

von M.Sc. Deliah Sarah Bolesta
geboren am 23.07.1989
in Rauenberg

**Erstgutachter:**
Prof. Dr. Thomas Kessler
Lehrstuhl für Sozialpsychologie, Friedrich-Schiller-Universität Jena

**Zweitgutachter:**
Prof. Dr. Dr. hc. Christoph Engel
Max Planck Institut zur Erforschung von Gemeinschaftsgütern Bonn

**Vorsitzender der Promotionskommission:**
Prof. Dr. Rafael Biermann
Professur für Internationale Beziehungen, Friedrich-Schiller-Universität Jena

**Eingereicht am: 24.03.2021**
**Tag der mündlichen Prüfung: 13.07.2021**

# Contents

# List of Figures

# List of Tables

# Summary

This dissertation investigates the impact of different context factors such as domain, identity, and measurement on political ideology and its psychological underpinnings. Taking on an ecological perspective along the lines of Brunswik (1955, 1956), a special focus is given to representative sampling of experimental stimuli.

The first project *The Domain-Specificity of Need for Cognitive Closure* tested the ideology symmetry hypothesis with regard to domain-specificity of need for cognitive closure. Three studies examined the influence of the political domain addressed on the relation between need for cognitive closure and political ideology. Across three operationalizations (discomfort with ambiguity, closed-mindedness, dogmatism), conservatives demonstrated more need for cognitive closure than liberals regarding a conservative domain (religion), and vice versa, liberals exhibited more need for cognitive closure regarding a liberal domain (environment, climate change). Differences in discomfort with ambiguity (Study 2) and dogmatism (Study 3) between conservatives and liberals were attenuated when personal relevance was accounted for.

The second project *Putting 'Identity' Back in Political Identification* examined the degree of entanglement between political attitudes (easy vs. hard policy issues) and the level of identity (personal vs. political identity) dependent on one's political orientation. In two studies, individuals endorsed counter-attitudinal issues stronger when their personal identity was salient, and pro-attitudinal issues more strongly when their political identity was salient. This was only found for hard issues and for individuals whose 'own' party (i.e., the party associated with their own political orientation) was not in government.

The third project *Now More Than Ever! Can Exposure to Fake News Lead to Polarization?* investigated the effect of exposure to in- or out-group fake news on political polarization. Exposure to in- and out-group fake news were associated with high affective polarization (Study 1) while higher levels in attitude polarization were found after exposure to out-group fake news (Study 2). Informing participants about the fake

news nature of the post attenuated affective polarization for those perceiving the sender to be an out-group member only (Study 2).

The fourth and final project *Measuring Political Ideology - A Systematic Review* aimed at providing a systematic review of political ideology measurement with a special focus on replicability and validity. Using a forward and backward snowballing search strategy, we identified 394 articles of which 207 met all inclusion criteria. Overall, we cataloged more than 60 unique ideological measures, of which only a third had been developed and validated beforehand. About 50% of all identified ideological instruments lacked a single mention of validation evidence. Indeed, the majority of the scales were on-the-fly measures or a combination of items used in previous studies. Furthermore, the data suggests that replicability might be restricted due to incomplete reporting of the items used, and substantial variance in scoring and scale type. In summary, these circumstances could hinder the ability to build on each other's work and thus likely pose a serious threat to the comparability and generalizability of findings.

Taken together, the four lines of research highlight the necessity of representative sampling and context sensitivity when assessing the psychological foundations of political attitudes. Implications of these four lines of research for the interpretation of existing and the conduction of future research are discussed.

# Zusammenfassung

Die vorliegende Dissertation untersucht den Einfluss verschiedener Kontextfaktoren wie Domäne, Identität und Messung auf politische Ideologie und ihre psychologischen Grundlagen. Unter Berücksichtigung einer ökologischen Perspektive in Anlehnung an Brunswik (1955, 1956) wird ein besonderer Fokus auf repräsentatives Sampling experimenteller Stimuli gelegt.

Das erste Projekt *The Domain-Specificity of Need for Cognitive Closure* testete die Ideologie-Symmetrie-Hypothese im Hinblick auf die Domänenspezifität des Bedürfnisses nach kognitiver Geschlossenheit. Drei Studien untersuchten den Einfluss der jeweiligen politischen Domäne auf den Zusammenhang zwischen dem Bedürfnis nach kognitiver Geschlossenheit und politischer Ideologie. Über drei Operationalisierungen hinweg (Ambiguitätsintoleranz, Engstirnigkeit, Dogmatismus) zeigten Konservative ein höheres Bedürfnis nach kognitiver Geschlossenheit als Liberale in Bezug auf eine konservative Domäne (Religion), und umgekehrt zeigten Liberale ein höheres Bedürfnis nach kognitiver Geschlossenheit in Bezug auf eine liberale Domäne (Umwelt, Klimawandel). Unterschiede in Ambiguitätsintoleranz (Studie 2) und Dogmatismus (Studie 3) zwischen Konservativen und Liberalen wurden abgeschwächt, wenn die persönliche Relevanz der jeweiligen Domäne berücksichtigt wurde.

Das zweite Projekt *Putting 'Identity' Back in Political Identification* untersuchte den Grad des Zusammenhangs zwischen politischen Einstellungen (einfache vs. schwierige politische Themen) und dem Grad der Identität (persönliche vs. politische Identität) in Abhängigkeit von der eigenen politischen Orientierung. In zwei Studien befürworteten Individuen einstellungs-diskonforme Aussagen stärker, wenn ihre persönliche Identität salient war, und einstellungs-konforme Aussagen stärker, wenn ihre politische Identität salient war. Dies wurde nur für schwierige politische Themen und für Personen gefunden, deren "eigene" Partei (d.h. die Partei, die mit ihrer eigenen politischen Orientierung assoziiert war) nicht an der Regierung war.

Das dritte Projekt *Now More Than Ever! Can Exposure to Fake News Lead to Polarization?* untersuchte den Effekt einer Exposition gegenüber Eigen- oder Fremd-Gruppen Fake News auf politische Polarisierung. Die Exposition gegenüber Eigen- oder Fremd-Gruppen Fake News war mit einer hohen affektiven Polarisierung assoziiert (Studie 1), während höhere Werte in der Einstellungspolarisierung nach Exposition gegenüber Fremd-Gruppen Fake-News gefunden wurden (Studie 2). Die Aufklärung der Proband*innen darüber, dass es sich um Fake News handelte, milderte die affektive Polarisierung nur bei denjenigen ab, die den Absender als ein Fremd-Gruppenmitglied wahrnahmen (Studie 2).

Das vierte und letzte Projekt *Measuring Political Ideology - A Systematic Review* zielte darauf ab, einen systematischen Überblick über die Messung politischer Ideologie mit besonderem Fokus auf Replizierbarkeit und Validität zu geben. Unter Verwendung einer vorwärts und rückwärts gerichteten Schneeballsuchstrategie identifizierten wir 394 Artikel, von denen 207 alle Einschlusskriterien erfüllten. Insgesamt katalogisierten wir mehr als 60 einzelne ideologische Maße, von denen nur ein Drittel zuvor validiert worden war. Bei etwa 50% aller identifizierten ideologischen Instrumente fehlten Validierungsnachweise. Die meisten Skalen waren "on-the-fly"-Maße oder eine Kombination von Items, die in früheren Studien verwendet wurden. Darüber hinaus deuten die Daten darauf hin, dass die Replizierbarkeit, aufgrund unvollständiger Angaben zu den verwendeten Items und einer erheblichen Varianz in Scorebildung und Skalentyp, eingeschränkt sein könnte. Zusammenfassend könnten diese Umstände die Fähigkeit, auf den Arbeiten der anderen aufzubauen, einschränken und somit potentiell eine Bedrohung für die Vergleichbarkeit und Generalisierbarkeit der Ergebnisse darstellen.

Zusammengenommen unterstreichen die vier Forschungslinien die Notwendigkeit der Berücksichtigung von sowohl repräsentativem Sampling als auch Kontextsensitivität bei der Beurteilung psychologischer Grundlagen von politischen Einstellungen. Die Implikationen dieser vier Forschungslinien für die Interpretation bestehender und die Durchführung zukünftiger Forschung werden diskutiert.

# 1. Introduction

> "To know an object is to lead to it through a context which the world provides."
>
> William James, 1975, p. 35

When Aristotle referred to a any human being as a *zoon politikon* he described them as being "by nature a political animal" (Aristotle, trans. 2009, book 1, II).[1] We are naturally sociable, drawn to social communities and as a function thereof, we may naturally develop attitudes towards political matters (Piepenbrink, 2001). Modern theories of political socialization still emphasize on the role of social context in the sense that political attitudes develop within ecological systems (Bronfenbrenner, 1979). They are shaped within micro- (family, peers, educational institutions) and macro-systems (political events, socio-structural features, political systems, political climate), as well as by the media (Eckstein, 2019). Understanding political attitudes as dynamic constructs that develop within the complex interplay of various contextual factors, they may well, once developed, also be affected by those same factors (Jennings, 1990). For instance, historical events such as the Holocaust (Carmil & Breznitz, 1991), the Vietnam war (Erikson & Stoker, 2011), the September 11 terrorist attacks (Skitka, Bauman, & Mullen, 2004), the German reunification (Friedrich & Förster, 1997), the arrival of migrants in Europe (Zick, Pettigrew, & Wagner, 2008), or the COVID-19 pandemic (Reeskens et al., 2020) were found to have had an impact on individuals' political attitudes. But also less incisive context factors such as media reporting (Lecheler & De Vreese, 2012; G. Lee & Cappella, 2001), movies (Adkins & Castle, 2014), or the weather (Egan & Mullin, 2012) can affect political attitudes.

[1] He goes on to explain that "he who by nature and not by mere accident is without a state, is either a bad man or above humanity; he is like the 'Tribeless, lawless, hearthless one' whom Homer denounces—the natural outcast is forthwith a lover of war; he may be compared to an isolated piece at draughts."

Accommodating said context-sensitivity, it is the aim of this dissertation to assess the relationship of one's political ideology to certain psychological underpinnings by, as the opening quote states, leading to it "through a context which the world provides" (James, 1975, p. 35). Taking on an ecological perspective along the lines of Brunswik (1955, 1956), a special focus is given to *representative sampling*. Assuming that an individual's perception and behavior is always organized in reference to and not independent from their environment (Dhami, Hertwig, & Hoffrage, 2004, p. 959), Brunswik suggests that research designs should be *representative*, in that experimental stimuli may be sampled from within the individual's environment that one wishes to generalize to. That is, as Kessler, Proch, Hechler, and Nägler (2015, p. 31) put it, research should "follow Brunswik's idea of varying the environmental stimuli in order to disentangle psychological processes from content. This would be possible only by varying the content of stimuli either systematically or according to the typical distribution in a certain environment".

Taking on an ecological perspective and considering contextual factors as a source of variance, the four lines of research presented in this dissertation aim at extending our knowledge on how psychological needs and motives relate to political ideology. The first project assesses whether cognitive closure could be a function of the political domain in question rather than one's political ideology alone. The second project investigates the role of identity on political attitudes, while the third tests the effect of real-life fake news social media posts on political polarization. The final project takes on a meta-perspective by conceptualizing measurement itself as a source of variance within a non-exhaustive systematic literature review. An overview of relevant theories on the structure and formation of political ideology precedes these four lines of research and intends to provide the conceptual and theoretical background against which the present empirical work was conducted.

# 2. Conceptual and Theoretical Background

> "Political thought is representative. I form an opinion by considering a given issue from a number of different viewpoints, by making present to my mind the standpoints of those who are absent; that is, I represent them. This process of representation does not blindly adopt the actual views of those who stand somewhere else, and hence look upon the world from a different perspective; this is a question neither of empathy, as though I tried to be or to feel like somebody else, nor of counting noses and joining a majority, but of being and thinking in my own identity where actually I am not." Arendt, 1961, p. 241

It is what Kant (1790, p. 224 ff.) called enlarged mentality (*erweiterte Denkungsart*) that Hannah Arendt refers to in her essay on *Truth and Politics* when she describes the process of political opinion formation. The capacity to think in representative, general terms rather than relying on one's subjective evaluations only. According to Arendt (1961, p. 242) opinion formation requires "disinterestedness, the liberation from one's own private interests ... and depends upon the degree of its impartiality". However, I suggest that the idea of impartial public opinion formation may be a desired rather than an actual state. Scholars in psychology and political science have proposed multiple theories about the origin of political opinions. Structuring these different accounts is not a trivial task, especially given the multitude of terms that can be found in the literature: political opinions, political attitudes, political orientation, or political ideology. While conceptually, they can mean different things, this matter is rarely discussed. The following section will provide definitions of these key concepts and discuss structure and measurement of political ideology. A summary of the most prominent theories about the formation of political opinions will be presented in the last section.

## 2.1. Definitions

Understanding what drives an individual's behavior can be seen as the core research interest of social sciences at large. One concept that has been claimed to explain how individuals navigate complex societal contexts is their respective *ideology*. Its popularity, however, lead to a plethora of definitions, an issue that Gerring dubbed "semantic promiscuity" (1997, p. 957). By providing an overarching taxonomy to classify prevalent definitions of ideology at the time, he identified *coherence* to be the common denominator: "Ideology, at the very least, refers to a set of idea-elements that are bound together, that belong to one another in a non-random fashion" (Gerring, 1997, p. 980). According to this framework, ideology can be about power, the world at-large and politics of which he deems the latter to be the most common referent. Zooming in on *political ideology*, Feldman (2013) states that this concept can be understood at multiple levels. They can be formalized, *prescriptive* conceptions of political thought (e.g., Marxism, Liberalism, Conservatism), or less formalized *discursive* conceptions that structure political debates, parties, and platforms. Or they can be *descriptive* in that they "describe the ways in which people organize their political attitudes and beliefs" (Feldman, 2013, p. 591). Most definitions of ideology in psychology and political science revolve around this descriptive understanding of it being a mental framework or schema that consists of an interrelated network of beliefs and attitudes held by the individual (e.g., Denzau & North, 2000; Erikson & Tedin, 2015) often emphasizing that this framework is shared among an identifiable group (e.g., Jost, Federico, & Napier, 2009; Knight, 2006). A concise definition of political *orientation* is more difficult to provide. Assuming that an ideology can be conceptualized as a spectrum or dimension (e.g., Zaller, 1992, p. 26, see section 2.2), political orientation has been described as one's location on this spectrum (Piurko, Schwartz, & Davidov, 2011, p. 540). That is, the individual manifestation of a specific ideology, also referred to as *ideological orientation* (Feldman, 2013; Jost, Federico, & Napier, 2009).

Political *attitudes* are, as the term suggests, attitudes towards political issues. An attitude according to Allport (1935, p. 810) is "a mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related". In line with Eagly and Chaiken (1993, p. 1) who define an attitude as "a psychological tendency that

is expressed by evaluating a particular entity with some degree of favor or disfavor", most definitions agree that the evaluative component is key to the concept of attitudes (Banaji & Heiphetz, 2010). Thus, the evaluation of a certain political entity or situation, that is, policy issues, reflects an individual's political attitude on the matter. Carmines and Stimson (1980) argued that political issues can be categorized as either *easy* or *hard*. An easy issue is assumed to have become "so ingrained over a long period that it structures voters' 'gut responses' to candidates and political parties" (p. 78), it is symbolic rather than technical, deals with policy ends rather than means, and "is likely to be an unresolved conflict long in the public eye" (p. 80). Hence, hard issues are technical issues that deal with policy means and that may be relatively new to the political agenda (Cizmar, 2011, p. 25). Social and cultural issues have been labeled easy given their "highly symbolic, affectively charged, ends-focused" nature, while "more means-focused issues of economics and scope of government" (Ellis & Stimson, 2012, p. 118) are assumed to be hard (see also, Bailey, Sigelman, & Wilcox, 2003; Johnston & Wronski, 2015). Contrasting attitudes with *opinions*, McNemar (1946, p. 289) states that "(n)o one has ever seen an attitude; an attitude, however real to its possessor, is an abstraction the existence of which is inferred either from nonverbal overt behavior, or from verbal or symbolic behavior" while an opinion "is frequently defined as the verbal expression of an attitude. This could mean that one can never hold an opinion unless it is expressed ..." (p. 289). Hence, a political opinion can be seen as the manifest representation of an underlying latent political attitude.

It is the aim of this thesis to investigate the interplay between one's political ideology, that is, their interrelated and shared network of beliefs and attitudes, and various contextual factors. For this purpose, we will refer to an individual's self-placement on a certain ideological spectrum as *ideological orientation*, and to their stated agreement or disagreement with certain policy issues as *political attitudes*.

## 2.2. Structure of Political Ideology

### 2.2.1. Dimensionality and Measurement

> "We began to recognize each other: those who were loyal to religion and the king took up positions to the right of the chair so as to avoid the shouts, oaths, and indecencies that enjoyed free rein in the opposing camp." Hodgson, 2018, p. 32

The origin of a *left-right-spectrum* to classify political ideologies dates back to the French National Constituent Assembly of 1789 where those in favor of the status quo were seated on the right, and the opponents, those in favor of limiting the powers of monarchy, were seated on the left. While the meaning associated with *left* and *right* has developed and broadened over the years (Hodgson, 2018), it is still commonly used to describe the political spectrum in many Western countries (Bobbio, 1996). A functional equivalent of the left-right-spectrum that is predominantly used in the United States, is the *liberal-conservative spectrum* where left equates to liberal and right to conservative (Fuchs & Klingemann, 1990). Both model ideology as *onedimensional* with left/liberal on one end of the spectrum and right/conservative on the other. This corresponds to stances on whether individuals advocate social change and reject inequality (left/liberal), or resist social change and accept inequality (right/conservative, Fuchs & Klingemann, 1990; Jost, Federico, & Napier, 2009).[2] In contrast, a substantial number of findings suggest that ideology may be best represented in *multidimensional* models (Feldman, 2013). Kerlinger (1967, 1972, 1984) was one of the first to provide factor-analytical evidence for a multidimensional structure where Liberalism and Conservatism are modeled as two orthogonal dimensions. In contrast to a unidimensional model where Liberalism is essentially the opposite of Conservatism, "it is posited that liberals and conservatives view the political world not from different sides of the same coin, but rather, if you will, from the perspective of entirely different currencies" (Conover & Feldman, 1981, p. 624). While Kerlinger's orthogonality assumption was not found to hold (Sidanius & Duffy, 1988), a bi-dimensional structure with moderately negatively correlated factors was replicated multiple times (Choma, Busseri, & Sadava, 2009; Choma, Hafer, Dywan,

[2] However, see also Proch, Elad-Strenger, and Kessler (2019) where resistance/acceptance of social change is understood as dependent on the degree to which conservatives and liberals approve of the respective status quo.

Segalowitz, & Busseri, 2012). Another popular strand of literature defined ideology within a bi-dimensional space of economic and social preferences (Ashton et al., 2005; Carmines, Ensley, & Wagner, 2012a; Feldman & Johnston, 2014; Knight, 1999; Treier & Hillygus, 2009), economic and social conservatism (Everett, 2013; Henningham, 1996, 1997), economic and social liberalism (Surridge, 2016), or cultural and market conservatism (Brooks, 2011; Crowson, 2009; De Witte, 1990; Zumbrunnen & Gangl, 2008). Other multidimensional conceptions differentiated between expansion of personal freedom and government intervention in economic affairs (Maddox & Lilie, 1984), capitalism and democracy (Chong, McClosky, & Zaller, 1983), liberty and equity (Rokeach, 1973), or equality and order (Janda, Berry, Goldman, & Hula, 2004).

Often similar to but not identical with the distinction between one- and multidimensional models is the difference betwen *symbolic* and *operational* ideology (Free & Cantril, 1967; Stimson, 2004). Symbolic ideology refers to "general, abstract ideological labels, images, and categories" (Jost, Federico, & Napier, 2009, p. 312) in the sense of an ideological self-identification, that is, the degree to which one sees themselves for instance as either liberal or conservative. Commonly, this is implemented with a single item asking the individual to indicate their political position along the respective dimension of, for instance, conservatism or liberalism. In contrast, *operational ideology* reflects "the sum of one's preferences regarding the proper scope of government at the level of particular social problems and values" (Ellis & Stimson, 2012, p. 16–17). Rather than an ideological label (Conover & Feldman, 1981), operational ideology is defined by an individual's policy mood (Berry, Ringquist, Fording, & Hanson, 2007) and their policy preferences, that is their responses to either proposed or actual policy actions (Ellis & Stimson, 2012, p. 17). Accordingly, operational ideology is measured by one's level of agreement with multiple statements on policy issues that may be attributed to an underlying latent ideology. Usually, symbolic ideology refers to a onedimensional ideological self-placement scale, while operational ideology refers to a multidimensional attitude scale (Ellis & Stimson, 2012). However, there are also examples in the literature where multidimensional constructs are measured symbolically, that is, participants indicate whether their views on certain policies (e.g., social or economic policies) are rather liberal or conservative (e.g., Klar, 2014; Skitka, Mullen, Griffin, Hutchinson, & Chamberlin, 2002). Similarly, some measure onedimensional constructs (e.g., Conservatism) operationally by assessing agreement or

disagreement with certain policies and aggregating the answers to a composite score of the respective construct (e.g., Sidanius, 1985; Wilson & Patterson, 1968, see Table 2.1 for an overview).

Table 2.1.

*Political Ideology Measurement Examples*

| | Onedimensional | Multidimensional |
|---|---|---|
| Symbolic | left-right self-placement<br>liberal-conservative self-placement | economic policy self-placement<br>social policy self-placement |
| Operational | Wilson & Patterson (1968)<br>Sidanius (1985) | Kerlinger (1984)<br>Everett (2013) |

In his seminal work, Converse (1964) found that most Americans' operational ideology, that is their issue preferences, were not consistent with their self-reported symbolic ideology and that their preferences as measured by the American National Election Study were not stable between points in time (i.e., between 1956, 1958, and 1960, respectively). More specifically, the majority of those who indicated to be symbolically conservative were found to hold operationally liberal attitudes, suggesting that "the political thinking of much of the public cannot be adequately described as ideological in the sense of deductive reasoning from politics and the social world" (Kinder, 1983, p. 416). This operational-symbolic disconnect and the temporal instability were repeatedly found in the following years and lead to the so called nonattitudes thesis stating that the public simply held no attitudes on most issues (Converse, 1970, 2000; Lewis-Beck, Norpoth, Jacoby, & Weisberg, 2008; Zaller, 1992). The reception of this work was quite controversial and apparently Converse was asked to write an essay on the topic, titled 'How Dumb Are the Voters Really?' (Converse, 2000). While many authors disagreed with the claim of nonattitudes and an operational-symbolic disconnect (Achen, 1975; Nie, Verba, & Petrocik, 1976), the bottom line that most seemed to agree with was that "although ideological identification and issue attitudes are often related, they are conceptually and empirically distinct" (Popp & Rudolph, 2011, p. 809). Furthermore, it has to be noted that the disconnect was substantially less severe for those who were well informed

about or engaged in politics (Bennett, 2006; Converse, 1964; Federico & Schneider, 2007; Layman & Carsey, 2002; Sidanius & Duffy, 1988; Zaller, 1992).

### 2.2.2. Conservatism and Liberalism

A morphological view of ideology posits that ideologies share each "many core, adjacent and peripheral concepts, but arrange and order them in different ways" (Alexander, 2015, p. 982). That is,

> "Ideologies may be likened to rooms that contain various units of furniture in proximity to each other ... If we find liberty, rationality, and individualism at its center, while equality - though in evidence - decorates the wall, we are looking at an exemplar of liberalism. If order, authority, and tradition catch our eye upon opening the door, while equality is shoved under the bed or, at best, one of its weaker specimens is displayed only when the guests arrive, we are looking at a version of conservatism." Freeden, 1996, p. 86–87

The latest version of *The Oxford Handbook of Political Ideologies* (Freeden, Sargent, & Stears, 2013) alone lists twenty different ideologies that the authors deem an adequate representation of modern ideological study. Turning to empirical research in social sciences, it seems the majority of work revolves around the ideological concepts of conservatism and liberalism. The reasons for this circumstance are manifold and in their entirety beyond the scope of this thesis. One rather pragmatic reason being that the traditional left-right continuum outlined above has come to be synonymous with a conservative-liberal continuum over time (Jost, Federico, & Napier, 2009). Another theory explaining their relative primacy over other concepts is rooted in the assumption that liberalism and conservatism, unlike other ideologies, address "every subject, every self, every citizen, as if universal" (Alexander, 2015, p. 983). The following attempt of a definition cannot do justice to the broad range of theories on conservative and liberal ideology. Rather it provides an overview of relevant concepts and ideas associated with or attached to liberalism and conservatism along three continua often conceptualized as core components of both ideologies: resistance vs. acceptance of change, acceptance of inequality vs. equality of opportunity, and free market vs. government regulation.

**Conservatism** Adapting a morphological view of conservatism, Jost, Glaser, Kruglanski, and Sulloway (2003b, p. 342–343) claim two core concepts, *resistance to change* and *acceptance of inequality*, and a list of peripheral aspects, such as "desire for order and stability, preference for gradual rather than revolutionary change (if any), adherence to preexisting social norms, idealization of authority figures, punishment of deviants, and endorsement of social and economic inequality". Kerlinger (1984, p. 16–17) defines conservatism by its "emphasis on the status quo and social stability, religion and morality, liberty and freedom, the natural inequality of men, the uncertainty of progress, and the weakness of human reason". Conservatism is often characterized by a preference of individualism over government regulation, holding an "excessively optimistic belief in the ability of political action to transform society into a rationally grounded order in which power will survive only as a benign instrument for facilitating desirable ends" (O'Sullivan, 2013, p. 293). Or as Kerlinger (1984, p. 16–17) put it, conservatism is characterized by "distrust of popular democracy and majority rule and by support of individualism and individual initiative, the sanctity of private property, and the central importance of business and industry in the society". Believing in free markets rather than governmental intervention to reduce inequalities, conservatives believe that "expanding market freedom and providing the ability to choose one's own economic path are comparably more important, and ultimately more prosperous for all citizens" (Ellis & Stimson, 2012, p. 5).

**Liberalism** A core component of liberalism is *equality of opportunity* that is to be ensured by governmental intervention (Ellis & Stimson, 2012). Liberalism foresees a "political order focused on impartiality, relative inclusiveness and a distribution of goods and services that works for the benefit of all and especially the least well off" (Freeden & Stears, 2013, p. 342). Kerlinger (1984, p. 15) also notes the emphasis of liberalism on "constitutional participatory government and democracy, ... egalitarianism and the rights of minorities ... and positive government action to remedy social deficiencies and to improve human welfare". Another core element is acceptance or *promotion of social progress and change* (Conover & Feldman, 1981; Jost et al., 2003b; Kerlinger, 1984). Other than conservatives who have a preference of free over regulated markets, "[l]iberals believe that a market economy, whatever its virtues in the efficient creation of prosperity, is a beast that needs the firm hand of government to tame it" (Ellis & Stimson, 2012, p. 4). A preference of government intervention in business and trade rests on the notion

that negative externalities caused by corporate interests should not be passed on to society.

## 2.3. Psychological Theories on Political Attitude Formation

Theories on how individuals form political attitudes abound the scientific literature. It is beyond the scope of this thesis to give an accurate historical review of political theory on this matter. Research in political science has predominantly focused on *top-down* processes "whereby political elites in the media and elsewhere construct and publicly disseminate ideological 'bundles' " (Jost, Kay, & Thorisdottir, 2009, p. 5). Psychologists, on the other hand, have often focused on *bottom-up* approaches, modeling certain predispositions as the underlying cause of political attitude formation. The theories outlined in the following sections rely on different assumptions about the nature of these predispositions. The first account emphasizes *values* as the foundation of attitudes (*value account*) while the second conceptualizes *needs and motives* as such (*cognitive-motivational account*). The third points out the role of *identity* underlying attitude formation (*identity account*).

### 2.3.1. The Value Account

Values have been argued to be the "ultimate underpinnings of attitudes" (Feldman, 2003b, p. 479). While values are assumed to be equally evaluative in nature, they are considered fewer and more central than attitudes (Rokeach, 1973). Bem (1970, p. 16) defines a value as "a primitive preference for or a positive attitude toward certain end-states of existence (like equality, salvation, self-fulfillment, or freedom) or certain broad modes of conduct (like courage, honesty, friendship, or chastity)". Given the overall positive valence of values, most value theories agree that values are organized in hierarchical systems structured by importance or "relative endorsement of values with respect to each other" (Feldman, 2013, p. 603). While generally assumed to transcend specific actions or situations, this respective relevance of some values over others in a given situation can lead to competing values (Schwartz, 1992, 1996). Accordingly, attitudes are guided "by tradeoffs among competing values that are implicated simultaneously in a behavior or attitude" (Schwartz, 1996, p. 2). These value systems can be domain-general

as outlined above, or domain-specific, "where each value dimension lends structure to public opinions within a particular domain" (Zaller, 1992, p. 26). Domain-general value systems can be about *basic* values (Schwartz, 1992, 1994, 1996), or *moral* values (Haidt & Joseph, 2004; Haidt & Graham, 2007), and have been found to be closely interrelated (Graham et al., 2011, 2013). Whereas *political* values, which are organized in a domain-specific value system (Converse, 1964; Feldman, 1988; McCann, 1997; Schwartz, Caprara, & Vecchione, 2010), can be seen as "characteristic adaptations of basic values to specific political contexts" (Caprara & Vecchione, 2013, p. 37).

**Basic Values** Schwartz and Bilsky (1987, 1990) proposed that three universal requirements preceded *basic values*: "biologically based needs of the organism, social interactional requirements for interpersonal coordination, and social institutional demands for group welfare and survival" (Schwartz & Bilsky, 1987, p. 551). In his value theory, Schwartz (1992) identified ten of such basic values which he assumed to be organized in four higher-order dimensions: Openness to Change (self-direction, stimulation, hedonism), Conservation (conformity, tradition, security), Self-Transcendence (universalism, benevolence), and Self-Enhancement (power, achievement). These basic values have been found to predict certain political attitudes (Cohrs, Moschner, Maes, & Kielmann, 2005; Duriez, Luyten, Snauwaert, & Hutsebaut, 2002; Schwartz, 2012) and political ideology more generally (Barnea & Schwartz, 1998; Caprara, Schwartz, Capanna, Vecchione, & Barbaranelli, 2006; Piurko et al., 2011).

**Moral Values** Moral foundations as introduced by Haidt and Joseph (2004, 2007) have often been conceptualized as *moral values* (Feldman, 2003b). The authors themselves describe them as "interlocking sets of values, practices, institutions, and evolved psychological mechanisms that function to suppress selfishness and make social life possible" (Haidt, 2008, p. 70) and are "organized in advance of experience" (Graham, Haidt, & Nosek, 2009, p. 1031). They identified five foundations on which humans are assumed to rely when making moral judgments. Two *individualizing* foundations (harm/care, fairness/reciprocity) that focus on the individual, and three *binding* foundations (in-group/loyalty, authority/respect, and purity/sanctity) that focus on the role of groups and institutions (Graham et al., 2009; Haidt, Graham, & Joseph, 2009). Moral foundations were found to predict a variety of political attitudes (Kertzer, Powers, Rathbun, & Iyer,

2014; Koleva, Graham, Iyer, Ditto, & Haidt, 2012; Milesi, 2016) as well as ideological orientation; liberals endorsed the individualizing more than the binding foundations while conservatives endorsed all foundations equally (Graham et al., 2009; Haidt & Graham, 2007). In a series of experimental studies, Day, Fiske, Downing, and Trail (2014) reported an interactive effect of ideological orientation and moral foundations on political attitudes. Conservatives' attitudes on pro-attitudinal *and* counter-attitudinal issues were stronger when those issues were framed according to the binding moral foundations (as compared to a control with no framing). For liberals, attitudes on pro-attitudinal issues were stronger when framed according to *any* moral foundation as compared to a control.

**Political Values** An individual's system of *core political values* consists of "overarching normative principles and belief assumptions about government, citizenship and ... society" (McCann, 1997, p. 565). As such, political values "may act as more proximal determinants of political choice than less overtly political values" (Caprara & Vecchione, 2013, p. 36) and have been found to be expressions of underlying basic values (Schwartz et al., 2010). Given the substantial variance regarding the number and content of political values identified in the literature, Caprara and Vecchione (2013, p. 36) and Schwartz et al. (2010, p. 424) report each an integrated, almost identical list of political values: Traditional morality (traditional religious and family values versus newer, permissive lifestyles), equality (egalitarian distribution of opportunities and resources), free enterprise (the noninterference of government in the economic system), civil liberties (freedom for everyone to act and think as they consider most appropriate), blind patriotism (unquestioning attachment to, and intolerance of criticism of, one's country), economic security (guarantee of job and income), and law and order (enforcement and obedience to law, protection against threats to the social order). Political values have been found to predict a number of political attitudes (Feldman, 1988; Goren, 2001; McCann, 1997; Peffley & Hurwitz, 1985; Pollock, Lilie, & Vittes, 1993; Zaller, 1992).

### 2.3.2. The Cognitive-Motivational Account

In a different approach, political attitude formation has been modeled along the lines of motivated social cognition, emphasizing the interplay between cognitive properties and psychological needs and motives (Kruglanski, 1996). Psychological needs and motives have often been used interchangeably but can both be understood as "internal states or forces

experienced as wishes and desires that lead to the achievement of specific goals" (Caprara & Vecchione, 2013, p. 33–34). Jost, Glaser, Kruglanski, and Sulloway (2003a, p. 341) argue in favor of a matching process wherein individuals adopt certain political attitudes or ideologies assuming that those would satisfy their psychological needs and motives. In a total of three meta-analyses, Jost and colleagues evaluated how epistemic and existential motives were associated with ideology and ideological motives of group-based dominance, system justification, and rationalization of self-interest (Jost et al., 2003b; Jost, Sterling, & Stern, 2017; Jost, Stern, Rule, & Sterling, 2017). *Epistemic motives* "govern the ways in which people seek to acquire beliefs that are certain and that help to navigate social and physical worlds that are threateningly ambiguous, complex, novel, and chaotic", more specifically, they "affect the style and manner by which individuals seek to overcome uncertainty and the fear of the unknown" (Jost et al., 2003b, p. 351). They identified a list of psychological variables representing epistemic motives related to political ideology: dogmatism, intolerance of ambiguity, integrative complexity, uncertainty avoidance, need for order, structure, and closure, openness to new experience, cognitive and perceptual rigidity, need for cognition, cognitive reflection, and self-deception. *Existential motives* to reduce anxiety and threat, and establish a sense of safety and security were modeled by psychological variables on loss prevention, self-esteem, mortality salience, subjective perceptions of threat, exposure to objectively threatening circumstances, and death anxiety. In later publications, they proposed *relational motives*, that is the "process of social influence and the motivation to achieve and maintain 'shared reality' with others" (Jost, Ledgerwood, & Hardin, 2008, p. 172), to underpin political ideology and attitudes in addition to epistemic and existential motives. They review evidence on the desire to share reality, perceptions of in-group consensus, collective self-efficacy, homogeneity of social networks, and the tendency to trust the government more when one's own party is in power (Hennes, Nam, Stern, & Jost, 2012; Jost, Ledgerwood, & Hardin, 2008; Jost, 2017). To the extent that a certain political ideology satisfies any of these motives, this ideology should be preferred by individuals high in the respective motivation. Jost and colleagues (Jost, Kruglanski, & Simon, 1999; Jost et al., 2003b) stated that this would be the case for a conservative rather than a liberal ideology and assumed higher levels of a) epistemic motives associated with certainty and closure, b) existential motives for safety,

and c) relational motives for affiliation, on the political right rather than the political left.

### 2.3.3. The Identity Account

A third perspective on political attitude formation evolved along the lines of social identity theory (SIT, Tajfel, 1978; Tajfel & Turner, 1979) and self-categorization theory (SCT, Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). While, objectively, anyone is a member of a variety of groups (e.g., mammals, Europeans, brown-haired, Millenials), not all of those may be *psychological groups*, that is, groups that are "psychologically significant for the members, to which they relate themselves subjectively for social comparison and the acquisition of norms and values ... , that they privately accept membership in, and which influences their attitudes and behavior" (Turner et al., 1987, p. 1–2). In short: objective group membership is a necessary, but not sufficient, condition for group identification in the sense of a "subjective, and internalized sense of belonging" (Huddy, 2013, p. 738). A group membership that one identifies with, to which one attaches value and emotional significance, and which is incorporated into their self-concept, has been referred to as one's *social identity* in SIT (Huddy, 2013; Tajfel, 1981). In contrast, an individual's *personal identity* comprises their self-concept on "attitudes, memories, behaviours, and emotions that define them as idiosyncratic individuals, distinct from other individuals" (Hornsey, 2008, p. 206).

In SCT, a cognitive elaboration of SIT, Turner et al. (1987) define social and personal identity in terms of *self-categorizations*, that is "cognitive groupings of self and some class of stimuli as identical and different from some other class" (Turner, Oakes, Haslam, & McGarty, 1994, p. 454). Here, one's social identity refers to a self-categorization that represents someone in terms of within-category similarities and between-category differences while one's personal identity is a self-categorization that defines "the individual as a unique person in terms of his or her individual differences from other (in-group) persons" (Turner et al., 1994, p. 454). However, neither the structural content of the categories nor the degree of inclusiveness alone define the difference between personal and social identity. Rather, it is "the level of comparison and self-categorization that is actually taking place, and the subjective sense of self that results" in a specific instant (Turner et al., 1994, p. 455). That is, for instance, being Christian can be a distinguishing

attribute if one's group of friends is non-religious, and a shared attribute when attending a church service.

Social identities resulting from self-categorizations with political relevance are *political identities* (Huddy, 2013). Some identities are inherently political, for instance, identifying as a member of a political party. Others, based on self-categories such as gender, religion, sexual orientation, or ethnicity, can potentially gain political relevance and become political identities. Based on cluster analyses, Deaux, Reid, Mizrahi, and Ethier (1995) examined the structure of political identities (e.g., conservative, Democrat, feminist) and found them to be social and collective rather than personal and individualistic. Similarly, symbolic ideology in the sense of ideological identification or party identification has been suggested to be equivalent to one's social or political identity (Conover & Feldman, 1984; Devine, 2015; Green, Palmquist, & Schickler, 2004; Huddy, 2001; Kelly, 1989).[3] In line with Turner et al. (1994, p. 461) who argued information processing to be an "emergent group process" rather than "purely individual, private, asocial, and nonnormative", Huddy (2013, p. 739) states that political identities may underlie *political cohesion*, that is, "shared political attitudes, beliefs, and behavior among group members". Correlational data from both, psychology and political science provides evidence for the claim that one's political identity in terms of social groups based on politically relevant criteria such as socio-economic status, gender or ethnicity (Conover & Feldman, 1984), party affiliation (Campbell, Converse, Miller, & Stokes, 1980; Carsey & Layman, 2006; Converse, 1964; Green et al., 2004) or symbolic ideology (Abramowitz & Saunders, 2006; Baldassarri & Gelman, 2008; Zaller, 1992) is associated with their political opinions.

According to SCT, social identities vary in salience across situations. Drawing on Bruner (1957), Oakes (1987, p. 118) defines a *salient group membership* as "*functioning psychologically* to increase the influence of one's membership in that group on perception and behaviour, and/or the influence of another person's identity as a group member on one's impression of and hence behaviour towards that person". Salience understood this way depends on the interaction between *accessibility* and *fit*. Social categories "may be fleetingly accessible if they are primed in the situation, or they may be chronically accessible if frequently activated or if people are motivated to use them" (Hornsey, 2008, p. 208). Fit can be comparative or normative. Comparative fit is determined by the

[3] In this context a social identity determined by symbolic ideology has also been referred to as *ideological identity* (Popp & Rudolph, 2011) or *ideological social identity* (Devine, 2015).

*meta-contrast ratio*, that is, the relation of inter- to intra-category differences. The larger the ratio, the more likely will this categorization become salient (Turner et al., 1987, 1994). Normative fit or cue validity (Rosch, 1978, p. 30) is

> a probabilistic concept; the validity of a given cue $x$ as a predictor of a given category $y$ (the conditional probability of $y|x$) increases as the frequency with which cue $x$ is associated with category $y$ increases and decreases as the frequency with which cue $x$ is associated with categories other than $y$ increases.

More specifically, "as the degree to which observed similarities and differences between people (or their actions) are perceived as correlated with a division into social categories" (Oakes, 1987, p. 130). As Conover and Feldman (1981, p. 642) noted, "ideological identifications should act as cues or reference points in the evaluation" and thus prime a certain political identity. Turner et al. (1987) propose a *functional antagonism* where as one identity increases in salience, other identities become less salient. However, whether or not identities are functionally antagonistic, is highly disputed (e.g., Abrams & Hogg, 2004). The fundamental mechanism in which identity turns "group normative attitudes into individually held attitudes" is that of *social categorization* and *prototype-based depersonalization* (Hogg & Smith, 2007, p. 120). Salience of a specific social category and associated identity may lead to depersonalization (Onorato & Turner, 2002) by which Turner et al. (1987, p. 50) mean "the process of 'self-stereotyping' whereby people come to perceive themselves more as the interchangeable exemplars of a social category than as unique personalities". Depersonalization results in perception of self and others that is tinted by category *prototypes*. Prototypes contain a meaningfully correlated set of attributes about what defines the group and what differentiates them from others. It is also prescriptive with regard to appropriate behavior and attitudes, that is "how people ought to behave as category members, what attitudes they ought to hold" (Hogg & Smith, 2007, p. 94). Prototypes are instrumental in that they optimize the meta-contrast-ratio, that is the ratio of average intergroup differences over average intragroup differences (Turner et al., 1987, p.47). Attitudes based on ingroup prototypes thus tend to converge to the ingroup normative attitudes and may be "more extreme than the majority of ingroup members' attitudes" (Hogg & Smith, 2007, p. 94). In this sense, multiple studies have found shifts towards a perceived ingroup norm regarding non-political (Abrams,

Wetherell, Cochrane, Hogg, & Turner, 1990; Terry & Hogg, 1996) and political attitudes (Cohen, 2003; Conover & Feldman, 1984; Malka & Lelkes, 2010; McGarty, Turner, Hogg, David, & Wetherell, 1992; Popp & Rudolph, 2011; Schmitt, Branscombe, & Kappen, 2003).

# 3. Overview of the Present Studies

The overarching goal of this dissertation was to evaluate the stability of political attitudes and their psychological underpinnings in the face of situational and methodological variance. Four research questions guided the present work of which each will be addressed in a separate chapter: 1) Does the propensity for cognitive closure depend on the political domain in question rather than one's political ideology alone?, 2) Are there differences in identity-based attitude shifts with regard to the nature of the policy issue addressed?, 3) Can exposure to fake news in the media have an effect on an individual's polarization in affect and attitudes?, and 4) How much variability has there been in social sciences with regard to empirical measurement of political ideology?

The first project is joint work with Thomas Kessler[4] and focused on a potential domain-specificity of cognitive closure (see Chapter 4). The aim of this chapter was to evaluate the competing hypotheses of *ideology asymmetry* and *ideological symmetry* (e.g., Brandt, Reyna, Chambers, Crawford, & Wetherell, 2014; Conway et al., 2016; Jost et al., 2003b; Tetlock, 1984) with regard to epistemic motivation. In three studies, we explored whether psychological constructs associated with high levels of epistemic motivation were sensitive to variations of the political domain in question. A systematic variation of domain within each study aimed at assessing the degree to which epistemic motivation was associated with ideological orientation. In Study 1 we explored differences in discomfort with ambiguity between liberals and conservatives for conservative (religion) and liberal domains (environment). In an attempt to replicate results observed in Study 1, we reassessed domain-specificity on discomfort with ambiguity and introduced closed-mindedness as a second empirical indicator for epistemic motivation in Study 2. Study 3 built on the previous studies by expanding the scope of domain to five topics (religion, climate change, abortion, same-sex marriage, and gun ownership) and dogmatism as the dependent variable.

[4]Friedrich Schiller University Jena, Germany

The second project was conducted as part of a research stay with Stephen W. Wright[5]. Building on theoretical notions from social identity theory (Tajfel, 1978; Tajfel & Turner, 1979) and self-categorization theory (Turner et al., 1987), we proposed that identity-based attitude shifts would depend on the nature of the policy issue addressed (see Chapter 5). According to self-categorization theorists, a salient social identity likely provokes prototype-based depersonalization processes whereby attitudes converge to a perceived ingroup norm (Hogg & Smith, 2007; Turner et al., 1987). We introduced the distinction between *easy* and *hard issues* mostly made by political scientists (Carmines & Stimson, 1980) to investigate whether a shift in identity would be associated with a shift in attitudes for both kinds of issues. Most studies that reported attitude shifts had focused on one hard issue and used source cues as identity salience manipulation (Cohen, 2003; Malka & Lelkes, 2010; Popp & Rudolph, 2011). We built on this work by introducing a set of both, easy and hard issues, and manipulated salience by a simple writing task that did not contain cues with regard to ingroup norms. This design was tested with a Canadian sample in Study 1 and with a sample from the United States in Study 2.

In the third project, Thomas Kessler and I assessed whether exposure to fake news of either in- or out-group members affected polarization in both, affect and attitudes (see Chapter 6). While intentional dissemination of deceptive information is not a novel phenomenon (Posetti & Matthews, 2018), the introduction of the internet and social media have lowered the barriers for misinformation to spread more quickly and efficiently than ever (Greifeneder, Jaffé, Newman, & Schwarz, 2021). Along with the phenomenon of filter bubbles where users are placed in like-minded clusters based on their online activity (Pariser, 2011, p. 10), there is a trend towards increasing political polarization in elites (Druckman, Peterson, & Slothuus, 2013; Layman, Carsey, & Horowitz, 2006), as well as the mass public (Carmines, Ensley, & Wagner, 2012b; Prior, 2013) in many countries (Boxell, Gentzkow, & Shapiro, 2020; Pontusson & Rueda, 2008; Yang et al., 2016). This chapter empirically tests the hypothesis put forward by theorists and in simulations (Azzimonti & Fernandes, 2018; Ribeiro, Calais, Almeida, & Meira, 2017; Tucker et al., 2018) that exposure to online fake news can exacerbate polarization in affect and attitudes of the electorate. Two studies presented participants with real-life fake news and orthogonally crossed correction (disclosure vs. no disclosure) and group

[5]Simon Fraser University Vancouver, British Columbia, Canada

membership of the sender (in-group vs. out-group vs. ambiguous). In doing so, the impact of exposure to online fake news on affective (Study 1) and attitude polarization (Study 2) was compared as a function of whether or not participants knew the social media post was factually incorrect and their identification with the perceived sender.

The final paper in this dissertation is a non-exhaustive literature review that I conducted with Flavio Azevedo[6] (see Chapter 7). Measuring an individual's political ideology has been at the heart of a substantial body of research in social sciences throughout the last century. As the scientific discourse, especially in social psychology, was heavily affected by the so-called Replication Crisis in the past years, the importance of reproducible science has become increasingly apparent (Pashler & Wagenmakers, 2012). Furthermore, as politico-psychological phenomena are mostly latent, in that the constructs of interest are not directly observable, its measurement requires appropriate psychometric development and validation. The lack thereof may affect the verity of reported findings as well as their replicability. With the recent surge in interest in politico-psychological research, instruments intending to gauge one's location on the ideological space abound in the marketplace. Yet, while producing multiple instruments for the same construct may be convenient, it is unlikely that they are all equally valid indicators of ideological content. In a non-exhaustive literature review, we have surveyed nearly 400 scientific articles that include a measure of ideology and report the implications of our findings for the comparability, applicability, and validity of ideological instruments.

[6]Friedrich Schiller University Jena, Germany

# 4. The Domain-Specificity of Need for Cognitive Closure

## 4.1. Introduction

For more than half a century, psychological underpinnings of political ideology have been a topic of interest for researchers and the public alike. Identifying what differentiates the politically liberal or leftist from the politically conservative or rightist has continuously been informing work from multiple disciplines, most prominently in political science and psychology. Research throughout the last decades has mostly been in line with the so called *ideology asymmetry hypothesis*[7] claiming systematic differences in psychological make-up between conservatives and liberals. In an extensive meta-analysis, Jost et al. (2003b) reviewed multiple psychological motives that may underlie these differences, concluding at one point that "[b]y far the most convincing research on left-right differences pertains to epistemic motives" (p. 352). In his theory of lay epistemics, Kruglanski originally defined *epistemic motivation* as "motivation toward knowledge as object" (1990, p. 335) emerging from an "individual's cost-benefit analysis of given epistemic end states" (p. 336). It can thus be understood as a factor underlying and shaping deliberation and information processing (Abele & Gendolla, 2002). Kruglanski and Webster emphasize *need for cognitive closure* as one epistemically relevant motivation and define it as "an individual's desire for a firm answer to a question and an aversion to ambiguity" (1996, p. 467). When faced for instance with a complex decision, an individual high in need for cognitive closure would be pressed to come to a conclusion quickly, whereas an individual low in need for cognitive closure would not be bothered by having to tolerate the epistemic uncertainty and hence, allow themselves more time to come to a conclusion.

[7] Also called *rigidity of the right* (Tetlock, 1984) or *authoritarian personality hypothesis* (Sidanius, 1985).

Epistemic motives in general and need for cognitive closure in specific, are assumed to vary as a function of both, the situation and the person (Kruglanski, 1990; Kruglanski & Webster, 1996; D. M. Webster & Kruglanski, 1994). Intrapersonal, that is situational, differences may occur whenever external (Kruglanski & Freund, 1983; Kruglanski & Webster, 1996; D. M. Webster, Richter, & Kruglanski, 1996) or internal (Sorrentino, Bobocel, Gitta, Olson, & Hewitt, 1988; D. M. Webster & Kruglanski, 1997) circumstances make information processing seemingly costly. In both cases, need for closure "fosters the tendency to *seize* on information that affords closure and to *freeze* on closure once it has been attained" (Jost et al., 2003b, p. 348). The most common operationalization of interpersonal differences in epistemic motivation has been the need for cognitive closure. D. M. Webster and Kruglanski (1994) modeled this construct as a latent variable with five manifest dimensions: preference for order and structure, discomfort with ambiguity, decisiveness, predictability, and close-mindedness. Similarly, Jost et al. (2003b) list the need for order, structure, and closure, discomfort with ambiguity, uncertainty avoidance, dogmatism, cognitive complexity, and closed-mindedness as empirical constructs underlying epistemic motivation. Linking the latter to political ideology, Kruglanski (2013, p. 27) argues that - ceteris paribus - conservative contents should generally be preferred by individuals high in need for closure given their tendency to prefer the status quo over change (but see also, Proch et al., 2019). Conservative ideologies emphasize on tradition and promise "epistemic stability, clarity, order, and uniformity" (Jost et al., 2003b, p. 348) while liberal ideologies promote "the potentiality for change, openness, and the belief in progress (and hence, inevitably, change)" (Kruglanski, 2013, p. 28). In fact, literature supporting the ideological asymmetry hypothesis repeatedly reported higher levels of discomfort with ambiguity or uncertainty (Fibert & Ressler, 1998; Jost et al., 2007; Kossowska & Hiel, 2003), cognitive rigidity (Kemmelmeier, 2007; Rock & Janoff-Bulman, 2010), dogmatism (Choma et al., 2012; Kerlinger & Rokeach, 1966; Rokeach, 1960), or need for cognitive closure (Chirumbolo, 2002; De Zavala, Cislak, & Wesolowska, 2010; D. M. Webster & Kruglanski, 1994) in conservatives rather than liberals.

There is, however, a substantial body of literature challenging the assumption of fundamental differences between conservatives and liberals in psychological make-up, thus arguing in favor of an *ideology symmetry hypothesis*[8]. The rationale being that while beliefs

[8]Also called *extremism* (Sidanius, 1985) or *ideologue hypothesis* (Tetlock, 1984).

and values may vary along the political spectrum (Feldman, 2013; Graham et al., 2013), the motivation to defend them does not, resulting in "bias and intolerance toward different topics and targets" for liberals and conservatives, respectively (Ditto et al., 2019, p. 276). Accordingly, Conway et al. (2016) found self-identified liberals to be more dogmatic and cognitively complex regarding liberal *domains* than self-identified conservatives and vice versa. This domain- or context-specificity[9] was also found for authoritarianism (Conway, Houck, Gornick, & Repke, 2018), intolerance towards outgroups (Brandt et al., 2014; Crawford & Pilanski, 2014), obedience to authority (Frimer, Gaucher, & Schaefer, 2014), selective exposure to opposing information (Frimer, Skitka, & Motyl, 2017), attributional processes (Morgan, Mullen, & Skitka, 2010), the formation of attitudes towards new stimuli (Fiagbenu, Proch, & Kessler, 2019, 2020; Ruisch, Shook, & Fazio, 2020), and disgust sensitivity (Elad-Strenger, Proch, & Kessler, 2020). According to Kruglanski (2013), need for closure "refers to a content-free tendency to seize and freeze on any relevant notions that happen to be accessible" and that "a person with a high need for closure may well be a rigid (or conservative!) liberal, if liberal notions were accessible in her or his environment" (p. 50-51). Hence, content-free (henceforth, *domain-general*, see Conway et al., 2016) need for closure becomes (domain-)"specific with regard to contents that are explicitly related to closure" (Jost et al., 2003b, p. 348).

The following three studies examined whether and how a variation of the domain addressed would affect the link between epistemic motivation and ideological orientation. It focused on discomfort with ambiguity, closed-mindedness, and dogmatism as operationalizations of need for cognitive closure. Study 1 intended to explore differences in discomfort with ambiguity between liberals and conservatives for conservative (religion) and liberal domains (environment), respectively. Expanding on and partly replicating these results, Study 2 investigated domain-specificity in discomfort with ambiguity and closed-mindedness. Furthermore, the influence of personal relevance of domain was considered in Study 2 and 3. Study 3 aimed at testing whether the pattern would hold for dogmatism as dependent variable and more than two domains.

[9]Similar to (Conway et al., 2016, p. 2), we define *domain-specific* as indicating "the particular content that comprises the thought-about subject".

## 4.2. Study 1

This study focused on *intolerance of ambiguity* as one of the oldest constructs making up the overarching concept of need for cognitive closure. It is one of the constructs that has persistently been conceptualized as a correlate of political conservatism and right-wing authoritarianism since its emergence in the 1950s (Furnham & Ribchester, 1995; Jost et al., 2003b). First mentioned by Frenkel-Brunswik (1949) intolerance of ambiguity describes an individual's tendency to "perceive ambiguous situations as sources of threat" (Budner, 1962, p. 29). According to Bhushan and Amal (1986) such ambiguous situations can result in individual reactions on different levels. They may lead to rigid black and white perceptions (cognitive level), or emotions such as "uneasiness, discomfort, dislike, anger and anxiety" (affective level, Grenier, Barrette, & Ladouceur, 2005, p. 594). Similarly, D. M. Webster and Kruglanski (1994) modeled discomfort occasioned by ambiguity as one aspect underlying need for cognitive closure. They assumed that an absence of closure was inherent to ambiguous situations and that individuals with a high need for closure would perceive such situations as aversive. While they consider *discomfort with ambiguity* to be closely related to intolerance of ambiguity on a conceptual level, they noted that previous scales on intolerance of ambiguity included items that "seem to address issues other than intolerance of ambiguity" (D. M. Webster & Kruglanski, 1994, p. 1054). Hence, they included discomfort with ambiguity as a subscale of the Need for Cognitive Closure Scale (NFCS) capturing the affective reactions of exposure to ambiguous situations. The discomfort with ambiguity scale as designed by D. M. Webster and Kruglanski (1994) is considered neutral regarding situational content. Accordingly, we expected to replicate previous findings linking higher levels of discomfort with ambiguity with a more politically conservative attitude (Jost et al., 2007; Kossowska & Hiel, 2003). Our *first hypothesis* states higher levels of domain-general discomfort with ambiguity for conservatives compared to liberals.

When assessing the degree to which discomfort elicited by ambiguous situations is linked to ideological orientation, we argue that the type of situation, that is, the topic addressed, needs to be taken into account. Certain topics or issues can be seen as inherent to a conservative or liberal ideology, respectively (Feldman, 2003b). Consequently, a certain ideological orientation usually coincides with a firm stance on a topic inherent to one's own ideology. Taking this into account, we assumed that ambiguity regarding ideology-

inherent topics might result in a more aversive reaction. More specifically, the purpose of this study was to test whether variance in discomfort with ambiguity between situations where the domain addressed was either liberal or conservative could be accounted for by ideological orientation. Replicating and expanding the work of Conway et al. (2016), we hypothesized that the relation between ideological orientation and discomfort with ambiguity may be domain-specific rather than domain-general. Identical to their study, we chose the topics of *religion* and *environment*. Both, theoretical (Hamilton, 2020; Miller, 1994) and empirical work (Lewis & Maltby, 2000) on ideological orientation found religion to be a topic that is inherent to political conservatism. Environmental topics on the other hand are and have been addressed more often by liberals than conservatives in the US and Western European countries (McCright, Dunlap, & Marquart-Pyatt, 2016). In a recent analysis of Twitter messages about what constitutes a good society, Sterling, Jost, and Hardin (2019) found religion and environmental topics (e.g., climate change, climate future, clean energy) to be among the dominant topics for conservatives and liberals, respectively. Thus, the *second hypothesis* assumes conservatives to experience more discomfort in ambiguous religious situations than liberals and vice versa in ambiguous environmental situations. Regarding differences within a political group, the *third hypothesis* states that conservatives would experience less discomfort in ambiguous environmental compared to ambiguous religious situations. And vice versa we predicted that liberals would experience more discomfort in ambiguous environmental than in in ambiguous religious situations.

### 4.2.1. Method

#### Participants

A minimum sample size of 158 participants required to detect effects at the .05 level with a medium effect size (Cohen's $f = .25$) and a power of .80 was determined by an a priori power analysis in G*Power 3.1 (Faul, Erdfelder, Buchner, & Lang, 2009). 544 U.S. citizens (6.3% males) were recruited from Amazon's Mechanical Turk in June 2018 and were paid a small fee for their participation. Only one participant had to be excluded from the analysis due to failed attention checks and non-meaningful answering patterns[10].

[10]More specifically, the participant indicated the same number on every Likert scale administered.

The final sample comprised $N = 543$ (control: $n = 148$; religion: $n = 189$; environment: $n = 206$) individuals with a mean age of $M = 37.03$ ($SD = 12.59$) of whom 39.15% were female. The majority of participants (47.88%) indicated to be *very liberal*, *liberal* or *somewhat liberal* whereas 31.86% indicated to be *very conservative*, *conservative* or *somewhat conservative* (see Table A.4 in the appendix for sample sizes per condition and ideological orientation). The survey was completed with an average time of $M = 9.91$ ($SD = 5.74$) minutes.

### Instruments and Procedure

In a between-subjects design, participants were randomly assigned to one of three priming conditions (control: $n = 148$; religion: $n = 189$; environment: $n = 206$). Subjects completed measures of discomfort with ambiguity, and indicated their ideological orientation.

**Priming Manipulation** In each of the conditions participants were asked to write a minimum of 300 words on either their daily routine on a weekday (*control*), their attitude towards the significance of religion in our society (*religion*), or the significance of climate change in our society (*environment*) while highlighting the aspects most important to them. Answers were checked for validity with regard to contents by the authors.

**Discomfort with Ambiguity** As found in previous studies, most of the scales that have been used to measure discomfort with ambiguity were either low in internal consistency (Budner, 1962; Bors, Gruman, & Shukla, 2010) or contained non-neutral, mostly conservatively biased wording (D. M. Webster & Kruglanski, 1994). One exception is the Need for Cognitive Closure Scale (NFCS) (D. M. Webster & Kruglanski, 1994) that has been found to have a high internal consistency (Kelemen, Péter Szabó, Mészáros, Forgas, & László, 2014; Kossowska & Hiel, 2003), neutral, non-biased wording (Bolesta, 2017), and which had been used to link political conservatism to discomfort with ambiguity before (Kossowska & Hiel, 2003; Okimoto & Gromet, 2016). To measure discomfort with ambiguity, the nine item discomfort with ambiguity subscale of the NFCS was used. Corresponding to their assigned condition, participants were either given the original scale (control) or a domain-specific scale (religion or environment). To introduce domain-specificity, the terms 'religion' or 'environment' were added to the item, always

maintaining the original item structure. The item "*In most social conflicts, I can easily see which side is right and which is wrong*" for instance was rephrased as either "*In most conflicts on religious topics, I can easily see which side is right and which is wrong*" (religion) or "*In most conflicts on environmental topics, I can easily see which side is right and which is wrong*" (environment). McDonald's omega suggested high internal consistency for each of the scale composites (original scale: $\omega_t = .85$, religion: $\omega_t = .85$, environment: $\omega_t = .82$, see Table A.1 for all items).[11] High levels indicate high levels of discomfort with ambiguity.

**Ideological Orientation** Ideological orientation was assessed with a standard 7-point Likert ideological self-placement scale (1 = *very liberal*, 7 = *very conservative*) that has commonly been used in previous studies on the matter (Conway et al., 2016; Jost et al., 2003b). Participants were categorized as either *conservatives* ($n = 173$; those who scored above 4 on the ideological self-placement scale) or *liberals* ($n = 260$; those who scored below 4 on the ideological self-placement scale), thereby ignoring participants who indicated to be *middle of the road* (i.e., indicated a score of 4) when it comes to their ideological orientation (see Table A.4 in the appendix for sample sizes per condition and ideological orientation).

### 4.2.2. Results

A two-way ANOVA testing the effects of ideological orientation (conservative, liberal) and domain (control, religion, environment) on discomfort with ambiguity was conducted. We found a large main effect of domain, $F(2, 427) = 71.08, p < .001, \eta^2 = .24$, a small main effect of ideological orientation, $F(1, 427) = 5.26, p = .02, \eta^2 = .01$, and the expected interaction, $F(2, 417) = 12.90, p < .001, \eta^2 = .06$ (see Figure 4.1).

[11] Cronbach's alpha has been found to underestimate reliability if items in a scale are not tau-equivalent (Deng & Chan, 2017), and thus statisticians have recommended the use of McDonald's omega rather than Cronbach's alpha (Hayes & Coutts, 2020).

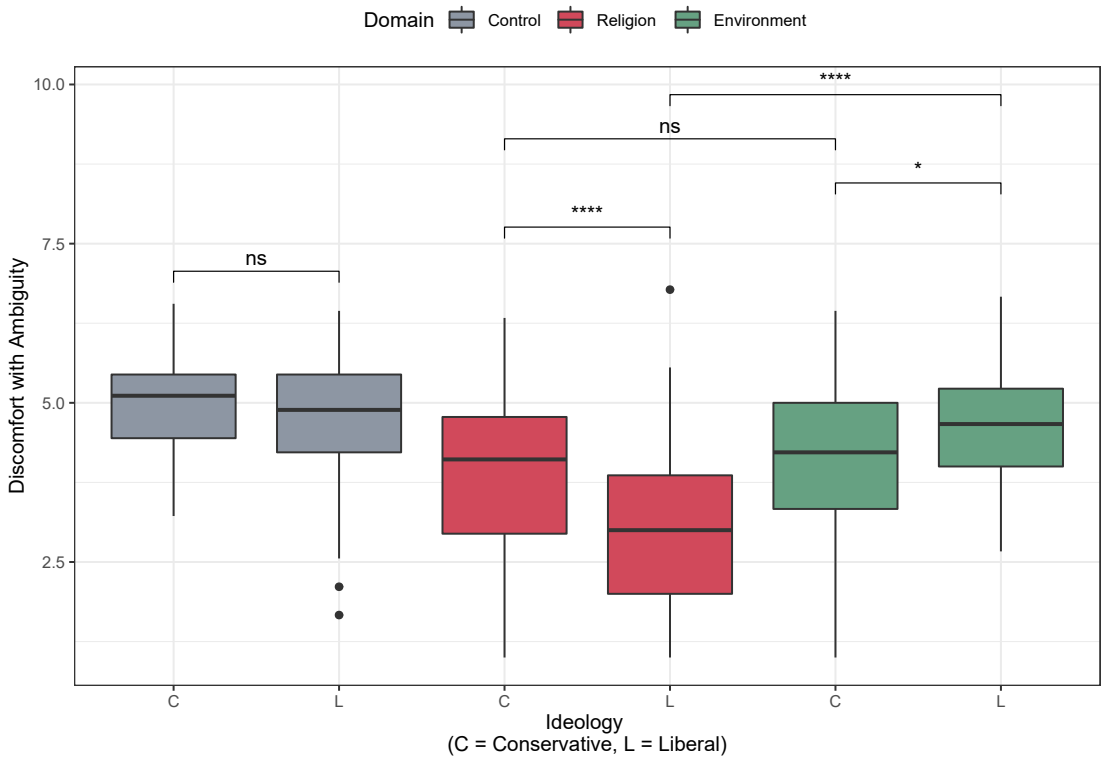



*Figure 4.1.*. Study 1: Two-Way Interaction of Ideological Orientation and Domain on Discomfort with Ambiguity.

Bonferroni-corrected comparisons of the means (see Table 4.1) showed that within the control condition, conservatives ($M = 4.98, SD = .73$) and liberals ($M = 4.72, SD = .98$) displayed similar levels of discomfort with ambiguity, $t(427) = 1.30, p = .20, d = .30$. Compared to conservatives ($M = 4.15, SD = 1.22$), liberals experienced more discomfort with ambiguity in the environment condition, $M = 4.59, SD = .93, t(427) = -2.45, p = .02, d = -.41$. Vice versa, conservatives ($M = 3.85, SD = 1.33$) experienced more discomfort with ambiguity in the religion condition than liberals, $M = 3.01, SD = 1.23, t(427) = 4.76, p < .001, d = .66$. Within liberals, we found higher levels of discomfort with ambiguity in the environment compared to the religion condition, ($t(427) = 10.14, p < .001, d = 1.46$. The same difference was found for conservatives but did not reach statistical significance, $t(427) = 1.49, p = .41, d = .23$.

Table 4.1.

*Study 1: Mean Levels of Discomfort With Ambiguity Per Domain and Ideological Orientation.*

| | Overall | | Control | | Religion | | Environment | |
|---|---|---|---|---|---|---|---|---|
| | *M* | *SD* | *M* | *SD* | *M* | *SD* | *M* | *SD* |
| Overall | 4.14 | 1.28 | 4.76 | 1.02 | 3.38 | 1.32 | 4.39 | 1.05 |
| Conservative | 4.30 | 1.23 | 4.98 | .73 | 3.85 | 1.33 | 4.15 | 1.22 |
| Liberal | 4.05 | 1.32 | 4.72 | .98 | 3.01 | 1.23 | 4.59 | .93 |

### 4.2.3. Discussion

The aim of Study 1 was to determine whether the relation between discomfort with ambiguity and ideological orientation was domain-specific rather than domain-general. Contrary to expectations, we did not replicate previous findings of higher domain-general discomfort with ambiguity in conservatives (e.g.., Jost et al., 2007; Kossowska & Hiel, 2003). As stated in our second hypothesis, we found conservatives to experience more discomfort in ambiguous religious situations than liberals, and liberals to experience more discomfort in ambiguous environmental situations than conservatives. Our third hypothesis assumed conservatives to express more discomfort with ambiguity in the religion compared to the environment condition, and vice versa for liberals. Levels were higher in the environment condition for both ideological groups, yet, the difference was statistically significant for liberals only. In summary, the present results suggest that an individual's discomfort with ambiguity largely depends on the domain addressed, thus, lending first support to the overarching hypothesis of domain-specificity.

While a first main effect of ideological orientation indicated higher levels of discomfort with ambiguity for conservatives, this difference was no longer significant when domain was accounted for. However, compared to the domain-specific conditions, discomfort with ambiguity was most pronounced in the control condition for conservatives and liberals alike. One reading of these results could be that even if items in the control condition were phrased domain-unspecific, that is allegedly neutral, they wouldn't make sense in a semantic vacuum. Items such as *I don't like situations that are uncertain* might make an individual think of a situation where they experienced uncertainty even if they were not explicitly asked to do so. Naturally, an experimenter cannot control

for these associations. Hence, it may well be that ambiguous situations where the domain was not further specified were perceived as generally more ambiguous than domain-specific situations. Literature associated with the ideology asymmetry hypothesis suggests political conservatism to be related with higher levels of uncertainty avoidance (Wilson, 1973). Thus, uncertainty regarding the specific contents of a situation may confound results for conservatives. Given, however, that we found similarly high levels of discomfort for liberals, they might either also be affected by the uncertainty elicited or by yet another mechanism that we have not yet considered in our design.

For within-domain comparisons between ideological groups, we assumed higher levels of discomfort in ambiguous religious situations for conservatives when compared to liberals, and vice versa higher levels of discomfort in ambiguous environmental situations for liberals when compared to conservatives. While no significant differences between ideological groups were found in the control condition, differences were significant and as expected in both domain-specific conditions. When religion was primed and included in the scale, conservatives expressed significantly higher levels of discomfort than liberals. Similarly, liberals expressed significantly higher levels of discomfort than conservatives in the environment condition. Thus, it seems that the direction of association between ideological orientation and discomfort with ambiguity is heavily domain-specific.

We had further hypothesized that between-domain comparisons within ideological groups would reveal ideology-dependent differences in discomfort with ambiguity between the two domain-specific conditions, respectively. More specifically, conservatives were expected to have higher levels in the religion than in the environment condition. For liberals we expected higher levels in the environment than in the religion condition. Our results were partly in line with these expectations. We found that liberals did indeed experience more discomfort with ambiguity in the environment than in the religion condition. However, a statistically non-significant trend towards higher levels in the environment condition was also found for conservatives. In the absence of further variables that could explain this pattern, we suggest that either liberals' discomfort in ambiguous situations depends more strongly on the domain addressed than it does for conservatives. Or the statistical model may still be lacking additional explanatory variables that would need to be accounted for in subsequent studies. Another reason could be the semantic scope of the domains. While both, *religion* and *environment* are somewhat value-laden

and encompass a rather vast semantic realm, *environment* is not solely associated with topics regarding for instance climate change or environmental protection, but also with the environment in terms of one's surroundings more generally. Going further, it may be imperative to choose a more specific and unambiguous wording to test domain-specificity. Therefore, we suggest a further variation of stimuli other than religion and environment in order to map alleged differences more systematically.

## 4.3. Study 2

Study 1 showed that domain-specificity in discomfort with ambiguity may be assumed for both, liberals and conservatives. Conservatives showed similar levels of discomfort with ambiguity in both domain-specific conditions that were overall lower than those in the domain-general condition. When compared to self-identified liberals, they experienced significantly more discomfort with ambiguity in the religion and significantly less in the environment condition. For liberals, we found discomfort with ambiguity to be most pronounced in the environment compared to the religion condition. Given these results, it was the aim of Study 2 to test whether this pattern would replicate, whether it would hold for other measures of need for cognitive closure and to introduce a potential explanatory variable. Hence, hypotheses were the same as in Study 1: A *first hypothesis* assumes higher levels of domain-general discomfort with ambiguity and closed-mindedness for conservatives compared to liberals. A *second hypothesis* states conservatives to experience more discomfort with ambiguity and closed-mindedness in religious domains than liberals, and vice versa in environmental domains. The *third hypothesis* expected higher levels of discomfort with ambiguity and closed-mindedness in the domain of religion compared to environment for conservatives, and vice versa for liberals.

In evaluating whether need for cognitive closure may be situation-dependent, that is, domain-specific, we expected religious issues to be more inherent to a conservative ideology and environmental issues to be more inherent to a liberal ideology. Thereby, we implicitly assumed that different domains or issues may be of more or less relevance, dependent on one's ideological orientation, and that this relevance would increase need for cognitive closure. The degree to which an issue is of personal relevance to an individual has been referred to as value-relevant involvement (B. T. Johnson & Eagly, 1989), issue involvement (Petty & Cacioppo, 1979), or personal relevance (Petty, Cacioppo, & Goldman, 1981). For

the remainder of this study we will use the term *personal relevance* to describe "the extent to which the attitudinal issue under consideration is of personal importance" (Petty & Cacioppo, 1979, p. 1915). Personal relevance has been found to produce resistance to persuasion (Chaiken, Wood, & Eagly, 1996), better memory for (Holbrook, Berent, Krosnick, Visser, & Boninger, 2005) and selective processing of consistent information (W. Hart et al., 2009). This rigid persistence on preexisting attitudes due to high personal relevance is somewhat similar to what Kruglanski and Webster (1996) describe as *seizing and freezing* when "people under a heightened need for closure [...] base their judgments predominantly on early or preexisting cues rather than on later information" (p. 265). Thus, Study 2 tests for a potential effect of personal relevance on the interaction of domain and ideological orientation. Introducing it as a covariate, a *fourth hypothesis* assumes no differences in discomfort with ambiguity and closed-mindedness between conservatives and liberals in either domain, when personal relevance is accounted for. Similarly, the *fifth hypothesis* expected no differences in discomfort with ambiguity or closed-mindedness between domains, when personal relevance is accounted for.

### 4.3.1. Method

#### Participants

A minimum sample size of 158 participants required to detect effects at the .05 level with a medium effect size (Cohen's $f = .25$) and a power of .80 was determined by an a priori power analysis in G*Power 3.1 (Faul et al., 2009). We recruited and paid 180 U.S. citizens for their participation on Amazon's Mechanical Turk. Only one participant had to be excluded from the analysis due to failed attention checks and non-meaningful answering patterns.[12] The final sample comprised $N = 179$ (control: $n = 64$; religion: $n = 51$; climate change: $n = 63$) individuals with a mean age of $M = 38.02$ ($SD = 11.01$) of whom 56.4% were female. The majority of participants (52.51%) indicated to be *very liberal*, *liberal* or *somewhat liberal* whereas 27.93% indicated to be *very conservative*, *conservative* or *somewhat conservative* (see Table A.5 in the appendix for sample sizes per condition and ideological orientation). The survey was completed with an average time of $M = 12.61$ ($SD = 6.05$) minutes.

[12] More specifically, the participant indicated the same number on every Likert scale administered.

**Instruments and Procedure**

We replicated the procedure and methods used in Study 1, added closed-mindedness as a dependent variable, changed the domain of environment to climate change, and included an item to assess the personal relevance of the topic addressed.

**Discomfort with Ambiguity and Closed-Mindedness** Participants were assigned one of three versions of the eight item closed-mindedness and the nine item discomfort with ambiguity subscale of the NFCS (Roets & Van Hiel, 2007) with either the original or a domain-specific wording. Domains were somewhat similar to Study 1, however, we replaced *environment* with *climate change* in order to tackle a more content-specific domain. The wording between domain-specific conditions was identical and only differed to the extent that either *religion* or *climate change* was inserted (see Table A.2 for both scales). Internal consistency was acceptable for both, the discomfort with ambiguity (original scale: $\omega_t = .80$, religion: $\omega_t = .79$, climate change: $\omega_t = .76$), and the closed-mindedness subscale (original scale: $\omega_t = .77$, religion: $\omega_t = .69$, climate change: $\omega_t = .76$).

**Personal Relevance of Topic** Participants indicated how important the domain was to them personally on a 7-point scale (1 = *not important at all*, 7 = *extremely important*). Mean personal relevance of religion was marginally higher for conservatives than for liberals (conservatives: $M = 3.51, SD = 2.52$; liberals $M = 2.43, SD = 2.40, t(138) = 1.69, p = .09, d = .55$), while mean personal relevance of climate change was higher for liberals compared to conservatives (conservatives: $M = 3.58, SD = 2.23$; liberals: $M = 6.15, SD = 1.21, t(138) = -4.58, p < .001, d = -1.31$).

### 4.3.2. Results

A two-way MANOVA testing the effects of ideological orientation (conservative, liberal) and domain (control, religion, climate change) on discomfort with ambiguity and closed-mindedness was conducted. The multivariate result was significant for domain, Pillai's trace = .39, $F(2, 138) = 16.61, p < .001$, and the interaction of domain and ideological orientation, Pillai's trace = .08, $F(2, 138) = 2.90, p = .02$. When accounting for personal relevance, multivariate results were significant for domain, Pillai's trace =

.40, $F(2, 137) = 17.20, p < .001$, the interaction of domain and ideological orientation, Pillai's trace = .07, $F(2, 137) = 2.46, p = .05$, and personal relevance, Pillai's trace = .08, $F(1, 137) = 6.06, p = .003$.

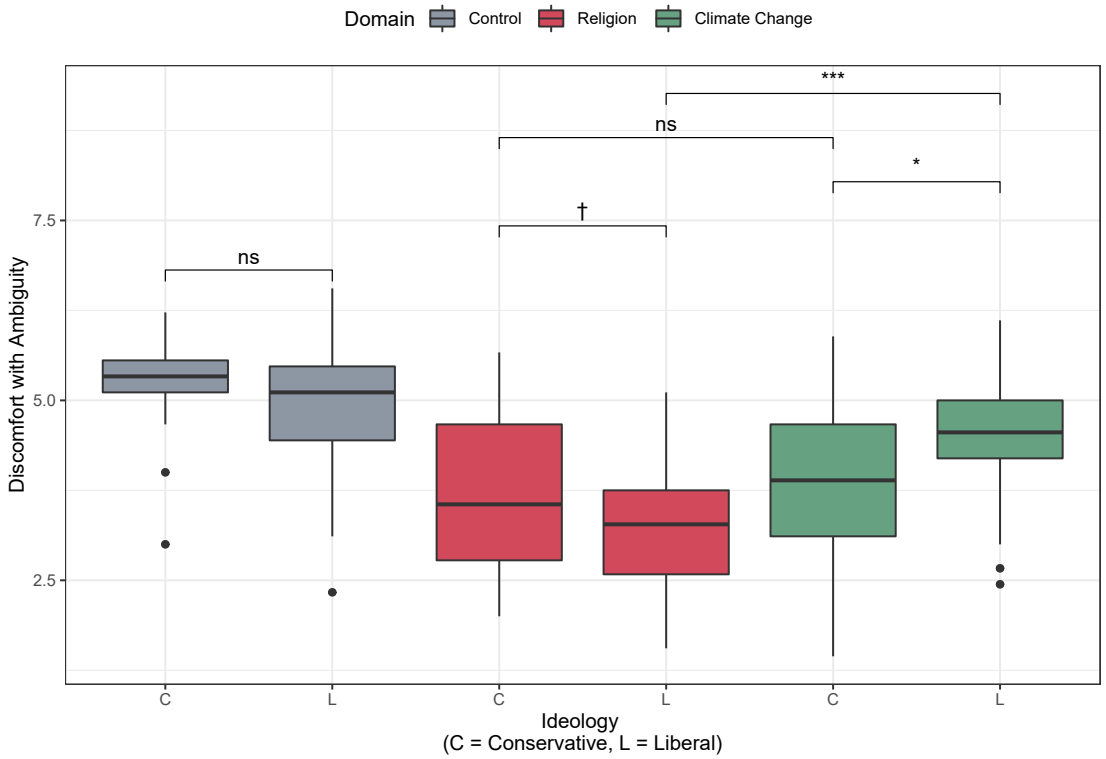



*Figure 4.2.*. Study 2: Two-Way Interaction of Ideological Orientation and Domain on Discomfort with Ambiguity.

### Discomfort With Ambiguity

Univariate analyses revealed a large main effect of domain, $F(2, 138) = 36.05, p < .001, \eta^2 = .33$, and a significant interaction of domain and ideological orientation, $F(2, 138) = 4.29, p = .02, \eta^2 = .04$ (see Figure 4.2). Bonferroni-corrected comparisons of the means (see Table 4.2) suggested no significant differences between conservatives ($M = 5.17, SD = .80$) and liberals ($M = 5.00, SD = .92$) in the control condition, $t(138) = .58, p = .56, d = .19$. Differences in domain-specific discomfort with ambiguity were as expected, with higher levels for conservatives in the religion condition (conservatives: $M = 3.76, SD = 1.14$; liberals: $M = 3.18, SD = .91, t(138) = 1.90, p = .06, d = .56$),

and significantly higher levels for liberals in the climate change condition (conservatives: $M = 3.90, SD = 1.10$; liberals: $M = 4.47, SD = .80, t(138) = -2.15, p = .03, d = -.59$). Within liberals, we found higher levels of discomfort with ambiguity in the climate change compared to the religion condition, $t(138) = -5.24, p < .001, d = -1.51$. No differences between conditions were found for conservatives.

Univariate analyses accounting for personal relevance revealed a large main effect of domain, $F(2, 137) = 37.08, p < .001, \eta^2 = .33$, and a significant interaction effect, $F(2, 137) = 9.67, p = .002, \eta^2 = .02$. Bonferroni-corrected comparisons of the means indicated higher levels of discomfort with ambiguity for liberals in the climate change compared to the religion condition, $t(137) = -3.39, p = .003, d = -.49$. All other comparisons were no longer significant.

Table 4.2.

*Study 2: Mean Levels of Discomfort With Ambiguity and Closed-Mindedness Per Domain and Ideological Orientation.*

| | Overall | | Control | | Religion | | Climate Change | |
|---|---|---|---|---|---|---|---|---|
| | *M* | *SD* | *M* | *SD* | *M* | *SD* | *M* | *SD* |
| | | | | Discomfort with Ambiguity | | | | |
| Overall | 4.25 | 1.15 | 5.00 | .91 | 3.39 | 1.01 | 4.19 | .95 |
| Conservative | 4.24 | 1.19 | 5.17 | .80 | 3.76 | 1.14 | 3.90 | 1.10 |
| Liberal | 4.32 | 1.14 | 5.00 | .92 | 3.18 | .91 | 4.47 | .80 |
| | | | | Closed-Mindedness | | | | |
| Overall | 3.65 | .96 | 3.58 | .86 | 3.54 | .95 | 3.81 | 1.04 |
| Conservative | 3.56 | .95 | 3.43 | .84 | 3.78 | 1.13 | 3.48 | .90 |
| Liberal | 3.78 | .97 | 3.68 | .88 | 3.42 | .81 | 4.17 | 1.06 |

**Closed-Mindedness**

Univariate analyses revealed a significant interaction of domain and ideological orientation, $F(2, 138) = 3.34, p = .04, \eta^2 = .04$ (see Figure 4.3). Bonferroni-corrected comparisons of the means (see Table 4.2) suggested no significant differences between conservatives ($M = 3.43, SD = .84$) and liberals ($M = 3.86, SD = .88$) in the control con-

dition, $t(138) = -.87, p = .39, d = -.29$. While no differences between conservatives and liberals were found in the religion condition, $t(138) = 1.18, p = .24, d = .37$, liberals had significantly higher levels of closed-mindedness in the climate change condition than conservatives (conservatives: $M = 3.48, SD = .90$; liberals: $M = 4.17, SD = 1.06, t(138) = -2.57, p = .01, d = -.70$). Within liberals, we found higher levels of closed-mindedness in the climate change compared to the religion condition, $t(138) = -3.00, p = .01, d = -.791$. No differences between conditions were found for conservatives. Post hoc power analyses revealed that given the small effect size (Cohen's $d = .37$) a sample size of $n = 74$ and $n = 128$ per group would be necessary for the difference to be significant at the 5% level (one-tailed) with an 80% chance. Thus, we cannot rule out that there might be a small effect of ideological orientation on discomfort with ambiguity in religious domains.

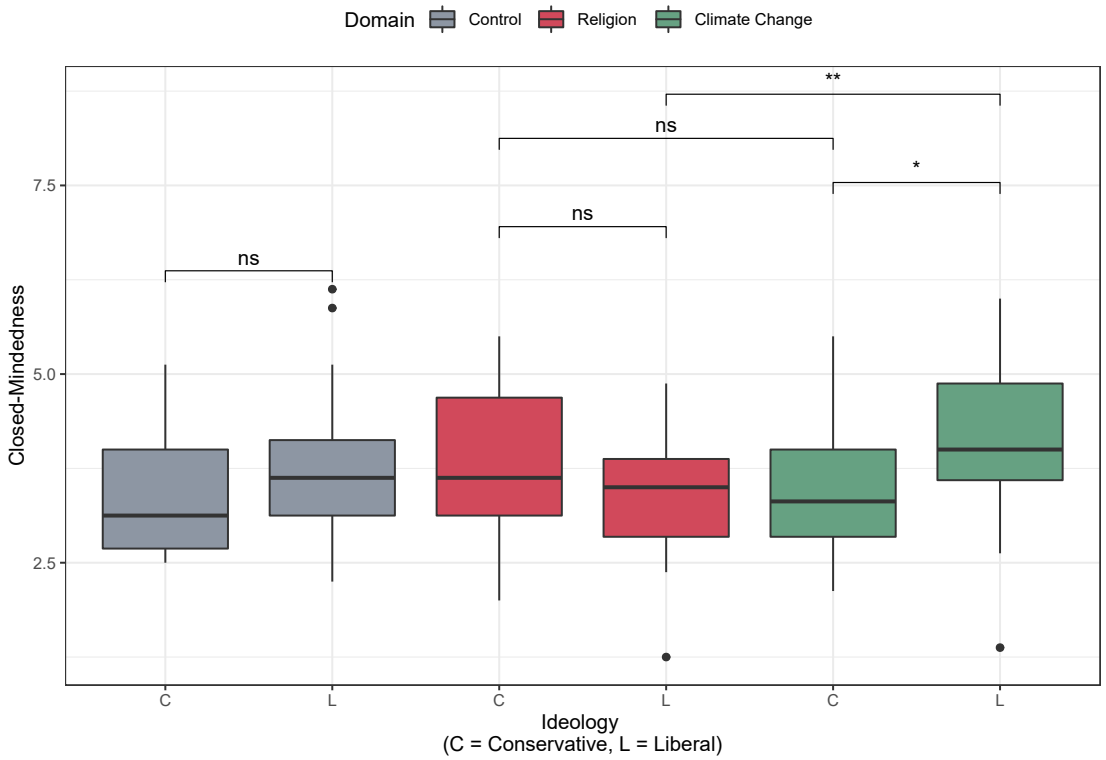



*Figure 4.3.*. Study 2: Two-Way Interaction of Ideological Orientation and Domain on Closed-Mindedness.

Univariate analyses accounting for personal relevance revealed a significant interaction effect, $F(2, 137) = 4.36, p = .02, \eta^2 = .06$. Bonferroni-corrected comparisons of the means indicated higher levels in the climate change condition for liberals compared to conservatives, $t(137) = -2.95, p = .004, d = -.49$, and higher levels of closed-mindedness within liberals in the climate change compared to the religion condition, $t(137) = -3.36, p = .003, d = -.48$. All other comparisons were no longer significant.

### 4.3.3. Discussion

It was the aim of Study 2 to replicate and expand findings from Study 1. Against our first hypothesis, but similar to Study 1, no differences between conservatives and liberals in the control condition were found for either dependent variable. Results were mostly in line with our second hypothesis; liberals experienced more discomfort with ambiguity and closed-mindedness in the climate change condition than conservatives. On the other hand, conservatives indicated higher levels of discomfort with ambiguity but not closed-mindedness in the religion condition when compared to liberals. Replicating results from Study 1, liberals' discomfort with ambiguity and closed-mindedness levels were higher for the domain of climate change compared to religion. Those differences were again not found for conservatives. When accounting for personal relevance, differences in discomfort with ambiguity between conservatives and liberals were no longer significant. However, differences between domains were still significant for liberals. No changes in closed-mindedness were observed. Hence, results lend partial support to the fourth hypothesis but no support to the fifth hypothesis. In summary, results from Study 1 were consistently replicated for discomfort with ambiguity but not for closed-mindedness.

Study 2 substantiates the overarching hypothesis of domain-specificity for discomfort with ambiguity. Results from Study 1 were consistently replicated, again showing no difference in domain-general discomfort with ambiguity and the expected differences between conservatives and liberals. When accounting for personal relevance, those differences were no longer significant while liberals still experienced higher discomfort in the climate change compared to the religion condition. Thus, personal relevance might explain the variance between ideologies per domain - but not the variance within liberals between domains. With regard to closed-mindedness, results indicate a significant difference between ideologies for climate change only that was still statistically significant

when personal relevance was accounted for. Similarly, liberals' higher levels in the climate change relative to the religion condition were also unaffected when personal relevance was added as a covariate. Hence, this does not seem to explain the observed differences. Closed-mindedness was mostly similar for either scale (domain-general and domain-specific), irrespective of participants' ideological orientation. The highest value that also drove the significant differences mentioned before, was that in the climate change condition for liberals. Taking a closer look at the items in both need for cognitive closure scales (NFCS, Roets & Van Hiel, 2007) might offer an explanation as to why differences in the religion domain were observed with regard to discomfort with ambiguity only. The latter address more *affective* aspects of need for cognitive closure while the other tackles *cognitive* aspects (D. M. Webster & Kruglanski, 1994). Both, religion and climate change, can be a matter of conviction or even belief and hence, have an affective component. Adding the impact of personal relevance, it makes sense that conservatives to whom religion is personally relevant would score high on items like "*When I am confused about something related to religion, I feel very upset*" while liberals, to whom religion was relatively less relevant, would score lower. The same rationale could explain differences in discomfort with ambiguity with regard to climate change. However, given that climate change is the object of research to thousands of research institutes worldwide as well as subject of political debates and policies, it makes sense that liberals, who see this issue as more pressing than conservatives (McCright et al., 2016), would rather disagree with (reversed) items such as "*When considering most conflicts on climate change, I can usually see how both sides would be right*". That is, given the policy relevance, conflicts on climate change would potentially be perceived as conflicts between pro- and opponents while religious conflicts are not necessarily discussed in public and between parties. As personal relevance did not affect the difference between conservatives and liberals in this domain, future studies should consider further explanatory variables, such as for instance the degree to which one identifies with a certain political ideology.

## 4.4. Study 3

In Study 1 and 2 we showed that the relation between ideological orientation and discomfort with ambiguity was domain-specific rather than domain-general. This pattern was only partly found for closed-mindedness in Study 2. Effects of personal relevance

were only observed for discomfort with ambiguity and not for closed-mindedness. To investigate further the role of domain in the interaction between ideological orientation and need for cognitive closure, we adopted the procedure of Study 1 and 2 and modeled dogmatism as the dependent variable. In addition, three more political domains were included.

The two most prominent conceptualizations of dogmatism have been shaped by Rokeach (1960) and Altemeyer (1996). The latter defined dogmatism as a "relatively unchangeable, unjustified certainty" and "conviction beyond the reach of evidence to the contrary" (Altemeyer, 1996, p. 201) while Rokeach (1960) defined dogmatic beliefs as "closed belief systems" (p. 67). Given the rigidity and resistance to change these definitions imply, adopting dogmatic beliefs has been understood as a way to satisfy epistemic needs and motives (Kruglanski, 2013) and has thus been conceptualized as a fundamental construct underlying epistemic motivation (Jost et al., 2003b; Jost, 2017). In their meta-analysis on ideological asymmetries in epistemic motivation, Jost (2017) found the largest effect sizes for dogmatism (unweighted $r = .51$) and out of the 50 examined studies "no study in which leftists scored higher" (p. 171). We expected to replicate these findings in a domain-general condition, thus, hypothesizing higher levels for conservatives when compared to liberals.

Conway et al. (2016) have found liberals and conservatives to be equally dogmatic - for different domains, respectively. This result is similar to our findings from Study 1 and 2 regarding discomfort with ambiguity and closed-mindedness. Study 3 aimed at replicating this domain-specificity of dogmatism for more than two political domains. We thus added the topics of *abortion*, *same-sex marriage*, and *gun ownership*. According to research in political science (Niemi, Weisberg, & Kimball, 2001, p. 221) and recent polls (Pew Research Center, 2019a, 2019b), U.S. Americans are heavily divided on whether or not abortion and same-sex marriage should be legal in the United States. Gun ownership, on the other hand, seems to be a topic that conservatives and liberals have discussed in a similar way in online Twitter discourse (Sterling et al., 2019). The association of dogmatism and ideological orientation in these conditions was examined in an exploratory matter. That is, we had no expectations with regard to whether conservatives or liberals would have higher levels of dogmatism in the respective condition. However, given the results on domain-specificity obtained in Study 1 and 2, we assumed that the relation

between ideological orientation and dogmatism might be just as susceptible to differences in domain and the respective personal relevance assigned. Directed hypotheses were identical to Study 2.

### 4.4.1. Method

#### Participants

A minimum sample size of 211 participants required to detect effects at the .05 level with a medium effect size (Cohen's $f = .25$) and a power of .80 was determined by an a priori power analysis in G*Power 3.1 (Faul et al., 2009). 580 U.S. citizens were recruited and paid on Amazons Mechanical Turk. All assignments were examined regarding failed attention checks, text production that was unrelated to the topic or visible arbitrary answering patterns. For six participants out of 580 at least one of these criteria was true and they were therefore excluded from further analysis. The final sample ($N = 574$) was on average 36.78 years old ($SD = 11.12$) and consisted of 55.1% males. 51.9% of subjects indicated to be *very liberal*, *liberal* or *somewhat liberal*, whereas 26.7% stated to be *very conservative*, *conservative*, or *somewhat conservative* (see Table A.6 in the appendix for sample sizes per condition and ideological orientation). The survey was completed with an average time of $M = 14.87$ ($SD = 8.10$) minutes.

#### Instruments and Procedure

The design and procedure was in most parts identical to Study 1 and 2. Dogmatism was modeled as dependent variable and in addition to the three previous conditions, three more were added: *abortion*, *gun ownership* and *same-sex marriage*.

**Personal Relevance of Topic** Participants indicated how important the domain was to them personally on a 7-point scale (1 = *not important at all*, 7 = *extremely important*). Mean personal relevance of religion was higher for conservatives compared to liberals (conservatives: $M = 4.58, SD = 2.44$; liberals $M = 1.54, SD = 2.12, t(440) = 5.75, p < .001, d = 1.52$), while mean personal relevance of climate change (conservatives: $M = 3.13, SD = 2.46$; liberals: $M = 5.64, SD = 1.58, t(440) = -5.42, p < .001, d = -1.26$) and same-sex marriage was higher for liberals than for conservatives (conservatives: $M = 3.03, SD = 2.76$; liberals: $M = 4.11, SD = 2.11, t(440) = -2.19, p = .03, d =$

−.54). Abortion and gun ownership were equally relevant to conservatives and liberals, respectively.

**Dogmatism** Considering recent criticism that the Rokeach (1960) dogmatism scale was not content-free and thus, an ideological rather than a cognitive style measure (Van Hiel, Onraet, & De Pauw, 2010), we decided to implement the Altemeyer (1996) dogmatism scale. Depending on the topic, participants were assigned one of six versions of the scale. In the control condition, participants saw the original item (e.g., *Anyone who is honestly and truly seeking the truth will end up believing what I believe*) whereas the topic was added to the item in any other condition (e.g., *Anyone who is honestly and truly seeking the truth about* [religion/climate change/abortion/gun ownership/same-sex marriage] *will end up believing what I believe*). Otherwise the wording was identical between conditions. McDonald's omega suggested high internal consistency for each of the scale composites (original scale: $\omega_t = .94$, religion: $\omega_t = .94$, climate change: $\omega_t = .92$, abortion: $\omega_t = .95$, gun ownership: $\omega_t = .95$, same-sex marriage: $\omega_t = .93$, see Table A.3 for all items).

### 4.4.2. Results

A two-way ANOVA testing the effects of ideological orientation (conservative, liberal) and domain (control, religion, climate change, abortion, gun ownership, same-sex marriage) on dogmatism was conducted. We found a medium main effect of domain, $F(5, 440) = 23.80, p < .001, \eta^2 = .19$, a small main effect of ideological orientation, $F(1, 440) = 10.21, p = .002, \eta^2 = .02$, and the expected interaction, $F(5, 440) = 8.76, p < .001, \eta^2 = .07$ (see Figure 4.4).

Bonferroni-corrected comparisons of the means (see Table 4.3) suggested higher domain-general dogmatism in conservatives than in liberals (conservatives: $M = 3.94, SD = 1.07$; liberals: $M = 2.73, SD = .85, t(440) = 4.70, p < .001, d = 1.25$). Differences in domain-specific dogmatism were also as expected, with higher levels for conservatives in the religion condition (conservatives: $M = 4.36, SD = 1.23$; liberals: $M = 3.29, SD = 1.04, t(440) = 3.75, p < .001, d = .93$), and higher levels for liberals in the climate change condition (conservatives: $M = 3.70, SD = .97$; liberals: $M = 4.46, SD = .97, t(440) = -3.06, p = .003, d = -.79$). Moreover, conservatives displayed more dogmatism regarding abortion than liberals (conservatives: $M = 4.81, SD = 1.46$; liberals: $M = 4.21, SD = .89, t(440) = 2.27, p = .03, d = .49$)

but not regarding gun ownership or same-sex marriage. Within liberals, we found higher levels of dogmatism in the climate change compared to the religion condition, $t(365) = -5.37, p < .001, d = -1.16$, while the opposite was not found for conservatives. For liberals, dogmatism in the religion condition was significantly lower than in any other condition. For conservatives, on the other hand, dogmatism was significantly lower in the climate change condition compared to all other conditions except religion (see Table A.7 in the appendix for all contrasts between conditions).

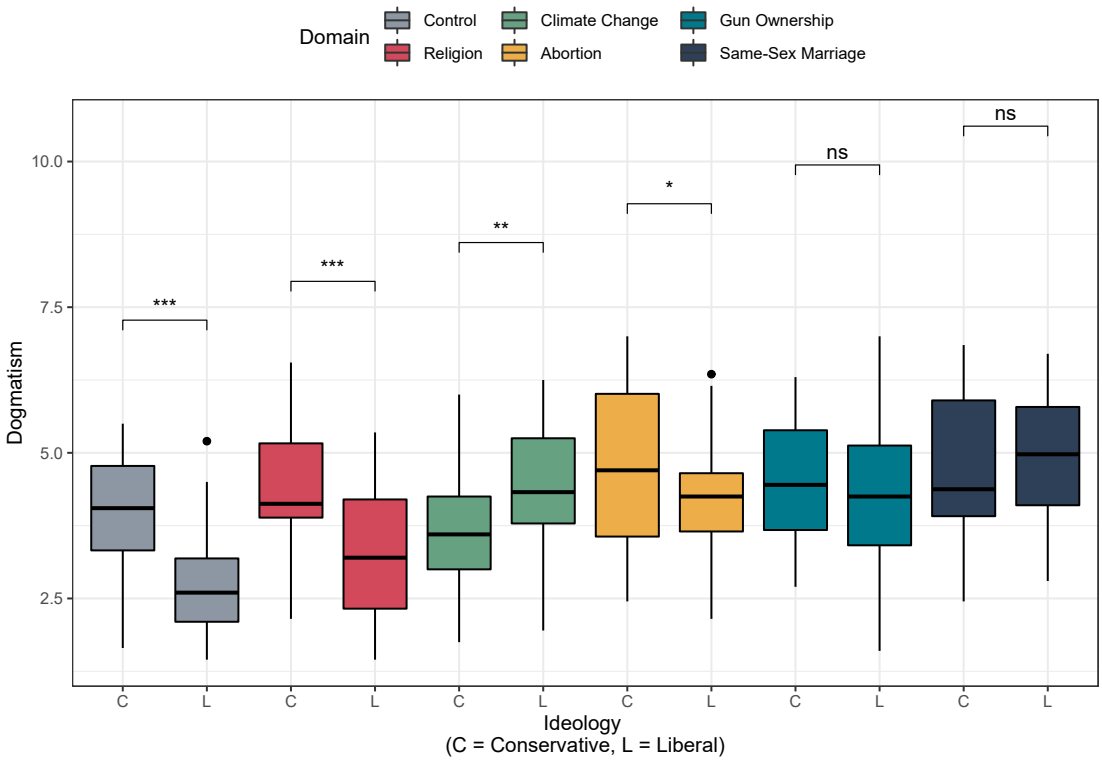



*Figure 4.4.*. Study 3: Two-Way Interaction of Ideological Orientation and Domain on Dogmatism.

When controlling for personal relevance, we still found a significant main effect of domain, $F(5, 439) = 26.50, p < .001, \eta^2 = .19$, ideological orientation, $F(1, 439) = 11.38, p < .001, \eta^2 = .02$, the expected interaction, $F(5, 439) = 4.28, p < .001, \eta^2 = .03$, as well as a a significant main effect of personal relevance, $F(1, 439) = 78.38, p < .001, \eta^2 = .12$. Differences between conservatives and liberals were still significant for abortion, $t(364) = 2.36, p = .02, d = .57$, but no longer for the domains of religion and climate change.

Differences within liberals and conservatives between the latter two conditions were also no longer significant.

Table 4.3.

*Study 3: Mean Levels of Dogmatism Per Domain and Ideological Orientation.*

| | Overall | | Control | | Religion | | Climate | | Abortion | | Gun | | Same-Sex | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *M* | *SD* | *M* | *SD* | *M* | *SD* | *M* | *SD* | *M* | *SD* | *M* | *SD* | *M* | *SD* |
| Overall | 4.03 | 1.24 | 3.15 | 1.08 | 3.53 | 1.21 | 4.13 | 1.01 | 4.33 | 1.18 | 4.25 | 1.20 | 4.74 | 1.08 |
| Con. | 4.31 | 1.22 | 3.94 | 1.07 | 4.36 | 1.23 | 3.70 | .97 | 4.81 | 1.46 | 4.51 | .98 | 4.66 | 1.29 |
| Lib. | 3.97 | 1.25 | 2.73 | .85 | 3.29 | 1.04 | 4.46 | .97 | 4.21 | .89 | 4.27 | 1.28 | 4.93 | 1.03 |

*Note.* Climate = Climate Change; Gun = Gun Ownership; Same-Sex = Same-Sex Marriage; Con = Conservative; Lib = Liberal

### 4.4.3. Discussion

Study 3 examined whether and to what respect the association between ideological orientation and dogmatism could be domain-specific. In line with our first hypothesis, domain-general dogmatism was higher in conservatives than in liberals. Similar to Study 1 and 2, and in line with our second hypothesis, we found higher levels of domain-specific dogmatism in conservatives in the religion condition, and higher levels in liberals when the domain in question was climate change. Moreover, dogmatism with regard to abortion was also higher in conservatives than in liberals. Within liberals, religious dogmatism was significantly lower than dogmatism with regard to climate change or any other of the tested domains. As in Study 1 and 2, differences in dogmatism between the religion and climate change condition were not significant for conservatives, thereby partly disconfirming our third hypothesis. In general, conservatives' dogmatism with regard to climate change was lowest relative to all other domains (except religion). As hypothesized in the fourth and fifth hypothesis, once personal relevance was accounted for, differences between ideologies within domain, and differences within ideologies between domains, were no longer significant.

The interaction of ideological orientation and domain on dogmatism both, supports and contradicts the ideology asymmetry hypothesis. Other than in Study 1 and 2, ideological asymmetries in dogmatism were found for the control group. Furthermore,

conservatives were more dogmatic than liberals with regard to religion and abortion. However, liberals were *more* dogmatic than conservatives regarding climate change and in two out of five domains (gun ownership, same-sex marriage) we found no differences. Also, dogmatism levels were overall lower in the control than in the domain-specific conditions, irrespective of ideological orientation. Regarding discomfort with ambiguity we had previously argued that levels in the domain-general condition might be confounded with higher ambiguity of the item itself relative to items where a political domain was specified. That is, an unspecific, general situation is by definition more ambiguous because the range of possible real-life equivalents that a participant may imagine to derive their level of discomfort is much broader. Using the same logic, it makes sense that dogmatism levels were higher in the domain-general condition. Reporting how unchangeably certain and convinced, that is, *dogmatic*, one is about something is much easier when they know what this *something* is. Both, the need for cognitive closure scale (D. M. Webster & Kruglanski, 1994) and the dogmatism scale (Altemeyer, 1996) are assumed to measure latent dispositions rather than political attitudes. While our results do not contest this assumption, those dispositions may be expressed to a varying degree *within* one person, depending on the specific contents of the situation that is evaluated.

The differences in dogmatism between liberals and conservatives seem to have been driven by personal relevance for two domains (religion, climate change). That is, if the domains of religion or climate change are specifically important to an individual, they are more likely to agree with items such as "*The things I believe in regarding religion/climate change are so completely true, I could never doubt them*". Thus, given that personal relevance of religion itself was higher for conservatives and vice versa, personal relevance of climate change was higher for liberals, it makes sense that the difference would be no longer significant. Moreover, given similar personal relevance ratings of abortion for both, conservatives and liberals, differences between ideologies were still significant when personal relevance was accounted for. Hence, other than dogmatism with regard to religion and climate change, dogmatism regarding the domain of abortion might not be determined by an individual's personal relevance.

## 4.5. General Discussion

The goal of the current series of studies was to examine potential differences in how an individual's epistemic motivation or need for cognitive closure relates to their ideological orientation dependent on a variation of issues. The prevailing claim in psychological and political research that conservatives would have a higher need for cognitive closure than liberals was almost exclusively tested with the standard, domain-general scales. The current work is among the first to include a variation of the situation, that is the political domain within which an individual would experience a need for cognitive closure. Furthermore, it is the first to test this assumption of domain-specificity with regard to more than one operationalization of need for cognitive closure: discomfort with ambiguity, closed-mindedness, and dogmatism. Three studies demonstrated that an individual's epistemic motivation or need for cognitive closure might not solely be explained by their ideological orientation but that the situation, that is, the domain addressed, as well as the personal relevance assigned to a domain, can have an influence. Results supported the assumption of a domain-dependent ideology symmetry hypothesis.

In Study 1 and 2 we found higher levels of discomfort with ambiguity in conservatives (vs. liberals) for the domain of religion, and higher levels in liberals (vs. conservatives) for the domain of environment/climate change. The ideological groups did not differ in the control condition. Within ideological groups, discomfort with ambiguity was higher in the control than in both domain-specific conditions. Comparing the latter two resulted in a significant difference for liberals only, with higher levels in the environment/climate-change compared to the religion condition. Regarding closed-mindedness (Study 2) we only found differences with regard to climate change between ideological groups and within liberals (when compared to religion). The challenge these results pose to existing findings is twofold; not only did we not replicate higher levels of discomfort with ambiguity in conservatives using the domain-general scale, we also found liberals to experience more of such when the situation in question was about environmental issues. Jost et al. (2003b) put forward the claim that ideological belief systems are adopted because they satisfy pre-existing needs and motives. To the extent that high need for cognitive closure produces a preference for the status quo, this preference may be met by status-quo promoting ideologies such as conservatism (Kruglanski, 2013, p. 27). However, we suggest that a *status quo* can refer to more than society as a whole. Individuals come with

differential pre-existing attitudes and social identities all of which one may be motivated to maintain as they also satisfy psychological needs and motives (Turner et al., 1987). Similar to dissonance theory (Festinger, 1957), experiencing uncertainty regarding an attitude or belief than one is committed to, might lead to discomfort or, more generally, the need for cognitive closure to avoid further dissonance.

Results from Study 3 substantiate this assumption. We replicated patterns from Study 1 and 2 for the domains of religion, climate change, and abortion but not for same-sex marriage and gun ownership. Zooming in on the degree to which conservatives and liberals assigned personal relevance to each topic, we found a clear propensity of liberals to assign high relevance to climate change and low relevance to religion. Relative to liberals, conservatives assigned higher relevance to religion and lower relevance to climate change. Thus, need for cognitive closure might be domain-specific if a certain domain is of personal relevance. This relevance, in turn, may likely be affected by one's ideological orientation. Given that both, religion and climate change, can be seen as a matter of belief, certainty about these matters may also be an affirmation of their existence. This does not apply to the other topics; there would be no apparent reason to doubt the existence of abortion, same-sex marriage or gun ownership. Regarding the latter, the status quo would thus be an attitude rather than a belief. Future studies could for instance prime the respective attitude (e.g., pro or contra abortion) and then test for differences in need for cognitive closure.

One finding that was not replicated in Study 3 were similar levels of the dependent variable in the domain-general control condition. This was true for discomfort with ambiguity (Study 1 and 2) and closed-mindedness (Study 2) but not for dogmatism (Study 3). To the knowledge of the authors, there is no empirical work with similar outcomes. Turning to the scale items themselves, one could say that the discomfort with ambiguity subscale comprises affective verbs and adjectives (uncomfortable, confused, dislike, annoying) while the closed-mindedness subscale mentions problems, opinions, or conflict. Both of which could potentially be applied to many situations. *I don't like situations that are uncertain* for instance could refer to the state of the world, society, interpersonal conflict, or job security - to name just a few. The dogmatism scale however, mentions beliefs or convictions in almost every item, thus restricting the scope of potential status quos to uphold to beliefs. Reconsidering the notion that a

conservative ideology comprises an appreciation of tradition and potentially religion, one could say that rigidly holding on to (not further specified) beliefs might be more likely for conservatives. However, one could also argue that beliefs about equality or change are deeply engrained in liberal ideologies, thus disproving the explanation outlined before.

### 4.5.1. Limitations and Future Research

In the present studies we conceptualized domain, that is, topic, as a between-subjects experimental condition on one identical dependent variable, respectively. However, this comes with two caveats, one methodological, one theoretical. Methodologically speaking, we assumed measurement invariance across all scales within a study. This was done to be able to compare scores across condition. Yet, this untested assumption should be considered in future studies. On a theoretical level, one might say that need for cognitive closure as dispositional variable *needs* to be measured in a domain-general way to capture "relevant notions that happen to be accessible" (Kruglanski, 2013, p. 50-51). That is, if the item is unspecific about the kind of situation, it could be indicative to see which situations are readily accessible. Future research should hence investigate further the relation between domain-general and domain-specific need for cognitive closure by considering a state-trait distinction and their interaction.

Regarding the measurement of political ideology, one must acknowledge that capturing this with a self-report measure is only one way to do so. If political ideology is modeled as uni-dimensional (Jost, Nosek, & Gosling, 2008), then comparing the ends of the scales, that is, liberals to conservatives, almost comes naturally. There is, however, statistical evidence that suggests a bi-dimensional model with correlated factors over a uni-dimensional one (Choma et al., 2009; Choma, Ashton, & Hafer, 2010; Choma et al., 2012; Kerlinger, 1984). If we assume liberalism and conservatism to be two functionally independent factors then measuring political ideology with a single self-placement scale might only explain a small share of the variance. While this has been the predominant way to measure ideology in the literature, mostly due to its parsimony, it would be worthwhile to consider operational ideology scales as predictors of need for cognitive closure.

Given the fact that we found similar, yet not identical patterns between different conceptualizations of need for cognitive closure, more constructs should be considered.

Similarly, more political domains should be included and their relevance could be accounted for. Future studies should thus broaden the range of domains and dependent variables in order to better disentangle the effect relevance and domain may have.

### 4.5.2. Conclusion

Understanding how epistemic motivation shapes information processing and formation of judgments can help to explain when and to what extent we may close our minds. Rather than "singling out political conservatives for special study" (Jost et al., 2003b, p. 339) the presented studies focused on disentangling dispositional from situational need for cognitive closure in political domains. Our findings demonstrate that there is considerable variance in need for closure across situations, both, within and between ideological groups. While several explanations were offered to explain our results, one conclusion that we want to draw independent of the specific outcomes is the following: differentiating between constructs or even scales when conducting meta-research is not optional but *imperative* if the goal is to measure one allegedly overarching psychological concept (i.e., epistemic motivation). Similarly, the complexity of behavior and cognition in political contexts needs to be accommodated. Modeling different domains can be a first way to approximate real-life situations in which behavior and cognition actually happen and where they may have an impact.

# 5. Putting 'Identity' Back in Political Identification

## 5.1. Introduction

During the late 1960s and early 1970s, social psychology found itself in a so-called *crisis of confidence* (Elms, 1975) where social psychologists worried that their field "was, among other things, reductionist and immature in its theories; positivist and unsophisticated in its methods; and blind to the role of language, history, and culture" (Hogg & Williams, 2000, p. 83). Critics noted that social psychology was overlooking the 'big picture' when it came to group processes, reducing them to "an aggregate of individual or interpersonal behaviors" (p. 84). It was during this crisis of confidence that two theories emerged "as an antidote to the overly individualistic and reductionist tendencies" (Hornsey, 2008, p. 205), namely social identity theory (SIT, Tajfel, 1978; Tajfel & Turner, 1979) and self-categorization theory (SCT, Turner et al., 1987). Both theories, later jointly known as the *social identity approach*, provide an extensive framework on cognitive, motivational and socio-historical aspects that give rise to group and intergroup phenomena (see also chapter 2.3.3 of this thesis). A key element of the social identity approach is that human beings are, and are able to act as both, individuals and social groups. Individuals self-categorize themselves differently in varying situations and can hence take on at least three levels of identity that vary in abstractness. The most abstract, superordinate category is one's *human identity*, comprising the features they share with other humans (ingroup) and that differentiate them from other species (outgroup). The next lower, intermediate category is one's *social identity*, their respective social group affiliations, the emotions and evaluation associated therewith, that is defined by features they share with ingroup members and that differentiate them from outgroup members. On the subordinate level, an individual's *personal identity* is shaped by their knowledge about their own distinct

character traits, skills, opinions and the emotions and evaluations associated (Tajfel, 1981; Turner et al., 1987). Self-categorization theorists argue that while personal and social identity operate simultaneously, their salience and perceptual effects are inversely related. They posit a *functional antagonism* between them whereby "the salience of one level produces the intra-class similarities and inter-class differences which reduce or inhibit the perception of the intra-class differences and inter-class similarities upon which lower and higher levels respectively are based" (Turner et al., 1987, p. 49). In short: "as one level becomes more salient the other levels become less so" (Hornsey, 2008, p. 208). However, this mechanism has been criticized as being rigid and over-simplified (Abrams & Hogg, 2004; Hornsey, 2008). Changing levels of identity from personal to social, that is perceiving oneself in a more inclusive category, can result in *depersonalization* of perception and behavior (Turner et al., 1987, p. 51). "When a category becomes salient, people come to see themselves and other category members less as individuals and more as interchangeable exemplars of the group prototype" (Hornsey, 2008, p. 208). The present work aims at evaluating how such changes in category salience may impact political attitudes.

Ensuing the social identity approach, a lot of research focused on assessing the consequences of self-categorizations on individuals' behavior, perception, and attitudes (see Hogg & Smith, 2007; Hornsey, 2008, for a review). Using panel data from the American National Election Survey, Conover and Feldman (1984) found differences in the levels of agreement with certain political issues between political groups. Those differences were most pronounced when the issue in question was obviously salient for a group's interest. For instance, women approved significantly more of the Equal Rights Amendment to the United States Constitution, and individuals identifying as poor or black agreed significantly stronger that the government should provide welfare services. Given the nature of the data, that is, social categories were constructed on the basis of sociodemographic variables (e.g., gender, ethnicity), the author assumed that the categories chosen for analysis were chronically accessible and hence affected participants' answers. Moreover, inducing salience of a certain social identity can cause individuals' attitudes to shift towards a perceived ingroup norm in both, non-political (Abrams et al., 1990; Hogg, Turner, & Davidson, 1990; McGarty et al., 1992), and political contexts (Cohen, 2003; Conover & Feldman, 1984; Malka & Lelkes, 2010; Popp & Rudolph, 2011).

Hogg and Smith (2007, p. 98) claimed that "self-categorisation depersonalises our attitudes so that they conform to the ingroup prototype, and that this represents genuine attitude change not superficial behavioural compliance". Scientific literature in political science and social psychology abound with publications and theories on attitude change and not all agree with the claim of *genuine* attitude change. Taken together, the approaches differ regarding hypotheses about the underlying mechanism, assumed stability of attitude change, and the (experimentally manipulated) circumstances that may trigger attitude change. Other than prototype-based depersonalization, authors have suggested cognitive dissonance (McKimmie et al., 2003; McKimmie, Terry, & Hogg, 2009) or deliberation processes (Myers & Mendelberg, 2013) as underlying mechanisms of attitude change. Dual process theories of persuasion (Cialdini & Goldstein, 2004; Eagly & Chaiken, 1993; Petty, Priester, & Brinol, 2002; Petty & Cacioppo, 2012) assume that "humans are motivated to hold accurate beliefs and reasonable attitudes, but often are unable or unwilling to expend the cognitive resources necessary to carefully consider whether new information should make them change their minds" (Valentino & Nardis, 2013, p 562). Information will be processed peripherally using simple heuristics when motivation is low, resulting in temporary attitude change only. When individuals are highly motivated, they will carefully consider the contents of the information and potential attitude change will be more stable. Most studies on identity-based attitude shifts have experimentally manipulated source cues to be either an ingroup or an outgroup member related to party affiliation or ideological self-placement. Cohen (2003) presented participants with a welfare policy report that was a) in favor of either a generous or a stringent policy, and b) allegedly endorsed by an either Democrat or Republican reference group. Participants' stance on the policy was almost exclusively informed by the fit of their own and the referents' political identity. That is, liberal participants supported or opposed either policy when they were told that Democrats supported or opposed it, and vice versa for conservatives. However, when no reference group was mentioned, participants based their attitudes merely on the message content such that liberals preferred the generous and conservatives preferred the stringent policy. A similar interaction between own identity and source cue was found for the topics of farm subsidies with conservative/liberal cues (Malka & Lelkes, 2010), and an economic recovery plan with the source cue being Bush/Obama (Popp & Rudolph, 2011). Literature from psychology and political science

further suggests that by choosing one's party affiliation or position on an ideological self-placement scale, the respective social identity becomes salient (Conover & Feldman, 1984; Devine, 2015; Green et al., 2004; Huddy, 2001; Kelly, 1989). In this sense, an ideological self-placement can lead to a salient social or *political identity* (Huddy, 2013).

According to SCT, shifts in attitude that follow a change in level of identity are a consequence of depersonalization. But from *where* do attitudes shift when a certain political identity is salient? If attitude change coincides with identity level change, does this mean that there were different attitudes previously held at the personal level? Most research within the social identity approach has focused on the influence of different social identities rather than one's personal identity (Hitlin, 2003). Do individuals hold distinct sets of attitudes per level of identity, that is, one personal and one per social category? Or is the personal attitude set the 'true' one and any other is just the product of the personal set and a certain constant? There has been considerable debate regarding the nature of relation between identity levels. Some authors have argued that personal and social identities are separate cognitive structures (Trafimow, Triandis, & Goto, 1991) but most agree that they are somehow interrelated. There is, however, substantial disagreement on the relative primacy of identity - which comes first? Proponents of a prepotency of personal identity argue in favor of a relative primacy of personal over social identity in Western cultures (Gaertner, Sedikides, & Graetz, 1999; Simon, 1993) while others posit the opposite, a relative primacy of social over personal identity (Brewer, 1991). Self-categorization theory offers a third perspective where neither takes precedence but wherein personal identity is socially mediated as "there would be no personal self in the absence of a higher order 'we' that provides the context for self-other differentiation in terms of person-specific attributes" (Onorato & Turner, 2002, p. 165). Turner et al. (1987, p. 46) further note that personal self-categorizations "do not represent the 'true' individual self which in some way invests the other levels with their significance" but rather a self-categorization shaped by interpersonal comparison within a certain category. Hence, we may assume that political attitudes held at the social level may not only be informed by one's personal attitudes but also the other way around. Expanding previous work on identity-based attitude shifts, the present research aims at quantifying the degree of entanglement between attitudes towards policy issues held at the personal and social level.

One important distinction regarding policy issues needs to be made when assessing the susceptibility to identity. Following Carmines and Stimson (1980), policy issues can be categorized as either *easy* or *hard*. Easy issues are symbolic, deal with policy ends, have been on the political agenda for long (Carmines & Stimson, 1980), are familiar (Pollock et al., 1993), highly salient, and evoke core values (Bailey et al., 2003). Individuals' stances on these issues may be 'gut responses', that is, "heuristics, or other short-cuts to information about politics, may be at the heart of easy issues" (Cizmar, 2011, p. 14). Hard issues on the other hand are technical, rather unfamiliar, deal with policy means, are relatively new to the political agenda (Carmines & Stimson, 1980), are unfamiliar (Pollock et al., 1993), not salient for most people, and "the province of politically knowledgeable, attentive voters" (Cizmar, 2011, p. 25). Social issues (e.g., same-sex marriage) have often been assumed to be easy issues, while economic issues (e.g., government spending) were labeled 'hard' issues (Bailey et al., 2003; Ellis & Stimson, 2012; Johnston & Wronski, 2015). Hard issues have been theorized to be more abstract and complex than easy issues (Pollock et al., 1993). While indicating one's attitude on an easy issue requires little political attentiveness, individuals need to rely on elite cues or party identification to make hard issues more readily understandable (Cizmar, 2011). Indeed, economic or unfamiliar (hard) issues have been found to be more susceptible to elite influence than social or familiar (easy) issues (Coan, Merolla, Stephenson, & Zechmeister, 2008; Cohen, 2003; Farrar et al., 2010; Goren, Federico, & Kittilson, 2009; Johnston & Wronski, 2015; Reeskens et al., 2020). Assuming that a salient political identity can serve as a cue to inform people's stance on hard issues, we suggest that an attitude shift due to depersonalization may be more likely to happen for hard issues than for easy ones.

To assess this claim, we conducted two studies where we manipulated participants' level of identity and assessed their agreement with pro- and counter-attitudinal issues. Assuming a bi-dimensional ideological model of conservatism and liberalism, we expected an interaction between the salient level of identity (personal vs. political) and the fit between one's own ideology and the respective issue stance. That is, our *first hypothesis* assumed liberals to endorse conservative economic attitudes more strongly when their personal identity was salient compared to when their political identity was salient. And vice versa, conservatives were expected to endorse liberal attitudes more strongly when their personal identity was salient. The *second hypothesis* stated that when their political

identity was salient, both, liberals and conservatives, would entrench their existing economic attitudes. We expected no such interaction for social issues. Studies were conducted in Canada (Study 1) and the United States (Study 2) where the governing party at the time of data collection was either left-leaning (Canada) or right-leaning (United States), respectively.

## 5.2. Study 1

Study 1 tested for differences in identity-based attitude shifts dependent on the nature of the issue (easy/social vs. hard/economic). Participants were randomly assigned to one of two conditions where either their personal or political identity salience was manipulated. They indicated their stance on a total of forty political attitude items of which half were pro-attitudinal for conservatives, and half were pro-attitudinal for liberals. We expected participants between identity conditions to differ most on 'hard' economic issues with higher levels in the political identity condition.

### 5.2.1. Method

#### Participants

A minimum sample size of 270 participants required to detect effects at the .05 level with a medium effect size (Cohen's $f = .25$) and a power of .80 was determined by an a priori power analysis in G*Power 3.1 (Faul et al., 2009). We recruited and paid 317 Canadian citizens for their participation on Amazons Mechanical Turk in early December 2018. 32 participants had to be excluded from the analysis due to failed attention checks and non-meaningful answering patterns. The final sample comprised $N$=285 individuals with a mean age of $M$= 31.32 ($SD$=9.78) of whom 45.96% were female. The majority of participants (54.74%) indicated to be *very liberal*, *liberal* or *somewhat liberal* whereas 22.11% indicated to be *very conservative*, *conservative* or *somewhat conservative*. The survey was completed with an average time of $M = 47.38$ ($SD = 443.36$) minutes.[13]

[13]A number of participants had opened the survey but only started filling it in after some time.

**Instruments and Procedure**

Our central manipulation was salience of either personal ($n = 150$) or political identity ($n = 135$). We randomly assigned participants to either of the conditions. In the political identity condition, participants were first asked to indicate their ideological orientation on a seven-point Likert ideological self-placement scale (1 = *very liberal*, 2 = *liberal*, 3 = *somewhat liberal*, 4 = *middle of the road*, 5 = *somewhat conservative*, 6 = *conservative*, 7 = *very conservative*). As a salience manipulation, the label they chose was forwarded to be included in the following instructions which we adapted from Hogg and Hains (1996):

> This section measures your feelings about your political group (*participant's ideology*) as a whole. Take a minute to think about your group. Think about the things you like and don't like about your group. Think about what makes your group special and what makes your group different from other political groups. When you have formed an impression of your group, proceed.

After one minute had passed, participants were asked to write a short statement (minimum of 200 characters) about what made them a typical group member of the ideological label they chose and how that made them feel. Following Haslam, Oakes, Reynolds, and Turner (1999) they were then asked to list three things that they and other individuals that indicated the same ideology did relatively well. Next, they completed a scale measuring several aspects of their political identity before they indicated their agreement with a total of 40 political attitude items (20 pro-attitudinal liberal and 20 pro-attitudinal conservative items), followed by a measure on the inclusion of their political group in the self, and a scale that measured aspects of their personal identity.

In the personal identity condition, participants did not indicate their ideological orientation until after having completed the attitude scales. They started out with a similar salience assessment to the one described above, except the wording was adapted to make their personal identity salient:

> This section measures your feelings about you as an individual. Take a minute to think about yourself. Think about the things you like and don't like about yourself. Think about what makes you special and what makes you different from other individuals. When you have formed an impression of yourself, proceed.

They were then asked to write a statement on what differentiates them from other individuals and to indicate three things that they personally thought they were good at, before filling in the attitudes scale. Finally, they also indicated their ideological orientation, the degree to which this political group was included in their self, and filled in a scale that measured aspects of their personal identity (see Table 5.1 for an overview of the study design).

Table 5.1.

*Overview Study Design*

| | Political Identity | Personal Identity |
|---|---|---|
| 1 | Ideological self-placement | – |
| 2 | Text production | Text production |
| 3 | Social identity measure | Personal identity measure |
| 4 | DV: Political attitudes | DV: Political attitudes |
| 5 | – | Ideological self-placement |
| 6 | Inclusion of in-group in self | Inclusion of in-group in self |
| 7 | In-group identification | In-group identification |
| 8 | Personal identity measure | Social identity measure |

**Ideological Orientation** Ideological orientation was assessed with a standard seven-point Likert ideological self-placement scale ranging from *very liberal* to *very conservative* and served as information for the salience manipulation described earlier and as predictor in the subsequent analyses.

**Aspects of Political and Personal Identity** As further salience manipulation and in order to assess whether it was successful, participants completed a scale on aspects of political and personal identity with ten items each (Ellemers, Kortekaas, & Ouwerkerk, 1999). For political identity, *group self-esteem* was measured with four items ($\omega_t = .76$), three items on each *self-categorization* ($\omega_t = .77$), and *commitment to the group* ($\omega_t = .76$). Regarding personal identity, *personal self-esteem* ($\omega_t = .82$) was measured with seven items, and *personal identification* ($\omega_t = .84$) with three items. Moreover, inclusion of the political group in the self was assessed with the graphic measure by Tropp and Wright (2001) to compare identity involvement between conditions (see Appendix B.1 for all items). Participants in the political identity condition indicated higher

levels of self-categorization ($M = 4.73, SD = 1.23$) than participants in the personal identity condition ($M = 4.31, SD = 1.29, t(281.93) = 2.82, p = .01, d = .33$). They also indicated higher levels of inclusion of the political group in the self in the political identity condition ($M = 4.01, SD = 1.33$) than in the personal identity condition ($M = 3.67, SD = 1.46, t(282.97) = 2.06, p = .04, d = .24$). Mean levels of all other identity subscales (group self-esteem, commitment to the group, personal self-esteem, personal identification) were not significantly different.

**Political Attitudes** Drawing from previous political attitude scales (Eaves et al., 1999; Everett, 2013; Pratto, Sidanius, Stallworth, & Malle, 1994), we evaluated 59 topics on their perceived typicality of either conservative or liberal symbolic ideological content in several steps. 20 topics resulted of which twelve were on economic issues (defense spending, gun control, health care, taxation, financial aid for refugees, affirmative action on housing, jobs, and education, welfare benefits for the unemployed, free market, carbon footprint, homeless support) and eight tackled social issues (abortion, death penalty, same-sex marriage, gay rights, immigration, family structures, traditional values, school prayer). Each issue was rephrased twice, each in a pro-attitudinal wording for liberals and conservatives, respectively. The topic *health care*, for instance, was rephrased as *Pro government sponsored health care* (liberal) and *Against government sponsored health care* (conservative). This procedure was adapted from previous studies that modeled issue-based ideology on two dimensions (Day et al., 2014; Goren et al., 2009; Johnston & Wronski, 2015). McDonald's omega suggested high internal consistency for each of the scale composites (conservative social issues: $\omega_t = .83$, liberal social issues: $\omega_t = .87$, conservative economic issues: $\omega_t = .81$, liberal economic issues: $\omega_t = .88$). All items and full documentation can be found in section B.1 of the appendix.

**Control Variables** We controlled for several additional variables including age, gender (0 = female), education (0 = less than a Bachelor's degree), and ethnicity (0 = White).

### 5.2.2. Results

#### Identity-Based Attitude Shift

We regressed all four attitude scales (conservative and liberal social issues, conservative and liberal economic issues) on ideological orientation, level of identity (0 = Personal Identity), and their interaction while controlling for several demographic variables (see Table 5.2). Ideology significantly predicted both social issue scales. As expected, conservative social ($B = .50, SE = .05, p < .001$) and economic issues ($B = .38, SE = .04, p < .001$) were positively related, liberal social ($B = -.49, SE = .05, p < .001$) and economic issues ($B = -.41, SE = .04, p < .001$) were negatively related. The interaction between ideology and political identity was significant for economic issues only.

Table 5.2.

*Study 1: Regression Estimates for All Models.*

| | Social (con.) | Social (lib.) | Economic (con.) | Economic (lib.) |
|---|---|---|---|---|
| | *B (SE)* | *B (SE)* | *B (SE)* | *B (SE)* |
| Ideology | .50*** | −.49*** | .38*** | −.41*** |
| | (.05) | (.05) | (.04) | (.04) |
| Political Identity | −.44† | .24 | −.43† | .32 |
| | (.26) | (.23) | (.22) | (.22) |
| Ideology X Political Identity | .07 | −.04 | .15* | −.13* |
| | (.07) | (.06) | (.06) | (.06) |
| Age | .01* | −.00 | −.00 | .00 |
| | (.01) | (.01) | (.01) | (.01) |
| Male | −.15 | .05 | .25** | −.21* |
| | (.11) | (.107) | (.0) | (.01) |
| Higher education | −.25* | .18† | −.06 | .05 |
| | (.11) | (.10) | (.09) | (.09) |
| Non-White | .47*** | −.32** | −.03 | .17 |
| | (.12) | (.11) | (.10) | (.10) |
| Constant | 1.53*** | 6.44*** | 1.28*** | 6.64*** |
| | (.27) | (.24) | (.23) | (.23) |
| *N* | 279 | 282 | 282 | 282 |
| $R^2$ | .489 | .501 | .494 | .508 |
| Adjusted $R^2$ | .48 | .49 | .48 | .49 |
| *F* (7; 271) | 37.00*** | 34.28*** | 33.28*** | 35.29*** |

*Note:* †p<.1;*p<.05; **p<.01; ***p<.001

The more conservative a participant stated to be, the stronger were their conservative economic attitudes in the political identity compared to the personal identity condition ($B = .15, SE = .06, p = .02$). And vice versa, the more conservative their ideology, the stronger their endorsement of liberal economic attitudes in the personal identity compared to the political identity condition ($B = -.13, SE = .06, p = .04$).

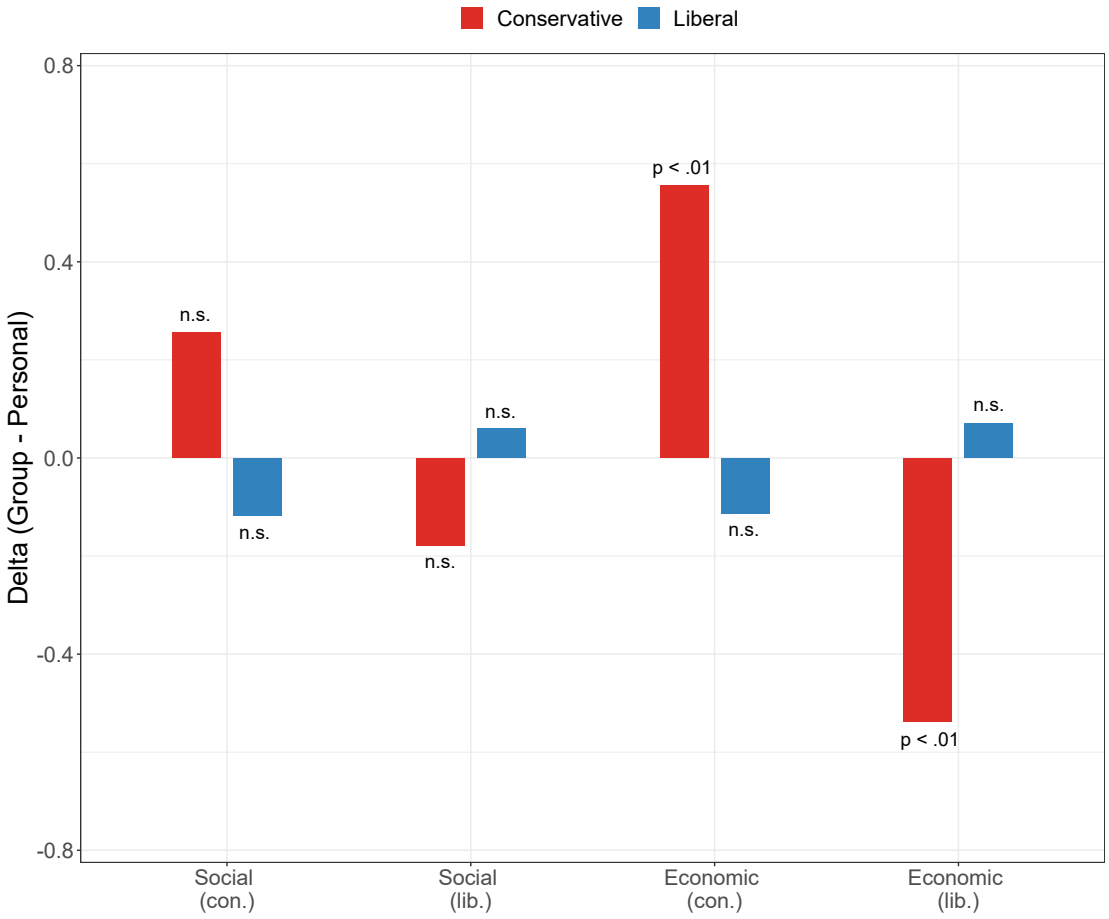



*Figure 5.1.*. Study 1: Differences in Attitudes between Conditions per Ideology.

Differences in attitudes between self-identified liberals and conservatives and the identity conditions were further analyzed by contrasting estimated marginal means (EMM), as visualized in Figure 5.1. Participants were categorized as either *conservatives* ($n = 53$; those who scored above 4 on the ideological self-placement scale) or *liberals* ($n = 156$; those who scored below 4 on the ideological self-placement scale), thereby ignoring participants who indicated to be *middle of the road* when it comes to their

symbolic ideology. Conservatives in the political identity condition ($EMM = 4.05, SE = .135$) expressed significantly higher levels of agreement with conservative economic issues than conservatives in the personal identity condition ($EMM = 3.49, SE = .14, t(215) = 2.84, p = .01$). Conversely, conservatives in the personal identity condition ($EMM = 4.19, SE = .15$) expressed significantly higher levels of agreement with liberal economic issues than conservatives in the political identity condition ($EMM = 3.65, SE = .14, t(215) = -2.63, p = .01$). No differences were found for conservatives on social issues or for liberals on either, economic and social issues (see section B.3 for a detailed item analysis).

### 5.2.3. Discussion

In line with the aim of Study 1, we were able to show that the salient level of identity affected stances on pro- and counter-attitudinal issues differently. We expected liberals in the personal identity condition to endorse counter-attitudinal economic issues (e.g., *Less government interference in business and trade*) stronger than liberals in the political identity condition. Vice versa, we hypothesized conservatives in the personal identity condition to be more in agreement with counter-attitudinal economic issues (e.g., *More government interference in business and trade*) than conservatives in the political identity condition. This hypothesis was found to hold for conservatives only, liberals' stances on counter-attitudinal issues were consistent across conditions. Our second hypothesis stated that both, liberals and conservatives in the political identity condition would entrench their existing economic attitudes, that is, indicate stronger approval of pro- and disapproval of counter-attitudinal items. Results lend partial support for this hypothesis, again with only conservatives being in line with expectations. No significant differences regarding social issues were expected for either ideological group.

Results suggest that symbolic ideology can indeed inform self-categorization processes. Moreover, Study 1 provides first evidence that the salient level of identity affects stances on hard and easy issues differently. Easy issues may be less susceptible to changes in self-categorization. Attitudes towards them are deeply ingrained, highly salient and readily available. Taking a stance on more technical, hard issues can be cognitively more effortful and people might thus rely on ingroup cues that inform their position. However, assumptions only held for conservative participants. One reason for these substantial

differences between conservatives and liberals might be rooted in the perceived status of either group. At the time of data collection in 2018, the Liberal Party held the absolute majority in the Canadian Parliament with Justin Trudeau as Prime Minister. Communication scientists have called Trudeau's political communication strategy similar to that of Donald Trump in that their messages on social media - while contents-wise diametrically opposed - are both highly personalized and intend on fostering perceived approachability (Lalancette & Raynauld, 2019). Thus, having a young, popular ingroup member in office might reflect positively on self-identified liberals' self-esteem. Assuming that holding a minority position in the government somehow reflects on individuals that self-categorize as conservatives, complying with the ingroup prototype and accentuating intergroup differences can increase their self-esteem and reduce uncertainty (Kelly, 1990).

## 5.3. Study 2

In Study 1 we tested whether ideological self-placement increased salience of one's political identity and would in turn foster attitude shifts for hard issues. We found Canadian conservatives to state stronger agreement with counter-attitudinal issues in the personal compared to the political identity condition, and vice versa for pro-attitudinal issues. This pattern was not found for liberals. Study 2 intended to replicate these findings in the United States where in 2018, contrary to Canada, a Republican president, Donald Trump, was in office and Republicans had just gained majority in the Senate and lost their majority in the House of Representatives after midterm elections on November 6. The weeks before and after elections were characterized by political debates between opposing parties on TV or social media, by individuals putting up lawn signs that support 'their' candidate and by constant media coverage of the most recent developments. Furthermore, engagement between opposing candidates is rarely neutral; "when contesting for political office, leaders do not only seek to build their own following but also to engage in attacks to destabilize opponent leaders" (Maskor, Steffens, & Haslam, 2020, p. 1). Translating this into social identity terms, we suggest that national elections are a 'natural' political identity manipulation. Not only are partisan cues constantly present in the media and in the public space, party candidates seek to maximize positive distinctiveness by emphasizing intergroup differences and intragroup similarities. We collected data two weeks after the midterm elections in 2018 ($t_1$) and recontacted participants four months

later for a second assessment ($t_2$). We intended to replicate findings from Study 1 and to investigate whether this 'natural' salience manipulation affected attitudes for both identity levels (personal vs. political) equally. Hence, we expected no identity-based attitude shifts for either issue domain and ideological group at $t_1$ and similar results as observed in Study 1 for $t_2$. Assuming that public political identity salience would have declined four months later, we hypothesized economic issue scales to be uncorrelated in the personal identity condition and correlated in the political identity condition (*third hypothesis*). Given the relative robustness of attitudes on easy issues found in Study 1, we expected social issue scales at $t_1$ and $t_2$ to be correlated for both identity conditions (*fourth hypothesis*).

### 5.3.1. Method

#### Participants

**$t_1$** A minimum sample size of 270 participants required to detect effects at the .05 level with a medium effect size (Cohen's $f = .25$) and a power of .80 was determined by an a priori power analysis in G*Power 3.1 (Faul et al., 2009). Two weeks after the midterm elections in the United States in 2018 we recruited and paid 346 U.S. citizens for their participation on Amazons Mechanical Turk. 11 participants had to be excluded from the analysis due to failed attention checks and non-meaningful answering patterns. The final sample comprised $N = 335$ individuals with a mean age of $M = 37.12$ ($SD = 12.38$) of whom 49.25% were female. The majority of participants (55.22%) indicated to be *very liberal*, *liberal* or *somewhat liberal* whereas 25.67% indicated to be *very conservative*, *conservative* or *somewhat conservative*. The survey was completed with an average time of $M = 14.42$ ($SD = 8.29$) minutes.

**$t_2$** Four months later we recontacted all 335 participants recruited at $t_1$ for a second assessment. 177 participants started the survey and a total of $N = 131$ finished and passed attention checks (attrition rate: 60.9%). The mean age of participants at $t_2$ was $M = 38.67$ ($SD = 12.32$), and 53.44% were female participants. The majority of participants (54.96%) indicated to be *very liberal*, *liberal* or *somewhat liberal* whereas 27.48% indicated to be *very conservative*, *conservative* or *somewhat conservative*. The survey was completed with an average time of $M = 13.45$ ($SD = 6.72$) minutes.

#### Instruments and Procedure

The procedure was identical to Study 1, the central manipulation was salience of either personal ($n_1 = 169, n_2 = 63$) or political identity ($n_1 = 166, n_2 = 68$). We randomly assigned participants to either of the conditions but kept this assignment constant between $t_1$ and $t_2$.

**Aspects of Political and Personal Identity** At $t_1$, participants in the political identity condition indicated higher levels of self-categorization, commitment to, and inclusion of the group in their self than participants in the personal identity condition. In the personal identity condition, personal identification was higher for both points in time compared to the political identity condition (see Table B.4 in the appendix).

### 5.3.2. Results

#### Identity-Based Attitude Shift $t_1$

We regressed all four attitude scales (conservative and liberal social issues, conservative and liberal economic issues) on ideology, level of identity (0 = Personal Identity), and their interaction while controlling for several demographic variables (see Table 5.3). Ideology significantly predicted both social issue scales. As expected, conservative social ($B = .59, SE = .04, p < .001$) and economic issues ($B = .54, SE = .04, p < .001$) were positively related, liberal social ($B = -.59, SE = .04, p < .001$) and economic issues ($B = -.57, SE = .04, p < .001$) were negatively related. The interaction term between ideology and identity did not reach significance.

Differences in attitudes between self-identified liberals and conservatives and the identity conditions were further analyzed by contrasting estimated marginal means of political attitudes (see Figure B.4). Participants were categorized as either *conservatives* ($n = 86$; those who scored above 4 on the ideological self-placement scale) or *liberals* ($n = 185$; those who scored below 4 on the ideological self-placement scale), thereby ignoring participants who indicated to be *middle of the road* when it comes to their symbolic ideology. No differences were found for either liberals on conservatives on any of the issue scales (see section B.3 for a detailed item analysis).

Table 5.3.

*Study 2: Regression Estimates for All Models*

| | $t_1$ | | | | $t_2$ | | | |
|---|---|---|---|---|---|---|---|---|
| | Social (con.) *B (SE)* | Social (lib.) *B (SE)* | Econ. (con.) *B (SE)* | Econ. (lib.) *B (SE)* | Social (con.) | Social (lib.) | Econ. (con.) | Econ.(lib.) |
| Ideology | .59*** | −.59*** | .54*** | −.56*** | .64*** | −.67*** | .52*** | −.592*** |
| | (.04) | (.04) | (.04) | (.04) | (.06) | (.06) | (.06) | (.07) |
| Pol. Identity | .01 | −.03 | −.08 | −.04 | −.08 | −.05 | .123 | −.19 |
| | (.23) | (.21) | (.23) | (.22) | (.33) | (.31) | (.35) | (.36) |
| Ideology X Pol. Identity | .02 | .02 | .02 | .03 | .10 | −.03 | .03 | −.04 |
| | (.06) | (.06) | (.06) | (.06) | (.09) | (.08) | (.10) | (.10) |
| Age | .02*** | −.02*** | .00 | −.00 | .02* | −.01* | −.01 | .00 |
| | (.00) | (.00) | (.00) | (.00) | (.01) | (.01) | (.01) | (.01) |
| Male | .06 | −.03 | .31** | −.16 | .24 | .03 | .28 | −.17 |
| | (.11) | (.10) | (.11) | (.10) | (.17) | (.15) | (.18) | (.18) |
| Higher education | −.10 | .08 | −.11 | .02 | .26 | −.14 | −.13 | .08 |
| | (.10) | (.10) | (.10) | (.10) | (.17) | (.16) | (.18) | (.18) |
| Non-White | .50*** | −.39*** | .08 | .12 | .43† | −.32* | −.02 | .12 |
| | (.12) | (.11) | (.12) | (.11) | (.12) | (.18) | (.21) | (.21) |
| Constant | .73** | 7.32*** | .85*** | 6.87*** | .16 | 7.57*** | 1.05* | 6.96*** |
| | (.24) | (.22) | (.24) | (.23) | (.40) | (.37) | (.42) | (.43) |
| Observations | 335 | 335 | 335 | 335 | 131 | 131 | 131 | 131 |
| $R^2$ | .56 | .59 | .52 | .54 | 0.67 | 0.70 | 0.53 | 0.58 |
| Adjusted $R^2$ | .56 | .58 | .51 | .53 | .65 | .68 | .50 | .56 |
| $F$ (7; 327) | 6.45*** | 66.41*** | 51.15*** | 54.87*** | | | | |
| $F$ (7; 123) | | | | | 35.316*** | 4.617*** | 19.60*** | 24.63*** |

*Note:* †p<.1;*p<.05; **p<.01; ***p<.001

### Identity-Based Attitude Shift $t_2$

We regressed all four attitude scales (conservative and liberal social issues, conservative and liberal economic issues) on ideology, level of identity (0 = Personal Identity), and their interaction while controlling for several demographic variables (see Table 5.3). Ideology significantly predicted both social issue scales. As in previous studies, conservative social ($B = .64, p < .001$) and economic issues ($B = .52, p < .001$) were positively related, liberal social ($B = -.67, p < .001$) and economic issues ($B = -.59, p < .001$) were negatively related. Neither level of identity nor the interaction term between predictors was found significant.

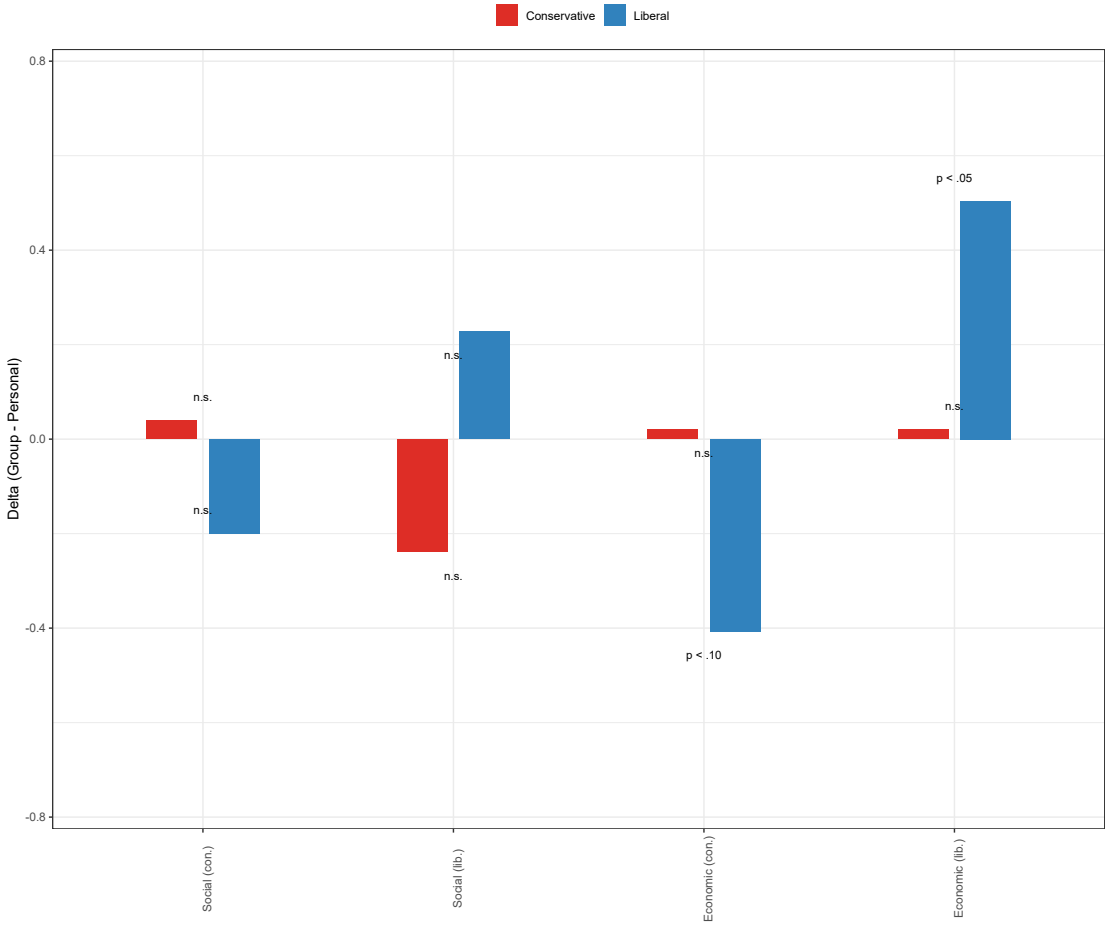



*Figure 5.2..* Study 2 $t_2$: Differences in Attitude Scales between Conditions per Ideological Orientation (Conservative Attitudes in Red, Liberal Attitudes in Blue).

As for $t_1$ and in Study 1, we contrasted estimated marginal means of political attitudes between liberals ($n = 78$) and conservatives ($n = 36$, see Figure 5.2). Liberals in the political identity condition ($EMM = 6.15, SE = .170$) expressed significantly higher levels of agreement with liberal economic issues than liberals in the personal identity condition ($EMM = 5.64, SE = .15, t(210) = 2.20, p = .03$). Similarly, liberals in the personal identity condition ($EMM = 2.16, SE = .14$) expressed marginally higher levels of agreement with conservative economic issues than liberals in the political identity condition ($EMM = 1.76, SE = .16, t(210) = -1.92, p = .06$). No differences were found for liberals on social issues or for conservatives on either, economic and social issues (see section B.3 for a detailed item analysis).

### Changes in Attitude from $t_1$ to $t_2$

In order to test for differences in attitude due to the 'natural' political identity salience during midterm elections compared to a later point in time, we regressed attitude scales assessed at $t_2$ on the ones assessed at $t_1$ in a path model considering residual covariances of attitudes per point in time (see Figure 5.3 below and Table B.5 in the appendix for all results). Similar to what regression results from the preceding section suggested, we found attitudes to be consistent across scales and identity conditions between points in time. Residual covariances at $t_1$ were all significant and as expected, that is, issue scales were positively correlated within (e.g., conservative social and economic issues) and negatively correlated between the respective ideological stance (e.g., conservative and liberal social issues) for both identity conditions. At $t_2$, however, we found differences between identity conditions. Participants' residual covariances in the personal identity condition were similar to $t_1$ except for correlations between conservative social issues and liberal economic issues ($z = -1.22, p = .22$), and liberal social issues and conservative economic issues ($z = -.99, p = .33$). In the political identity condition, only correlations within a domain were still significantly negative.

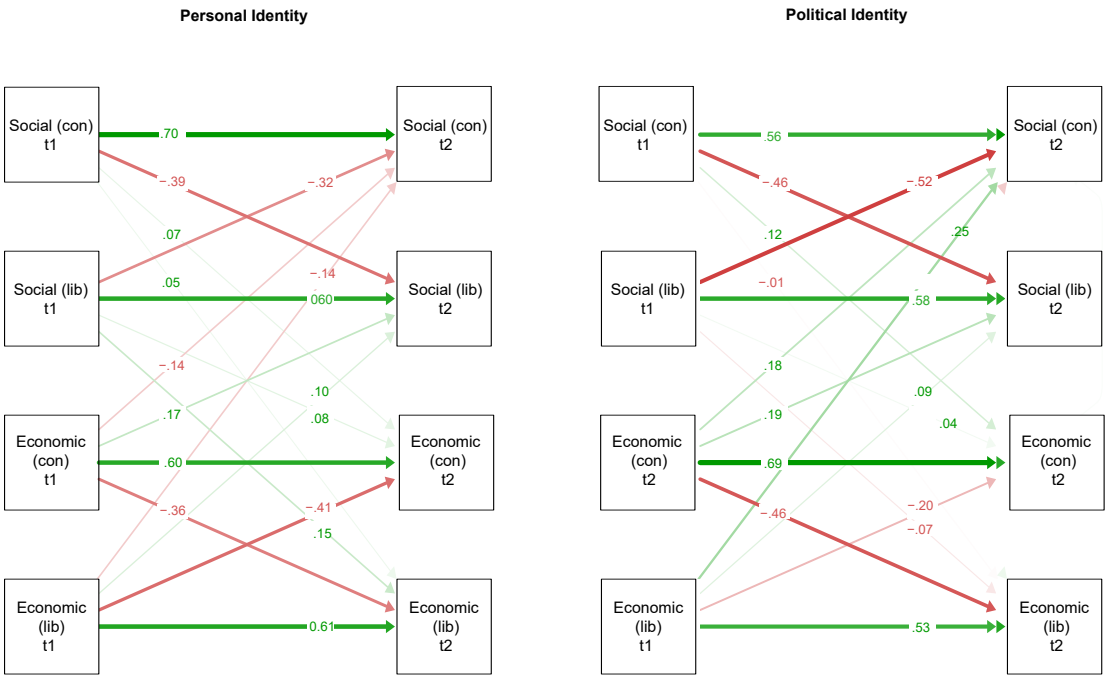



*Figure 5.3.*. Study 2: Path Model for Attitudes Between Points in Time and per Experimental Condition.

### 5.3.3. Discussion

In line with expectations, we found no identity-based attitude shifts at $t_1$. Results suggest that four months later, liberals indicated stronger stances on pro-attitudinal economic issues when their political identity was salient and stronger stances on counter-attitudinal economic issues when their personal identity was salient. No such pattern was found for conservatives or social issues, hence invertedly replicating results from Study 1. As expected, social attitude scales at $t_1$ and $t_2$ were correlated for both identity conditions. Contrary to expectations we also found economic attitude scales to be highly correlated for both conditions between points in time.

Results from Study 2 lend support to our overarching hypothesis of identity-based attitude shifts on hard issues. However, whereas in Study 1 this pattern was only true for conservatives, it was observed for liberals only in Study 2. As outlined in Study 1, one of the reasons for the observed asymmetry might be that the party in power is perceived

as an outgroup by liberals. Hence, the need for positive distinctiveness by emphasizing group norms and attitudes.

Both, social and economic issues were strongly correlated over time for both identity conditions. While this pattern was in line with expectations for social issues, it was not for economic issues. More specifically, we expected that if participants' political identity was salient at $t_1$ independent of our manipulation, then participants' stances in the personal identity condition would be informed by group prototypes at $t_1$ only, resulting in un- or weakly correlated scales between $t_1$ and $t_2$. The fact that residual covariances were similar for both conditions at $t_1$ might speak to high levels of political cohesion due to a highly politicized public life at the time. While this remained relatively unchanged in the personal identity condition at $t_2$, residual covariances in the political identity condition changed substantially. The identity-based shifts observed for liberals at $t_2$ might underlie this pattern: while negative correlations within a domain (conservative vs. liberal social/economic issues) were still significant, correlations between hard and easy issues were not.

## 5.4. General Discussion

The results of the present research attest to the importance of identity and the nature of issues in determining people's political attitudes. As predicted, pro-attitudinal issues were entrenched when participants' political identity was salient. Conversely, counter-attitudinal issues were more strongly endorsed when their personal identity was salient. This pattern was only true for 'hard' economic issues and for the ideological group whose associated party did *not* represent a governmental majority (Study 1: conservatives, Study 2 $t_2$: liberals) at the time of data collection. Moreover, we found an experimental salience manipulation to be unsuccessful when the public discourse was shaped by national elections (Study 1 $t_1$). To our knowledge, these studies provide first experimental evidence of how identity salience affects people's stances on hard and easy issues differently. Furthermore, they might present quasi-experimental evidence of how public politics shape political cohesion on an individual level.

Only recently, Reeskens et al. (2020) published their results from longitudinal studies showing the relative stability of easy, and relative volatility of hard issues before and during the COVID-19 pandemic. Their findings are in line with previous research that

had found easy issues to be relatively stable (Farrar et al., 2010; Wojcieszak & Price, 2010) while hard issues are rather volatile in that individuals are more likely to rely on ingroup cues to derive their opinion (Coan et al., 2008; Cohen, 2003; Malka & Lelkes, 2010; Popp & Rudolph, 2011). The present research confirms and expands on these findings by showing that the salience of one's political identity can trigger an attitude shift towards an ingroup prototype even without explicit source cues and for hard issues only. However, we found differences with regard to how well this pattern fit the data. Firstly, identity-based attitude shifts were only observed for one of the two ideological groups, either conservatives (Study 1) or liberals (Study 2 $t_2$). Secondly, we found no such shifts immediately after a national election in the United States. These findings will be discussed with regard to stability and function of attitude shifts. We argue that rather than representing genuine, that is, stable attitude change (Hogg & Smith, 2007), attitude shifts on hard issues can be explained by the psychological functions they serve.

By the time of data collection, Canada's prime minister and the government majority were from the Liberal Party, while in the United States, the President and the majority in the Senate were Republican, hence conservative. Both heads of state, Justin Trudeau and Donald Trump, have been very active in their social media communication "in order to circumvent traditional media intermediaries and reach out directly to publics ... in highly personalized ways" and held a certain celebrity status (Lalancette & Raynauld, 2019, p. 889). The finding of asymmetrical attitude shifts in Study 1 and 2 was not expected but might be explained by the fact that the respective group that *did* shift attitudes when their political identity was salient was *not* the group of the respective head of state or government. In terms of social identity theory, the party in office may be assumed to have a higher status than the party in opposition. However, given the nature of democracy, this hierarchy can just as easily be reversed with every national election. Ellemers, Van Knippenberg, and Wilke (1990) found that if one's group status is likely to change in the future, people do not dissociate from the group but rather engage in social competition. This was found to be true for low status groups rather than high status groups (Ouwerkerk, de Gilder, & de Vries, 2000). If status hierarchy is potentially unstable or perceived illegitimate, group members are more likely to engage in outgroup derogatory behavior (Hornsey, Spears, Cremers, & Hogg, 2003). To the extent that a conservative/liberal self-identification relates to a conservative/liberal party identification

(Conover & Feldman, 1981; Kossowska & Hiel, 2003), conservatives in Canada might perceive themselves as temporarily lower status compared to liberals and vice versa for the United States. A prototype-based depersonalization process of aligning attitudes with an ingroup would not only increase ingroup entativity and cohesion (Hogg & Smith, 2007), but also allow for the maintenance of a favorable self-view (Pool, Wood, & Leck, 1998), an increase in self-esteem (Ellemers et al., 1999), and uncertainty reduction (J. R. Smith, Hogg, Martin, & Terry, 2007). In summary, this means that the observed pattern of identity-based attitude shifts could potentially be reversed along with the status hierarchy, that is, if for instance the Conservative Party would hold the majority in Canada. This hypothesis, if found to hold, would speak against *genuine* attitude change as put forward by Hogg and Smith (2007) but rather for motivated reasoning and temporary *functional* attitude shifts. In favor of this impermanence hypothesis, we found attitude shifts to be significant only until more than four months after national elections (Study 2). No differences in attitudes towards social and economic issues between identity conditions were found at $t_1$. Assuming that during national elections, ideological and party cues were omnipresent and participants' political identities might have been more salient than their personal identities independent of our salience manipulation, then anyone's opinions at $t_1$ was more prototype-based than at $t_2$. The fact that we did observe shifts on economic issues for liberals at $t_2$ speaks to the impermanence or salience-dependence of depersonalized attitudes.

The present research enriches the literature on how social identities can impact behavior and perception. It introduces an identity-based perspective into the debate on nonattitudes and the operational-symbolic disconnect (Converse, 1964, 1970; Ellis & Stimson, 2012). Furthermore, we suggest it bears several implications for public opinion discourse and political attitude formation. In both, psychology and political science, research on attitude change has often revolved around mechanisms of persuasion rather than 'natural' attitude change (Bailey et al., 2003; Cobb & Kuklinski, 1997; Mackie, Worth, & Asuncion, 1990; Mackie, Gastardo-Conaco, & Skelly, 1992). Our findings could inform political communication in a way that can either improve or undermine democratic processes of public opinion formation. Making one's personal level of identity salient before they vote on a certain issue might prevent attitude polarization. Assuming that there are common goods worth preserving, for instance the environment, then nudging a

voter's attitude towards more environmental protection may be a justified public interest. However, the same nudging procedure has substantial potential for populist abuse. While there have been constructive attempts to make hard issues easier (Cobb & Kuklinski, 1997; Pollock et al., 1993), the same mechanism could be used to sway people on hard issues. By using 'easy' imagery on for instance abortion, 'hard' attitudes on health care systems could be influenced (Cizmar, 2011). Making use of identity-based attitude shifts in attitude formation is a double-edged sword, while powerful and functional, it can also lay the ground for populist abusive communication.

### 5.4.1. Limitations and Future Research

Inferences drawn from Study 2 about temporal stability of attitude shifts can only be preliminary due to a large dropout rate. Furthermore, future studies should test for interpersonal differences in attitude shifts if assigned the opposite condition at $t_2$ rather than the identical one. One explanatory variable largely neglected in the present research is that of political sophistication. A series of authors have conceptualized political sophistication to be a key distinctive factor in attitude stability, especially when differentiating between easy and hard issues (Carmines & Stimson, 1980; Ellis & Stimson, 2012; Goren, 2004). The possibility of a moderating effect of political sophistication on identity-based attitude shifts should be considered. Another strand of literature has investigated the effect of hard issues framed 'easy' and vice versa (Cizmar, 2011; Cobb & Kuklinski, 1997; Pollock et al., 1993). The present research could inform and be informed by the latter. Moreover, our findings are of course restricted to a North American or Western population at best. The mechanisms under study here might not hold in more collectivist countries or in countries were the political landscape can't be arranged along a conservative/liberal or left/right dimension.

### 5.4.2. Conclusion

The current studies aimed at elaborating and quantifying the degree of entanglement between attitudes towards easy and hard policy issues held at the personal and social identity level, respectively. We found that individuals endorsed counter-attitudinal issues stronger when their personal identity was salient. Conversely, stances on pro-attitudinal issues were entrenched along with a salience of one's political identity. This was only true

for hard issues and for individuals whose 'own' party, that is the party associated with their own political identification, presented a governmental minority. Putting 'identity' back in political identification can shed light on attitude shifts and inform political communication.

# 6. Now More Than Ever! Can Exposure to Fake News Lead to Polarization?

## 6.1. Introduction

Following the United States presidential elections in November 2020, Donald Trump and his supporters repeatedly put forward the false claim of electoral fraud and that *he* and not his opponent Joe Biden had won the election (see e.g., Haberman, Rutenberg, Corasaniti, & Epstein, 2020; Kessler & Rizzo, 2020). When a group of his supporters violently stormed the United States Capitol on January 6, 2021, Donald Trump published tweets that were interpreted as supporting this attack for which Twitter permanently suspended his account two days later (BBC, 2021; Ortutay, 2021; Pro Republica, 2021; Twitter Inc., 2021):

> These are the things and events that happen when a sacred landslide election victory is so unceremoniously & viciously stripped away from great patriots who have been badly & unfairly treated for so long. Go home in love & in peace. Remember this day forever!

Throughout his presidency, Donald Trump had published statements that were non-factual on the one hand (see e.g., Applebaum, 2020), and claimed mainstream media reports that were not in his favor to be *fake news* on the other hand (Ross & Rivers, 2018). Academic and societal reception of the phenomenon of fake news speaks to its relevance and timeliness; a Web of Science search for 'fake news' resulted in 2229 articles of which 98.12% ($n = 2187$) were published after 2016. Moreover, the American Dialect Society (2018) elected fake news Word of the Year 2017.

Fake news needs to be distinguished from *misinformation*, false or misleading information, and *disinformation*, misinformation that is spread with deceptive intentions, in that

fake news is "fabricated information that mimics news media content in form but not in organizational process or intent" (Lazer et al., 2018, p. 1094). Persily (2017, p. 67) differentiates four types of fake news: *satirical fake news*, as published for instance by The Onion in the United States or the Postillon in Germany, *profit-driven fake news* that spread disinformation with the purpose of financial gain, *reckless reporting*, or *political propaganda*, "the deliberate use of misinformation to influence attitudes on an issue or toward a candidate" (Persily, 2017, p. 68). While fake news is not a new phenomenon (Posetti & Matthews, 2018), there are several factors that make it a more pressing concern in the digital age (Ackland & Gwynn, 2021). Throughout the last century, dominant information distribution technologies such as broadcast and print have been geared to "journalistic norms of objectivity and balance" (Lazer et al., 2018, p. 1094). Building up a news outlet and entering the market meant high fixed costs (e.g., wages, utilities, production cost) before making any revenue. Expecting high levels of credibility and trustworthiness to result in stable sales figures, news outlets with high fixed costs were motivated to build a sustainable reputation for themselves (Allcott & Gentzkow, 2017). With an increasing preference for online news consumption, this still holds true for news producers today that maintained their editorial norms and processes. Providing information online can come at substantially lower costs of entry for new competitors rejecting the above-mentioned norms and processes (Ackland & Gwynn, 2021; Lazer et al., 2018), as "on social media, the fixed costs of entering the market and producing content are vanishingly small" (Allcott & Gentzkow, 2017, p. 221).

If we assume that consumers always prefer high quality and unbiased news reporting over the opposite, one might not expect any difficulties resulting from lower quality competitors entering the market. However, an individual's demand for unbiased information may be distorted by socio-cognitive biases related to their preexisting attitudes and their ideological identity. In line with literature on the *confirmation bias* (Nickerson, 1998) and *cognitive consistency* (Lavine & Latané, 1996), individuals were found to prefer attitude-consistent messages in political information search over inconsistent ones (Knobloch-Westerwick, Johnson, & Westerwick, 2015; Knobloch-Westerwick, Mothes, & Polavin, 2020; Lodge & Taber, 2005, 2013; Mullainathan & Shleifer, 2005; Taber & Lodge, 2006; Taber, Cann, & Kucsova, 2009), and outlets were evaluated to be of higher quality when their reports were in line with an individual's priors (Gentzkow & Shapiro,

2006). These biases in information processing might have been the breeding ground for fake news producers. By mimicking news media content and tailoring their fabricated content to the expected priors, fake news producers might cater to both, people's demand for high quality and their preference for attitude-consistent content. On a supply-side this can result in a "reduced demand for high-precision, low-bias reporting" (Allcott & Gentzkow, 2017, p.219) and thus, an increase in fake news prevalence.

Adding fake news producers to the media landscape may come at multiple societal costs. Even though fake news only make up a small share of the total media output (Allen, Howland, Mobius, Rothschild, & Watts, 2020; Guess, Nyhan, & Reifler, 2018) and only very few people actually engage in sharing fake news (Guess, Nagler, & Tucker, 2019; Osmundsen, Bor, Vahlstrup, Bechmann, & Petersen, 2020; Ovide, 2021), they were found to reach more people and diffuse faster than true news stories (Vosoughi, Roy, & Aral, 2018). False information about risks associated with vaccinations, for instance, have lead to a pronounced decrease in vaccine compliance and hence, an increase in diseases that could have been prevented by vaccines in many countries (Gangarosa et al., 1998; Hansen & Schmidtblaicher, 2019; Larson, Cooper, Eskola, Katz, & Ratzan, 2011; Poland & Spier, 2010). Fake news on political topics have been found to spread significantly faster than fake news on other topics (Vosoughi et al., 2018) and can foster growing skepticism towards mainstream media (Allcott & Gentzkow, 2017; Barthel, Mitchell, & Holcomb, 2016; Marwick & Lewis, 2017), undermine the democratic process by erecting "barriers to educated political decision making" (Persily, 2017, p. 70), or even influence election outcomes (Allcott & Gentzkow, 2017; Zimmermann & Kohring, 2020).

Having become increasingly aware of these consequences, the European Commission (2020) has launched the European Digital Media Observatory to detect and fight fake news, and social media platforms like Twitter (Twitter Inc., 2020), Facebook (Tidy, 2020), and YouTube (Newton, 2020) have started fact-checking and flagging fake news content. However, evidence on the effectiveness of correcting false information is mixed. Some have found correction to be rarely fully effective or even counterproductive under certain circumstances (Lazer et al., 2018; Lewandowsky, Ecker, & Cook, 2017). False beliefs were often at least partially upheld, even if the correction was acknowledged (H. M. Johnson & Seifert, 1994; Lewandowsky, Ecker, Seifert, Schwarz, & Cook, 2012). Others found that contingent on whether or not a correction challenged a participants'

ideological world views, belief in false information even increased (Ecker & Ang, 2019; P. S. Hart & Nisbet, 2012; Nyhan & Reifler, 2010; Nyhan, Reifler, & Ubel, 2013; Nyhan & Reifler, 2015; Zhou, 2016). This so called *backfire effect*, however, occurred almost exclusively for politically conservative participants and failed to replicate in both, exact (Haglin, 2017) and modified replications (Wood & Porter, 2019). In fact, the majority of research suggests that correcting misinformation indeed leads to belief updating in most cases (see, Swire-Thompson, DeGutis, & Lazer, 2020, for an overview). Assuming that correction usually leads to successful belief updating, does this mean that flagging and correcting online fake news can eliminate the threat they pose? The present chapter aims at evaluating the effect of correction on an individual's polarization in both, affect and attitudes.

Political fake news are motivated ideologically in that they seek to promote consistent topics or candidates and discredit inconsistent ones (Allcott & Gentzkow, 2017). This implies an intergroup dynamic where individuals are exposed to opinions of in- or outgroup members that may accordingly be congruent or incongruent with their own. From the literature we know that exposure to both, attitude-congruent (Arceneaux & Johnson, 2013; Kim, 2015; Schmuck, Heiss, & Matthes, 2020) and attitude-*in*congruent information (Bail et al., 2018; Schmuck et al., 2020; Sunstein, 2018a, 2018b) can lead to increasingly polarized attitudes. And while polarization in affect was also found to increase after exposure to attitude-congruent information, it tended to decrease after exposure to attitude-incongruent information (Garrett et al., 2014; Wojcieszak & Garrett, 2018). Given the intergroup dynamic of political fake news, learning that a relevant ingroup disseminated fake news might be perceived as a threat to one's group identity as individuals tend to evaluate the groups they identify with positively and "there are motivational pressures to maintain this state of affairs" (Turner et al., 1987, p. 57). From multiple studies we know that group identity threat in its interaction with group identification may eventually lead to an increased *ingroup bias* (Branscombe & Wann, 1994; Grant, 1993; Jetten, Spears, & Manstead, 1997; Spears, Doosje, & Ellemers, 1997; Wann & Branscombe, 1990; Verkuyten & Nekuee, 1999), that is, "the tendency to favor one's own group, its members, its characteristics, and its products, particularly in reference to other groups" (American Psychological Association, 2020). Expanding on these findings and considering that the salience of group categories fosters "perceptual

accentuation of intra-class similarities and inter-class differences" (Turner et al., 1987, p. 49), we suggest that learning about ingroup fake news dissemination might exacerbate the polarizing effect of exposure to ingroup attitudes. Hence, it is the aim of the present research to examine whether learning about the fake news nature of an ingroup message can lead to a relative preference of ingroup over outgroup features, in that individuals become *polarized* in their evaluations of outgroup relative to ingroup members (*affective polarization*) and in their political attitudes (*attitude polarization*) (Azzimonti & Fernandes, 2018; Ribeiro et al., 2017; Spohr, 2017). The present research examines whether learning about the fake news nature of a social media post increases affective (Study 1) and attitude polarization (Study 2) dependent on the level of identification with the sender. We randomly presented participants one of four fake news posts found on `https://www.mimikama.at` that had actually been shared on social media at some point prior to data collection. They were then either told right away that the post they saw was factually incorrect (disclosure) or they were only told so before completing the survey (no disclosure). Levels of affective and attitude polarization were evaluated with respect to participants' level of identification with the perceived sender and their ideological orientation.

## 6.2. Study 1

Shanto Iyengar and colleagues (Iyengar, Sood, & Lelkes, 2012; Iyengar & Westwood, 2015; Iyengar, Lelkes, Levendusky, Malhotra, & Westwood, 2019) coined the term of *affective polarization* in an attempt to describe the increasing gap between positive affect towards their own and negative affect towards the other party for Republicans and Democrats alike (Haidt & Hetherington, 2012). Linking their theoretical considerations to insights from Social Identity Theory (Tajfel, 1970; Tajfel & Turner, 1979), they claim affective polarization to be "a natural offshoot of ... partisan group identity" (Iyengar et al., 2019, p. 130) that is defined by "the tendency of people identifying as Republicans or Democrats to view opposing partisans negatively and copartisans positively" (Iyengar & Westwood, 2015, p. 691). Multiple studies have found a trend of polarized partisan affect in the United States (Druckman & Levendusky, 2019; Iyengar et al., 2019; S. W. Webster & Abramowitz, 2017) while the evidence for other countries with multiparty systems is mixed (Boxell et al., 2020; Reiljan, 2020). Rather than analyzing

long-term effects of exposure to in- or outgroup fake news, this study focused on the immediate effects of exposure to fake news on affective polarization in a multiparty system. More specifically, we examined the effect of fake news correction and group membership on affective polarization. Participants were randomly assigned one of four fake news stimuli, and one of two disclosure conditions where they either learned about the social media post being fake news right away (disclosure) or at the end of the survey (no disclosure). We expected differences in affective polarization dependent on the time of disclosure and on the participants' level of identification with the perceived sender (ingroup vs. outgroup vs. ambiguous). Previous research found an increase in affective polarization after forced or selective exposure to ingroup online information (Iyengar et al., 2012; J. K. Lee, Choi, Kim, & Kim, 2014; Stroud, 2010) that was in some cases attenuated by exposure to outgroup online information (Garrett et al., 2014; Kim, 2015; Wojcieszak & Garrett, 2018). Hence, when fake news were not corrected, a *first hypothesis* expected affective polarization to be stronger for those who perceived the sender to be an ingroup rather than an outgroup member. However, given a potentially heightened group identity salience, affective polarization should be lowest whenever participants only moderately or ambiguously identified with the sender compared to those who clearly identified the sender as an in- or outgroup member. When participants learned about the fake news nature of the stimulus early on, a *second hypothesis* expected that this might be perceived as a group identity threat that would lead to an increased ingroup bias (Branscombe & Wann, 1994; Grant, 1993; Jetten et al., 1997; Spears et al., 1997; Wann & Branscombe, 1990; Verkuyten & Nekuee, 1999). Hence, we expected highest levels of affective polarization when participants perceived the sender to be an ingroup member compared to an outgroup member and to cases when they ambiguously identified with the sender. Assuming that group identity threat would motivate ingroup bias more strongly than mere group identity salience, in a *third hypothesis*, we hypothesized higher levels of affective polarization in the disclosure compared to the no disclosure condition for those who perceived the sender to be an ingroup member. We expected no such differences when participants' identification with the perceived sender was ambiguous or low. Finally, ideological differences in affective polarization between conditions were assessed in an exploratory manner.

### 6.2.1. Method

#### Procedure

Data collection was conducted via respondi, a German online panel provider, in December 2019. Participants had to provide information about their age, mother tongue and ideological orientation on a ten point Likert scale (ranging from 1 = *left/liberal* to 10 = *right/conservative*) before starting the survey. Anyone who was either a) younger than 18, b) did not consider German their mother tongue, or c) indicated an ideological orientation for which the a priori set quota was already met (40% self-reported liberals, i.e., indicating a value below 5, 40% self-reported conservatives, i.e., indicating a value larger than 5, 20% self-reported moderates, indicating a value equal to 5) was screened out and thanked for their participation. In a 4 (fake news stimulus) x 2 (disclosure vs. no disclosure) factorial between subjects design, the remaining participants were randomly presented one of four stimuli and asked to carefully read the Facebook post presented. After a minimum of 15 seconds of stimulus presentation participants were asked an attention question regarding the respective stimulus contents and screened out if their answer was incorrect. In one condition, the information that the stimulus presented was factually incorrect (i.e., deemed fake news) was disclosed after the attention question, in the other condition it was disclosed at the very end of the survey. Participants ranked a list of political groups according to their perceived likelihood of this group being the sender, and were then asked to report their affect towards and their level of identification with each of these groups before concluding the survey with demographic questions.

#### Participants

A minimum sample size of 225 participants required to detect effects at the .05 level with a medium effect size (Cohen's $f = .25$) and an .80 power was determined by an a priori power analysis in G*Power 3.1 (Faul et al., 2009). 1.102 participants started the survey and after automatic screen-outs due to quota or failed attention checks complete data was collected from 452 participants. After excluding another 34 cases due to random answering patterns and 41 cases where too much or too few time had elapsed deviated by more than minus one or more than plus two standard deviations from the mean of $M = 31.8$ ($SD = 17.62$), the final sample consisted of $N = 377$ participants with a mean age

of $M = 46.42$ ($SD = 15.21$) of which 41.91% ($n = 158$) were female.[14] Mean ideological orientation was $M = 4.76$ ($SD = 2.10$) and the survey was completed with an average time of $M = 20.51$ minutes ($SD = 140.73$).

### Materials

**Stimuli** Four out of eight real-life stimuli were chosen as a result of a pretest conducted in November 2019 (see section C.1 in the appendix for full documentation). The first (*Hambach forest*, Figure C.2c) and the second (*Taxes* , Figure C.2d) were perceived to have had a left-wing rather than a right-wing sender, and vice versa for the third (*Greta Thunberg*, Figure C.4a) and the fourth (*Green Party*, Figure C.4b), respectively. Every participant was randomly assigned one of the four stimuli.

**Disclosure** The following message was displayed either right after stimulus presentation (*disclosure*) or at the end of the survey (*no disclosure*): "The post you just saw has been shared in social media multiple times. Various journalists' research showed that it was factually incorrect and was therefore labeled fake news by those journalists". Table C.6 in the appendix displays sample sizes per condition.

**Perceived Sender** After completing a trial task to familiarize themselves with the drag and drop procedure, participants were asked to rank a list of groups according to the perceived likelihood of them being the sender of the Facebook post presented with rank 1 indicating the *highest likelihood*. At least five of the following groups had to be ranked: environmental activists, climate change skeptics, right-wing extremists, left-wing extremists, politically moderates, CDU (Christian Democratic Union of Germany), SPD (Social Democratic Party of Germany), AfD (Alternative for Germany), FDP (Free Democratic Party), Bündnis 90/Die Grünen (Alliance 90/The Greens), Die Linke (The Left), Other (optional string entry).

[14] Participants who indicated an identical value for every item of at least one scale or an answering pattern that was logically inconsistent, were excluded. We further excluded all cases where the time elapsed between first and last click on the affect scale (see 6.2.1) This strict procedure was applied because taking less than 14 (-1 $SD$) or more than 67 seconds (+2 $SD$) to answer might have attenuated the manipulation effect.

**Affect** Participants were asked to indicate how they generally felt towards the groups listed above on a ten point Likert scale ranging from 1 (= *strong negative feelings*) to 10 (= *strong positive feelings*).

**Identification** On a ten point Likert scale ranging from 1 (= *not at all*) to 10 (= *completely*) participants indicated their level of identification with any of the groups.

**Ideological Orientation** Participants were asked to place themselves on a ten point Likert scale ranging from 1 (= *very liberal*) to 10 (= *very conservative*) according to their ideological orientation on a left-right/liberal-conservative spectrum. They were categorized as either *conservatives* ($n = 211$; those who scored above the sample mean) or *liberals* ($n = 166$; those who scored below the sample mean).

### Indices

**Identification with Perceived Sender** As an index for participants' identification with the groups they assigned the highest likelihood of being the sender to, identification scores ($ID_i$) for the groups they assigned rank 1, 2, and 3 to were summed up and divided by $m = 3$. Higher levels indicate higher identification with the perceived sender.

$$Identification = \frac{\sum_{i=1}^{m} ID_i}{m} \tag{6.1}$$

Overall, ideological orientation and identification with perceived sender per stimulus were moderately correlated according to expectations. This pattern held true in both disclosure conditions (see Table C.5 in the appendix).

Identification with perceived sender was then recoded such that for participants who identified strongly (i.e., equal to or above one standard deviation) with the perceived sender relative to their respective overall mean identification, we assumed that the sender was perceived an *ingroup* member ($n = 113$). When identification with the perceived sender was below or equal to one standard deviation of the individual mean, the sender was assumed to be an *outgroup* member ($n = 169$). In any other case, the level of identification with the sender was assumed to be *ambiguous* ($n = 95$).

**Affective Polarization** Affective polarization was measured by adapting the two-party feeling thermometer rating (Iyengar et al., 2012, 2019) to a multi-party environment

(Boxell et al., 2020; Reiljan, 2020; Wagner, 2020). In a first step, we calculated mean ingroup affect ($\bar{a}_{ingroup}$) for all $n$ political groups that had affect ratings greater than the individual mean affect over all $N = 11$ ($N = 12$, if *other* was specified) groups ($\bar{a}$):

$$\bar{a} = \frac{\sum_{i=1}^{N} a_i}{N} \tag{6.2}$$

$$\bar{a}_{ingroup} = \frac{\sum_{i=1}^{n} \sqrt{(\bar{a} - a_i)^2}}{n} \tag{6.3}$$

Equivalently, we calculated mean outgroup affect ($\bar{a}_{outgroup}$) for all $m$ groups with affect ratings smaller than or equal to the individual mean affect over all $N$ groups ($\bar{a}$):

$$\bar{a}_{outgroup} = \frac{\sum_{i=1}^{m} \sqrt{(\bar{a} - a_i)^2}}{m} \tag{6.4}$$

Therefore, considering $n$ in- and $m$ outgroups, the individual level of affective polarization (AP) is defined as follows. Higher levels indicate stronger affective polarization.

$$AP = \frac{\sum_{i=1}^{n} \sqrt{(\bar{a} - a_i)^2}}{n} - \frac{\sum_{i=1}^{m} \sqrt{(\bar{a} - a_i)^2}}{m} \tag{6.5}$$

### 6.2.2. Results

We ran a linear mixed effects model using the lme4 package (Bates, Sarkar, Bates, & Matrix, 2007) including affective polarization as the dependent variable and fixed effects of identification with perceived sender (0 = ambiguous sender), time of disclosure (0 = no disclosure), as well as their interaction and a number of control variables (see Table 6.1). Stimuli were included as random effects, thereby allowing for random slopes of the effect of stimuli on affective polarization. Statistical significance was calculated with Satterthwaite's method in the lmerTest package (Kuznetsova, Brockhoff, & Christensen, 2017). For the remainder of this article, 95% confidence intervals will be reported in addition to $p$-values for any linear mixed effects model as simulations found that $p$-values in linear mixed models were somewhat anti-conservative and prone to Type 1 errors (Luke, 2017). The Benjamini and Hochberg (1995) procedure was applied to control for Type 1 errors for all planned comparisons. To account for unequal sample sizes per sub-group (see Table C.7 in the appendix), planned comparisons were computed using estimated marginal means (EMM).

Table 6.1.

*Study 1: Regression of Affective Polarization on Time of Disclosure and Identification with Perceived Sender (Fixed Effects), Including a Random Slope for Stimulus.*

| | | 95% CI | | |
|---|---|---|---|---|
| | *B (SE)* | *LL* | *UL* | *t* |
| Ingroup sender | 1.21*** | .70 | 1.72 | 4.65 |
| | (.26) | | | |
| Outgroup sender | 1.07*** | .58 | 1.57 | 4.25 |
| | (.26) | | | |
| Disclosure | .31 | −.26 | .89 | 1.06 |
| | (.29) | | | |
| Ingroup sender X Disclosure | −.56 | −1.36 | .25 | −1.36 |
| | (.41) | | | |
| Outgroup sender X Disclosure | −.96** | −1.67 | −.24 | −2.62 |
| | (.37) | | | |
| Age | .01 | −.01 | .02 | 1.25 |
| | (.01) | | | |
| Male | .00 | −.29 | .30 | .01 |
| | (.15) | | | |
| Higher education | −.05 | −.34 | .23 | −.37 |
| | (.15) | | | |
| Constant | 2.91*** | 2.29 | 3.53 | 9.18 |
| | (.32) | | | |
| AIC | 1338.82 | | | |
| BIC | 1385.88 | | | |
| Log Likelihood | -657.41 | | | |
| Num. obs. | 373 | | | |
| Num. groups: Stimulus | 4 | | | |
| Var: Stimulus (Intercept) | .00 | | | |
| Var: Residual | 1.99 | | | |

*Note.* CI = confidence interval; *LL* = lower limit; *UL* = upper limit. ***$p < .001$; **$p < .01$

The data revealed a main effect for each, perceived ingroup ($B = 1.21, SE = .26, t(373) = 4.65, p < .001$) and outgroup sender ($B = 1.07, SE = .26, t(373) = 4.25, p < .001$) relative to an ambiguous sender. While the main effect of disclosure was not significant, an interaction term between disclosure and sender indicated significantly lower levels of affective polarization when disclosure was early and the sender was perceived an outgroup member ($B = -.955, SE = .37, t(373) = -2.62, p = .01$). Comparing

the full model ($AIC = 1338.82$) with a model excluding the fixed effects fit the data significantly better ($AIC = 1362.50, \chi^2(5) = 33.73, p < .001$). However, potentially resulting from near zero random effect variance, the model resulted in singular fit. Hence, the random slope for stimulus was excluded from further analyses, thereby assuming affective polarization to be invariant across stimulus conditions.

Averaging over the levels of identification, no differences in affective polarization were found between no disclosure ($EMM = 3.92, SE = .10$) and disclosure ($EMM = 3.74, SE = .12, t(371) = 1.18, p = .24$). Overall, affective polarization was largest when the sender was perceived an ingroup ($EMM = 4.27, SE = .14$) rather than an outgroup member ($EMM = 3.91, SE = .11, t(371) = 2.01, p = .05$) or when identification was ambiguous ($EMM = 3.31, SE = .146, t(371) = 4.71, p < .001$). Differences between the latter and outgroup members were also significant ($t(371) = 3.28, p = .002$).

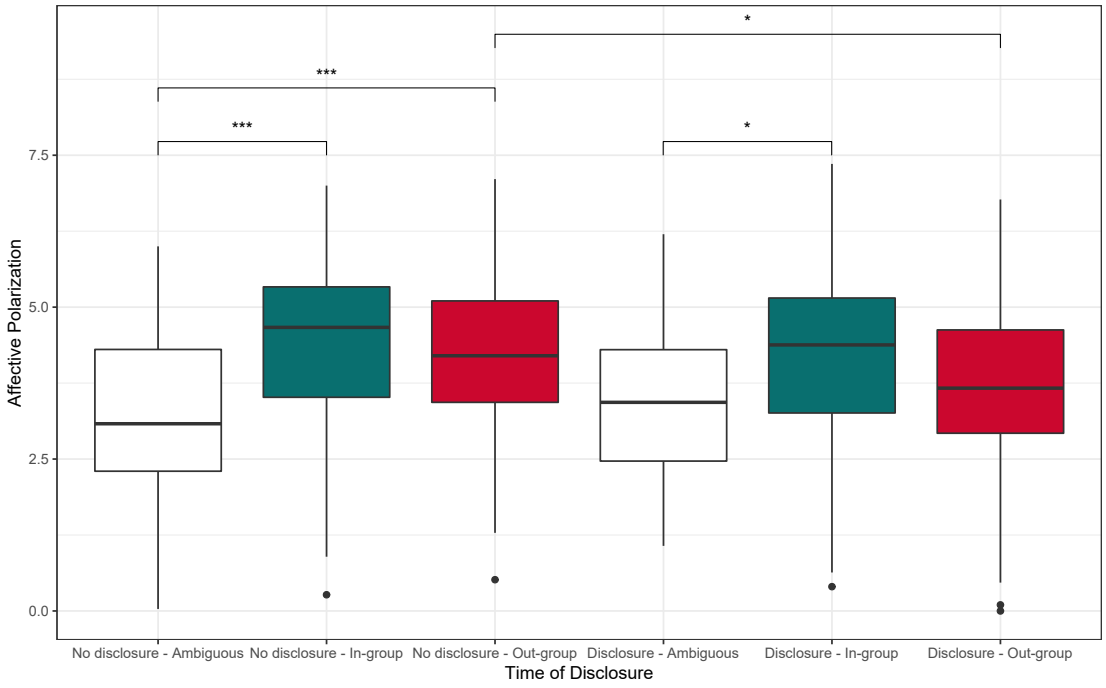



*Figure 6.1..* Study 1: Differences in Affective Polarization between Levels of Identification with Perceived Sender per Disclosure Condition.

Figure 6.1 visualizes comparisons between the sub-samples. When fake news were not disclosed, affective polarization was lowest for participants whose identification was ambiguous ($EMM = 3.18, SE = .20$) compared to when the sender was per-

ceived an ingroup ($EMM = 4.36, SE = .17, t(371) = 4.55, p < .001$) or outgroup member ($EMM = 4.22, SE = .15, t(371) = 4.12, p < .001$). The difference between the latter was found insignificant. In the disclosure condition, affective polarization was higher for ingroup senders ($EMM = 4.18, SE = .23$) compared to outgroup ($EMM = 3.60, SE = .16, t(371) = 2.08, p = .07$) or ambiguous identification ($EMM = 3.44, SE = .21, t(371) = 2.35, p = .04$). Significant differences between conditions were only found when the sender was perceived an outgroup member with higher levels in the no disclosure condition ($t(371) = 2.85, p = .01$, see Table 6.2 for mean levels and standard deviations).

Table 6.2.

*Study 1: Mean Levels of Affective Polarization as a Function of Identification with Perceived Sender, Time of Disclosure, and Ideological Orientation.*

| | Disclosure late | | Disclosure early | |
|---|---|---|---|---|
| | *M* | *SD* | *M* | *SD* |
| Overall | | | | |
| Ingroup | 4.36 | 1.43 | 4.18 | 1.78 |
| Ambiguous | 3.18 | 1.34 | 3.44 | 1.21 |
| Outgroup | 4.22 | 1.39 | 3.60 | 1.43 |
| Liberals | | | | |
| Ingroup | 4.55 | 1.50 | 4.69 | 1.52 |
| Ambiguous | 3.66 | .91 | 3.60 | 1.31 |
| Outgroup | 4.26 | 1.26 | 3.88 | 1.26 |
| Conservatives | | | | |
| Ingroup | 4.14 | 1.32 | 3.76 | 1.90 |
| Ambiguous | 2.93 | 1.47 | 3.37 | 1.19 |
| Outgroup | 4.19 | 1.52 | 3.36 | 1.53 |

**Exploratory analyses**

A multiple regression including ideological orientation as predictor (see Table C.8 in the appendix) revealed an additional marginally significant main effect for liberals ($B = .781, SE = .43, t = 1.82, p = .07$), indicating overall higher levels of affective polarization for liberals ($EMM = 4.11, SE = .12$) as compared to conservatives ($EMM = 3.63, SE =$

$.10, t(365) = -3.03, p = .003$). Differences between disclosure conditions were significant for conservatives when the sender was perceived to be an outgroup member with higher levels in the no disclosure condition ($EMM = 4.19, SE = .209$) compared to early disclosure ($EMM = 3.36, SE = .21, t(365) = 2.78, p = .01$). When fake news were not disclosed, affective polarization was lowest for ambiguous sender identification (liberals: $EMM = 3.66, SE = .34$, conservatives: $EMM = 2.93, SE = .25$) compared to when the sender was perceived an in- (liberals: $EMM = 4.55, SE = .22, t(365) = -2.19, p = .09$; conservatives: $EMM = 4.14, SE = .24, t(365) = -3.48, p < .001$) or outgroup member (liberals: $EMM = 4.26, SE = .22, t(365) = -1.48, p = .21$; conservatives: $EMM = 4.19, SE = .21, t(365) = -3.89, p < .001$). Statistical significance was obtained for conservatives only. In the disclosure early condition, liberals' affective polarization was highest for ingroup senders ($EMM = 4.69, SE = .34$) compared to outgroup ($EMM = 3.88, SE = .23, t(365) = 1.96, p = .08$) or ambiguous senders ($EMM = 3.60, SE = .39, t(365) = -2.088, p = .08$), yet the differences were only marginally significant.

### 6.2.3. Discussion

In line with our first hypothesis, we found higher levels of affective polarization after exposure to in- and outgroup stimuli relative to cases were identification with the sender was moderate or ambiguous. However, levels of affective polarization after exposure to ingroup stimuli were not significantly different from levels after exposure to outgroup stimuli, hence, partly contradicting our first hypothesis. In line with our second hypothesis we find highest levels of affective polarization for participants who perceived the sender to be an ingroup member when fake news content was disclosed. Comparing affective polarization between disclosure conditions unexpectedly revealed higher levels in the no disclosure relative to the disclosure condition when the sender was perceived an outgroup member. Exploratory analyses showed similar results when accounting for ideological orientation. Conservatives ambiguously identifying with the sender showed least affective polarization when they had not learned about the fake news, yet, these differences were attenuated in the disclosure early condition. Liberals who learned about the fake news early exhibited higher levels of affective polarization when they perceived the sender to be an ingroup member relative to an outgroup member or when sender identification was

ambiguous. These differences, however, were only marginally significant after adjusting for multiple comparisons. Differences between disclosure conditions were significant for conservatives perceiving the sender to be an outgroup member only.

Consistent with previous findings, the present data suggests that exposure to ingroup stimuli on social media can be associated with heightened levels of affective polarization. However, while affective polarization was slightly lower after exposure to outgroup compared to ingroup members, the difference did not reach statistical significance. In their studies, Garrett et al. (2014) and Wojcieszak and Garrett (2018) found an attenuating effect of exposure to outgroup attitudes on affective polarization in a within-subjects design. That is, *adding* outgroup stimuli significantly reduced the polarizing effect of ingroup stimuli. Our findings suggest that both, in- and outgroup salience can exacerbate polarization relative to when one does not clearly identify with the sender.

Within the disclosure condition, learning that the stimulus presented was factually incorrect, that is, fake news, did not affect overall affective polarization. There was a trend towards greater polarization when the sender was perceived an ingroup member. Most interestingly, however, the difference between those who moderately or ambiguously identified with the sender and those who perceived the sender an outgroup member was no longer significant in the overall sample and for both political groups. Conservatives' affect towards in- and outgroups was similar, independent of who they perceived the fake news sender to be. Liberals, however, indicated greater polarization in affect when they thought the fake news sender was an ingroup member.

Contrary to our expectations, we found no differences between disclosure conditions when the sender was perceived an ingroup member. Analyzing the differences between conditions for liberals and conservatives separately revealed different changes in affective polarization. Conservatives who learned about ingroup fake news dissemination tended to polarize less in affect than those who did not know the social media post was fake. Conversely, liberals' affective polarization was slightly higher when they learned about the ingroup fake news post. However, the sample sizes required for these differences to reach

statistical significance were large.[15] Thus, non-significance was unlikely due to a limited sample size. Differences in conditions regarding outgroup fake news unexpectedly resulted in significantly *lower* affective polarization when disclosure was early for the overall sample and conservatives. Debunking outgroup fake news might have attenuated the polarizing effect of heightened group identity salience by the stimulus. That is, potentially feeling morally superior to the outgroup because it was *them* who disseminated fake news and not *us* may have lead to conciliatory rather than derogatory affect ratings.

## 6.3. Study 2

Study 1 examined the effect of a factually incorrect social media post on participants' affective polarization in two conditions. Not knowing it was fake news lead to higher levels of affective polarization for those identifying the sender as an in- or outgroup member relative to when their identification with the perceived sender was moderate or ambiguous. When they did learn that the post was factually incorrect, we observed slightly higher levels for ingroup senders compared to outgroup or ambiguous senders. Differences between disclosure conditions were found for those perceiving the sender to be an outgroup member. In this case, participants knowing about the fake news displayed significantly *less* polarization in affect than those who did not know.

Study 2 focused on the effect fake news might have on a polarization in *attitudes* dependent on the perceived group membership of the sender. Research on selective exposure, that is, "the use of likeminded media outlets" (Kim, 2015, p. 932), suggests that exposure to attitude-consistent (ingroup) media can increase attitude polarization (Jamieson & Cappella, 2008; Slater, 2007; Spohr, 2017). This was found for a variety of single issue positions in both, correlational (Kim, 2015; Schmuck et al., 2020) and experimental studies (Levendusky, 2013b). Findings on the effect of exposure to outgroup media, however, are mixed. Results range from strong polarization for Republicans only

[15] We conducted post hoc power analyses using G*Power 3.1 (Faul et al., 2009) with power (1 - $\beta$) set at .80 and $\alpha = .05$, two-tailed, to check whether our non-significant results were due to a lack of statistical power. On the basis of the respective means and observed effect sizes for the between-groups comparisons for liberals after ingroup (Cohen's $d = .093$) or outgroup exposure (Cohen's $d = .302$), we estimated that sample sizes would have to increase up to 1440, and 137, respectively, in order for group differences to reach statistical significance at the .05 level. For conservatives after ingroup (Cohen's $d = .232$) or outgroup exposure (Cohen's $d = .544$), sample sizes of 230 and 43 would be necessary. Sample sizes for between-groups comparison of conservatives after outgroup exposure were met (no disclosure: $n = 46$, disclosure: $n = 45$). For all other comparisons, it is unlikely that our non-significant findings can be attributed to a limited sample size.

(Bail et al., 2018), or for those favoring Muslim immigration (Schmuck et al., 2020), to studies where polarization after exposure to outgroup media only occurred for those with strong prior attitudes (Levendusky, 2013b). Assuming that exposure to in- or outgroup media can result in a heightened group identity salience (Levendusky, 2013a) and hence lead to an increased ingroup bias (Mullen, Brown, & Smith, 1992), we suggest that individuals may *generally* polarize in their attitudes. That is, other than testing the effect of in- or outgroup fake news content on a single attitude, the present research investigates attitude polarization in several domains. Identical to Study 1, we expected those identifying strongly (ingroup) or very little (outgroup) with the perceived sender to polarize more in attitudes compared to those who identified moderately or ambiguously after exposure to fake news without disclosure. Given the mixed evidence on the effect of ideological orientation on attitude polarization after exposure to in- or outgroup media, this effect was investigated in an exploratory manner.

In a meta-analysis comprising 30 studies, Walter, Cohen, Holbert, and Morag (2020) analyzed the effect that correcting fake news on a certain topic had on the attitudes regarding this topic. They concluded that pro-attitudinal correction (i.e., debunking the opposing ideology) was more likely to result in updated beliefs than counter-attitudinal correction (i.e., debunking one's own ideology). Linking this to results from Study 1 and findings on the effect of group threat, we hypothesized that disclosing fake news would result in higher levels of attitude polarization for those identifying strongly (ingroup) with the sender relative to those identifying little (outgroup) or ambiguously. We expected those levels to be higher compared to the no disclosure condition for those identifying strongly (ingroup sender) and lower for those identifying little (outgroup). When accounting for ideological orientation, Walter et al. (2020) found no differences in the overall effect of correction between liberals and conservatives. However, the difference in belief-updating between pro- and counter-attitudinal correction was only significant for conservatives. Thus, we conducted exploratory analyses comparing the change in affective polarization between disclosure conditions among liberals and conservatives dependent on their level of sender identification.

### 6.3.1. Method

#### Procedure

The procedure was identical to Study 1 except for the dependent variable for which, after stimulus presentation and information about the factual incorrectness of the stimulus in one condition, participants indicated their agreement with 37 policy statements.

#### Participants

A minimum sample size of 225 participants required to detect effects at the .05 level with a medium effect size (Cohen's $f = .25$) and an .80 power was determined by an a priori power analysis in G*Power 3.1 (Faul et al., 2009). 1137 participants started the survey and after automatic screen-outs due to quota or failed attention checks complete data was collected from 467 participants. After applying exclusion criteria identical to Study 1, three cases were excluded due to random answering patterns and another 32 because too much (+2 $SD$) or too few (-2 $SD$) had elapsed when indicating their political attitudes. The final sample consisted of $N = 432$ with a mean age of 45.09 ($SD = 15.52$) of which 44.68% ($n = 193$) identified as women. Mean ideological orientation was $M = 4.87$ ($SD = 2.22$) and the survey was completed with an average time of $M = 21.08$ minutes ($SD = 112.36$). Sample size per stimulus condition is displayed in Table C.9 in the appendix.

#### Materials

**Political Attitudes** The Federal Agency for Civic Education in Germany issues a so called *Wahl-O-Mat* for every national or regional election where citizens can indicate their stance (*agree, neutral, disagree*) on a number of policy issues. All political parties that can be voted for in the respective election are asked prior to publication for their position on each of the respective items. Upon completion citizens' and parties' answers are matched to indicate the percentage of overlap in their answers. For this study, we used the items used in the 2018 national election Wahl-O-Mat (Federal Agency for Civic Education, 2017). All except for one of the 38 items broached political issues that were still relevant at the time of data collection. Deviating from the original version we asked participants to indicate their agreement with an item on a ten point Likert scale ranging from 1 (= *fully disagree*) to 7 (= *fully agree*). An exploratory graph analysis (Golino

& Epskamp, 2017; Golino et al., 2020) to estimate the dimensional structure of the Wahl-O-Mat attitude scale suggested five dimensions (see Table C.3). This dimensional structure was validated in a confirmatory factor analysis and provided acceptable fit ($\chi^2(454) = 1438.30, p < .001$, CFI = .82, RMSEA = .07, 95% RMSEA CI [.07; .08], NFI = .76, NNFI = .81, SRMR = .09, see chapter C.2 in the appendix for full documentation). The first factor tackled *economic* issues (nine items, $\omega_t = .70$), factor 2 *democracy and globalization* (eight items, $\omega_t = .72$), factor 3 *environmental* issues (six items, $\omega_t = .70$), factor 4 *domestic and immigration policies* (six items, $\omega_t = .78$), and factor 5 contained *neoliberal* issues (three items, $\omega_t = .48$). Items that had negative network loadings were recoded such that higher levels on factor 1 through 3 indicated a more left-leaning position, while higher levels on factor 4 indicated a more right-leaning position. Factor 5 was uncorrelated with ideological orientation (see Table C.10 in the appendix for all intercorrelations).

### Indices

**Identification with Perceived Sender** Identification with perceived sender was calculated identical to Study 1. Higher levels indicate higher identification with the perceived sender. Overall, ideological orientation and identification with perceived sender per stimulus were moderately correlated according to expectations. This pattern only held true in the disclosure late condition. When participants had learned about the fake news content right away, ideological orientation and identification with perceived sender were only correlated in one condition (see Table C.11 in the appendix for all intercorrelations).

**Attitude Polarization per Dimension** Following prior work (Kim, 2015; J. K. Lee et al., 2014; Wojcieszak & Rojas, 2011), attitude polarization was conceptualized as the absolute deviation from the scale midpoint. The measure was created by folding each item, with the answer *4* recoded to *0*, *1* and *7* recoded as *3*, *2* and *6* recoded as *2*, *3* and *5* recoded as *1*. Folded items were aggregated and divided by the respective number of items per dimension (Factor 1: $M = 1.81, SD = .65$; Factor 2: $M = 1.95, SD = .64$; Factor 3: $M = 1.80, SD = .70$; Factor 4: $M = 1.86, SD = .71$; Factor 5: $M = 2.06, SD = .82$; range = 0-3; higher values indicate greater polarization). Attitude polarization as measured by factor 1 through 3 were negatively correlated with ideological orientation,

suggesting stronger overall polarization for left-leaning participants on these factors. Attitude polarization for factor 4 was positively correlated, suggesting stronger overall polarization for right-leaning participants while attitude polarization for factor 5 was found uncorrelated with ideological orientation (see Table C.10 in the appendix for all intercorrelations).

### 6.3.2. Results

#### Intercorrelations of Study Variables

In the disclosure late condition, attitude polarization as measured by factors 1 through 3 was negatively correlated with ideological orientation suggesting stronger overall polarization for left-leaning participants on these factors. While polarization as measured by factor 4 was positively correlated with ideological orientation suggesting stronger overall polarization for right-leaning participants, polarization for factor 5 was found uncorrelated with ideological orientation. When disclosure was early, only polarization as measured by factor 2 and factor 4 was correlated with ideological orientation (see Table C.12 in the appendix for all intercorrelations).

#### Effect of Disclosure and Identification on Attitude Polarization

We ran five separate linear mixed effects models using the lme4 package (Bates et al., 2007) including attitude polarization per dimension as the dependent variable and fixed effects of identification with perceived sender (0 = ambiguous sender), time of disclosure (0 = no disclosure), as well as their interaction and a number of control variables (see Table 6.4). Stimuli were included as random effects, thereby allowing for random slopes of the effect of stimuli on affective polarization. Statistical significance was calculated with Satterthwaite's method in the lmerTest package (Kuznetsova et al., 2017). Results, whenever significant, will be presented per factor. Comparing the full model with a model excluding the fixed effects fit the data significantly better for all factors except factor 3 (Factor 1: $AIC = 815.60, \chi^2(5) = 18.98, p = .002$; Factor 2: $AIC = 815.23, \chi^2(5) = 22.37, p < .001$; Factor 3: $AIC = 920.84, \chi^2(5) = 7.28, p = .20$, Factor 4: $AIC = 904.24, \chi^2(5) = 16.71, p = .01$; Factor 5: $AIC = 1020.70, \chi^2(5) = 14.22, p = .01$). Random effect variance was nearly zero for all models. Hence, the random slope for stimulus was excluded from post-hoc analyses, thereby assuming affective polarization to

be invariant across stimulus conditions. The Benjamini and Hochberg (1995) procedure was applied to control for type I errors for all planned comparisons. To account for unequal sample sizes per sub-group (see Table C.13 in the appendix), planned comparisons were computed using estimated marginal means. All estimated marginal means of attitude polarization per factor as a function of identification with perceived sender and time of disclosure are displayed in Table 6.3.

**Factor 1: Economic Issues** The data revealed a main effect for perceived outgroup sender ($B = .20, SE = .09, t = 2.14, p = .03$, 95% CI [.02; .39]) relative to an ambiguous sender. Neither time of disclosure nor the interaction term was found significant. Overall, attitudes were most polarized when the sender was perceived an outgroup rather than an ingroup member ($t(426) = -3.969, p < .001$) or when identification was ambiguous ($t(426) = -3.53, p < .001$). In both disclosure conditions, attitude polarization was most pronounced when the sender was perceived an outgroup member relative to an ingroup member (no disclosure: $t(426) = -2.49, p = .04$; disclosure: $t(426) = -3.01, p = .02$) or a sender with ambiguous identification (no disclosure: $t(426) = -2.28, p = .05$; disclosure: $t(426) = -2.70, p = .03$). No significant differences between disclosure conditions were found.

**Factor 2: Democracy and Globalization** We found a main effect for perceived outgroup sender ($B = .19, SE = .09, t = 2.04, p = .04$, 95% CI[.01; .38]) relative to an ambiguous sender. Neither time of disclosure nor the interaction term was found significant. Overall, attitudes were most polarized when the sender was perceived an outgroup rather than an ingroup member ($t(426) = -3.93, p < .001$) or when identification was ambiguous ($t(426) = -3.91, p < .001$). In both disclosure conditions, attitude polarization was most pronounced when the sender was perceived an outgroup member relative to an ingroup member (no disclosure: $t(426) = -2.24, p = .07$; disclosure: $t(426) = -3.28, p = .01$) or a sender with ambiguous identification (no disclosure: $t(426) = -2.16, p = .07$; disclosure: $t(426) = -3.35, p = .01$). However, differences in the no disclosure condition were only marginally significant. Attitude polarization for participants perceiving the sender an outgroup member was higher in the disclosure compared to the no disclosure condition but the difference was not statistically significant ($t(426) = -1.28, p = .36$). Post hoc power analyses revealed that given the small effect

size (Cohen's $d = .21$) a sample size of $n = 289$ per group would be necessary for the difference to be significant at the 5% level (one-tailed) with an 80% chance. Thus, we cannot rule out that there might have been a small effect of disclosure on attitude polarization.

**Factor 3: Environmental Issues** Neither main nor interaction effects were significant for factor 3 as dependent variable. Planned comparisons also did not indicate any significant differences between identification levels, times of disclosure, or their interaction.

Table 6.3.

*Study 2: Estimated Marginal Means and Standard Errors of Attitude Polarization per Factor as a Function of Identification with Perceived Sender, and Time of Disclosure.*

| | Overall | | Ambiguous | | Ingroup | | Outgroup | |
|---|---|---|---|---|---|---|---|---|
| | *EMM* | *SE* | *EMM* | *SE* | *EMM* | *SE* | *EMM* | *SE* |
| Factor 1 | | | | | | | | |
| Overall | 1.81 | .03 | 1.70 | .06 | 1.65 | .06 | 1.96 | .05 |
| No disclosure | 1.76 | .04 | 1.70 | .08 | 1.66 | .08 | 1.92 | .06 |
| Disclosure | 1.78 | .05 | 1.71 | .09 | 1.64 | .10 | 2.00 | .06 |
| Factor 2 | | | | | | | | |
| Overall | 1.95 | .03 | 1.82 | .06 | 1.80 | .06 | 2.10 | .04 |
| No disclosure | 1.90 | .04 | 1.84 | .08 | 1.81 | .08 | 2.05 | .06 |
| Disclosure | 1.92 | .05 | 1.81 | .08 | 1.79 | .09 | 2.16 | .06 |
| Factor 3 | | | | | | | | |
| Overall | 1.80 | .03 | 1.71 | .06 | 1.76 | .07 | 1.88 | .05 |
| No disclosure | 1.80 | .05 | 1.74 | .09 | 1.82 | .09 | 1.83 | .07 |
| Disclosure | 1.77 | .05 | 1.68 | .09 | 1.70 | .11 | 1.93 | .07 |
| Factor 4 | | | | | | | | |
| Overall | 1.86 | .03 | 1.80 | .06 | 1.65 | .07 | 2.00 | .05 |
| No disclosure | 1.83 | .05 | 1.74 | .08 | 1.73 | .09 | 2.03 | .07 |
| Disclosure | 1.80 | .05 | 1.87 | .09 | 1.56 | .01 | 1.97 | .07 |
| Factor 5 | | | | | | | | |
| Overall | 2.06 | .04 | 2.00 | .07 | 1.81 | .08 | 2.22 | .06 |
| No disclosure | 1.99 | .06 | 1.98 | .10 | 1.80 | .11 | 2.19 | .08 |
| Disclosure | 2.03 | .06 | 2.03 | .11 | 1.83 | .12 | 2.24 | .08 |

*Note. EMM* = Estimated marginal means.

**Factor 4: Domestic and Immigration Policies** We found a main effect for perceived outgroup sender ($B = .27, SE = .11, t = 2.53, p = .01$, 95% CI [.06; .47]) relative to an ambiguous sender. Neither time of disclosure nor the interaction term was found significant. Overall, attitudes were most polarized when the sender was perceived an outgroup rather than an ingroup member ($t(426) = -4.19 p < .001$) or when identification was ambiguous ($t(426) = -2.49, p = .02$). Affective polarization was highest after exposure to outgroup relative to ingroup fake news in both disclosure conditions (no disclosure: $t(426) = -2.63, p = .06$; disclosure: $t(426) = -3.28, p = .01$) and relative to an ambiguous sender in the no disclosure condition ($t(426) = -2.62, p = .03$). Attitude polarization for participants perceiving the sender an ingroup member was lower in the disclosure compared to the no disclosure condition but the difference was not statistically significant ($t(426) = 1.17, p = .43$). Post hoc power analyses revealed that given the small effect size (Cohen's $d = .22$) a sample size of $n = 249$ per group would be necessary for the difference to be significant at the 5% level (one-tailed) with an 80% chance. Thus, we cannot rule out that there might have been a small effect of disclosure on attitude polarization.

**Factor 5: Neoliberal Issues** Neither main nor interaction effects were significant for factor 5 as dependent variable. Overall, attitudes were most polarized when the sender was perceived an outgroup rather than an ingroup member ($t(426) = -4.10 p < .001$) or when identification was ambiguous ($t(426) = -2.31, p = .03$). When accounting for time of disclosure, attitude polarization for perceived outgroup members was still higher than for ingroup members independent of whether participants had learned about the fake news early on ($t(426) = -2.86, p = .02$) or at the end of the study ($t(426) = -2.94, p = .02$). No significant differences between disclosure conditions were found.

Table 6.4.

*Study 2: Regression of Attitude Polarization per Factor on Time of Disclosure and Identification with Perceived Sender (Fixed Effects), Including a Random Slope for Stimulus.*

| | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 |
|---|---|---|---|---|---|
| Ingroup sender | .03 | .03 | .12 | .04 | −.11 |
| | (.11) | (.11) | (.12) | (.12) | (.14) |
| Outgroup sender | .20* | .19* | .07 | .27* | .19 |
| | (.09) | (.09) | (.11) | (.11) | (.12) |
| Disclosure | −.01 | −.05 | −.08 | .10 | .00 |
| | (.11) | (.11) | (.12) | (.12) | (.14) |
| Ingroup sender X Disclosure | −.02 | −.01 | −.05 | −.28 | −.00 |
| | (.16) | (.16) | (.18) | (.18) | (.21) |
| Outgroup sender X Disclosure | .11 | .17 | .19 | −.14 | .06 |
| | (.14) | (.14) | (.16) | (.15) | (.17) |
| Age | .01*** | .01*** | .01** | .01*** | .02*** |
| | (.00) | (.00) | (.00) | (.00) | (.00) |
| Male | .06 | .01 | .04 | .03 | −.09 |
| | (.06) | (.06) | (.07) | (.07) | (.08) |
| Higher education | .02 | −.02 | −.03 | .01 | −.01 |
| | (.06) | (.06) | (.07) | (.07) | (.07) |
| Constant | 1.14*** | 1.48*** | 1.44*** | 1.32*** | 1.32*** |
| | (.12) | (.12) | (.13) | (.13) | (.15) |
| AIC | 815.60 | 815.23 | 920.84 | 904.24 | 1020.70 |
| BIC | 864.42 | 864.05 | 969.66 | 953.06 | 1069.52 |
| Log Likelihood | −395.80 | −395.62 | −448.42 | −44.12 | −498.35 |
| Num. obs. | 432 | 432 | 432 | 432 | 432 |
| Num. groups: Stimulus | 4 | 4 | 4 | 4 | 4 |
| Var: Stimulus (Intercept) | .00 | .00 | .00 | .00 | .00 |
| Var: Residual | .37 | .37 | .47 | .45 | .59 |

*Note.* $^{***}p < .001$; $^{**}p < .01$; $^{*}p < .05$

### Effect of Disclosure and Identification on Attitude Polarization by Ideological Orientation

All estimated marginal means of attitude polarization per factor as a function of disclosure condition, level of identification, and ideological orientation can be found in Table C.14 in the appendix.

**Factor 1: Economic Issues** We found overall higher levels of attitude polarization on economic issues for liberals ($EMM = 1.86, SE = .05$) than for conservatives ($EMM = 1.70, SE = .04, t(420) = -2.43, p = .02$). In both disclosure conditions, conservatives' attitude polarization was most pronounced when the sender was perceived an outgroup member (no disclosure: $EMM = 1.90, SE = .08$; disclosure: $EMM = 2.01, SE = .09$) relative to an ingroup member (no disclosure: $EMM = 1.51, SE = .12, t(420) = -2.75, p = .07$; disclosure: $EMM = 1.41, SE = .14, t(420) = -3.60p = .01$). No significant differences between disclosure conditions were found.

**Factor 2: Democracy and Globalization** Overall, levels of attitude polarization on topics related to democracy and globalization were higher for liberals ($EMM = 2.09, SE = .049$) than for conservatives ($EMM = 1.77, SE = .04, t(420) = -5.07, p < .001$). Conservatives' attitude polarization was most pronounced when the sender was perceived an outgroup member (no disclosure: $EMM = 2.02, SE = .08$; disclosure: $EMM = 2.02, SE = .08$) relative to an ingroup member (no disclosure: $EMM = 1.50, SE = .11, t(420) = -3.83, p = .002$; disclosure: $EMM = 1.57, SE = .14, t(420) = -2.84, p = .04$) in both disclosure conditions, and higher compared to an ambiguous sender when fake news weren't disclosed ($EMM = 1.71, SE = .09, t(420) = -2.69, p = .04$). Attitude polarization for liberals perceiving the sender an outgroup member was higher in the disclosure compared to the no disclosure condition but the difference was not statistically significant ($t(420) = -1.66, p = .10$). Post hoc power analyses revealed that given the small effect size (Cohen's $d = .41$) a sample size of $n = 76$ per group would be necessary for the difference to be significant at the 5% level (one-tailed) with an 80% chance. Thus, we cannot rule out that there might be a small effect of disclosure on attitude polarization for liberals perceiving the sender to be an outgroup member.

**Factor 3: Environmental Issues** Attitude polarization on environmental issue was larger for liberals ($EMM = 1.90, SE = .06$) than for conservatives ($EMM = 1.67, SE = .05, t(420) = -3.12, p = .002$). Comparisons between disclosure conditions were insignificant. However, post hoc power analyses revealed that the non-significant difference for liberals perceiving the sender either an in- ($t(420) = .95, p = .50$, Cohen's $d = .41$) or an outgroup member ($t(420) = -1.42, p = .33$, Cohen's $d = .30$) might have failed to reach statistical significance due to low sample size. A sample size of $n = 141$ and $n = 139$ per group, respectively, would have been necessary to reach the 5% level (one-tailed) with an 80% chance.

**Factor 4: Domestic and Immigration Policies** Conservatives showed overall higher levels of attitude polarization regarding domestic and immigration policies ($EMM = 1.89, SE = .05$) compared to liberals ($EMM = 1.71, SE = .06, t(420))2.45, p = .02$). Accounting for level of identification or disclosure did not reveal any significant differences. Yet, post hoc power analyses revealed that the non-significant difference for liberals perceiving the sender either an ingroup member ($t(420) = .99, p = .70$, Cohen's $d = .28$) might have failed to reach statistical significance due to low sample size. A sample size of $n = 164$ per group would have been necessary to reach the 5% level (one-tailed) with an 80% chance.

**Factor 5: Neoliberal Issues** Neither differences in overall attitude polarization on neoliberal issues between conservatives and liberals, nor when accounting for level of identification or disclosure, were found significant.

### 6.3.3. Discussion

Building on results from Study 1, our first hypothesis assumed that exposure to in- and outgroup fake news would result in higher attitude polarization relative to ambiguous identifiers, even if they were not informed about the fake news nature of the stimulus. Results suggested highest affective polarization after exposure to outgroup compared to ingroup fake news (factor 1, 2, 4, 5) or to fake news with an ambiguous sender identification (factor 1, 2, 4). When disclosing fake news, the second hypothesis expected highest levels for perceived ingroup senders. However, we found an almost identical pattern compared to the no disclosure condition. Contrary to expectations, attitude

polarization was lower after exposure to ingroup fake news (factor 4), and higher after exposure to outgroup fake news (factor 2) when non-factuality was disclosed relative to when it was not. None of these differences reached statistical significance, but post hoc analyses suggested that this could have been reached by increasing the number of participants.

Being exposed to a social media post sent by an outgroup member resulted in more polarized attitudes on a range of topics (economic issues, democracy and globalization, domestic and immigration policies, neoliberal issues) relative to social media posts by other senders. That is, a potentially heightened group identity salience by an outgroup cue might have affected overall attitudes differently than one by an ingroup cue. While the latter may also increase group identity salience, the need to accentuate group boundaries by stating extreme attitudes might have been stronger with an explicit reference to an outgroup present. This was also the case when participants knew the post was factually incorrect. While no significant differences in attitude polarization between disclosure conditions emerged, there was a trend towards *more* polarization for outgroup posts related to democracy and globalization for those who knew it was factually incorrect compared to those who did not know. On the other hand, we found a noteworthy trend of *lower* attitude polarization on domestic and immigration policies when ingroup fake news were debunked compared to when they were not.

Comparing attitude polarization with regard to ideological orientation, we found overall higher levels in liberals for all domains where high levels indicated a more left-leaning position (economic issues, democracy and globalization, environmental issues) and higher levels in conservatives for domestic and immigration policies. Conservatives' attitude polarization after exposure to outgroup fake news was higher than after exposure to ingroup fake news (factor 1, 2) or to fake news with an ambiguous sender (factor 2). We found no such differences for liberals. Our results suggest a non-significant trend of lower polarization after ingroup fake news exposure (factor 3, 4) and higher polarization after outgroup fake news exposure (factor 2, 3) for liberals who were aware of the fake news content relative to those who were not. Again, post hoc analyses suggested that non-significance was likely due to a low sample size. Given that liberals were more likely to have high scores on factor 2 and 3, and low scores on factor 4, the observed differences between disclosure conditions make sense. A liberal identifying highly with

the perceived sender must have most likely seen a pro-environmental (*Hambach Forest*) or a pro-immigration (*Taxes*) Facebook post. Learning that this ingroup post was actually fake news, they reacted by displaying *lower* polarization on environmental issues, as well as domestic and immigration policies compared to those who did not know it was fake. On the other hand, liberals identifying little with the perceived sender must have most likely seen an anti-environment (*Greta Thunberg*) or an anti-democratic/homophobic (*Green Party*) Facebook post. Here, learning that this outgroup post was actually fake news, they reacted by displaying *stronger* polarization on environmental issues, as well as items on democracy and globalization compared to those who did not know it was fake. Hence, for liberals, ingroup deviant behavior *decreased* ingroup bias while outgroup deviant behavior *increased* it.

## 6.4. General Discussion

Along with the COVID-19 pandemic that keeps the world in suspense, we are faced with what has been called an *infodemic* - a surge of false or misleading information about the virus, vaccines, and national policies associated therewith (World Health Organization, 2020a, 2020b). Fake news downplaying the mortality of the virus or the effectiveness of face masks are just two examples out of many that have been exploited in the interest of mostly right-wing political parties (see for instance, McGreal, 2020; Reichart, 2020). As a result of an algorithmic placement of users in like-minded clusters based on their online activity, so called filter bubbles (Pariser, 2011, p. 10), citizens are exposed to increasingly homogeneous information, a development that can contribute to the spread of fake news and a further polarization of opinion networks at the same time (Törnberg, 2018). The question we posed was whether and under which circumstances encountering political fake news on social media could lead to a polarization in affect and attitudes. Can correcting fake news increase or decrease polarization? And does it matter whether the alleged sender is perceived an ingroup rather than an outgroup member? In two separate studies we assessed the impact of fake news posts on an individual's affective (Study 1) and attitude polarization (Study 2) and whether this impact was dependent on how strongly they identified with the perceived sender.

The present results suggest that exposure to in-and outgroup fake news may impact affective polarization differently than attitude polarization. Not knowing the post they saw

was fake news, participants in Study 1 displayed ingroup favoritism similarly when they thought that either an in- or an outgroup member disseminated the post. Participants in Study 2 showed increased ingroup favoritism by stating more extreme attitudes only when they thought that the social media post was sent by an outgroup member. We assumed that seeing a social media post from either an in- or an outgroup member would lead to increased group identity salience and an ingroup bias for both. This was only true in Study 1. One reason for this unexpected result could be that stating stronger positive or negative feelings towards the in- and outgroup may be easier or less consequential than stating more extreme attitudes towards real-life policies. If one identifies the sender as an outgroup member, then one's own group membership might be more salient in contrast to this outgroup and thereby increase the need to accentuate group boundaries more strongly. Another explanation may be that ingroup bias in Study 1 was specific and directed while Study 2 measured an un-directed spill-over to general political attitudes.

The tendencies observed in the no disclosure condition were even more pronounced when participants learned that the social media post they saw was fake news. Affective polarization was now largest for those perceiving the sender to be an ingroup member while attitudes on four out of five dimensions were most polarized for perceived outgroup senders. Comparing polarization between disclosure conditions also resulted in different patterns for affect and attitudes, respectively. Those who had learned about the outgroup fake news polarized significantly less in affect than those who had not learned about it. We found a reversed, yet insignificant pattern for some attitude dimensions in Study 2: more polarization for those to whom the outgroup fake news information was disclosed compared to those to whom it was not disclosed. Polarization for those having perceived the sender an ingroup member was rather similar between studies. The results suggest a non-significant trend towards lower polarization in affect and some attitude dimensions for those who had learned about the fake news. Hence, contrary to our expectations, correcting fake news may not lead to more polarization in affect or attitude if identification with the sender is high. Learning, however, that an outgroup member posted fake news may lead to less affective ingroup bias on the one hand, but to a tendency towards more extreme attitudes on the other.

Taking the results at face value, we could summarize the present studies on an optimistic note, saying that correcting ingroup fake news does not increase polarization

and correcting outgroup fake news even decreases polarization in affect. Does this mean that correcting fake news is beneficial in the best and harmless in the worst case? Certainly, summarizing what the present results imply for the impact of fake news correction does not come without caveats. That is, we cannot disentangle whether polarization in any condition was caused by exposure to the stimulus, by correction of fake news or whether it was present anyway for those identifying highly with a political group. For now, we can only make assumptions about the underlying processes. However, the finding that correction of ingroup fake news decreased affective polarization, is noteworthy. Social identity theorists have found lower ingroup bias or even an outgroup bias when ingroup status was high rather than low (Brewer, 1979; Brewer & Campbell, 1976; Dutton, 1976; Mullen et al., 1992). Learning that the outgroup disseminated fake news might result in the perception of a superior status and subsequently less ingroup bias or favoritism. On the other hand, those studies also document higher ingroup bias for low status groups. We do not find that those learning that their own group had disseminated fake news showed greater ingroup bias. If anything, there was a tendency towards less ingroup bias as well. Moreover, the non-significant tendency for stronger attitude polarization after learning about outgroup fake news conflicts with this rationale. Nevertheless, while acknowledging certain reservations, we believe that our findings can contribute to a growing body of insights investigating the consequences of exposure to and the correction of fake news.

### 6.4.1. Limitations and Future Research

We aimed at assessing the impact of correction by comparing degrees of polarization between those who were merely exposed to the post without knowing it was fake news to those who were told it was. However, the provocative nature of the stimuli presented suggests that they were not only meant for ingroup members to read but also as a positioning statement against any opposing, allegedly outgroup, opinions. Hence, disentangling polarization induced by mere exposure from polarization induced by group threat as a result of correction, was not possible. Future studies should include a measure of perceived threat to test for a potential mediating effect.

The present studies aimed at testing immediate effects of exposure to fake news rather than long-term consequences. Yet, testing differences in affect and attitudes within the

same study or between two points in time rather than between disclosure conditions only could shed light on how those polarization types interact and whether they persist over time.

Another limitation of our studies is the fact that we asked every participant to indicate their ideological orientation at the beginning of the survey. We did this in the interest of quotas, that is, a balanced sample. However, this might have made everyone's political identity salient even before viewing the stimulus. The stimuli used here were real-life fake news posts from Facebook. We did not control whether participants had either seen the stimulus before or whether they even deemed it believable. Future studies should collect more data on the stimulus features in order to control for unsystematic biases due to prior knowledge or incredibility of the stimulus itself. Moreover, any impact of ideological orientation reported here can only be preliminary as some sub-groups did not have enough statistical power.

### 6.4.2. Conclusion

The present work takes on a social identity perspective on how online fake news impact an individual's affect and attitudes. It finds exposure to in- and outgroup fake news to be associated with high affective polarization while higher levels in attitude polarization were found after exposure to outgroup fake news. Informing participants about the fake news nature of the post attenuated affective polarization for those perceiving the sender to be an outgroup member only. It is the first empirical work to investigate the impact of exposure of in- and outgroup fake news on attitude and affective polarization separately. Although some results may be but preliminary, it offers valuable insight into how attempts to correct fake news should consider social identity processes in order to prevent further polarization.

# 7. Measuring Political Ideology - A Systematic Review

## 7.1. Introduction

Political ideologies are foundational to a broad range of social science fields such as political science, behavioral economics, social and political psychology – but also to medical-related sciences, marketing, and sociology. Political ideologies help individuals to navigate and interpret the complex socio-political world by offering an organization of values, justifying social arrangements, and explaining power relations. But despite its almost ubiquitous prevalence, scholarly debate rages on ideology's elemental, underlying and foundational aspects. Can people be considered as ideologues (Azevedo, Jost, Rothmund, & Sterling, 2019; Conover & Feldman, 1984; Converse, 1964; Goren, 2001, 2012; Zaller, 1992), which psychological processes help structure individuals' political beliefs (Duckitt, 2001; Feldman, 1988; Haidt & Graham, 2007; Jost et al., 2003b; Tomkins, 1963)? How can ideological mental representations be empirically evaluated (Carmines et al., 2012a; Ellis & Stimson, 2009; Feldman & Johnston, 2014; Fuchs & Klingemann, 1990; Jost, Federico, & Napier, 2009; von Collani & Grumm, 2009), and is mass public ideologically polarized (Abramowitz & Saunders, 2008; Fiorina & Abrams, 2008; Lelkes, 2016)? Social and political psychology research mainly focused on identifying individual antecedents of ideological proclivities, that is, for instance how political ideology relates to moral foundations (Graham et al., 2009; Haidt et al., 2009; Weber & Federico, 2013), motivated social cognition (Jost & Amodio, 2012; Jost et al., 2003b), personality traits (Gerber, Huber, Doherty, Dowling, & Ha, 2010; Hirsh, DeYoung, Xu, & Peterson, 2010; McClosky, 1958), genetic predispositions (Funk et al., 2013), genotypic differences (Settle, Dawes, Christakis, & Fowler, 2010), or differences in neural activity (Jost & Amodio, 2012), to name only a few. To shed some light onto these questions, social scientists resorted

to interviews and subsequent analyses of responses to political questions, in mostly two approaches. On one hand, political scientists typically made use of a selected number of political attitudes questions present in national election studies and cross-national surveys. On the other hand, some streams of inquiry, more predominant in social psychology and related fields, tended to opt for fashioning and employing their own surveys and inventories aiming to tap into the same ideological beliefs. Thus, studying the interplay between political ideology and the individual, scholars used diverse and wide-ranging approaches. Yet, few grappled meaningfully with either theory or measurement of ideology. In this chapter, we explore the diverse approaches to conceptualizing and investigating political ideology systematically by giving special focus to theory, measurement, and their intersection.

Unlike temperature or height, politico-psychological phenomena are mostly latent in that they are not directly observable. Covariance in manifest, that is, observable indications of one's ideological orientation on either symbolic or operational ideology scales are assumed to have a common underlying cause. Here, a certain latent political ideology. To interpret scores on ideological instruments as indicative of the degree to which a person adheres to an ideology, these instruments need to be valid indicators of the underlying latent construct. Hence, their measurement needs systematic psychometric development and validation. This process of construct validation is the method by which evidence is provided that the scores actually reflect the target construct. A lack thereof severely hinders the ability to make any inference about the phenomenon under study and thereby might affect the verity of reported findings as well as their replicability (Flake, Pek, & Hehman, 2017; Flake & Fried, 2020; Hussey & Hughes, 2020). It also increases the likelihood of jingle-jangle fallacies (Kelley, 1927; Thorndike, 1916; Weidman, Steckler, & Tracy, 2017), that is, either assuming different sets of items would measure convergent constructs when those are actually distinct (jingle fallacy), or vice versa, assuming different sets of items would measure distinct constructs when they're actually convergent (jangle fallacy).

With the recent surge in interest in politico-psychological research, instruments intending to gauge one's location on the ideological space abound in the literature. For instance, Jost et al. (2003b) included almost thirty different scales assumed to measure political conservatism in their meta-analysis. Producing multiple instruments

for the same construct may be simply convenient for researchers, or a consequence of the tendency to develop one's own theories instead of building on existing theories. Mischel (2005, 2008) dubbed this phenomenon the *toothbrush problem*, humorously suggesting that psychologists "treat other people's theories like used toothbrushes, and therefore [...] stray away from them as much as possible. The objective is to develop one's own toothbrush - shiny and new" (Mischel, 2005, as cited by Vartanian, 2014, p. 15). This analogy might also apply to measurement as reviews on studies from social and personality psychology (Flake et al., 2017), health education and behavior (Barry, Chaney, Piazza-Gardner, & Chavarria, 2014), and emotion research (Weidman et al., 2017) suggest. Those reviews found that between 44% and 88% of included papers reported using ad hoc measures. More often than not did those scales (both, well-established and ad hoc) fail to report validation evidence. Further research on the prevalence of validation evidence in psychological research suggests that scales for which little validity evidence had been published were more likely to fail those validity metrics (Hussey & Hughes, 2020; Shaw, Cloos, Luong, Elbaz, & Flake, 2020). The authors assumed that the pattern of failing to report validation evidence may not just have been a case of underreporting, that is, measures may be valid but their validity is not reported. They argue it may rather represent "an abundance of invalid measures hiding in plain sight (i.e., hidden invalidity)" (Hussey & Hughes, 2020, p. 176). These findings are particularly alarming given that "the verity of results about a psychological construct hinges on the validity of its measurement" (Flake et al., 2017, p. 370), implying a serious threat for the confidence researchers may have in their findings.

In a recently published article, Flake and Fried (2020) build on these claims and put forward the concept of *questionable measurement practices* (QMP). The authors transfer the concept of questionable research practices (see, John, Loewenstein, & Prelec, 2012) to the measurement of psychological constructs, that is "any approach that researchers take to create a number to represent a variable under study" (Flake & Fried, 2020, p. 458). QMPs are defined as "decisions researchers make that raise doubts about the validity of the measures used in a study, and ultimately the validity of the final conclusion" (p. 458). According to Flake and Fried (2020), examples of QMPs include: lack of definition for the construct; failure to describe the measure or administrative procedure; not reporting justification for measure selection or existing validity evidence;

undisclosed response coding, transformation, items, calculation of score, and conducted (psychometric) analyses; undeclared modifications before or after data collection without justification; use of measures on-the-fly deprived of validity evidence (i.e., all of above) and without reasoning for existing measures. QMPs cover a broad range of issues, "including lack of transparency, ignorance, negligence, and misrepresentation", and need to be taken seriously as failing to disclose measurement specifics can pose a threat to both, replicability and all aspects of validity (Flake & Fried, 2020, p. 458–459).

Given the plethora of ideological instruments, we assume this might likely also apply to the measurement of political ideology. While it may be standard practice to assume ideological inventories can be used interchangeably, it is unlikely that they are all equally valid indicators of ideological content. This untested assumption, if shown not to hold, may pose a threat to the validity and replicability of findings, thus hindering the accumulation of knowledge. The main goal of the present review is to provide a systematic assessment of political ideology measurement in order to map the extent to which QMPs are present in the literature. In addition, we aim to explore how this might affect replicability as well as three aspects of the overall validity of a conclusion: external, statistical-conclusion, and construct validity (Shadish, Cook, & Campbell, 2002). *Replicability* would be threatened if a researcher unaffiliated with the original study were not able to repeat this study, given the information provided in the original study. *External validity* would be compromised by an overly population-specific measure that precludes generalizability or if the information to assess the latter is missing. *Statistical-conclusion validity* can be threatened if "undisclosed measurement flexibility generates multiple comparisons in a statistical test, which can bias the test's results" (Flake & Fried, 2020, p. 459). And lastly, failing to report information on how latent constructs relate to their operationalization threatens *construct validity* (Shadish et al., 2002, p. 72). We will focus on published work from psychology and political science, and evaluate potential differences between the fields. As outlined in chapter 2, there are different conceptions of political ideology. Given that some of the most popular works on the topic focused on conservatism (e.g. Ellis & Stimson, 2012; Jost et al., 2003b; Wilson & Patterson, 1968), we will restrict our analysis on the construct of *operational political conservatism*. To assess measurement practices and the degree to which QMPs are present, we conducted a non-exhaustive systematic literature review comprising a final sample of 207 empirical articles.

## 7.2. Method

### Sampling and Data Sources

In line with guidelines for making research syntheses more transparent and easier to replicate (Atkinson, Koenka, Sanchez, Moshontz, & Cooper, 2015), we followed J. Webster and Watson's (2002) recommendations for systematic literature studies. The authors argue for the use of both forward and backward snowballing search (i.e., from the reference lists and citations of selected relevant literature) as the main and appropriate method for literature search procedures. Jalali and Wohlin (2012) compared this technique to more traditional approaches via keywords in reference databases (e.g., Kitchenham & Charters, 2007) and found no major differences between the findings of either analysis. The present approach ensures that the resulting dataset paints an accurate description and development of ideology as a construct, as well as of the myriad of approaches, methodologies, and analyses leveraged in its history.

With this goal in mind, seven papers were selected as the starting set from leading journals in areas using ideological instruments. Our criteria for identifying papers with ideological scales were not only based on journal impact ($Mdn = 2.56$, $SD = .96$)[16] and citations ($Mdn = 107$, $SD = 309.37$)[17] but also relative to their representation in terms of both theoretical and methodological characteristics (e.g., dimensionality, field, sample type and size). The selected ideological instruments were also balanced with respect to unidimensional vs. multidimensional conceptualizations of ideology, they had been published in psychological, communication and political science disciplines, cut across academia and industry, utilized varying degrees of psychometric methods, and figured both representative, adult and large samples, as well as convenient, small, student samples.

In specific, the first instrument was the classic *Conservatism Scale* by Wilson and Patterson (1968) which is the most cited conservatism scale according to Google Scholar ($N = 745$). The second and third were the refined and validated successors of the Con-

[16]No impact factor could be retrieved for the *British Journal of Social and Clinical psychology* as it was split in two separate journal (*British Journal of Social psychology* and *British Journal of Clinical psychology*) in 1981. Thus, we averaged the 2018 impact factor of the latter two for our purposes. Impact factors for *Personality and Individual Differences*, *Psychological Reports* and *Cognition & Emotion* were from 2017, from 2018 for *Social Psychological and Personality Science*, and from 2019 for *Political psychology* and *PLOS One*.

[17]Number of citations was retrieved from Google Scholar on July 20, 2020.

servatism Scale, *Social Conservatism* (Henningham, 1996) and *Economic Conservatism* (Henningham, 1997). The fourth ensues from a nonpartisan, independent, American think tank, the Pew Research Center (2012) which developed the *Core Issues in American Politics* (also used in Zell & Bernstein, 2014). The fifth selected scale, *Core Domains of Social and Economic Conservatism* was developed by political scientists and its indices were present in several waves of the reputable American National Election Studies (ANES; Feldman & Johnston, 2014). The sixth instrument, *Political Issue Statements* (Inbar, Pizarro, & Bloom, 2009) and the seventh, *Social and Economic Conservatism Scale* (Everett, 2013) both stem from psychological science while adopting widely contrasting conceptual and methodological approaches.

### Inclusion Criteria and Coding of Articles

For this review, we included empirical studies where at least one operational measure of conservatism was used. Studies that used only either symbolic ideology (i.e. ideological self-placement), a measure of Right Wing Authoritarianism (RWA) or Social Dominance Orientation (SDO) as proxy, were excluded from further analysis. A total of $N = 394$ initially identified articles were reviewed of which $n = 85$ were either meta-analyses, reviews or did not measure political ideology. 48 articles had to be excluded because they were not or only partially accessible online. A total of $n = 47$ studies used ideological self-placement, or an RWA or SDO measure ($n = 7$) for the operationalization of Conservatism only (see Figure 7.1 for an overview). The final sample of $N = 207$ articles was coded by two independent junior coders and checked for correctness by a senior coder.[18] Any inconsistent or ambiguous case was discussed with a second senior coder before making a final decision, resulting in a single accurate data set for analysis. Both junior coders held an undergraduate degree in social sciences and had received both, formal training in measurement, research practices, and statistics as part of their education, as well as a specific training on the coding of this project by the senior coders. Senior coders held postgraduate degrees in psychology at the time of coding with formal training and practical experience in measurement, research practices, and statistics. For each of the 207 articles examined we coded *meta-information* (year of publication, name of author(s), scientific discipline, publication outlet), *sample specifics* (national origin of

[18] All articles included in the review are marked with an asterisk in the reference section.

sample, type of sample, sample size), *study specifics* (number of studies within article, number of relevant measures within article), *measurement specifics* (name of relevant measure, novelty of measures, number of items for each measure, type of scale, lower and upper limit of scale, scoring of items, and whether or not all items or example items were provided), and *information on construct validation* (presence of validation evidence for measures used, use of factor analytical methods, type and technique of factor analysis, rotation and extraction method used in factor analysis).

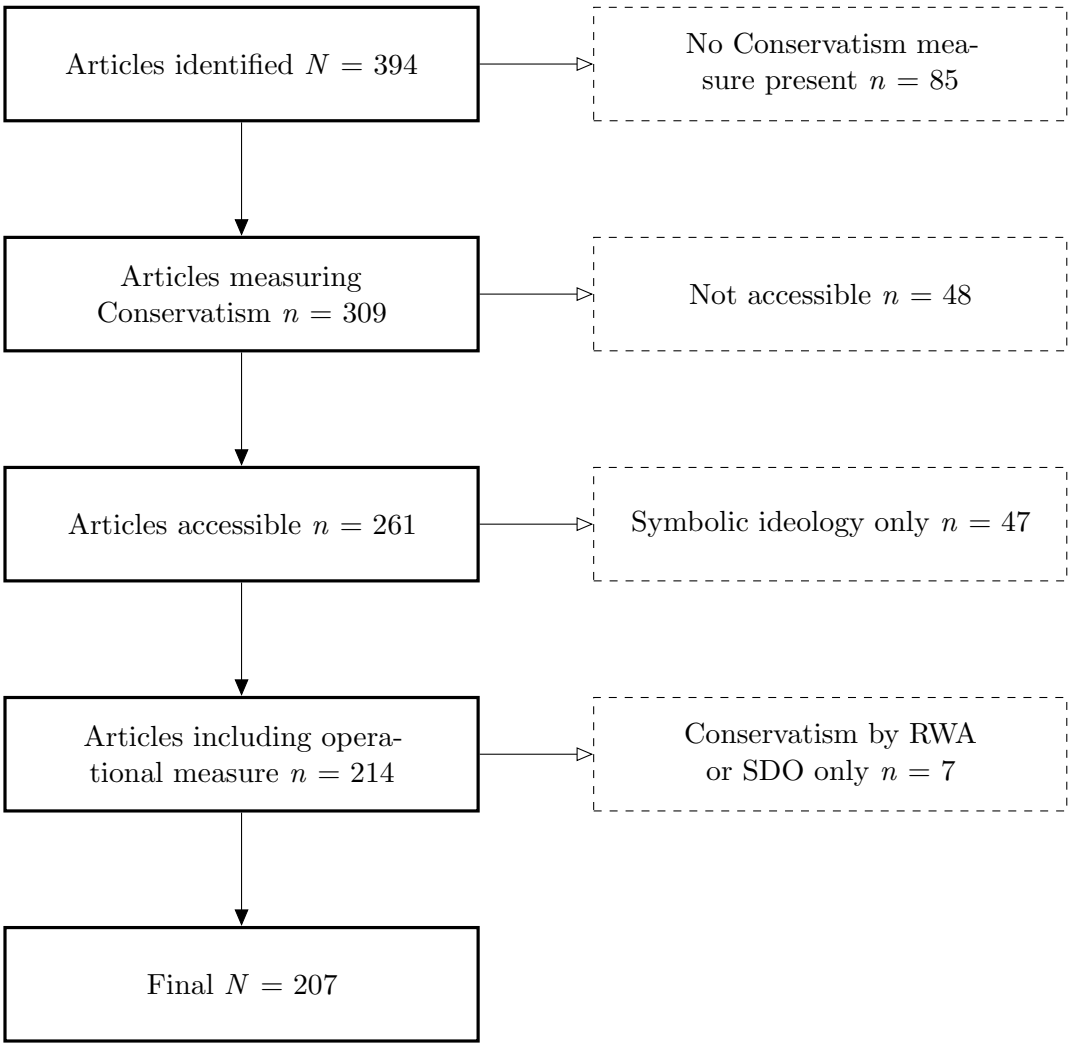



*Figure 7.1..* Flowchart of Sampling Process

## 7.3. Results

Findings of the present review will be presented along the five coding categories of meta-information, sample specifics, study specifics, measurement specifics, and validation evidence. The last section presents a case study of the most frequently coded scale.

### Meta-Information

The earliest of the articles included was published in 1929, the latest in 2020 with more than half of the articles published after 2003. 60.39% were from psychology (including social psychology, political psychology, and educational psychology), 26.57% from political science, and 13.04% from other disciplines (e.g. economics, sociology, or genetics). The three most frequently coded publication outlets in psychology were *Personality and Individual Differences* ($n = 18$), *The Journal of Social Psychology* ($n = 14$), and *Political Psychology* ($n = 11$). In political science, the most frequently coded outlet was the *American Journal of Political Science* ($n = 7$), followed by the *Journal of Politics* ($n = 6$), and *The Forum* ($n = 5$, see Figure D.1 and D.2 in the appendix for all frequencies).

### Sample Specifics

Sample size was reported in $n = 175$, that is, 84.54% of all cases ($n = 122$, 98.39% in psychology, $n = 30$, 54.55% in political science). Overall median sample size was 502 ($SD = 15806.67, range : 1 - 163814$ subjects), 452.5 in psychology ($SD = 18564.41, range : 30 - 163814$ subjects), and 1126 in political science ($SD = 3550.31, range : 1 - 13201$ subjects). Samples consisted mostly of adults ($n = 99$, 49.01%, of which $n = 36$, 17.82% were panel data) and students ($n = 55$, 27.23%). In Psychology, samples were equally made up of adults ($n = 45$, 36.89%, of which $n = 4$, 3.28% were panel data) and students ($n = 45$, 36.89%), while in political science mostly adult samples ($n = 39$, 75%, of which $n = 25$, 48.08% were panel data) and almost no student samples ($n = 2$, 3.85%) were coded.A total of 76 different countries were coded out of which about half ($n = 37$, 48.68%) were non-OECD countries.[19] In relative terms, OECD countries were largely over-represented. 80.96% ($n = 370$) of all studies were conducted with samples from OECD countries with 28.01% ($n = 128$) from the United

[19]Countries were compared with regard to their membership in the Organisation for Economic Co-operation and Development (OECD). Member states of the OECD are high-income countries with a high Human Development Index (see `https://stats.oecd.org/`).

States alone (see Table D.1 in the appendix for an overview of the ten most frequently coded countries).

### Study and Measurement Specifics

We coded an average of 1.3 studies ($SD = .9, range: 1 - 8$ studies) and 1.66 relevant measures ($SD = 1.42, range: 1 - 11$ measures) per article. An average of 37.14 items ($SD = 43.93, range: 1 - 400$ items) across scales within a single article and $M = 23.97$ items ($SD = 32.15, range: 399$ items) within scales across articles was documented.

A total of 222 distinct operational ideology measures were coded out of which 60 were not named and nine (4.06%) were coded more than once throughout all articles. Across articles and scales we coded a total of $n = 303$ measurement instances. The most prevalent scale was the Wilson and Patterson Conservatism Scale (WP C-Scale, Wilson & Patterson, 1968) with a total of $n = 49$ measurement instances (16.17%) of which seven were modified, shortened or adapted versions (see Section 7.3 below for a detailed case study). Second most frequently were De Witte's (1990) Cultural (2.97%, $n = 9$) and Economic Conservatism scales (2.31%, $n = 7$). For the majority of all articles (75.36%, $n = 156$) authors reported the scale type used for scoring (e.g. Likert scale) but only in 54.59% ($n = 113$) did they also report lower and upper limits of the scale. Exact scoring techniques were reported in 52.17% ($n = 108$) of all cases out of which 63.89% ($n = 69$) used mean scores and 33.33% ($n = 36$) used sum scores. All items used in the study were documented in 58.45% ($n = 121$) of the articles. Example items were provided in 36.05% ($n = 31$) of the cases where full item reporting was not present (see Table 7.1 for a more detailed break-down between scientific disciplines).

Table 7.1.

*Study and Measurement Specifics per Scientific Discipline*

| | Psychology ($n$ = 124) | | Political Science ($n$ = 55) | | Other ($n$ = 28) | |
|---|---|---|---|---|---|---|
| | *Mdn*(*SD*) | *range* | *Mdn*(*SD*) | *range* | *Mdn*(*SD*) | *range* |
| Within article | | | | | | |
| Studies | 1 (.89) | 5 | 1 (.59) | 3 | 1 (1.33) | 7 |
| Relevant measures | 1 (1.63) | 10 | 1 (.72) | 3 | 1 (1.48) | 7 |
| Novel measures | 1 (.87) | 5 | 1 (1.00) | 6 | 1 (.49) | 1 |
| Items across scales | 36 (45.20) | 399 | 16 (21.8) | 131 | 24 (62.75) | 278 |
| Across article | | | | | | |
| Items per scale | 16 (37.04) | 399 | 12 (12.29) | 49 | 16.5 (34.58) | 187 |
| | $n$ | % | $n$ | % | $n$ | % |
| Social & Economic Cons. | | | | | | |
| Social | 13 | 10.48 | 2 | 3.64 | 2 | 7.14 |
| Economic | 9 | 7.26 | 4 | 7.27 | 4 | 14.29 |
| Both | 39 | 31.45 | 26 | 47.27 | 13 | 46.43 |
| Scale type reported | 94 | 75.81 | 44 | 80.00 | 18 | 64.29 |
| Scale limits reported | 68 | 54.84 | 32 | 58.18 | 13 | 46.43 |
| Scoring technique reported | 66 | 53.23 | 27 | 49.09 | 15 | 53.57 |
| All items reported | 64 | 51.61 | 39 | 70.91 | 18 | 64.26 |
| Example items[a] | 18 | 30.00 | 7 | 43.75 | 6 | 60.00 |
| Unnamed scales[b] | 16 | 12.70 | 34 | 46.58 | 10 | 32.26 |
| Novel scale[b] | 69 | 54.76 | 49 | 67.12 | 18 | 58.07 |
| Scale type reported[c] | 56 | 81.16 | 39 | 79.59 | 11 | 61.11 |
| Scale limits reported[c] | 41 | 59.42 | 28 | 57.14 | 8 | 44.44 |
| Scoring technique reported[c] | 41 | 59.42 | 23 | 46.94 | 7 | 38.89 |
| All items reported [c] | 51 | 73.91 | 35 | 71.43 | 16 | 88.89 |

*Note.* [a]Percentages were calculated for the respective number of articles where full item reporting was not present. [b]Percentages were calculated for the respective number of distinct measures in a field (psychology: $n = 126$; political science: $n = 73$; other disciplines; $n = 31$). [c]Percentages were calculated for the respective number of novel measures within a field.)

Out of all scales, 61.26% were novel measures that had no reference to previous use ($n = 136$, $Mdn = 1$, $SD = .91$, range: 1-7 measures). For these novel measures, 77.94% ($n = 106$) reported the type of scale they had used, 56.62% ($n = 77$) also documented lower and upper limits of their scales, and 52.21% ($n = 71$) reported the scoring technique. All items of novel scales were provided in 75% ($n = 102$) of all cases, while example items were provided for 38.23% ($n = 13$) of novel scales that did not report all items.

### Validation Evidence

Whenever authors used scales that had previously been reported elsewhere, the majority did not report factorial validation evidence (83.1%, $n = 59$). Articles where we coded at least one novel measure reported factorial validation evidence for those measures about half of the time (47.79%, $n = 65$). Of those, 67.69% ($n = 44$) reported the technique, another 58.46% ($n = 38$) reported rotation method, and 26.15% ($n = 18$) reported the extraction method. In summary, factorial evidence with full reporting was present in 18.46% ($n = 12$) of the cases where novel measures were implemented (see Table 7.2 for a more detailed break-down between scientific disciplines).

Table 7.2.

*Validation Evidence for Novel Measures per Scientific Discipline*

| | Psychology ($n = 69$) | | Political Science ($n = 49$) | | Other ($n = 18$) | |
|---|---|---|---|---|---|---|
| | *n* | % | *n* | % | *n* | % |
| Validation evidence reported | 37 | 53.62 | 21 | 42.86 | 7 | 38.89 |
| Technique reported[a] | 24 | 64.86 | 14 | 66.67 | 6 | 85.71 |
| Rotation method reported[a] | 26 | 70.27 | 7 | 33.33 | 5 | 71.43 |
| Extraction method reported[a] | 12 | 32.43 | 4 | 19.05 | 1 | 14.29 |
| Full reporting[a] | 9 | 24.32 | 2 | 9.52 | 1 | 14.29 |

*Note.* [a] Percentages were calculated for the respective number of cases when validation evidence for a novel measure was reported.

### Case Study: Wilson-Patterson Conservatism Scale

The original Wilson and Patterson (1968) Conservatim Scale presented 50 items, half of them assumed to be agreed to by participants high in conservatism. Each agreement (*Yes*) with a conservative statement and disagreement (*No*) with a non-conservative item

was assigned a value of 2. A value of 0 was assigned for answers of the opposite pattern (i.e. disagreement with conservative statements and agreement with non-conservative statements). If uncertain (*?*) a value of 1 was given. The authors aggregated all values (*sum score*) resulting in a possible range of scores from 0 to 100. Ranging from 1968 to 2017, the majority of the 49 mentions coded in this review were from Psychology ($n = 35$, 71.43%), only 12.25% were from Political Science ($n = 6$). Table 7.3 provides an overview of the coded measurement specifics.

Table 7.3.

*Case Study Wilson & Patterson (1968) Conservatism Scale: Reporting of Measurement Specifics*

| | Psychology (n = 35) | | Political Science (n = 6) | | Other (n = 8) | |
|---|---|---|---|---|---|---|
| | *n* | % | *n* | % | *n* | % |
| Number of items reported | 29 | 82.86 | 6 | 100.00 | 7 | 87.50 |
| Scale type reported | 27 | 77.14 | 5 | 83.33 | 4 | 50.00 |
| Scoring technique reported | 23 | 65.71 | 3 | 50.00 | 5 | 62.50 |
| Mean score[a] | 10 | 43.48 | 0 | 0.00 | 4 | 80.00 |
| Sum score[a] | 13 | 56.52 | 2 | 66.67 | 1 | 20.00 |
| Validation evidence reported[b] | 7 | 58.33 | 0 | 0.00 | 1 | 20.00 |
| Scale use as suggested by the authors[c] | 4 | 11.43 | 0 | 0.00 | 0 | 0.00 |

*Note.* [a]Percentages were calculated for the respective number of cases when scoring techniques were reported. [b]Percentages were calculated for the respective number of cases when the number of items was not 50 ($n = 12$ in Psychology, $n = 4$ in Political Science, and $n = 5$ for Other). [c]That is, whenever authors reported using 50 items and a sum scoring of the *Yes/No/?* scale.

The original version with 50 items was used about half of the time ($n = 21$, 42.86%) and mostly in Psychology ($n = 17$, 48.57%). Item count ranged from 13 to 67 items and was validated in 38.1% ($n = 8$) of all cases whenever item count was not 50. Scale and scoring type as suggested by the original authors was coded in 40.82% ($n = 20$) and 32.65% ($n = 16$) of all cases, respectively. Overall, we coded four cases (8.16%) where the original number of items, scale type, and scoring technique were used (see Figure 7.2 on the following page).

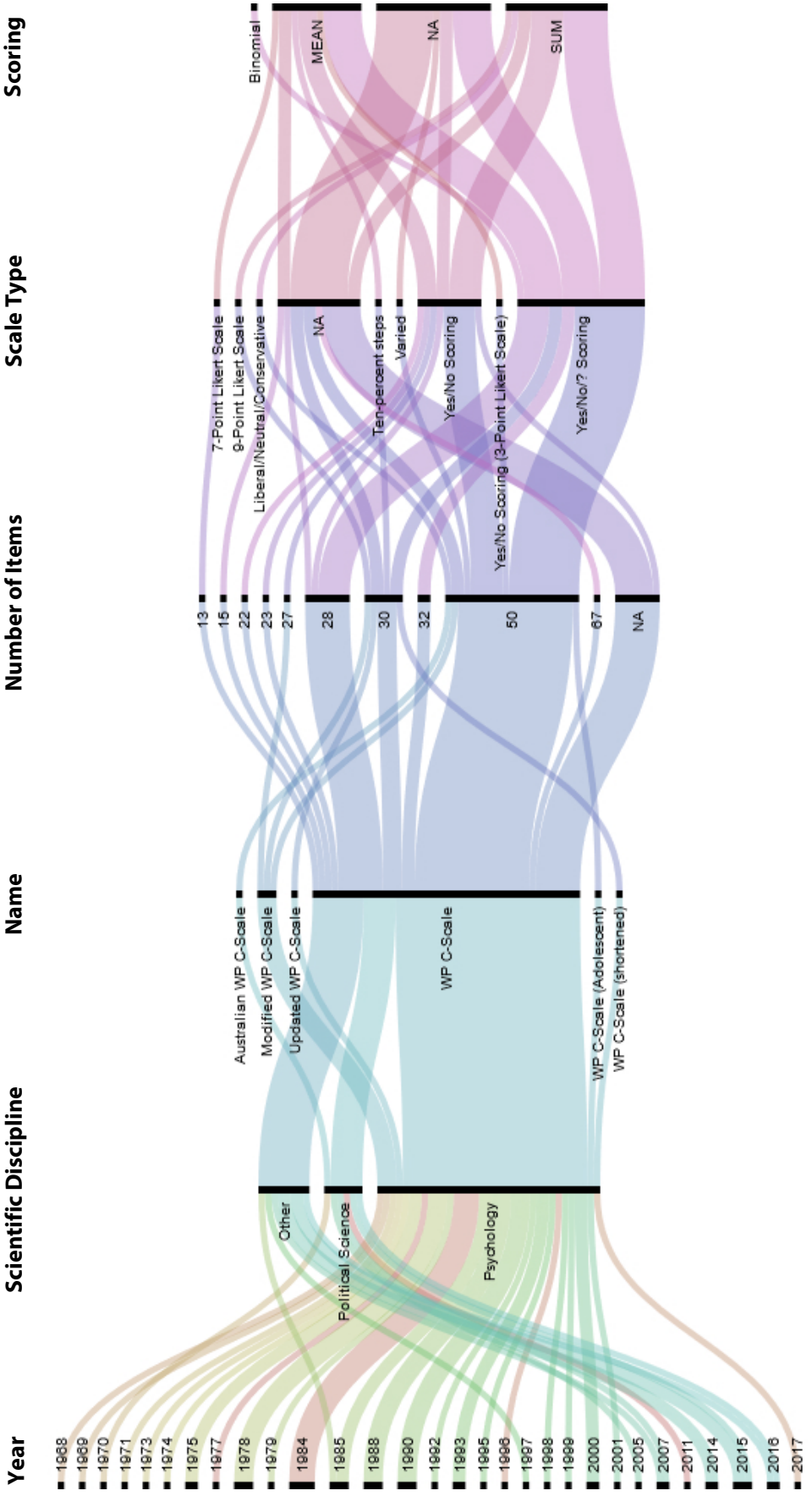



*Figure 7.2..* Alluvial flow chart: Use of the Wilson & Patterson (1968) Conservatism Scale.

## 7.4. Discussion

The present review aimed at providing a historical assessment of political ideology measurement with a special focus on replicability and validity. Using a forward and backward snowballing search strategy, we identified 394 articles of which 207 met all inclusion criteria. We extracted information along five broad categories that will also structure the following discussion. We highlight key findings per category, provide recommendations for improving the current practice and give a concluding assessment of the findings regarding implications for replicability and validity.

### Meta-Information

More than half of the coded articles had been published after 2003. Comparing this to publications on the topic of 'political ideology' available in the Web of Science database, our sample even underrepresents studies published from 2003 to 2020. 85.51% of the articles found under the keyword 'political ideology' in any scientific discipline listed on Web of Science were published after 2003.[20] Within this database search, *Personality and Individual Differences* was the second most frequently listed journal, *The Journal of Social Psychology* was on rank 17, while *Political Psychology* was the most prominent outlet. For political science, the *American Journal of Political Science* ranked eighth, the *Journal of Politics* ranked fourth, while *The Forum* was not among the top ten journals. While our sample does deviate from the actual publication statistics, we suggest it represents a sufficiently representative sample in terms of years of publication and publication outlet. Interestingly, *Political Psychology* was the most frequent journal for both disciplines on Web of Science. This might speak to an increasing interdisciplinary interest in the topic of political ideology and is all the more reason to consider differences in measurement practice between fields.

### Sample Specifics

Sample sizes were reported in almost all cases for psychology but only in about half of the articles from political science. Standard deviations and the range in sample size were large for both fields. This variance might have been driven by studies using panel data or

[20] Numbers retrieved from `https://apps.webofknowledge.com/` on December 17, 2020. We searched for publications on the topic of 'political ideology' between 1929 and 2020.

instances where large scale data (e.g. Dimock, Kiley, Keeter, & Doherty, 2014; Graham et al., 2011; Kubin & Brandt, 2020) or Twitter data (Kteily, Rocklage, McClanahan, & Ho, 2019) was analyzed. Using panel data such as the American National Election Survey seems to be more common in political science than in psychology.

While we sampled studies conducted in 76 different countries, a large majority of the samples were from OECD countries with more than a quarter from the United States alone. These findings are in line with previous critical assessments of sampling practices in psychology that found 68% of all subjects to be from the United States, and another 27% from the English-speaking countries[21] and Europe (Arnett, 2008). That is, countries that made up 12% of the population at the time, and whose population is as critics put it "a truly unusual group" (Henrich, Heine, & Norenzayan, 2010b, p. 61) or even among "the most psychologically unusual people on Earth" (Henrich, Heine, & Norenzayan, 2010a, p. 29) were largely over-represented in our dataset. The discussion about asymmetric sampling from Western, Educated, Industrialized, Rich, and Democratic countries (WEIRD, Henrich et al., 2010b) has put into question the generalizability of findings with regard to "the rest of the world's population, the other 95%" (Arnett, 2008, p. 602). Findings that model an individual's political ideology with regard to any other psychological or behavioral outcome can hence only be accurate for WEIRD countries. Not only does this bear implications for social sciences and the self-set mission to identify universal principles underlying human behavior, it may also have societal consequences (Henrich et al., 2010a). Policy-makers relying on WEIRD research to inform global politics need to be aware of the very special subsample that studies have been conducted with. Henrich et al. (2010a, p. 29) suggest that "recognizing the full extent of human diversity does not mean giving up on the quest to understand human nature" but rather that it would paint a more just and accurate picture of it.

### Study and Measurement Specifics

We found that across our sample of 207 articles, 222 distinct scales had been used, of which about a quarter were not given a name. Out of the nine scales that had been used more than once, the most prominent scales were the Wilson and Patterson Conservatism Scale (Wilson & Patterson, 1968), and De Witte's (1990) Cultural and

[21] English-speaking countries are the United Kingdom, Canada, Australia, and New Zealand.

Economic Conservatism scales making up about twenty percent of all measurement instances. For sixty percent of all measures no reference to a previously used and validated scale was provided. For both, novel and non-novel scales, scale type was reported in most cases while lower and upper limit of the scale and scoring technique were only reported half of the time. Exact item wording was more often reported for novel than for established scales. With nominally more scales than articles of which only few were used repeatedly and the majority was constructed on the fly, it seems that there has been little consistency across and within fields throughout the last century. However, we suggest that different explanations underlie the heterogeneity in psychology and political science, respectively. More than half of the novel measures in political science were composite scales constructed from panel data variables that were referenced in the majority of articles. Compared to single cross-section data, panel data comes with the advantages of more accurate inference of model parameters, greater capacity for capturing the complexity of human behavior, and a simplification of computational and statistical inference (Hsiao, 2007, p. 3–5). There is usually little change regarding the variables assessed over the years, providing a convenient sample of longitudinal data. However, this also means that analyses can only be conducted with the variables at hand leading to a plethora of unnamed scales. In psychology, more than half of the scales were novel, whereas most of them, unlike in political science, were named. This potentially speaks to the toothbrush problem in that psychological researchers exhibit a tendency to provide novel conceptual work instead of building on and replicating previous work (Mischel, 2005, 2008). To speak metaphorically; while psychologists would rather develop their own toothbrush each and give it a distinct name, political scientists feel comfortable drawing from the same pool of readily available toothbrushes but wouldn't bother naming them.

### Validation Evidence

Validation evidence can be provided in two ways. Either authors reference to previous work where the scale in question had been validated, thereby assuming that this validation evidence extends to their study or they provide the evidence themselves (Flake et al., 2017). For the present sample we found that whenever scales were novel or had no reference to previous studies, less than half of the authors reported factorial validation

evidence. Out of those, full reporting of factor analytical specifics (technique, rotation, and extraction method) was provided in less than twenty percent. To the extent that the scales coded for this review intend to measure *one* underlying latent construct across multiple studies or even multiple latent constructs within one study, construct validation is of paramount importance. Just like it is imperative for researchers studying temperature to make sure their instrument measures temperature and not humidity or air pressure, we need to make sure that our scales actually measure what we think they do (Flake et al., 2017, p. 374). Surely, the full process of scale construction and validation is lengthy and complex. Yet, shying away from it eventually leaves us with questionable conclusions. Measuring political ideology heterogeneously in the absence of systematically developed scales creates the untested and potentially misleading assumption that those measures capture the same latent construct when we do not know that they do. Hence, we can not rule out succumbing to jingle fallacies (Thorndike, 1904). These different scales could have differential relationships to other constructs, leading to the erroneous conclusion that the same ideology does not relate consistently to external correlates. However, several scales composed of different items may also be highly correlated with each other and therefore lead to similar empirical effects in different studies (Weidman et al., 2017). This could be investigated empirically by comparing convergent and predictive validity of multiple ideology measures in one study. So far, however, we cannot assume that different scales actually capture identical latent constructs. Like Flake et al. (2017, p. 374), we suggest that "researchers consider their studies as part of a broader literature which encompasses substantive theory *including* what is known about how to best measure the constructs central to that theory". This way, well-established and validated scales can be confidently implemented (if used as intended) and conclusions can be relied on.

**Case Study: Wilson-Patterson Conservatism Scale**

When evaluating the most frequently coded Wilson and Patterson (1968) Conservatism Scale more closely, we found substantial variance with regard to how it had been implemented. The original version of the Conservatism Scale as developed and validated by Wilson and Patterson (1968) was used in four cases out of a total 49. The other 45 versions varied with regard to item count, scale type and scoring technique. Barely any of the variations were validated. Hence, even when focusing on a single scale only,

we cannot confidently assume results to be comparable between those studies. While it might be potentially adequate to update the Conservatism Scale as its items have been created over forty years ago, this should be done within a full process of construct validation. If not only the latent construct allegedly underlying all the sampled articles, but even studies allegedly using the same scale can not be assumed to be equivalent, then psychological and political science as fields should start being more conscientious about their decisions.

**Summary**

The present review provides an overview of how the fields of psychology and political science have been measuring political conservatism in the last century. We found several asymmetries and inconsistencies whose impact on replicability and validity we will discuss hereinafter. Our data suggest a potential threat to *replicability* of the fields' findings given the incomplete reporting of measurement specifics in general, and especially for novel, not previously validated scales. Incomplete reporting of measurement specifics can also threaten *statistical conclusion validity* as undisclosed measurement flexibility can potentially allow for questionable research practices such as different scoring techniques that can lead to different outcomes (Flake & Fried, 2020). Given the large asymmetry when it comes to representativeness of samples in favor of WEIRD countries, or, more specifically, in favor of the United States, we propose that *external validity* may be threatened as well. Either authors need to be clear about the restricted scope their findings may apply to, or sampling needs to be extended to other, non-WEIRD countries. Finally, the lack of reported validation evidence for novel scales leaves us with the assumption that *construct validity* within the measurement of political conservatism is also threatened.

### 7.4.1. Limitations and Future Research

Given that the inclusion criteria of this review were such that only work on operational political conservatism was included, we can only assume that our results would generalize to other constructs like for instance operational political liberalism, or libertarianism. The representativeness in itself might be compromised by the selection technique of forward and backward snowballing as chosen articles were by definition interlinked to a

certain degree. Future research could draw random samples from a body of literature obtained from keyword searches to ensure a less internally coherent sample.

We had taken on a relatively conservative approach with regard to coding. That is, we took information as published but never contacted the authors for additional information on for instance validation evidence or item wording. Hence, our conclusions might be overly pessimistic vis-à-vis the *true* state of the world. We also disregarded the actual content of the scales, information necessary to actually evaluate construct validity. In order to assess the degree to which scales on operational political conservatism measure the same underlying latent construct, future research endeavors could focus on a systematic assessment of scale content on the one hand, and measurement invariance on the other hand.

We believe that as a field, we need an institutional effort towards a standardized measure of ideology or a set of standardized measures which are continuously updated and whose psychometric properties are known. For instance, we should have a measure whose dimensionality is known and tested across high-quality surveys. We should have a measure that is invariant across major population groups, and ideally, invariant in time. Another path forward would be to qualify findings based on ideological topics, rather than scales, and try to generalize to ideology if findings work on a variety of both social and economic issue positions. Yet another approach is to have theory-based measures. That is, to focus on theoretical clarity and possibly try to limit the scope of ideology to a theory-justified range of issues as a mean to placate the conceptual chaos we are currently in.

### 7.4.2. Conclusion

Given previous works from different fields on similar questions (Flake et al., 2017; Flake & Fried, 2020; Hussey & Hughes, 2020; Shaw et al., 2020; Weidman et al., 2017), we conclude that our findings might not apply to research on political ideology only. We suggest that the threats to replicability and validity outlined above could be mitigated by considering four suggestions. Firstly, by making a full report of measurement specifics mandatory whenever authors deviate from a scale for which this information is available. Secondly, by embedding one's own research within a larger body of literature to the extent that well-established and validated scales are used to answer new questions. Thirdly, by

providing factorial validation whenever there is a need for a new scale and reporting all factor analytical specifics necessary. And finally, by making an effort to expand sampling beyond our own WEIRD scope.

# 8. General Discussion

> "There is little technical basis for telling whether a given experiment is an ecological normal, ... or whether it is more like a bearded lady at the fringes of reality, or perhaps like a mere homunculus of the laboratory out in the blank."
>
> Egon Brunswik, 1955, p. 204

This dissertation investigated the impact of different context factors such as domain, identity, and measurement on political ideology and its psychological underpinnings. It was the overarching aim to disentangle psychological processes from variance due to context by taking on an ecological perspective along the lines of Brunswik (1955, 1956). By representative sampling of experimental stimuli, the present work aimed at expanding our knowledge about whether and how individuals' political ideology relates to their underlying psychological make-up. In four self-contained chapters, I tested the domain-specificity of need for cognitive closure (Chapter 4), investigated the impact of identity and group membership on political attitudes (Chapter 5) and political polarization (Chapter 6), and conducted a systematic review of political ideology measurements (Chapter 7). To conclude this dissertation, I will discuss findings from the present four chapters and eight studies with regard to the opening quote. Has the effort of representative sampling brought us closer to finding the ecological normal, that is, the underlying psychological process? Can we rule out the possibility of bearded ladies at the fringes of reality or laboratory homunculi? And if not, have we at least come closer to identifying them? Following this introduction, I will provide a summary of the present research and highlight main findings. After integrating implications and the contribution of said findings I will discuss this work's limitations, outline future research avenues and finish with an overarching conclusion.

## 8.1. Main Findings, Implications & Contribution

In the first project of this dissertation, I tested the overarching hypothesis of domain-specificity of need for cognitive closure. I hypothesized that need for cognitive closure, rather than as a function of political ideology alone (see for instance, Jost et al., 2003b), would result from an interaction of domain and political ideology. More specifically, I assumed *ideological symmetries* in need for cognitive closure when the domain addressed was taken into account. In a total of three studies, participants filled in either a domain-general or a domain-specific version of one of three operationalizations of need for cognitive closure; discomfort with ambiguity (Study 1 and 2), closed-mindedness (Study 2), or dogmatism (Study 3). Political domains used in these studies were sampled with regard to relevant political discussions in the country of participants' origin at the time of data collection. Across all three studies, I consistently found higher need for cognitive closure in liberals relative to conservatives when an environmental domain (*environment* in Study 1, *climate change* in Study 2 and 3) was addressed. Vice versa, conservatives displayed higher need for cognitive closure within two out of three operationalizations (discomfort with ambiguity and dogmatism) than liberals when a religious domain was addressed. When personal relevance of the domain was accounted for, differences in domain-specific discomfort with ambiguity (Study 2) and dogmatism (Study 3) were no longer significant, suggesting it may underlie domain-specificity of need for cognitive closure. Inconsistent with previous work (e.g., Jost et al., 2003b; Kossowska & Hiel, 2003), I did not find higher levels of domain-general discomfort with ambiguity or closed-mindedness for conservatives. Only for domain-general dogmatism did they display significantly higher levels than liberals (Jost, 2017).

In line with previous work (Brandt et al., 2014; Conway et al., 2016, 2018; Elad-Strenger et al., 2020; Fiagbenu et al., 2019; Proch et al., 2019), the present studies lend further support to the notion of an ideology symmetry hypothesis. That is, while different beliefs and values may lead liberals and conservatives to assign personal relevance to different topics, respectively (Feldman, 2013; Graham et al., 2013), the motivation to defend their convictions seems to be similar for both. While the present results cannot explain the underlying mechanism beyond the notion that personal relevance might play a role, representative stimulus sampling regarding both, domain and latent construct, did help us disentangle content from psychological processes (Kessler et al., 2015). This

work is among the first to account for the complexity of cognition in political contexts by modeling several issue domains and operationalizations of need for cognitive closure. The results emphasize the necessity of representative sampling for the study of underlying psychological processes.

In a second project, I examined the degree of entanglement between political attitudes and the salient level of identity dependent on one's political orientation. I built on previous work that found shifts in attitudes when a certain level of identity (personal vs. political) was induced (i.e., identity-based attitude shifts, Cohen, 2003; Conover & Feldman, 1984; Malka & Lelkes, 2010; Popp & Rudolph, 2011) and introduced the notion of easy and hard issues (Carmines & Stimson, 1980; Pollock et al., 1993). Social issues have often been assumed to be *easy*, that is, they are familiar, highly salient, and individuals often rely on heuristics when indicating their agreement with such. Economic issues have been labeled *hard* as they can be more abstract and complex than easy issues. In two studies, one in Canada, one in the United States, I assigned participants randomly to one of two conditions where either their personal or political identity salience was manipulated. Participants indicated their stance on a total of forty political attitude items half of which were pro-attitudinal for conservatives, and half were pro-attitudinal for liberals. I expected an interaction between the salient level of identity (personal vs. political) and the fit between one's own ideological orientation and the respective issue stance. That is, I assumed liberals to endorse conservative economic attitudes more strongly when their personal identity was salient compared to when their political identity was salient. And vice versa, conservatives were expected to endorse liberal attitudes more strongly when their personal identity was salient. Secondly, I hypothesized that when their political identity was salient, both, liberals and conservatives, would entrench their existing economic attitudes. We expected no such interaction for social issues. In line with hypotheses, individuals indeed endorsed counter-attitudinal issues stronger when their personal identity was salient, and pro-attitudinal issues more strongly when their political identity was salient. This was only found for economic (hard) issues and for individuals whose 'own' party (i.e., the party associated with their own political orientation) was not in government.

These results attest to the importance of identity and the nature of issues in determining people's political attitudes. They enrich the literature on how social identities can impact behavior and perception by introducing an identity-based perspective into the debate on nonattitudes and the operational-symbolic disconnect (Converse, 1964, 1970; Ellis & Stimson, 2012). Moreover, the natural manipulation of different ideological orientations of the governing party in each of the samples provided further support for the the need of an ecological perspective. Not only do we need to consider a variation of experimental stimuli, we also need to take into account societal variables such as the party in power and potentially heightened political identity due to national elections. To my knowledge, these studies provide first experimental evidence of how identity salience affects people's stances on hard and easy issues differently. Furthermore, they might present quasi-experimental evidence of how public politics shape political cohesion on an individual level.

The third project investigated the effect of exposure to in- or out-group fake news on political polarization. I empirically tested the hypothesis put forward by theorists and in simulations (Azzimonti & Fernandes, 2018; Ribeiro et al., 2017; Tucker et al., 2018) that exposure to online fake news can exacerbate polarization in affect and attitudes of the electorate. I presented participants with real-life fake news and orthogonally crossed correction (disclosure vs. no disclosure) and group membership of the sender (in-group vs. out-group vs. ambiguous). In doing so, the impact of exposure to online fake news on affective (Study 1) and attitude polarization (Study 2) was compared as a function of whether or not participants knew the social media post was factually incorrect and their identification with the perceived sender. The question I posed was whether and under which circumstances encountering political fake news on social media could lead to a polarization in affect and attitudes. Would correcting fake news increase or decrease polarization? And would it matter whether the alleged sender was perceived an ingroup rather than an outgroup member? In two separate studies I assessed the impact of fake news posts on an individual's affective (Study 1) and attitude polarization (Study 2) and whether this impact was dependent on how strongly they identified with the perceived sender. Exposure to in- and out-group fake news were associated with high affective polarization (Study 1) while higher levels in attitude polarization were found

after exposure to out-group fake news (Study 2). Informing participants about the fake news nature of the post attenuated affective polarization for those perceiving the sender to be an out-group member only (Study 2).

The present results suggest that exposure to in-and outgroup fake news may impact affective polarization differently than attitude polarization. It is the first empirical work to investigate the impact of exposure of in- and outgroup fake news on attitude and affective polarization separately and hence, contributes to a growing body of insights investigating the consequences of exposure to and the correction of fake news. In line with suggestions for instance from Wells and Windschitl (1999), this work modeled different stimuli as random factors to control for variance due to stimulus variation. As no differences in polarization were found between stimuli, I was able to generalize across stimuli while still allowing for a more representative experimental design.

The fourth and final project entails a non-exhaustive systematic review of nearly 400 scientific articles that include a measure of ideology. Reviewing studies from the 1930s up to 2019, we sampled across a wide range of social sciences' subfields. A total of 394 selected articles were identified, 309 articles measured ideology in some form, and from those which were accessible, 207 articles used an operational measure of ideology. Overall, we cataloged more than 200 unique ideological measures, of which only but a third had been developed and validated beforehand. And from these, only a small minority provided information on statistical technique, extraction and rotation method, which are needed for replication. About 50% of all ideological instruments lacked a single mention of validation evidence. Indeed, the majority of the scales were on-the-fly measures or a combination of items used in previous studies. Furthermore, the data suggests that replicability might be restricted due to incomplete reporting of the items used, and substantial variance in scoring and scale type (even within seemingly identical scales).

Taken together, these circumstances might hinder the ability to build on each other's work and thus likely pose a serious threat to the comparability and generalizability of findings. The results call upon empirical researchers to acknowledge the need for thorough reporting and construct validation in the interest of cumulative science and valid inferences. It is the first systematic review to map social scientific practices in

the measurement of political ideology and should be considered the prelude of future empirical work putting the discussed validity threats to test. It also provides a new perspective onto representative sampling, as it puts into question whether the plethora of ideological instruments represents the environment about which a researcher wishes to make inferences. While this may well be the case, the lack of construct validation precludes us from coming to such conclusions.

## 8.2. Limitations and Future Directions

Several limitations, open questions and ambiguous results in this dissertation lay out the path for future research endeavors and will be outlined below.

Not only is there substantial variance in psychology and political science regarding the measurement of operational conservatism (see Chapter 7), there are also several conceptualizations of political ideology of which I only considered one in this dissertation; a one-dimensional spectrum of conservatism and liberalism. Chapter 4, 5, and 6 only used a symbolic liberal-conservative self-placement scale as predictor variable and factored in neither operational conservatism or liberalism, nor other political ideologies such as libertarianism or socialism. While this choice was made intentionally in order to build on existing literature that predominantly modeled liberalism and conservatism as political ideologies, future research should widen the scope as to capture a more fine-grained picture. Furthermore, having both, symbolic and operational measures within one study would account for and shed light onto how the operational-symbolic disconnect (Converse, 1964; Ellis & Stimson, 2012) relates to psychological processes.

In Chapter 4, domain-specific scales were compared to an allegedly domain-general scale. However, from previous work we know that scales or stimuli can hardly be 'neutral' inasmuch as individuals resort to an accessible salient context when evaluating the scales or stimuli (Fiagbenu et al., 2019, 2020; Schmitt et al., 2003). Hence, the domain-specificity or domain-generality of a stimulus should always be considered as a random factor in experimental designs. While this was indeed considered for fake news stimuli in Chapter 6, this design lacked control stimuli in the sense of true news (as opposed to fake news). Furthermore, the stimuli used in this chapter were on purpose ideologically slanted. Subsequent studies should also consider more moderate stimuli and could, for instance,

include a fact-checker tool and orthogonally cross verity of news (true vs. fake) and disclosure (disclosure vs. no disclosure) on both, slanted and non-slanted stimuli.

The present work aimed at sampling representative stimuli for the experimental designs in order to increase ecological validity. However, as Brunswik (Brunswik, 1955, 1956) suggested, a single individual should also be exposed to *multiple* representatively sampled stimuli in order to map intraindividual differences when facing different context variations. This was not the case in any of the present studies. In the interest of orthogonal salience manipulation, participants were only exposed to one domain (Chapter 4), one identity salience manipulation (Chapter 5), one fake news stimulus, and one dependent variable (Chapter 6). The present findings need to be replicated in either within-subjects or longitudinal designs where participants would be exposed to multiple stimuli at one or several points in time.

In order to disentangle context variation from the underlying psychological mechanism, a number of explanatory variables should be considered in future studies. In Chapter 4 and 5, strength of ideological identificiation, perceived group status, and political sophistication could explain part of the observed variance in addition to personal relevance. Moreover, perceived threat, identity salience, and several stimulus features should have been accounted for in Chapter 6.

Construct validation can be conceptualized in three phases: substantive, structural, and external validation (Benson, 1998; Clark & Watson, 2016; Flake et al., 2017; Loevinger, 1957; Strauss & Smith, 2009). For the systematic review conducted in Chapter 7 only structural validity evidence was considered. The claims put forward in this chapter need to be substantiated by systematic assessment of scale content, their convergent, discriminant, and predictive validity, as well as measurement invariance. Furthermore, representativeness of sampled studies needs to be accounted for by either random or more systematic sampling.

Finally, all participants in this dissertation were sampled from either Germany, Canada, or the United States. All of which are Western, Educated, Industrialized, Rich, and Democratic (WEIRD, Henrich et al., 2010b) countries, and hence, any inferences made and conclusions drawn are limited to such countries. Future research should consider less WEIRD populations in order to disentangle cultural variation from more universal psychological processes.

## 8.3. Conclusion

The overarching goal of this dissertation was to evaluate the stability of political attitudes and their psychological underpinnings in the face of situational and methodological variance. In summary, the four lines of research highlight the necessity of representative sampling and context sensitivity when assessing the psychological foundations of political attitudes. Returning to Hannah Arendt's understanding of political thought as impartial and representative, this thesis substantiates my initial suggestion that impartial public opinion may be a desired rather than an actual state. In line with theories on political socialization (Eckstein, 2019) and the stimulus sampling paradigm (Brunswik, 1955, 1956), the three experimental chapters in this dissertation (Chapter 4, 5, and 6) illustrate how the interrelation between ideological orientation, political attitudes, and certain psychological motives heavily depends on and varies along with the context provided. In taking on a meta-perspective, Chapter 7 systematically reviewed and mapped practices in the measurement of political ideology. Results suggest substantial heterogeneity in ideological instruments and a non-negligible lack of construct validation therein. Hence, not only do we need to account for ecological variance by stimulus sampling, we also need to consider our choice of instrument as an additional source of variance.

In four chapters, this thesis paints a comprehensive, multi-perspective picture of the need to consider contextual factors of various origins. This need becomes even clearer if one takes into account that political ideology by definition develops in shared, that is, social contexts. Acknowledging contextual and methodological variance in the study of political psychology can help us build a more accurate and detailed picture of humans as political beings.

# Appendix

# A. Supplementary Materials Chapter 4

## A.1. Scales

### Discomfort with Ambiguity

Table A.1.

*Domain-General and Domain-Specific Discomfort with Ambiguity.*

| | Domain-general |
|---|---|
| 1 | I don't like situations that are uncertain. |
| 2 | I feel uncomfortable when I don't understand the reason why an event occurred in my life. |
| 3 | When I am confused about an important issue, I feel very upset. |
| 4 | In most social conflicts, I can easily see which side is right and which is wrong. |
| 5 | I like to know what people are thinking all the time. |
| 6 | I dislike it when a person's statement could mean many different things. |
| 7 | It's annoying to listen to someone who cannot seem to make up his or her mind. |
| 8 | I feel uncomfortable when someone's meaning or intention is unclear to me. |
| 9 | I'd rather know bad news than stay in a state of uncertainty. |
| | **Domain-specific (religion/environment)** |
| 1 | I don't like to feel uncertain about religious (environmental) issues. |
| 2 | I feel uncomfortable when I don't understand the reason for my religious (environmental) beliefs. |
| 3 | When I am confused about a religious (environmental) issue, I feel very upset.. |
| 4 | In most conflicts on religious (environmental) topics, I can easily see which side is right and which is wrong. |
| 5 | With respect to religious (environmental) topics, I like to know what people are thinking all the time. |
| 6 | I dislike it when a person's statement on religious (environmental) issues could mean many different things. |
| 7 | It's annoying to listen to someone who cannot seem to make up his or her mind on religious (environmental) topics. |
| 8 | I feel uncomfortable when someone's meaning or intention on religious (environmental) topics is unclear to me. |
| 9 | I'd rather know bad news when it comes to my religious (environmental) convictions than stay in a state of uncertainty. |

**Closed-Mindedness**

Table A.2.

*Domain-General and Domain-Specific Closed-Mindedness.*

| | Domain-general |
|---|---|
| 1 | Even after I've made up my mind about something, I am always eager to consider a different opinion. $(r)$ |
| 2 | I dislike questions which could be answered in many different ways. |
| 3 | I feel irritated when one person disagrees with what everyone else in a group believes. |
| 4 | When considering most conflict situations, I can usually see how both sides could be right. $(r)$ |
| 5 | When thinking about a problem, I consider as many different opinions on the issue as possible. $(r)$ |
| 6 | I prefer interacting with people whose opinions are very different from my own. $(r)$ |
| 7 | I always see many possible solutions to problems I face. $(r)$ |
| 8 | I do not usually consult many different opinions before forming my own view. |
| | **Domain-specific (religion/climate change)** |
| 1 | Even after I've made up my mind about religion (climate change), I am always eager to consider a different opinion. $(r)$ |
| 2 | I dislike questions on religion (climate change) which could be answered in many different ways. |
| 3 | I feel irritated when one person disagrees with what everyone else in a group believes about religion (climate change). |
| 4 | When considering most conflicts on religion (climate change), I can usually see how both sides could be right. $(r)$ |
| 5 | When thinking about religion (climate change), I consider as many different opinions on the issue as possible. $(r)$ |
| 6 | I prefer interacting with people whose opinions on religion (climate change) are very different from my own. $(r)$ |
| 7 | I always see many possible solutions to problems related to religion (climate change). $(r)$ |
| 8 | I do not usually consult many different opinions before forming my own view on religion (climate change). |

## Dogmatism

Table A.3.

*Domain-General and Domain-Specific Dogmatism.*

| | Domain-general |
|---|---|
| 1 | Anyone who is honestly and truly seeking the truth will end up believing what I believe. |
| 2 | There are so many things we have not discovered yet, nobody should be absolutely certain his beliefs are right. ($r$) |
| 3 | The things I believe in are so completely true, I could never doubt them. |
| 4 | I have never discovered a system of beliefs that explains everything to my satisfaction. ($r$) |
| 5 | It is best to be open to all possibilities, and ready to reevaluate all your beliefs. ($r$) |
| 6 | My opinions are right, and will stand the test of time. |
| 7 | Flexibility is a real virtue in thinking, since you may well be wrong. ($r$) |
| 8 | My opinions and beliefs fit together perfectly to make a crystal-clear "picture" of things. |
| 9 | There are no discoveries or facts that could possibly make me change my mind about the things that matter most in life. |
| 10 | I am a long way from reaching a final conclusion about the central issues in life. ($r$) |
| 11 | The person who is absolutely certain they have the truth will probably never find it. ($r$) |
| 12 | I am absolutely certain that my ideas about the fundamental issues in life are correct. |
| 13 | The people who disagree with me may well turn out to be right. ($r$) |
| 14 | I am so sure I am right about the important things in life, there is no evidence that could convince me otherwise. |
| 15 | If you are "open-minded" about the most important things in life, you will probably reach the wrong conclusions. |
| 16 | Twenty years from now, some of my opinions about the important things in life will probably have changed. ($r$) |
| 17 | "Flexibility in thinking" is another name for being "wishy-washy". |
| 18 | No one knows all the essential truths about the central issues in life. ($r$) |
| 19 | Someday I will probably realize my present ideas about the BIG issues are wrong. ($r$) |
| 20 | People who disagree with me are just plain wrong, and often evil as well. |
| | Domain-specific (religion/climate change/abortion/gun ownership/same-sex marriage) |
| 1 | Anyone who is honestly and truly seeking the truth about [...] will end up believing what I believe. |
| 2 | When it comes to [...], there are so many things we have not discovered yet, nobody should be absolutely certain his beliefs are right. ($r$) |
| 3 | The things I believe in regarding [...] are so completely true, I could never doubt them. |
| 4 | When it comes to [...], I have never discovered a system of beliefs that explains everything to my satisfaction. ($r$) |
| 5 | It is best to be open to all possibilities, and ready to reevaluate all your beliefs concerning [...]. ($r$) |
| 6 | My opinions on [...] are right, and will stand the test of time. |
| 7 | Flexibility is a real virtue in thinking, since you may well be wrong about [...]. ($r$) |
| 8 | My opinions and beliefs fit together perfectly to make a crystal-clear "picture" of [...]. |
| 9 | There are no discoveries or facts that could possibly make me change my mind about [...]. |
| 10 | I am a long way from reaching a final conclusion about the central issues regarding [...]. ($r$) |
| 11 | The person who is absolutely certain they have the truth about [...] will probably never find it. ($r$) |
| 12 | I am absolutely certain that my ideas about the fundamental issues in [...] are correct. |
| 13 | The people who disagree with me on [...] may well turn out to be right. ($r$) |
| 14 | I am so sure I am right about the important things in life like [...], there is no evidence that could convince me otherwise. |
| 15 | If you are "open-minded" about [...], you will probably reach the wrong conclusions. |
| 16 | Twenty years from now, some of my opinions about [...] will probably have changed. ($r$) |
| 17 | "Flexibility in thinking" regarding [...] is another name for being "wishy-washy". |
| 18 | No one knows all the essential truths about [...]. ($r$) |
| 19 | Someday I will probably realize my present ideas about [...] are wrong. ($r$) |
| 20 | People who disagree with me on [...] are just plain wrong, and often evil as well. |

*Note.* ($r$) indicates reverse-coded items. [...] represents a placeholder where the respective topic (religion/climate change/abortion/gun ownership/same-sex marriage) was included in the item.

## A.2. Additional Tables

Table A.4.

*Study 1: Sample Size per Domain and Ideological Orientation.*

| | Control | Religion | Environment | Sum |
|---|---|---|---|---|
| Conservative | 53 | 63 | 57 | 174 |
| Liberal | 65 | 94 | 101 | 260 |
| Sum | 118 | 157 | 158 | 433 |

Table A.5.

*Study 2: Sample Size per Domain and Ideological Orientation.*

| | Control | Religion | Climate Change | Sum |
|---|---|---|---|---|
| Conservative | 15 | 15 | 20 | 50 |
| Liberal | 36 | 26 | 32 | 94 |
| Sum | 51 | 41 | 52 | 144 |

Table A.6.

*Study 3: Sample Size per Domain and Ideological Orientation.*

| | Control | Religion | Climate | Abortion | Gun | Same-Sex | Sum |
|---|---|---|---|---|---|---|---|
| Conservative | 27 | 29 | 20 | 26 | 26 | 26 | 154 |
| Liberal | 50 | 52 | 51 | 49 | 50 | 46 | 298 |
| Sum | 97 | 81 | 71 | 75 | 76 | 72 | 452 |

*Note.*Climate = Climate Change; Gun = Gun Ownership; Same-Sex = Same-Sex Marriage

Table A.7.

*Study 3: Contrasts of Estimated Marginal Means of Dogmatism between Domains per Ideological Orientation.*

| Contrast | | Estimate | *SE* | *t* | *p* |
|---|---|---|---|---|---|
| | | Conservatives | | | |
| Religion | – Climate Change | .66 | .32 | 2.06 | .40 |
| | – Abortion | −.45 | .33 | −1.37 | 1.00 |
| | – Gun Ownership | −.15 | .33 | −.45 | 1.00 |
| | – Same-Sex Marriage | −1.64 | .33 | −.93 | 1.00 |
| Climate Change | – Abortion | −1.11 | .30 | −3.73 | .00 |
| | – Gun Ownership | −.81 | .30 | −2.72 | .07 |
| | – Same-Sex | −.96 | .30 | −3.24 | .01 |
| Abortion | – Gun Ownership | .30 | .31 | .98 | 1.00 |
| | – Same-Sex | .14 | .31 | .47 | 1.00 |
| Same-Sex Marriage | – Gun Ownership | −.16 | .31 | −.51 | 1.00 |
| | | Liberals | | | |
| Religion | – Climate Change | −1.17 | .22 | −5.37 | <.001 |
| | – Abortion | −.92 | .22 | −4.18 | <.001 |
| | – Gun Ownership | −.98 | .22 | −4.46 | <.001 |
| | – Same-Sex Marriage | −1.64 | .22 | −7.31 | <.001 |
| Climate Change | – Abortion | .24 | .22 | 1.12 | 1.00 |
| | – Gun Ownership | .19 | .22 | .87 | 1.00 |
| | – Same-Sex | −.47 | .22 | −2.12 | .35 |
| Abortion | – Gun Ownership | −.06 | .22 | −.26 | 1.00 |
| | – Same-Sex | −.72 | .23 | −3.17 | .02 |
| Same-Sex Marriage | – Gun Ownership | −.66 | .23 | −2.93 | .04 |

*Note.* Bonferroni method was used to correct $p$ values for multiple testing.

# B. Supplementary Materials Chapter 5

## B.1. Scales

### Aspects of Political and Personal Identity

Table B.1.

*Aspects of Political and Personal Identity.*

| | Political Identity |
|---|---|
| *Group self-esteem* | |
| 1 | I think my group has little to be proud of. $(r)$ |
| 2 | I feel good about my group. |
| 3 | I have little respect for my group. $(r)$ |
| 4 | I would rather not tell that I belong to this group. $(r)$ |
| *Self-categorization* | |
| 5 | I identify with other members of my group. |
| 6 | I am like other members of my group. |
| 7 | My group is an important reflection of who I am. |
| *Commitment to the group* | |
| 8 | I would like to continue working with my group. |
| 9 | I dislike being a member of my group. $(r)$ |
| 10 | I would rather belong to the other group. $(r)$ |
| | **Personal Identity** |
| *Personal self-esteem* | |
| 1 | I have got what it takes. |
| 2 | I think I have sufficient qualities. |
| 3 | I generally feel like a failure. $(r)$ |
| 4 | I can do most things just as well as others. |
| 5 | I have nothing to be proud of. $(r)$ |
| 6 | I feel good about myself. |
| 7 | I am generally satisfied about myself. |
| *Personal identification* | |
| 8 | I see myself as someone with individual characteristics. |
| 9 | I am different from other people. |
| 10 | I feel like a unique person. |

*Note.* $(r)$ indicates reverse-coded items.

### Inclusion of the In-Group in Self

Which of the following circles best represents your own level of identification with this group? (S = Self, G = Group)


*Figure B.1..* Inclusion of the Political Group in the Self.

### Political Attitudes

**Topic Selection** We intended to create a set of items that comprises current topics which are perceived as either conservative or liberal. In a first step, we evaluated well established scales that have, however, been created more than 20 years ago (Eaves et al., 1999; Pratto et al., 1994; Wilson & Patterson, 1968). After excluding items that were outdated or not indicative of either ideology, we added topics from a more recent scale that were not yet represented (Everett, 2013), and rephrased every topic twice, once in a conservative and once in a liberal pro-attitudinal sense. This set of items was reassessed and after excluding duplicates and non-indicative items, 20 topics or 40 items remained.

**Step 1** We asked $N = 101$ participants to evaluate a list of 59 topics on whether they thought the respective topic was *definitely conservative*, *somewhat conservative*, *definitely liberal*, *somewhat liberal*, or whether they were *undecided* on how to categorize the topic (see Table B.2 for all items). Item 1 through 28 were taken from Eaves et al. (1999) and Wilson and Patterson (1968), item 29 through 58 from Pratto et al. (1994). After comparing these items with the most prominent issues on `https://www.isidewith.com/polls` at the time of the study (November 2018), we included another item on *fracking*, a topic that was popular but had not been captured by the aforementioned scales.

Table B.2.

*Frequency Table of Evaluations in Step 1.*

| | Item | Def. con.e | Def. lib. | Swt. con. | Swt. lib. | Und. |
|---|---|---|---|---|---|---|
| 1 | Death penalty | 61 | 3 | 26 | 3 | 8 |
| 2 | *Astrology* | 2 | 15 | 2 | 10 | 72 |
| 3 | *X-rated movies* | 2 | 23 | 3 | 17 | 56 |
| 4 | *Modern art* | 1 | 33 | 3 | 28 | 36 |
| 5 | Women's liberation | 1 | 78 | 2 | 17 | 3 |
| 6 | *Foreign aid* | 7 | 33 | 13 | 35 | 13 |
| 7 | Federal housing | 3 | 59 | 7 | 29 | 3 |
| 8 | *Democrats* | 1 | 71 | 2 | 26 | 1 |
| 9 | *Military drill* | 59 | 3 | 24 | 3 | 12 |
| 10 | *Military draft* | 48 | 2 | 27 | 3 | 21 |
| 11 | Abortion | 10 | 61 | 5 | 16 | 9 |
| 12 | *Property tax* | 25 | 13 | 15 | 18 | 30 |
| 13 | Gay rights | 1 | 85 | 1 | 13 | 1 |
| 14 | *Liberals* | 0 | 96 | 0 | 4 | 1 |
| 15 | Immigration | 8 | 38 | 10 | 23 | 22 |
| 16 | *Capitalism* | 62 | 1 | 21 | 3 | 14 |
| 17 | Segregation | 47 | 3 | 23 | 8 | 20 |
| 18 | *Moral majority* | 38 | 13 | 14 | 12 | 24 |
| 19 | *Pacifism* | 6 | 46 | 6 | 21 | 22 |
| 20 | Censorship | 43 | 8 | 23 | 7 | 20 |
| 21 | *Nuclear power* | 24 | 10 | 25 | 10 | 32 |
| 22 | *Living together* | 5 | 6 | 23 | 23 | 44 |
| 23 | *Republicans* | 89 | 2 | 9 | 1 | 0 |
| 24 | *Divorce* | 7 | 13 | 11 | 20 | 50 |
| 25 | School prayer | 80 | 2 | 15 | 3 | 1 |
| 26 | Unions | 13 | 47 | 9 | 24 | 8 |
| 27 | *Socialism* | 5 | 61 | 6 | 17 | 12 |
| 28 | *Busing* | 3 | 17 | 6 | 29 | 46 |
| 29 | *Death penalty for drug kingpins* | 58 | 4 | 26 | 4 | 9 |
| 30 | Prisoner's rights | 3 | 60 | 2 | 30 | 6 |
| 31 | Longer prison sentences | 75 | 0 | 18 | 5 | 3 |
| 32 | Gay or lesbian marriage | 1 | 87 | 1 | 11 | 1 |
| 33 | *Gay and lesbian rights* | 3 | 88 | 1 | 6 | 3 |
| 34 | Guaranteed job security after maternity leave | 3 | 70 | 4 | 19 | 5 |

*Continued on next page*

Table B.2 – *Continued from previous page*

| | Item | Def. con.e | Def. lib. | Swt. con. | Swt. lib. | Und. |
|---|---|---|---|---|---|---|
| 35 | *Stiffer penalties for wife beating* | 10 | 33 | 10 | 25 | 23 |
| 36 | Equal pay for women | 2 | 67 | 2 | 22 | 8 |
| 37 | More women judges | 2 | 66 | 1 | 25 | 7 |
| 38 | Government sponsored health care | 0 | 83 | 3 | 14 | 1 |
| 39 | Better support for the homeless | 2 | 68 | 4 | 23 | 4 |
| 40 | *More support for early education* | 4 | 49 | 3 | 35 | 10 |
| 41 | *Free school lunches* | 5 | 62 | 3 | 26 | 5 |
| 42 | *Low income housing* | 2 | 63 | 4 | 26 | 6 |
| 43 | *Arresting the homeless* | 54 | 3 | 23 | 2 | 19 |
| 44 | *Guaranteed jobs for all* | 2 | 72 | 9 | 14 | 4 |
| 45 | Reduced benefits for the unemployed | 65 | 4 | 26 | 2 | 4 |
| 46 | Greater aid to poor kids | 4 | 68 | 3 | 23 | 3 |
| 47 | Increased taxation of the rich | 2 | 78 | 5 | 15 | 1 |
| 48 | *Racial quotes* | 21 | 14 | 17 | 14 | 35 |
| 49 | *Affirmative action* | 2 | 72 | 3 | 22 | 2 |
| 50 | *School busing* | 6 | 25 | 5 | 19 | 46 |
| 51 | *Civil rights* | 6 | 59 | 5 | 21 | 10 |
| 52 | Helping minorities get a better education | 2 | 67 | 3 | 23 | 6 |
| 53 | Government helping minorities get better housing | 3 | 72 | 5 | 16 | 5 |
| 54 | Government has no business helping any particular ethnic group in the job market | 71 | 3 | 15 | 6 | 6 |
| 55 | Decreased defense spending | 8 | 55 | 7 | 27 | 4 |
| 56 | *Going to war* | 57 | 5 | 22 | 3 | 14 |
| 57 | *Government-mandated recycling programs* | 2 | 65 | 3 | 29 | 2 |
| 58 | *More government involvement on clean air and water* | 4 | 72 | 5 | 19 | 1 |
| 59 | *Fracking* | 56 | 3 | 21 | 1 | 20 |

*Note.* Def. con. = definitely conservative; Def. lib. = definitely liberal; Swt. con. = somewhat conservative; Swt. lib. = somewhat liberal; Und. = Undecided. Items excluded in Step 2 are printed in *italics*.

**Step 2** In a second step, we reviewed the results (see Table B.2, excluded items are printed in italics) and excluded items a) where a large share of the sample was undecided on (e.g., astrology, divorce, X-rated movies), b) where the topic was represented more

than once (e.g., gay rights, gay and lesbian rights), c) that did not contain policy issues (e.g., liberals, modern art), and d) that described ideologies themselves (e.g., capitalism, pacifism). Comparing the remaining 25 items with a more recently developed scale (Everett, 2013), we added the following topics that were not yet represented in our set of topics: *traditional marriage, limited government, business, gun ownership, patriotism, traditional values*. Furthermore, items that tackled environmental topics (21, 57, 58, 59) were rephrased to a more up-to-date version regarding government-mandated programs to decrease the American carbon footprint. Topics that we assumed to comprise several aspects (immigration, traditional marriage) were split in two new topics each (immigration and federal aid for refugees; alternative and traditional family structures).

Each of the remaining 34 topics was rephrased so as to represent a liberal or conservative stance. The topic *health care*, for instance, was rephrased as *Pro government sponsored health care* (liberal) and *Against government sponsored health care* (conservative). The 68 resulting items were evaluated by a sample of $N = 127$ U.S. American participants as to whether they though the topic was *definitely conservative, somewhat conservative, definitely liberal, somewhat liberal, both, neither* or whether they were *undecided*.

Table B.3.

*Frequency Table of Evaluations in Step 2.*

| | Item | Both | Def. con. | Def. lib. | Neither | Swt. con. | Swt. lib. | Und. |
|---|---|---|---|---|---|---|---|---|
| 1 | Pro-choice | 1 | 9 | 98 | 6 | 2 | 9 | 2 |
| 2 | Pro-life | 4 | 88 | 17 | 1 | 9 | 4 | 4 |
| 3 | Government should help minorities get better housing | 3 | 2 | 88 | 1 | 3 | 26 | 4 |
| 4 | Government should not help minorities get better housing | 3 | 70 | 8 | 12 | 26 | 3 | 5 |
| 5 | Government should help minorities get a better education | 10 | 4 | 73 | 1 | 7 | 29 | 3 |
| 6 | Government should not help minorities get a better education | 2 | 55 | 5 | 22 | 30 | 8 | 5 |

*Continued on next page*

Table B.3 – *Continued from previous page*

| | Item | Both | Def. con. | Def. lib. | Neither | Swt. con. | Swt. lib. | Und. |
|---|---|---|---|---|---|---|---|---|
| 7 | Government should help particular ethnic groups in the job market | 2 | 2 | 81 | 5 | 3 | 29 | 5 |
| 8 | Government has no business helping any particular ethnic group in the job market | 3 | 70 | 4 | 14 | 26 | 3 | 7 |
| 9 | *Pro federal housing* | 6 | 2 | 79 | 2 | 6 | 26 | 6 |
| 10 | *Against federal housing* | 1 | 68 | 3 | 12 | 27 | 7 | 9 |
| 11 | *Greater aid to poor kids* | 22 | 3 | 71 | 4 | 5 | 18 | 4 |
| 12 | *Less aid to poor kids* | 1 | 52 | 3 | 34 | 29 | 5 | 3 |
| 13 | Better support for the homeless | 15 | 4 | 73 | 6 | 5 | 23 | 1 |
| 14 | Less support for the homeless | 4 | 60 | 3 | 21 | 32 | 1 | 6 |
| 15 | Increased benefits for the unemployed | 4 | 3 | 72 | 4 | 3 | 38 | 3 |
| 16 | Reduced benefits for the unemployed | 1 | 60 | 4 | 14 | 35 | 8 | 5 |
| 17 | *Pro censorship* | 5 | 42 | 17 | 30 | 12 | 7 | 14 |
| 18 | *Against censorshi*p | 26 | 19 | 39 | 10 | 8 | 12 | 13 |
| 19 | Support government-mandated programs to decrease the American carbon footprint | 14 | 2 | 82 | 4 | 5 | 14 | 6 |
| 20 | Disapprove of government-mandated programs to decrease the American carbon footprint | 3 | 66 | 6 | 9 | 26 | 9 | 8 |
| 21 | *Longer prison sentences* | 6 | 64 | 3 | 12 | 31 | 4 | 7 |
| 22 | *Shorter prison sentences* | 4 | 1 | 63 | 16 | 3 | 32 | 8 |
| 23 | *Strengthen prisoner's rights* | 6 | 4 | 70 | 14 | 3 | 24 | 6 |
| 24 | *Weaken prisoner's rights* | 3 | 53 | 5 | 23 | 33 | 6 | 4 |
| 25 | Legalize same-sex marriage | 4 | 77 | 2 | 8 | 27 | 4 | 5 |
| 26 | Disapprove of same-sex marriage | 4 | 1 | 71 | 8 | 7 | 31 | 5 |
| 27 | Pro death penalty | 10 | 2 | 93 | 0 | 1 | 21 | 0 |
| 28 | Against death penalty | 2 | 84 | 2 | 13 | 21 | 3 | 2 |
| 29 | Support alternative familiy structures | 11 | 1 | 96 | 2 | 1 | 15 | 1 |
| 30 | *Disapprove of alternative family structures* | 1 | 88 | 3 | 11 | 21 | 1 | 2 |
| 31 | Support gay rights | 4 | 1 | 85 | 4 | 7 | 22 | 4 |
| 32 | Disapprove of gay rights | 1 | 74 | 5 | 12 | 28 | 2 | 5 |

*Continued on next page*

Table B.3 – *Continued from previous page*

| | Item | Both | Def. con. | Def. lib. | Neither | Swt. con. | Swt. lib. | Und. |
|---|---|---|---|---|---|---|---|---|
| 33 | Pro government sponsored health care | 2 | 4 | 100 | 3 | 3 | 13 | 2 |
| 34 | Against government sponsored health care | 2 | 89 | 2 | 5 | 21 | 4 | 4 |
| 35 | *More government interference* | 4 | 10 | 61 | 10 | 8 | 24 | 10 |
| 36 | *Less government interference* | 5 | 77 | 10 | 7 | 19 | 3 | 6 |
| 37 | More government interference in business and trade | 1 | 11 | 59 | 12 | 9 | 24 | 11 |
| 38 | Less government interference in business and trade | 2 | 76 | 9 | 7 | 22 | 5 | 6 |
| 39 | Pro gun control laws | 5 | 21 | 85 | 1 | 4 | 11 | 0 |
| 40 | Against gun control laws | 2 | 87 | 17 | 2 | 9 | 6 | 4 |
| 41 | Make immigration to the US easier | 1 | 1 | 99 | 3 | 1 | 20 | 2 |
| 42 | Make immigration to the US more difficult | 2 | 98 | 2 | 2 | 19 | 3 | 1 |
| 43 | Federal aid for refugees | 4 | 1 | 88 | 3 | 2 | 24 | 5 |
| 44 | No federal aid for refugees | 2 | 79 | 6 | 8 | 25 | 4 | 3 |
| 45 | Increased defense spending | 4 | 86 | 4 | 5 | 20 | 6 | 2 |
| 46 | Decreased defense spending | 2 | 7 | 66 | 9 | 5 | 34 | 4 |
| 47 | *Pro patriotism* | 40 | 62 | 3 | 8 | 9 | 0 | 5 |
| 48 | *Against patriotism* | 2 | 3 | 26 | 80 | 1 | 10 | 5 |
| 49 | Establish school prayer | 0 | 83 | 5 | 11 | 15 | 6 | 7 |
| 50 | Abolish school prayer | 3 | 3 | 77 | 10 | 3 | 22 | 9 |
| 51 | *Support a desegregation of neighborhoods* | 23 | 5 | 51 | 18 | 11 | 12 | 7 |
| 52 | *Disapprove of a desegregation of neighborhoods* | 10 | 30 | 9 | 36 | 19 | 9 | 14 |
| 53 | Increased taxation of the rich | 1 | 5 | 95 | 5 | 6 | 13 | 2 |
| 54 | Decreased taxation of the rich | 3 | 79 | 10 | 8 | 18 | 6 | 3 |
| 55 | Support traditional values | 6 | 98 | 2 | 2 | 17 | 2 | 0 |
| 56 | Disapprove of traditional values | 1 | 4 | 51 | 39 | 2 | 23 | 7 |
| 57 | Support traditional family structures | 10 | 91 | 4 | 1 | 18 | 3 | 0 |
| 58 | *Disapprove of traditional family structures* | 1 | 5 | 40 | 60 | 1 | 18 | 2 |
| 59 | *Pro unions* | 10 | 15 | 60 | 5 | 6 | 18 | 13 |
| 60 | *Against unions* | 3 | 58 | 11 | 14 | 23 | 5 | 13 |

*Continued on next page*

Table B.3 – *Continued from previous page*

| | Item | Both | Def. con. | Def. lib. | Neither | Swt. con. | Swt. lib. | Und. |
|---|---|---|---|---|---|---|---|---|
| 61 | *Pro women's liberation* | 18 | 1 | 77 | 4 | 1 | 23 | 3 |
| 62 | *Against women's liberation* | 2 | 49 | 2 | 52 | 17 | 3 | 2 |
| 63 | *Support for guaranteed job security after maternity leave* | 22 | 5 | 58 | 5 | 4 | 29 | 4 |
| 64 | *Opposition to guaranteed job security after maternity leave* | 3 | 43 | 6 | 38 | 25 | 6 | 6 |
| 65 | *More women judges* | 25 | 3 | 57 | 11 | 3 | 23 | 5 |
| 66 | *Fewer women judges* | 0 | 36 | 3 | 55 | 28 | 1 | 4 |
| 67 | *Support equal pay for women* | 46 | 2 | 54 | 7 | 2 | 15 | 1 |
| 68 | *Disapprove of equal pay for women* | 1 | 41 | 2 | 56 | 18 | 3 | 6 |

*Note.* Def. con. = definitely conservative; Def. lib. = definitely liberal; Swt. con. = somewhat conservative; Swt. lib. = somewhat liberal; Und. = Undecided. Items excluded in Step 3 are printed in *italics*.

**Step 3** Finally, we excluded items that were a) not associated with an either liberal or conservative stance (i.e., that participants associated with both, neither, or that they were undecided on) for more than 20% of the sample (e.g., support/disapprove of equal pay for women), and b) were semantically similar to other items (e.g., more government interference, more government interference in business and trade). We decided to keep some items (e.g., less support for the homeless) even though they did not meet the 20% criterion when their counterpart (e.g., better support for the homeless) did meet it. Applying this rationale left us with a total of 40 items, 20 per ideological stance (see Table B.3, excluded items are printed in italics).

## B.2. Additional Tables

Table B.4.

*Study 2: Mean Level Comparison Between Personal and Political Identity Indicator Variables.*

| | $t_1$ | | | $t_2$ | | |
|---|---|---|---|---|---|---|
| | Political | Personal | $t$ | Political | Personal | $t$ |
| Group | | | | | | |
| Self-esteem | 5.91 | 5.72 | 1.58 | 6.019 | 5.79 | 1.19 |
| Self-categorization | 5.20 | 4.76 | 3.25** | 5.28 | 4.94 | 1.55 |
| Commitment | 6.16 | 5.89 | 2.22* | 6.25 | 6.02 | 1.41 |
| Personal | | | | | | |
| Self-esteem | 5.39 | 5.61 | −1.57 | 5.57 | 5.68 | −.50 |
| Identification | 5.33 | 5.61 | −2.55* | 5.27 | 5.705 | −2.15* |
| Inclusion in self | 4.07 | 3.72 | 2.30* | 4.21 | 3.70 | 1.99* |
| $n$ | 166 | 169 | | 67 | 70 | |

*Note.* †p<.1;*p<.5; **p<.01; ***p<.001.

## B.3. Additional Analyses

### Study 1: Detailed Item Analysis

For a more finegrained picture, we analyzed items individually (see Figure B.2 for a visualization). While we found liberals to differ on virtually no issue between identity conditions, conservatives' attitudes varied on most economic but also some social issues. The interaction of ISP and identity level did not have a significant effect on the aggregate social issue scales. However, we found conservatives to indicate stronger conservative stances when their political identity was salient regarding same sex-marriage (personal: $EMM = 2.53, SE = .271, t(430) = 1.255, p < .001$, political: $EMM = 3.79, SE = .258$) and gay rights (personal: $EMM = 2.33, SE = .240, t(430) = 1.030, p = .002$ , political: $EMM = 3.36, SE = .228$) compared to when it was not. Similarly, they held more liberal attitudes regarding same-sex marriage (personal: $EMM = 5.13, SE = .271$, political: $EMM = 4.15, SE = .258, t(430) = -.982, p = .009$), gay rights (personal: $EMM = 5.40, SE = .240$, political: $EMM = 4.61, SE = .228, t(430) = -.794, p = .017$), and family structures (personal: $EMM = 4.83, SE = .263$, political: $EMM = 4.12, SE = .250, t(430) = -.712, p = .05$) when their personal identity was salient compared to when their political identity was salient.

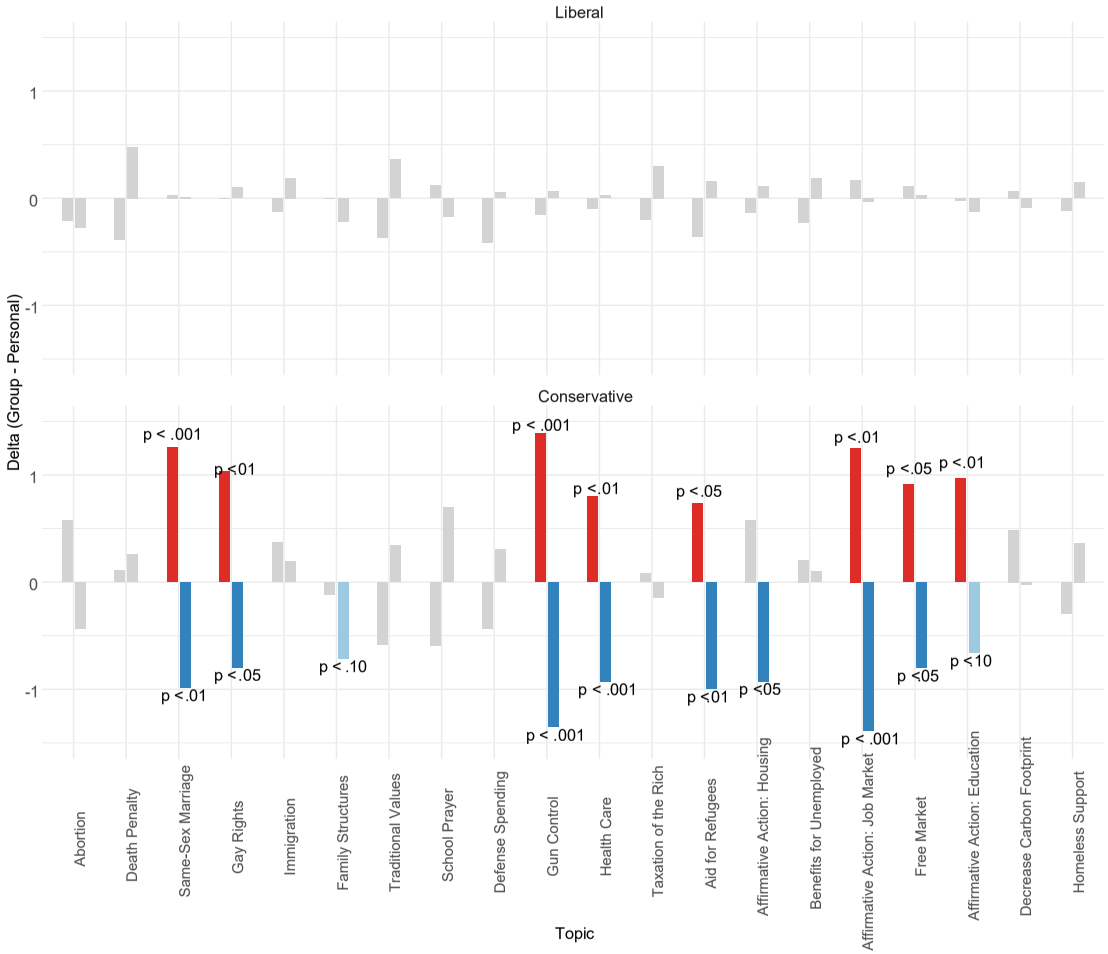



*Figure B.2.*. Study 1: Differences in Attitudes between Conditions per Ideological Orientation (Conservative Attitudes in Red, Liberal Attitudes in Blue).

**Study 2: Detailed Item Analysis $t_1$**

Conservatives indicated stronger conservative stances in the political compared to the personal identity condition regarding gay rights (personal: $EMM = 3.30, SE = .229$, political: $EMM = 4.02, SE = .229, t(534) = 2.222, p = .027$), gun control (personal: $EMM = 4.16, SE = .255$, political: $EMM = 4.93, SE = .255, t(534) = 2.127, p = .034$), benefits for the unemployed (personal: $EMM = 3.14, SE = .222$, political: $EMM = 4.12, SE = .222, t(534) = 3.110, p = .002$), affirmative action with regard to education (personal: $EMM = 3.65, SE = .235$, political: $EMM = 4.40, SE = .235, t(534) = 2.238, p = .026$), and homeless support (personal: $EMM = 2.42, SE = .190$, political: $EMM = 3.42, SE = .190, t(534) = 3.714, p < .001$). Contrary to expectations, they also indicated stronger liberal stances on some items in the political compared to the personal condition, namely on aid for refugees (personal: $EMM = 3.09, SE = .231$, political: $EMM = 3.95, SE = .231, t(534) = 2.637, p = .009$), and traditional values (personal: $EMM = 1.70, SE = .229$, political: $EMM = 2.56, SE = .229, t(534) = 2.659, p = .008$). Liberals indicated marginally stronger liberal stances regarding death penalty (personal: $EMM = 4.91, SE = .198$, political: $EMM = 4.42, SE = .197, t(534) = 1.768, p = .078$) and marginally stronger conservative stances on school prayer (personal: $EMM = 5.41, SE = .198$, political: $EMM = 5.20, SE = .197, t(534) = 1.774, p = .077$, see Figure B.3) .

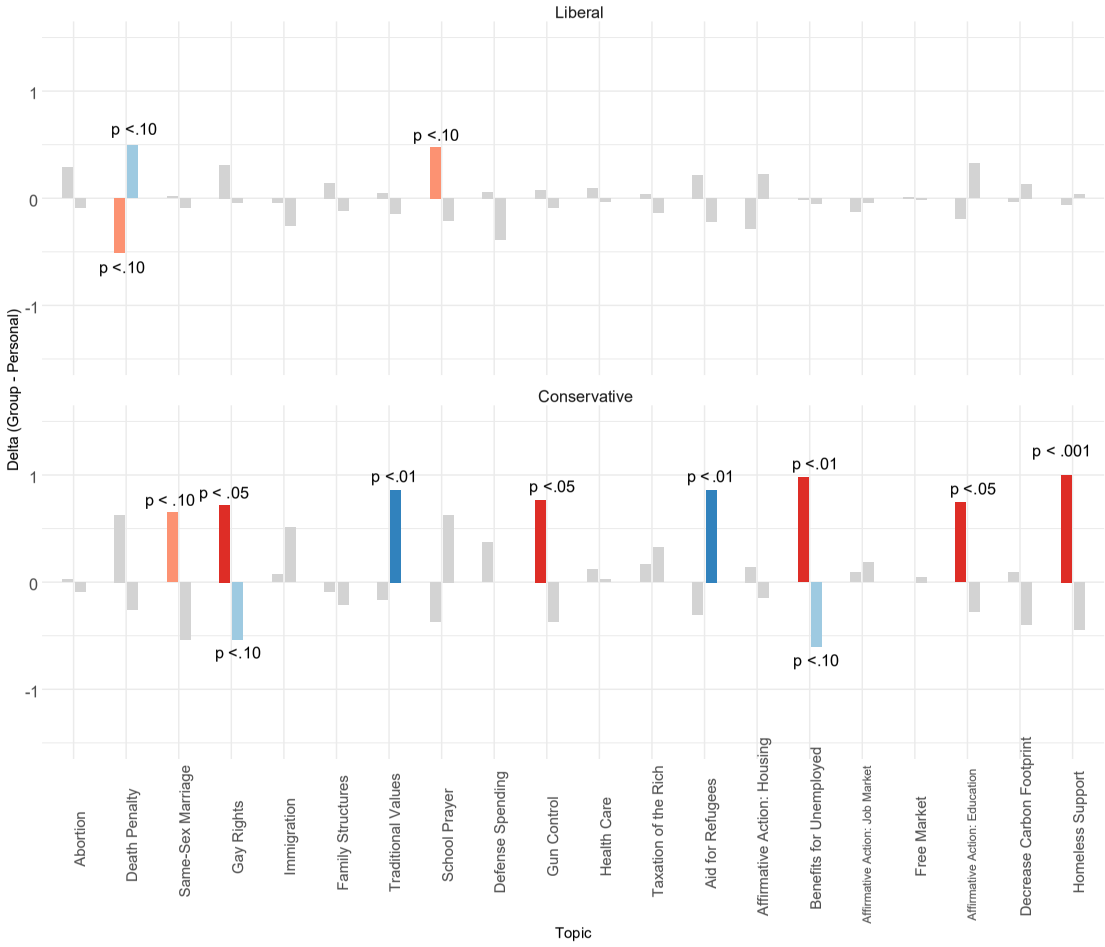



*Figure B.3.*. Study 2 $t_1$: Differences in Items between Conditions per Ideological Orientation (Conservative Attitudes in Red, Liberal Attitudes in Blue).

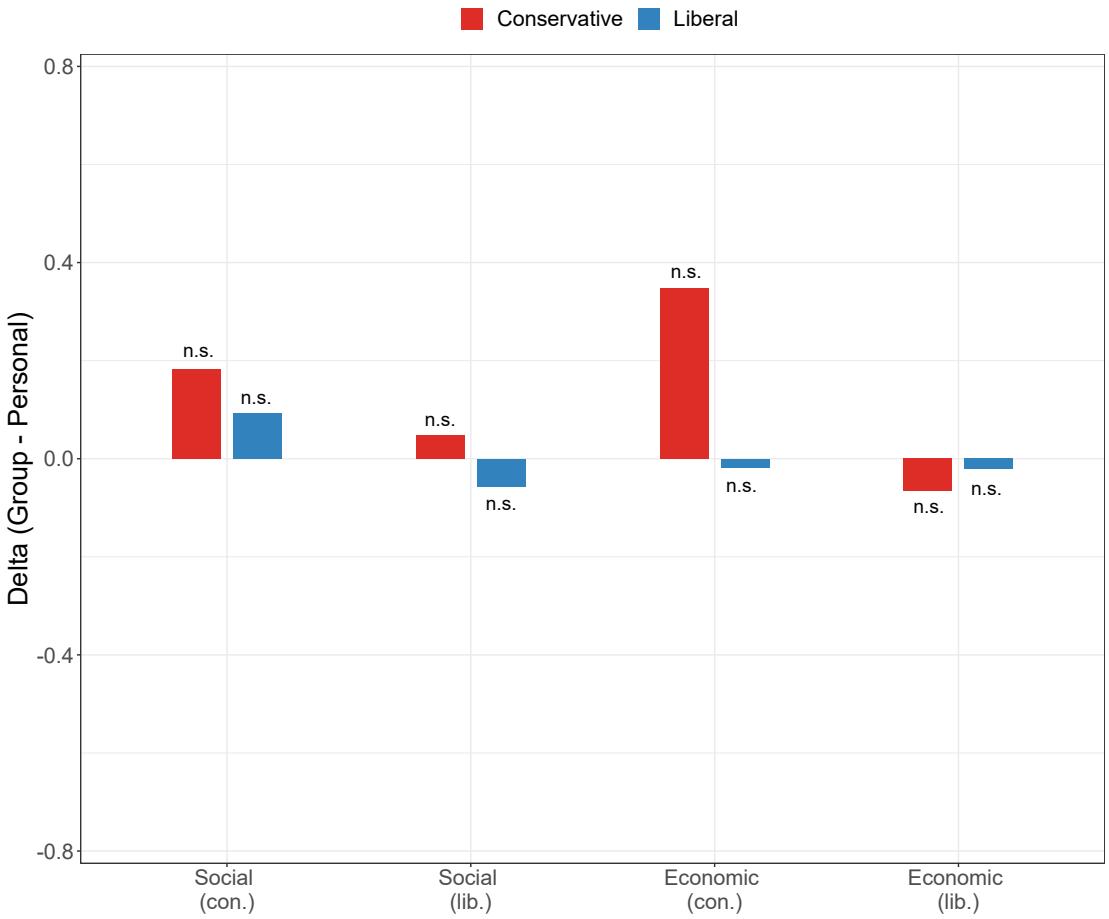



*Figure B.4..* Study 2 $t_1$: Differences in Attitude Scales between Conditions per Ideological Orientation (Conservative Attitudes in Red, Liberal Attitudes in Blue).

### Study 2: Detailed Item Analysis $t_2$

Conservatives indicated stronger conservative stances in the political compared to the personal identity condition regarding same-sex marriage (personal: $EMM = 3.33, SE = .383$, political: $EMM = 4.67, SE = .355, t(232) = 2.552, p = .011$), gay rights (personal: $EMM = 3.00, SE = .343$, political: $EMM = 4.05, SE = .317, t(232) = 2.244, p = .026$), and governmental action to reduce America's carbon footprint (personal: $EMM = 2.94, SE = .325$, political: $EMM = 4.71, SE = .301, t(232) = 3.993, p < .001$). Conservatives' liberal stances were stronger in the personal than in the political identity condition on same-sex marriage (personal: $EMM = 4.72, SE = .383$, political: $EMM = 3.33, SE = .355, t(232) = -2.658, p = .008$), gay rights (personal: $EMM = 5.00, SE = .343$, politi-

cal: $EMM = 3.29, SE = .317, t(232) = -3.672, p < .001$), family structures (personal: $EMM = 4.56, SE = .402$, political: $EMM = 3.05, SE = ..373, t(232) = -3.207, p = .002$), and governmental action to reduce America's carbon footprint (personal: $EMM = 4.89, SE = .325$, political: $EMM = 3.29, SE = .301, t(232) = -3.617, p < .001$). Contrary to expectations, they also indicated stronger liberal stances on some items in the political compared to the personal condition, namely on immigration (personal: $EMM = 1.89, SE = .412$, political: $EMM = 3.00, SE = .381, t(232) = 1.979, p = .049$), and affirmative action for housing (personal: $EMM = 2.83, SE = .409$, political: $EMM = 4.33, SE = .378, t(232) = 2.692, p = .008$). Liberals indicated stronger liberal stances in the political compared to the personal identity condition regarding affirmative action on education (personal: $EMM = 6.27, SE = .245$, political: $EMM = 5.43, SE = .267, t(232) = 2.201, p = .029$), and stronger conservative stances in the personal identity condition (personal: $EMM = 2.48, SE = .257$, political: $EMM = 1.70, SE = .281, t(232) = -2.034, p = .043$) on the same topic.

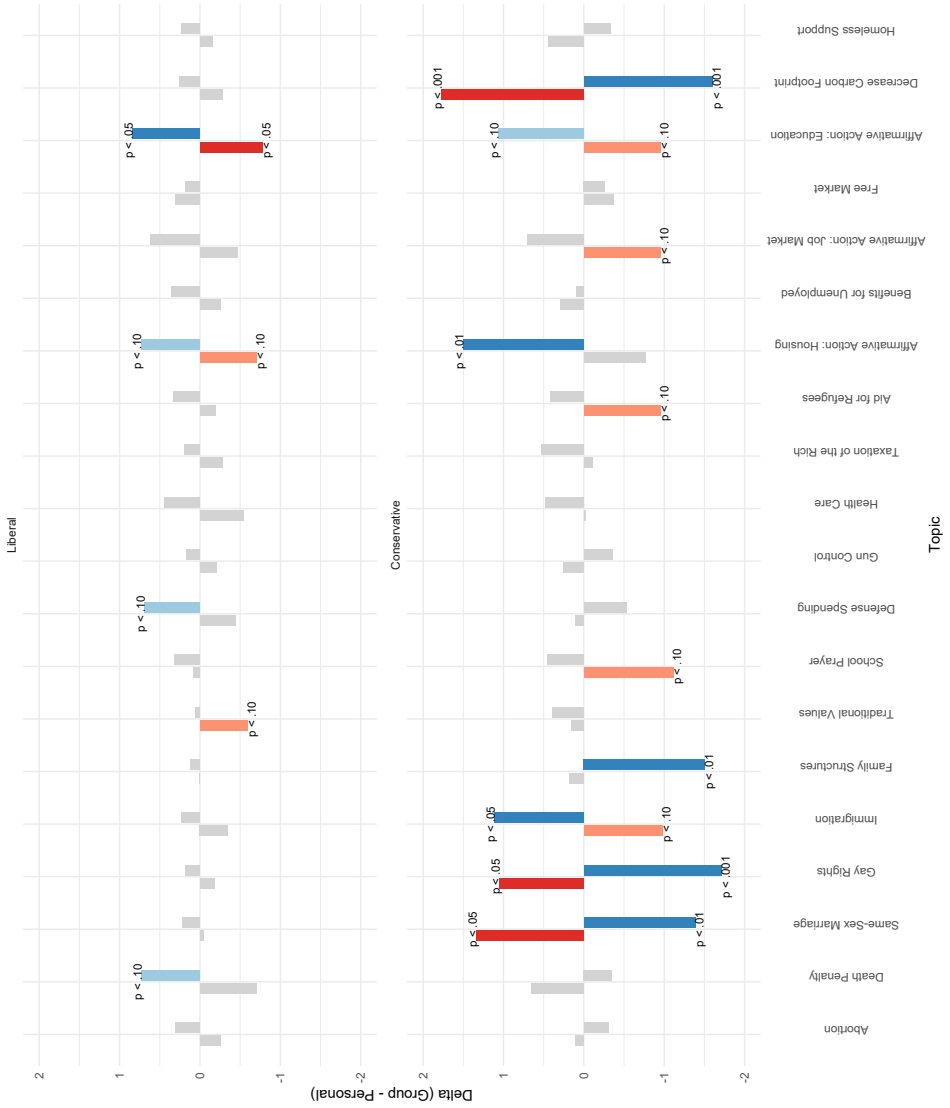



*Figure B.5..* Study 2 $t_2$: Differences in Items between Conditions per Ideological Orientation (Conservative Attitudes in Red, Liberal Attitudes in Blue).

## Study 2: Structural Equation Modeling

Table B.5.

*Study 2: Structural Equation Model for Both Identity Conditions.*

| | | Personal Identity | | | | Political Identity | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Estimate | *SE* | *z* | *p* | Estimate | *SE* | *z* | *p* |
| | | | | | Regression Slopes | | | | |
| Social (con.) t2 | | | | | | | | | |
| | Social (con.) t1 | 0.61 | 0.13 | 4.83 | .00 | 0.53 | 0.12 | 4.60 | .00 |
| | Social (lib.) t1 | -0.36 | 0.13 | -2.80 | .01 | -0.46 | 0.12 | -3.73 | .00 |
| | Economic (con.) t1 | 0.15 | 0.15 | 0.96 | .34 | -0.07 | 0.14 | -0.45 | .65 |
| | Economic (lib.) t1 | 0.05 | 0.15 | 0.33 | .74 | -0.01 | 0.15 | -0.08 | .94 |
| Social (lib.) t2 | | | | | | | | | |
| | Social (con.) t1 | -0.41 | 0.09 | -4.51 | .00 | -0.20 | 0.11 | -1.75 | .08 |
| | Social (lib.) t1 | 0.60 | 0.09 | 6.58 | .00 | 0.69 | 0.12 | 5.86 | .00 |
| | Economic (con.) t1 | 0.08 | 0.11 | 0.72 | .47 | 0.04 | 0.14 | 0.25 | .79 |
| | Economic (lib.) t1 | 0.07 | 0.10 | 0.65 | .52 | 0.12 | 0.15 | 0.81 | .42 |
| Econ (con.) t2 | | | | | | | | | |
| | Social (con.) t1 | 0.10 | 0.12 | 0.85 | .40 | 0.09 | 0.11 | 0.79 | .43 |
| | Social (lib.) t1 | 0.17 | 0.12 | 1.38 | .17 | 0.19 | 0.12 | 1.65 | .10 |
| | Economic (con.) t1 | 0.60 | 0.15 | 4.09 | .00 | 0.58 | 0.14 | 4.24 | .00 |
| | Economic (lib.) t1 | -0.39 | 0.14 | -2.80 | .01 | -0.46 | 0.14 | -3.27 | .00 |
| Econ (lib.) t2 | | | | | | | | | |
| | Social (con.) t1 | -0.14 | 0.11 | -1.31 | .19 | 0.25 | 0.12 | 2.13 | .03 |
| | Social (lib.) t1 | -0.14 | 0.11 | -1.32 | .19 | 0.18 | 0.12 | 1.43 | .15 |
| | Economic (con.) t1 | -0.32 | 0.13 | -2.39 | .02 | -0.52 | 0.15 | -3.58 | .00 |
| | Economic (lib.) t1 | 0.70 | 0.13 | 5.56 | .00 | 0.56 | 0.15 | 3.71 | .00 |
| | | | | | Residual Covariances | | | | |
| Social (con.) t1 - Social (lib.) t1 | | -1.69 | 0.29 | -5.84 | .00 | -2.05 | 0.35 | -5.82 | .00 |
| Social (con.) t1 - Economic (con.) t1 | | 1.22 | 0.25 | 4.93 | .00 | 1.45 | 0.29 | 5.09 | .00 |
| Social (con.) t1 - Economic (lib.) t1 | | -1.24 | 0.26 | -4.84 | .00 | -1.50 | 0.29 | -5.08 | .00 |
| Social (lib.) t1 - Economic (con.) t1 | | -1.13 | 0.24 | -4.77 | .00 | -1.46 | 0.29 | -5.04 | .00 |
| Social (lib.) t1 - Economic (lib.) t1 | | 1.20 | 0.25 | 4.84 | .00 | 1.62 | 0.31 | 5.28 | .000 |
| Economic (con.) t1 - Economic (lib.) t1 | | -1.60 | 0.27 | -5.90 | .00 | -1.74 | 0.30 | -5.87 | .00 |
| Social (con.) t2 - Social (lib.) t2 | | -0.11 | 0.03 | -4.02 | .00 | -0.11 | 0.03 | -3.85 | .00 |
| Social (con.) t2 - Economic (con.) t2 | | 0.11 | 0.03 | 3.20 | .00 | -0.00 | 0.02 | -0.14 | .89 |
| Social (con.) t2 - Economic (lib.) t2 | | -0.04 | 0.03 | -1.22 | .22 | -0.05 | 0.03 | -1.81 | .07 |
| Social (lib.) t2 - Economic (con.) t2 | | -0.02 | 0.02 | -0.99 | .33 | 0.00 | 0.02 | 0.06 | .95 |
| Social (lib.) t2 - Economic (lib.) t2 | | 0.05 | 0.02 | 2.44 | .02 | 0.01 | 0.03 | 0.56 | .58 |
| Economic (con.) t2 - Economic (lib.) t2 | | -0.11 | 0.03 | -3.70 | .00 | -0.15 | 0.03 | -4.87 | .00 |
| | | | | Fit Indices | | | | | |
| | $\chi^2$(df) | 668.58(23) | | | .00 | | | | |
| | CFI | 0.70 | | | | | | | |
| | TLI | 0.52 | | | | | | | |
| | RMSEA | 0.44 | | | | | | | |

# C. Supplementary Materials Chapter 6

## C.1. Pretest Stimuli

### Method

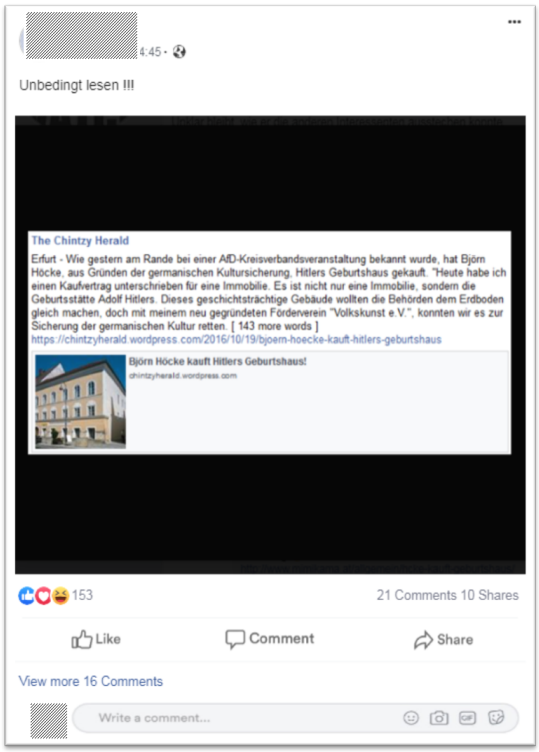
**Participants** 136 German participants were recruited online in November 2019 and complete data was collected for $N = 112$ participants with a mean age of $M = 24.45$ ($SD = 6.59$) of which 76.79% ($n = 86$) were female. Mean ideological orientation was $M = 2.72$ ($SD = 1.22$) and the survey was completed with an average time of $M = 10.53$ minutes ($SD = 8.22$).

**Instruments and Procedure** In a between-subjects design, participants were randomly assigned one of eight real-life social media posts that were factually incorrect (retrieved from `https://www.mimikama.at`) and were asked to carefully read the post presented. After passing an attention question regarding the respective stimulus contents, participants indicated the amount of dissonant discomfort, positive and negative affect they experienced after reading the post and were then asked to rate a list of political groups according to their perceived likelihood of this group being the sender. They reported how strongly they identified with each of these groups, how credible they found the stimulus and to what extent they found it likely that this stimulus had actually been shared on social media. The survey was completed with a number of demographic questions.

**Stimuli** Eight real-life social media posts were retrieved from `https://www.mimikama.at`, four of which (Figure C.1) were presumably targeted at left-wing rather than right-wing individuals, and vice versa for another four (Figure C.3). Participants each saw one stimulus for a minimum of 15 seconds.

*Figure C.1..* Left-Wing Stimuli


*(a)* Stimulus 1: Honorary chairman




*(b)* Stimulus 2: Birthplace Hitler


*(c)* Stimulus 3*: Hambach Forest


*(d)* Stimulus 4*: Taxes

*Figure C.3.*. Right-Wing Stimuli


*(a)* Stimulus 5*: Greta Thunberg


*(b)* Stimulus 6*: Green Party Parliament


*(c)* Stimulus 7: Green Party Migration


*(d)* Stimulus 8: Christmas Bonus Refugees

**Affect** Participants indicated how strongly they experienced dissonance/psychological discomfort by rating the extent to which they felt *uncomfortable, uneasy*, and *bothered* (Elliot & Devine, 1994) on a scale from 1 (= *not at all*) to 7 (*completely*). They were further asked to state the extent to which they experienced negative (*afraid, ashamed, hostile, nervous, upset*) and positive affect (*active, inspired, attentive, determined, alert*) (adapted from Röcke & Grühn, 2003; Watson & Clark, 1999) using the same scale.

**Sender** Participants were asked to indicate how likely (0 = *very unlikely* to 100 = *very likely*) they thought one of the following groups to be the sender of the post they had just seen: environmental activists, climate change skeptics, refugees, Antifa, Nazis, right-wing extremists, left-wing extremists, politically moderates, CDU (Christian Democratic Union of Germany), SPD (Social Democratic Party of Germany), AfD (Alternative for Germany), FDP (Free Democratic Party), Bündnis 90/Die Grünen (Alliance 90/The Greens), Die Linke (The Left), Other (optional string entry).

**Identification** On a scale ranging from 0 (= *not at all*) to 100 (= *completely*) participants indicated their level of identification with all of the above-mentioned political groups.

**Credibility and Sharing-Likelihood of Stimuli** On a scale from 0 (*very incredible*) to 100 (*very credible*) participants indicated how credible they found the stimulus. They were furthermore asked how likely they thought it was that the presented stimulus had actually been shared on social media (0 = *very unlikely* to 100 = *very likely*).

### Results

Mean affect ratings per stimulus are presented in Table C.1, mean perceived likelihood of certain political groups being the sender in Table C.2. Figure C.5 and C.6 display credibility and dissemination likelihood ratings, respectively.

**Stimuli - Leftist Sender** Stimulus 1 (Hambach Forest) made participants feel uncomfortable ($M = 3.92, SD = 2.04$), upset ($M = 4.20, SD = 2.12$), and attentive ($M = 4.20, SD = 1.71$). Participants perceived environmental activists ($M = 87.64, SD =$

Table C.1.

*Mean Affect Ratings Per Stimulus.*

| Affect | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| uncomfortable | **3.92** | **3.47** | **4.93** | **5.00** | 4.36 | 3.36 | 3.25 | 2.82 |
| uneasy | 3.56 | 2.93 | 4.33 | 3.92 | 4.00 | 3.00 | 3.17 | 3.09 |
| bothered | 3.24 | 3.20 | 4.73 | 3.92 | 3.09 | 3.91 | 2.50 | 2.18 |
| upset | **4.20** | **4.47** | **5.47** | **6.08** | **4.45** | **4.18** | **4.25** | **3.45** |
| hostile | 3.20 | 2.93 | 4.47 | 4.00 | 2.82 | 3.09 | 3.67 | 2.18 |
| alert | 3.76 | 3.40 | 4.20 | 4.17 | **4.73** | **4.27** | 3.50 | 3.36 |
| ashamed | 3.12 | 2.87 | **5.27** | **5.33** | 3.36 | 3.55 | **3.75** | **4.18** |
| inspired | 3.44 | 2.87 | 3.47 | 3.92 | 4.00 | 3.64 | **3.75** | 3.36 |
| nervous | 3.36 | 2.40 | 3.13 | 3.42 | 3.27 | 3.09 | 2.17 | 2.36 |
| determined | 3.44 | 3.00 | 3.53 | 2.83 | 3.91 | 2.91 | 3.42 | 3.00 |
| attentive | **4.20** | **4.53** | 4.67 | 4.67 | **5.55** | **5.09** | **4.00** | **4.09** |
| afraid | 3.00 | 2.33 | 3.27 | 3.83 | 2.64 | 1.45 | 1.75 | 1.73 |
| active | 3.12 | 2.27 | 3.60 | 3.17 | 3.91 | 3.45 | 3.08 | 3.36 |

*Note.* 1 = Hambach Forest, 2 = Taxes, 3 = Birthplace Hitler, 4 = Honorary Chairman, 5 = Green Party Migration, 6 = Green Party Parliament, 7 = Greta Thunberg, 8 = Christmas Bonus Refugees. Highest mean scores per stimulus are printed in bold font.

19.30), the Green ($M = 75.24, SD = 19.08$) or the Left party ($M = 57.48, SD = 25.86$) to be the most likeliest senders. Credibility was higher for stimulus 1 ($M = 48.96, SD = 20.01$) compared to stimulus 4 ($M = 29.92, SD = 24.15 t(63) = 2.527, p = .014$), no differences in dissemination likelihood were found.

Stimulus 2 (Taxes) made participants feel uncomfortable ($M = 3.47, SD = 2.13$), upset ($M = 4.47, SD = 2.26$), and attentive ($M = 4.53, SD = 1.64$). Participants perceived the Left party ($M = 80.13, SD = 17.10$), left-wing extremists ($M = 75.47, SD = 19.09$), or Antifa ($M = 69.21, SD = 28.73$) to be the most likeliest senders. Credibility was higher for stimulus 2 ($M = 56.87, SD = 23.19$) compared to stimulus 3 ($M = 41.40, SD = 19.74 t(63) = 1.974, p = .053$) and 4 ($t(63) = 3.243, p = .002$) and perceived slightly more likely to be shared ($M = 85.27, SD = 12.135$) than stimulus 3 ($M = 70.4, SD = 31.04, t(63) = 1.844, p = .070$).

Stimulus 3 (Birthplace Hitler) made participants feel uncomfortable ($M = 4.93 SD = 1.75$), upset ($M = 5.47, SD = 1.96$), and ashamed ($M = 5.27, SD = 1.75$). Participants perceived the AfD ($M = 78.80, SD = 19.89$), Nazis ($M = 77.53, SD = 16.26$), or right-wing extremists ($M = 76.93, SD = 18.05$) to be the most likeliest senders.

Stimulus 4 (Honorary Chairman) made participants feel uncomfortable ($M = 5.00 SD = 1.60$), upset ($M = 6.08, SD = 1.00$), and ashamed ($M = 5.33, SD = 2.19$). Participants perceived the AfD ($M = 78.58, SD = 29.67$), right-wing extremists ($M = 75.25, SD = 29.05$), or Nazis ($M = 70.33, SD = 36.00$) to be the most likeliest senders.

Table C.2.

*Mean Likelihood of Political Group Being the Sender per Stimulus.*

| Sender | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Environmental activists | **87.64** | 57.00 | 19.13 | 11.09 | 40.73 | 16.00 | 33.58 | 21.46 |
| Climate change skeptics | 16.16 | 11.13 | 51.07 | 44.82 | 37.00 | **79.73** | **55.75** | 26.91 |
| Refugees | 17.88 | 36.20 | 9.93 | 7.82 | 37.82 | 17.20 | 20.27 | 21.64 |
| Antifa | 46.30 | **69.21** | 43.00 | 42.86 | 48.10 | 25.22 | 32.20 | 16.60 |
| Nazis | 11.84 | 6.67 | **77.53** | **70.33** | 22.27 | 76.90 | 41.17 | **70.91** |
| Right-wing extremists | 13.48 | 6.40 | **76.93** | **75.25** | 25.55 | **77.82** | **49.75** | **70.00** |
| Left-wing extremists | 54.80 | **75.47** | 25.36 | 31.92 | **61.10** | 16.80 | 35.00 | 23.91 |
| Moderates | 36.16 | 32.62 | 33.23 | 29.22 | 30.67 | 38.75 | 47.00 | 47.00 |
| CDU | 18.04 | 28.33 | 28.33 | 25.25 | 33.10 | 48.00 | 46.75 | 49.18 |
| SPD | 37.36 | 40.73 | 29.93 | 16.75 | 38.18 | 31.64 | 36.92 | 39.91 |
| AfD | 17.56 | 7.80 | **78.80** | **78.58** | 27.64 | **84.36** | **61.67** | **76.64** |
| FDP | 17.52 | 27.93 | 31.60 | 23.67 | 25.91 | 40.50 | 45.33 | 42.82 |
| Green Party | **75.24** | 65.47 | 19.13 | 13.00 | **56.64** | 2.55 | 20.00 | 25.91 |
| The Left | **57.48** | **80.13** | 23.13 | 40.08 | **53.00** | 23.50 | 35.33 | 25.00 |

*Note.* 1 = Hambach Forest, 2 = Taxes, 3 = Birthplace Hitler, 4 = Honorary Chairman, 5 = Green Party Migration, 6 = Green Party Parliament, 7 = Greta Thunberg, 8 = Christmas Bonus Refugees. Highest mean scores per stimulus are printed in bold font.

**Stimuli - Rightist Sender** Stimulus 5 (Green Party Migration) made participants feel upset ($M = 4.45, SD = 1.63$), alert ($M = 4.73, SD = 1.74$), and attentive ($M = 5.55, SD = 1.13$). Participants perceived left-wing extremists ($M = 61.09, SD = 36.32$), the Green ($M = 56.64, SD = 33.97$), or the Left party $M = 53.00, SD = 33.52$) to be the most likeliest senders.

Stimulus 6 (Green Party Parliament) made participants feel upset ($M = 4.18, SD = 2.09$), alert ($M = 4.27, SD = 1.01$), and attentive ($M = 5.09, SD = .70$). Participants perceived the AfD ($M = 84.36, SD = 6.80$), climate change skeptics ($M = 79.73, SD = 15.81$), or right-wing extremists $M = 77.82, SD = 13.91$) to be the most likeliest senders.

Stimulus 7 (Greta Thunberg) made participants feel upset ($M = 4.25, SD = 2.49$), ashamed ($M = 3.75, SD = 2.18$), inspired ($M = 3.75, SD = 1.71$), and attentive ($M = 4.00, SD = 1.71$). Participants perceived the AfD ($M = 61.67, SD = 29.62$),

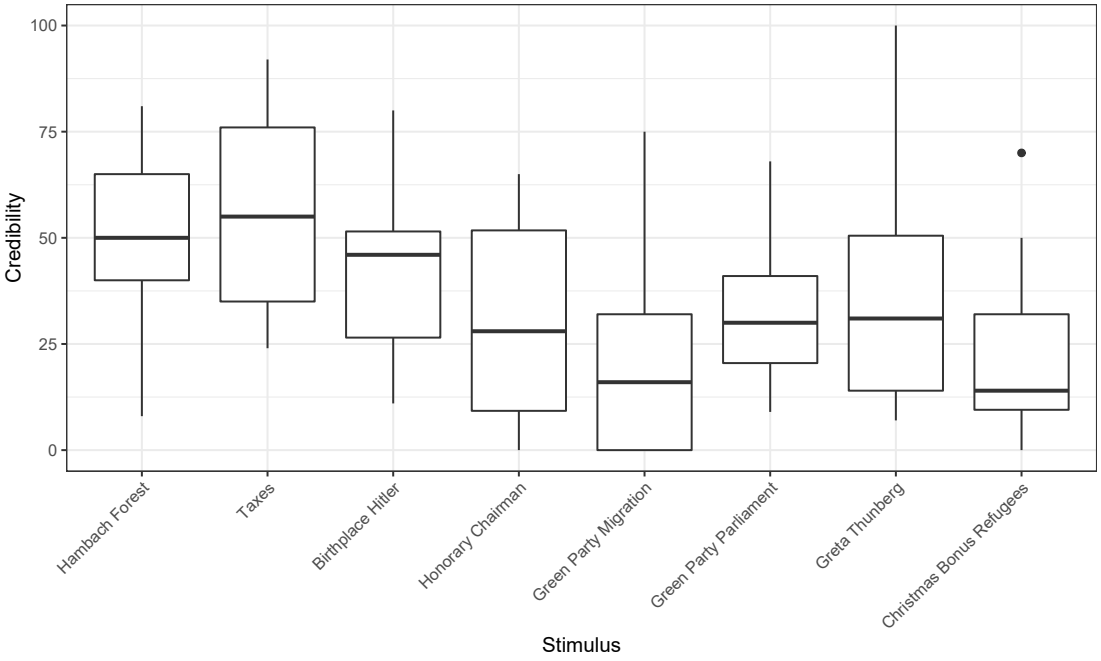



*Figure C.5..* Credibility of Stimuli.

climate change skeptics ($M = 55.75, SD = 38.81$), or right-wing extremists $M = 49.75, SD = 32.35$) to be the most likeliest senders.

Stimulus 8 (Christmas Bonus Refugees) made participants feel upset ($M = 3.45, SD = 2.16$), ashamed ($M = 4.18, SD = 2.52$), and attentive ($M = 4.09, SD = 1.45$). Participants perceived the AfD ($M = 76.64, SD = 27.63$), right-wing extremists ($M = 70.00, SD = 24.85$), or Nazis $M = 70.91, SD = 30.25$) to be the most likeliest senders.

No significant differences in credibility or dissemination likelihood between stimuli were found. Overall, left-wing stimuli were perceived more credible ($M = 45.63, SD = 22.83$) than right-wing stimuli ($M = 28.69, SD = 23.31, t(93.192) = 3.801, p < .001$) while no differences in dissemination likelihood between left-wing ($M = 76.39, SD = 22.18$) and right-wing stimuli ($M = 80.98, SD = 20.54, t(99.311) = -1.122, p = .264$) was found.

**Discussion**

Out of the four stimuli (stimulus 1, 2, 3, and 4) that were sent by left-wing rather than right-wing individuals, only two (stimulus 1 and 2) were perceived as such, that is, sent by a left-wing political group (environmental activists, the Green party, the Left party, left-wing extremists, Antifa). They were also both perceived more credible

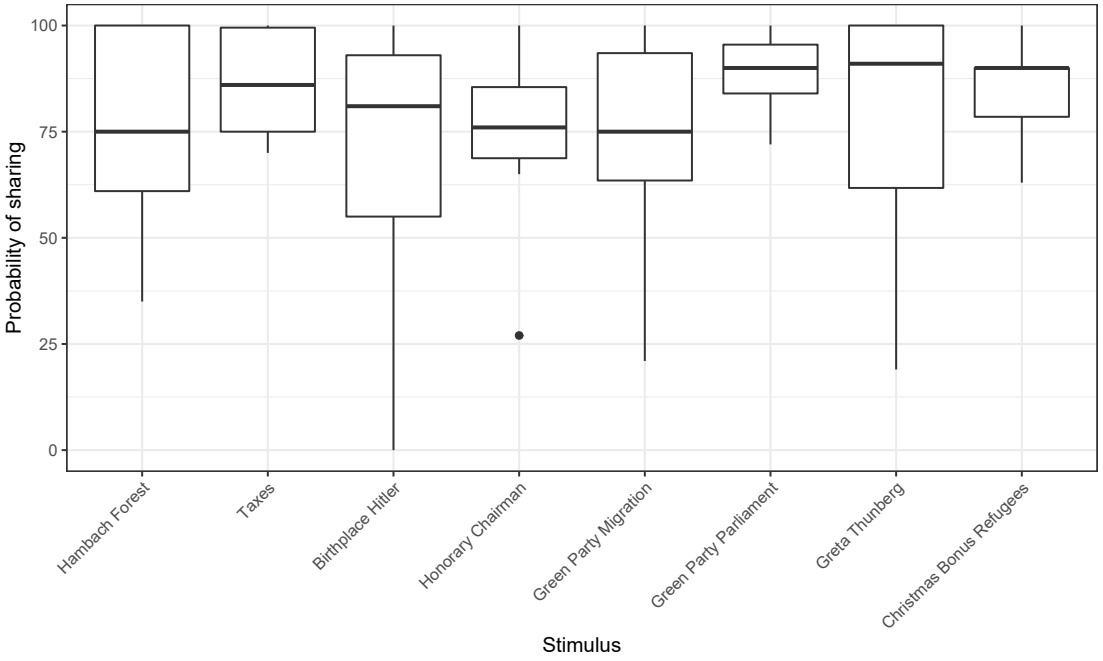



*Figure C.6..* Dissemination Likelihood of Stimuli.

than stimulus 3 and 4, and in one case more likely to be shared. All stimuli elicited psychological discomfort and upset. While stimulus 1 and 2 also made participants feel attentive, stimulus 3 and 4 elicited shame.

All except one (stimulus 5) right-wing stimuli were perceived to have been sent out by rightist political groups (AfD, climate change skeptics, right-wing extremists, Nazis). Participants felt negative affect (upset, alertness, shame) and attentiveness after exposure to any of the right-wing stimuli, while stimulus 7 also felt inspiring to some. Overall, credibility was lower for right-wing than for left-wing stimuli, yet, stimulus 6 and 7 had absolute highest mean ratings within the group of right-wing stimuli.

Stimulus 1, 2, 6, and 7 were chosen to be implemented in the study design as they were the most credible within their group and were each perceived to have been sent out by a sender with the intended ideological orientation.

## C.2. Construct Validation of Political Attitudes Scale

The *Wahl-O-Mat* (Federal Agency for Civic Education, 2017) attitude scales used for this study have, to the best of our knowledge, not been structurally validated, nor have their number of dimensions been assessed systematically. Alongside recent developments in psychometrics focusing on network models, so called Markov Random Fields (Lauritzen, 1996), Golino and Epskamp (2017) introduced *exploratory graph analyses* (EGA) as an alternative way of estimating the dimensional structure of psychological data. They could elaborately show that EGA performed equally well or even outperformed more traditional approaches in a number of simulation studies.

We applied EGA to the political attitude scales using the *EGAnet* package (Golino & Christensen, 2019). In a recursive process items were analyzed one by one using Gaussian graphical LASSO (least absolute shrinkage and selection operator) with extended Bayesian information criterion in order to select the optimal regularization parameter. A Walktrap algorithm was used for node similarity-based community detection. Similar to Golino and Demetriou (2017, p. 58) we applied two rules to assess dimensionality with EGA. Firstly, whenever a dimension was represented by a single item only, this item was deleted and the analysis was repeated. Secondly, we estimated node strength, that is, the between- and within-community strength of each item for each community, which can be seen as a rough equivalent to factor loading (Christensen, Golino, & Silvia, 2020). Whenever node strength was $< |.1|$ for all dimensions, the item was also deleted and EGA was re-run. The final model was then submitted to confirmatory factor analysis using a weighted least square mean and variance adjusted (WLSMV) estimator in *lavaan* (Rosseel, 2012). Model fit was verified by evaluating the comparative fit index (CFI, Bentler, 1990), the root mean-square error of approximation (RMSEA), the normed fit index (NFI), the nonnormed fit index (NNFI, Bentler, 1990), and the standardized root mean square residual (SRMR) for each of the models. Good model fit is indicated by CFI $> .95$ (Hu & Bentler, 1999), RMSEA $< .08$ (Browne & Cudeck, 1992), NFI and NNFI $> .90$ (Bentler & Bonett, 1980), and SRMR $< .08$ (Hu & Bentler, 1999).

#### Exploratory and Confirmatory Factor Analysis

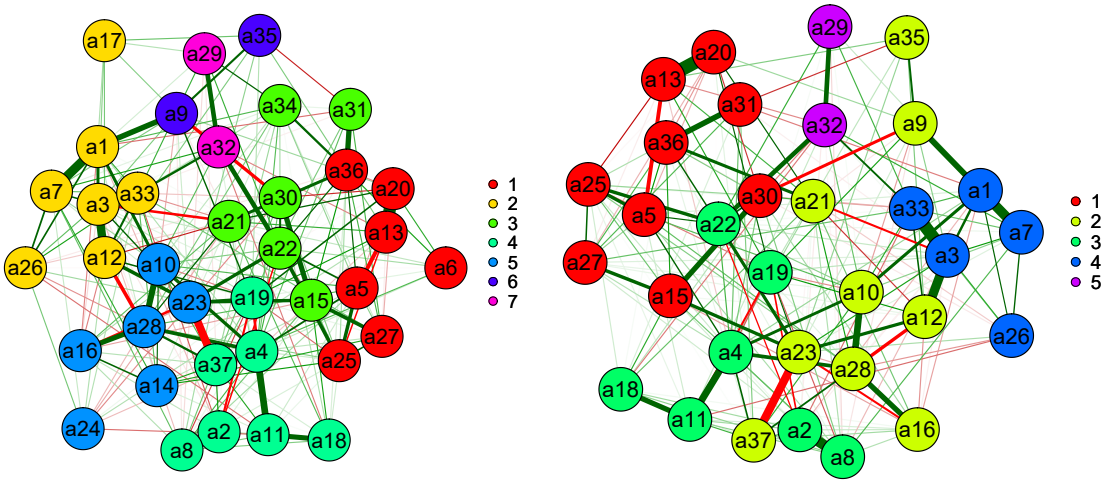
In a first step, EGA identified seven factors all represented by more than one item (see Figure C.7). Five items had a node strength $< |.1|$ and were excluded (a6, a14,

a17, a24, a34). The second EGA suggested a five-dimensional structure with only one item with a node strength $< |.1|$ (a35). The third EGA identified four factors with no single item-dimensions or node strengths $< |.1|$ (see Table C.3 for an overview of the dimensional structure per model). None of the models provided good fit (Model 1: $\chi^2(608) = 1992.912, p < .001, CFI = .774, RMSEA = .073, NFI = .706, NNFI = .752, SRMR = .089$; Model 2: $\chi^2(454) = 1557.597, p < .001, CFI = .800, RMSEA = .075, NFI = .741, NNFI = .782, SRMR = .092$; Model 3: $\chi^2(428) = 1649.961, p < .001, CFI = .773, RMSEA = .081, NFI = .718, NNFI = .754, SRMR = .098$, see Figure C.8, C.9 and C.10 for visualizations of all CFA structures). However, the second model had the highest CFI, NFI, and NNFI with an RMSEA still $< .08$. Hence, we chose to proceed with the five-dimensional factor structure as suggested in Model 2 (see Table C.4). Two items (a9 and a22) had a node strength below $< |.1|$ while loading considerably higher on other factors (factor 4 and 5, respectively). Regarding content, these items also provided a better fit with the factors they had higher node strength with. This solution provided a better fit than Model 2 and was hence used for analyses in Study 2 ($\chi^2(454) = 1438.3, p < .001, CFI = .822, RMSEA = .071, NFI = .761, NNFI = .805, SRMR = .089$, see Figure C.11). Factor 1 tackled *economic* issues, factor 2 *democracy and globalization*, factor 3 *environmental* issues, factor 4 *domestic and immigration policies*, and factor 5 contained *neoliberal* issues.

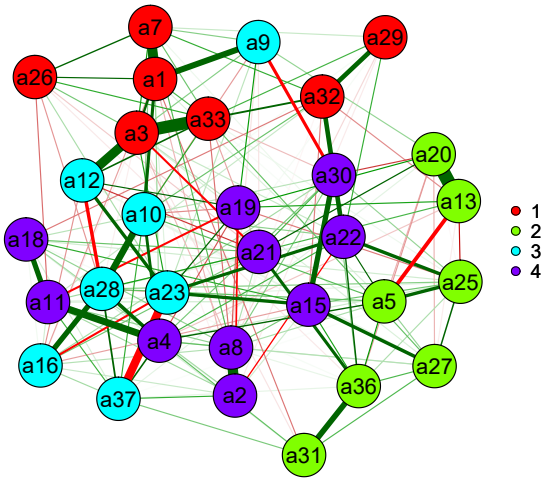
Table C.3.

*Study 2: Community (Dimension) Membership of Each Node in the Network.*

| | | Model 1 | Model 2 | Model 3 |
|---|---|---|---|---|
| a1 | Bei der Terrorismusbekämpfung soll die Bundeswehr im Inland eingesetzt werden dürfen | 2 | 4 | 1 |
| a2 | Dieselkraftstoff für Pkw soll höher besteuert werden. | 4 | 3 | 4 |
| a3 | Für die Aufnahme von neuen Asylsuchenden soll eine jährliche Obergrenze gelten. | 2 | 4 | 1 |
| a4 | Der Ausbau erneuerbarer Energien soll vom Bund dauerhaft finanziell gefördert werden. | 4 | 3 | 4 |
| a5 | Der Bund soll mehr Mittel für den sozialen Wohnungsbau bereitstellen. | 1 | 1 | 2 |
| a6 | BAföG soll generell unabhängig vom Einkommen der Eltern gezahlt werden. | 1 | - | - |
| a7 | Die Videoüberwachung im öffentlichen Raum soll ausgeweitet werden. | 2 | 4 | 1 |
| a8 | Generelles Tempolimit auf Autobahnen! | 4 | 3 | 4 |
| a9 | Die Verteidigungsausgaben Deutschlands sollen erhöht werden. | 6 | 2 | 3 |
| a10 | Betreiber von Internetseiten sollen gesetzlich dazu verpflichtet sein, Falschinformationen ("Fake News") zu löschen, auf die sie hingewiesen wurden. | 5 | 2 | 3 |
| a11 | Ökologische Landwirtschaft soll stärker gefördert werden als konventionelle Landwirtschaft. | 4 | 3 | 4 |
| a12 | Kindergeld soll nur an deutsche Familien ausgezahlt werden. | 2 | 2 | 3 |
| a13 | Arbeitsverträge sollen weiterhin ohne Angabe von Gründen befristet sein dürfen. | 1 | 1 | 2 |
| a14 | Kinder sollen gegen ansteckende Krankheiten geimpft werden müssen. | 5 | - | - |
| a15 | Alle Banken sollen verstaatlicht werden. | 3 | 1 | 4 |
| a16 | Der Völkermord an den europäischen Juden soll weiterhin zentraler Bestandteil der deutschen Erinnerungskultur sein. | 5 | 2 | 3 |
| a17 | Haushaltsüberschüsse sollen überwiegend zum Abbau von Staatsschulden verwendet werden. | 2 | - | - |
| a18 | Die Gesamtzahl der Nutztiere in den landwirtschaftlichen Betrieben einer Gemeinde soll begrenzt werden können. | 4 | 3 | 4 |
| a19 | In Deutschland soll auch zukünftig Braunkohle abgebaut werden dürfen. | 4 | 3 | 4 |
| a20 | Unternehmen sollen weiterhin Leiharbeiterinnen und Leiharbeiter beschäftigen dürfen. | 1 | 1 | 2 |
| a21 | In Deutschland geborene und aufgewachsene Kinder ausländischer Eltern sollen weiterhin neben der deutschen ihre zweite Staatsangehörigkeit behalten dürfen. | 3 | 2 | 4 |
| a22 | Bereits nach 40 Beitragsjahren soll der Renteneintritt abschlagsfrei möglich sein. | 3 | 3 | 4 |
| a23 | Deutschland soll zu einer nationalen Währung zurückkehren. | 5 | 2 | 3 |
| a24 | Die Frauenquote für die Aufsichtsräte börsennotierter Unternehmen soll abgeschafft werden. | 5 | - | - |
| a25 | Hohe Vermögen sollen besteuert werden. | 1 | 1 | 2 |
| a26 | Für begangene Straftaten sollen auch Kinder unter 14 Jahren verurteilt werden können. | 2 | 4 | 1 |
| a27 | Alle Bürgerinnen und Bürger sollen bei gesetzlichen Krankenkassen versichert sein müssen. | 1 | 1 | 1 |
| a28 | Der Bund soll weiterhin Projekte gegen Rechtsextremismus fördern. | 5 | 2 | 3 |
| a29 | Der Erwerb von selbst genutztem Wohneigentum soll bis zu einer bestimmten Höhe steuerfrei sein. | 7 | 5 | 1 |
| a30 | Rüstungsexporte aus Deutschland sollen ausnahmslos verboten werden. | 3 | 1 | 4 |
| a31 | Der kontrollierte Verkauf von Cannabis soll generell erlaubt sein. | 3 | 1 | 2 |
| a32 | Der Solidaritätszuschlag soll vollständig abgeschafft werden. | 7 | 5 | 1 |
| a33 | Anerkannten Flüchtlingen, die sich Integrationsmaßnahmen verweigern, sollen die Leistungen gekürzt werden können. | 2 | 4 | 1 |
| a34 | Eltern sollen für ihre Kinder bis zum Ende der Grundschulzeit einen Rechtsanspruch auf Ganztagsbetreuung erhalten. | 3 | - | - |
| a35 | Der Gottesbezug im Grundgesetz soll bestehen bleiben. | 6 | 2 | - |
| a36 | In Deutschland soll es ein bedingungsloses Grundeinkommen geben. | 1 | 1 | 2 |
| a37 | Die Zusammenarbeit der Mitgliedstaaten in der Europäischen Union soll verstärkt werden. | 4 | 2 | 3 |




*(a)* Model 1 (37 items)




*(c)* Model 3 (31 items)

*Figure C.7.*. Study 2: Exploratory Graph Analysis Using gLASSO and a Walktrap Algorithm for Three Different Models.

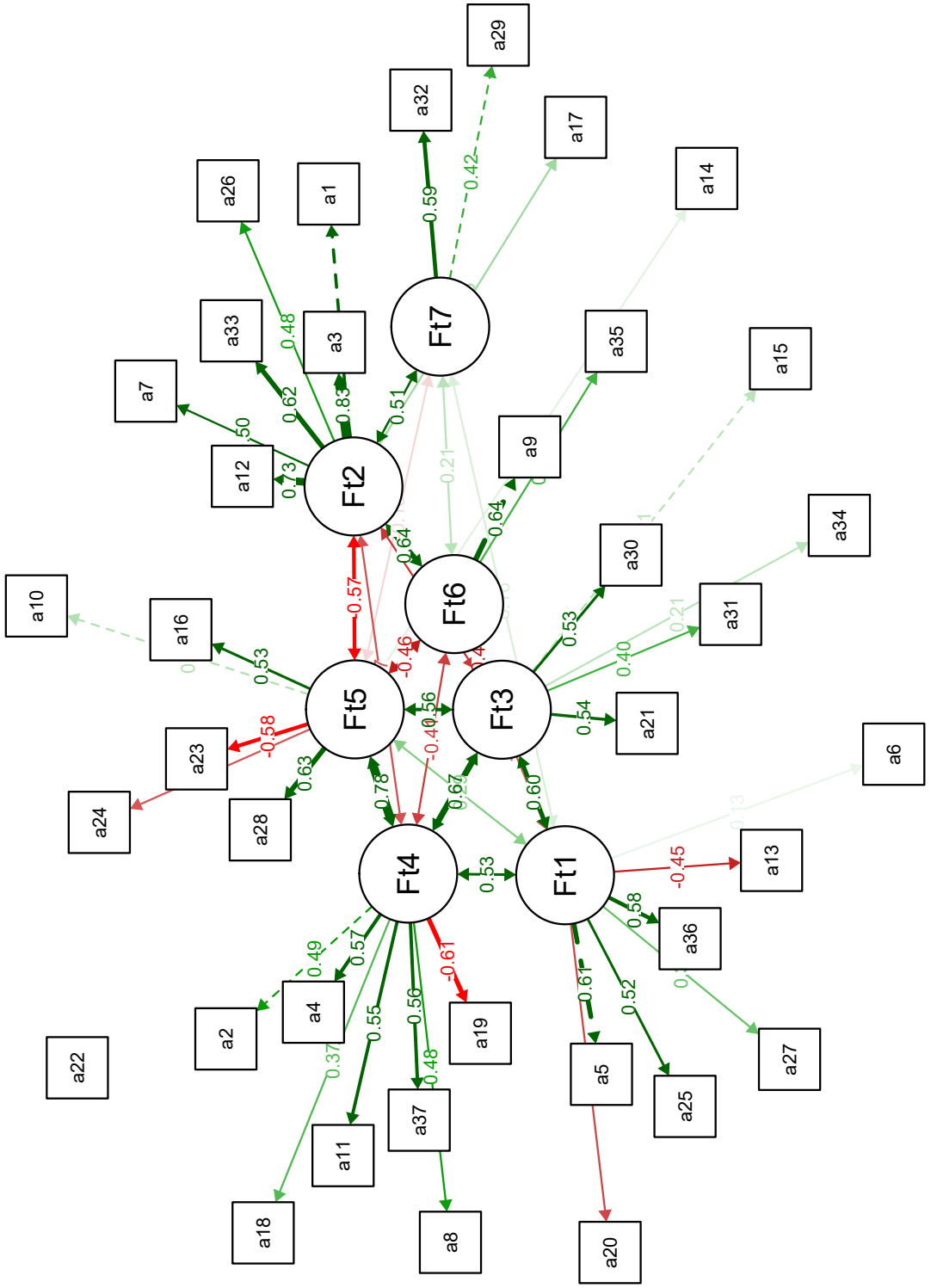



*Figure C.8..* Study 2: Confirmatory Factor Analysis Using a WLSMV Estimator for Model 1 (37 items).

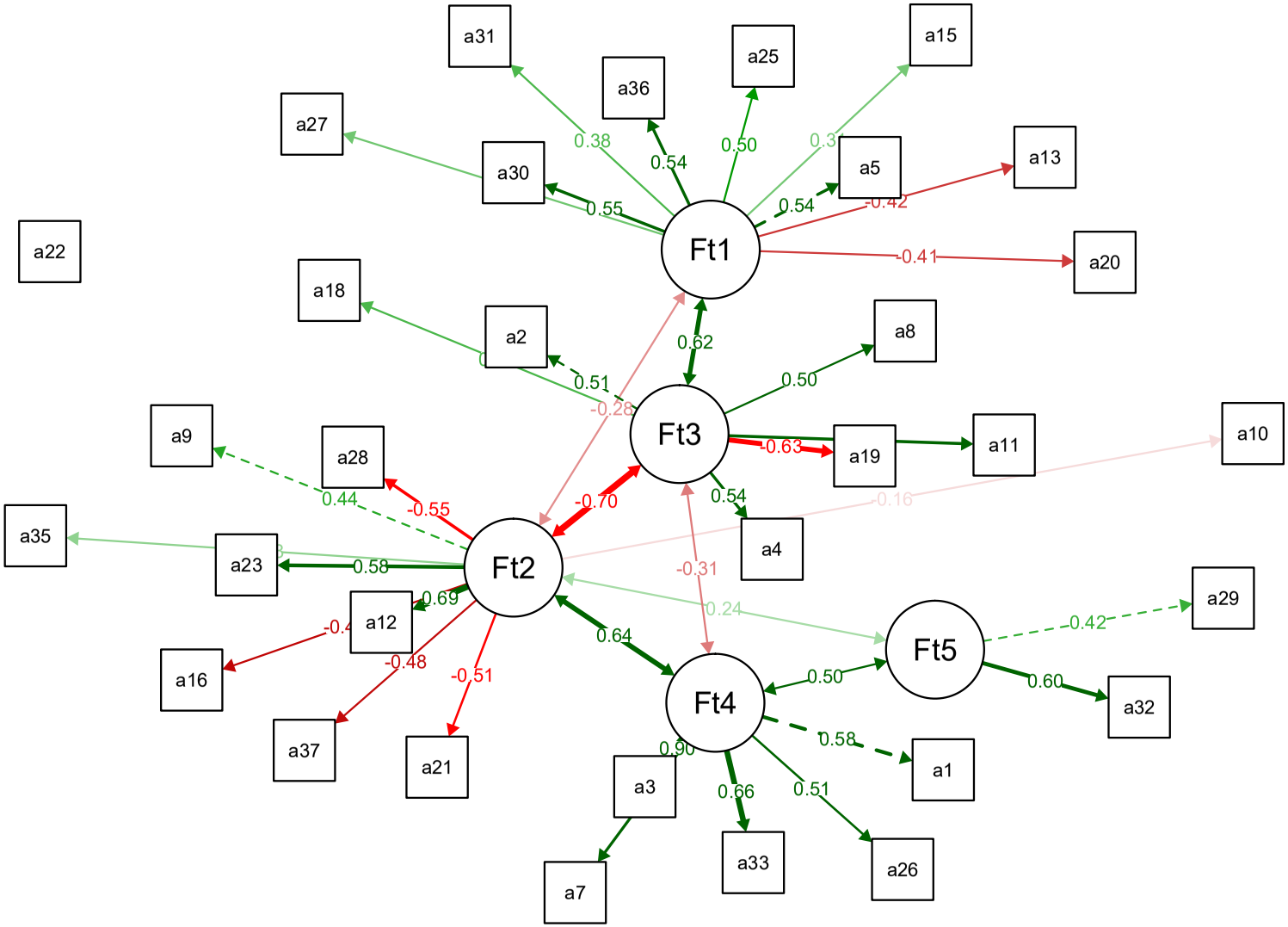



*Figure C.9.*. Study 2: Confirmatory Factor Analysis Using a WLSMV Estimator for Model 2 (32 items).

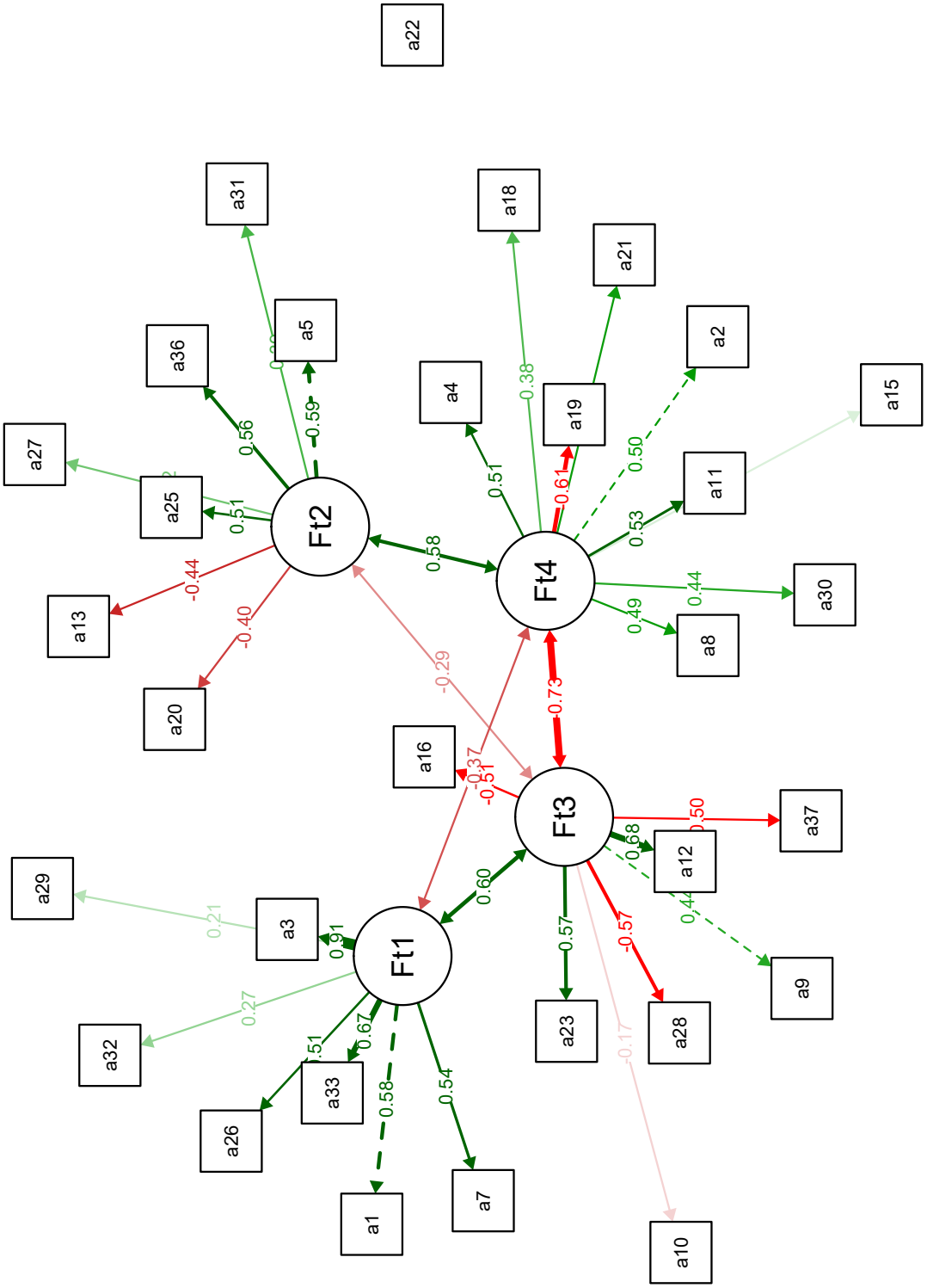



*Figure C.10..* Study 2: Confirmatory Factor Analysis Using a WLSMV Estimator for Model 3 (31 items).

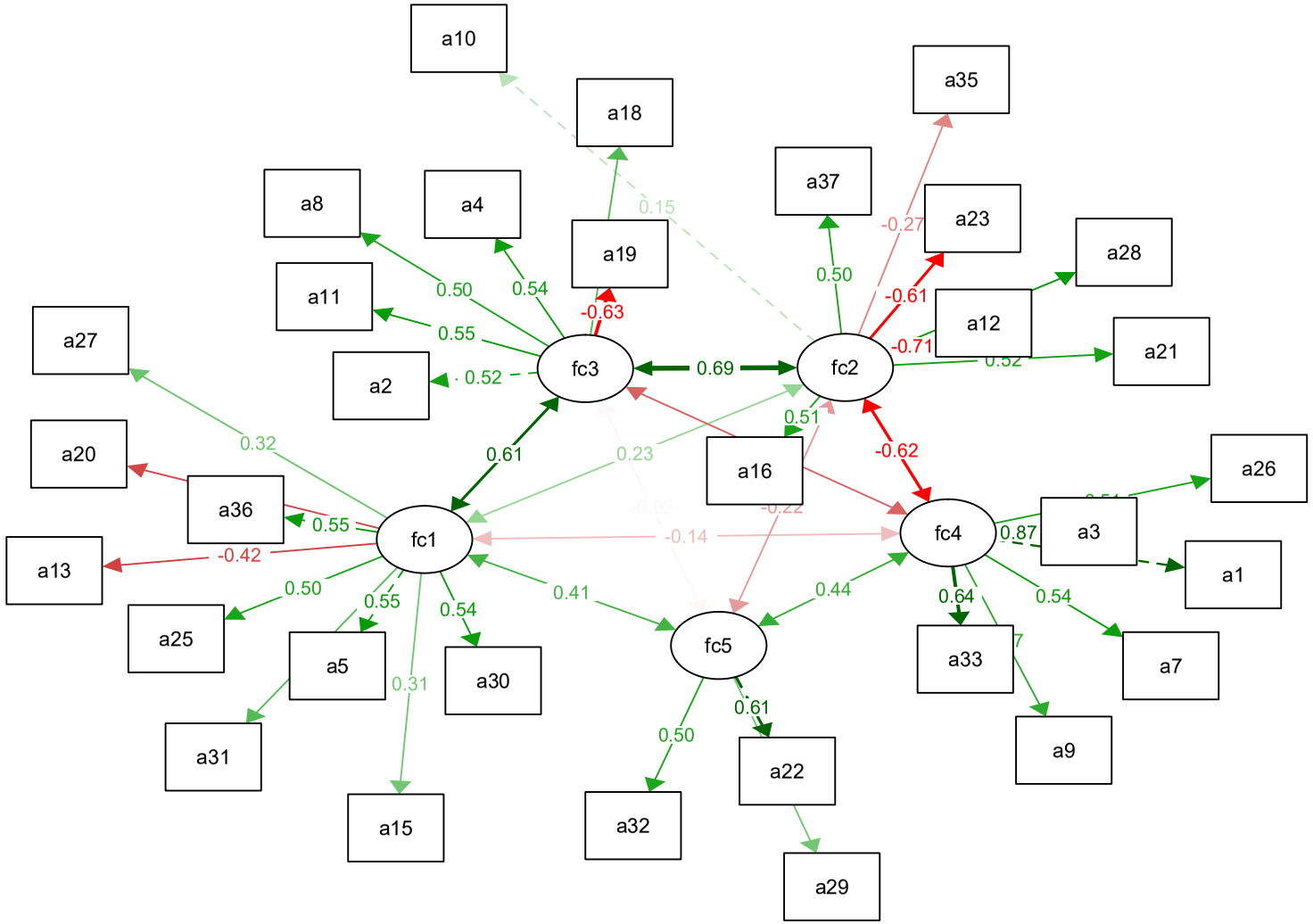



*Figure C.11.*. Study 2: Confirmatory Factor Analysis Using a WLSMV Estimator for Model 4 (32 items).

Table C.4.

*Study 2: Network Loadings for Exploratory Graph Analysis Using gLASSO and a Walktrap Algorithm (32 Items).*

| | | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| a5 | Der Bund soll mehr Mittel für den sozialen Wohnungsbau bereitstellen. | **.190** | .050 | .111 | .007 | |
| a13 | Arbeitsverträge sollen weiterhin ohne Angabe von Gründen befristet sein dürfen. | **−.239** | .048 | −.047 | | −.046 |
| a15 | Alle Banken sollen verstaatlicht werden. | **.191** | −.072 | .067 | | −.051 |
| a20 | Unternehmen sollen weiterhin Leiharbeiterinnen und Leiharbeiter beschäftigen dürfen. | **−.208** | .059 | −.044 | | |
| a25 | Hohe Vermögen sollen besteuert werden. | **.195** | .020 | .105 | .003 | |
| a27 | Alle Bürgerinnen und Bürger sollen bei gesetzlichen Krankenkassen versichert sein müssen. | **.191** | .007 | .021 | .037 | |
| a30 | Rüstungsexporte aus Deutschland sollen ausnahmslos verboten werden. | **.141** | −.096 | .104 | −.013 | |
| a31 | Der kontrollierte Verkauf von Cannabis soll generell erlaubt sein. | **.103** | .051 | .032 | −.028 | |
| a36 | In Deutschland soll es ein bedingungsloses Grundeinkommen geben. | **.231** | .058 | .051 | −.004 | |
| a10 | Betreiber von Internetseiten sollen gesetzlich dazu verpflichtet sein, Falschinformationen ("Fake News") zu löschen, auf die sie hingewiesen wurden. | .031 | **.126** | .097 | .132 | .063 |
| a12 | Kindergeld soll nur an deutsche Familien ausgezahlt werden. | .006 | **−.179** | −.042 | .178 | |
| a16 | Der Völkermord an den europäischen Juden soll weiterhin zentraler Bestandteil der deutschen Erinnerungskultur sein. | .030 | **.168** | .031 | −.021 | |
| a21 | In Deutschland geborene und aufgewachsene Kinder ausländischer Eltern sollen weiterhin neben der deutschen ihre zweite Staatsangehörigkeit behalten dürfen. | .158 | **−.095** | .057 | −.087 | |
| a23 | Deutschland soll zu einer nationalen Währung zurückkehren. | .057 | **−.230** | .104 | .068 | |
| a28 | Der Bund soll weiterhin Projekte gegen Rechtsextremismus fördern. | .045 | **.299** | .069 | −.024 | |
| a35 | Der Gottesbezug im Grundgesetz soll bestehen bleiben. | −.053 | **.082** | −.011 | | |
| a37 | Die Zusammenarbeit der Mitgliedstaaten in der Europäischen Union soll verstärkt werden. | .029 | **.181** | .122 | | |
| a2 | Dieselkraftstoff für Pkw soll höher besteuert werden. | .007 | .042 | **.243** | −.045 | −.008 |
| a4 | Der Ausbau erneuerbarer Energien soll vom Bund dauerhaft finanziell gefördert werden. | .117 | .153 | **.181** | .020 | .003 |
| a8 | Generelles Tempolimit auf Autobahnen! | .067 | −.028 | **.209** | .048 | −.018 |
| a11 | Ökologische Landwirtschaft soll stärker gefördert werden als konventionelle Landwirtschaft. | .012 | .051 | **.252** | −.029 | .022 |
| a18 | Die Gesamtzahl der Nutztiere in den landwirtschaftlichen Betrieben einer Gemeinde soll begrenzt werden können. | .061 | .032 | **.110** | | −.053 |
| a19 | In Deutschland soll auch zukünftig Braunkohle abgebaut werden dürfen. | −.098 | −.142 | **−.155** | .012 | |
| a1 | Bei der Terrorismusbekämpfung soll die Bundeswehr im Inland eingesetzt werden dürfen | .027 | .142 | .029 | **.279** | |
| a3 | Für die Aufnahme von neuen Asylsuchenden soll eine jährliche Obergrenze gelten. | .008 | −.202 | −.035 | **.291** | .004 |
| a7 | Die Videoüberwachung im öffentlichen Raum soll ausgeweitet werden. | | .041 | .033 | **.260** | .104 |
| a9 | Die Verteidigungsausgaben Deutschlands sollen erhöht werden. | −.071 | **.071** | −.044 | ***.140*** | |
| a26 | Für begangene Straftaten sollen auch Kinder unter 14 Jahren verurteilt werden können. | −.004 | −.037 | −.025 | **.171** | |
| a33 | Anerkannten Flüchtlingen, die sich Integrationsmaßnahmen verweigern, sollen die Leistungen gekürzt werden können. | .038 | .089 | .026 | **.260** | .191 |
| a22 | Bereits nach 40 Beitragsjahren soll der Renteneintritt abschlagsfrei möglich sein. | .188 | .076 | **.077** | .016 | ***.247*** |
| a29 | Der Erwerb von selbst genutztem Wohneigentum soll bis zu einer bestimmten Höhe steuerfrei sein. | | .001 | .046 | .048 | **.168** |
| a32 | Der Solidaritätszuschlag soll vollständig abgeschafft werden. | .039 | .023 | .104 | .100 | **.168** |

*Note.* Network loadings associated with the respective dimension are printed in bold font. Network loadings equal to zero are left blank. Re-assignments to new factors (item a9 and a22) are printed in bold italic font.

## C.3. Additional Tables

Table C.5.

*Study 1: Correlation of Identification with Perceived Sender and Ideological Orientation per Stimulus and Time of Disclosure.*

| | Hambach Forest | Taxes | Green Party | Greta Thunberg |
|---|---|---|---|---|
| Overall | $-.488^{***}$ | $-.471^{***}$ | $.444^{**}$ | $.359^{***}$ |
| Disclosure late | $-.464^{***}$ | $-.463^{***}$ | $.472^{***}$ | $.291^{*}$ |
| Disclosure early | $-.523^{**}$ | $-.484^{**}$ | $.401^{*}$ | $.440^{**}$ |

*Note.* $^{***}p < .001$; $^{**}p < .01$; $^{*}p < .05$.

Table C.6.

*Study 1: Sample Size per Disclosure Condition and Stimulus.*

| | Hambach forest | Taxes | Greens parliament | Greta Thunberg | Sum |
|---|---|---|---|---|---|
| No disclosure | 60 | 46 | 48 | 58 | 212 |
| Disclosure | 41 | 43 | 38 | 43 | 165 |
| Sum | 101 | 89 | 86 | 101 | 377 |

Table C.7.

*Study 1: Sample Size per Disclosure Condition, Identification with Sender, and Ideological Orientation.*

| | | Conservative | Liberal | Sum |
|---|---|---|---|---|
| No disclosure | Ambiguous | 33 | 17 | 50 |
| | Sender ingroup | 34 | 41 | 75 |
| | Sender outgroup | 46 | 41 | 87 |
| | Sum | 113 | 99 | 212 |
| Disclosure | Ambiguous | 32 | 13 | 45 |
| | Sender ingroup | 21 | 17 | 38 |
| | Sender outgroup | 45 | 37 | 82 |
| | Sum | 98 | 67 | 165 |
| Sum | Ambiguous | 65 | 30 | 95 |
| | Sender ingroup | 55 | 58 | 113 |
| | Sender outgroup | 91 | 78 | 169 |
| | Sum | 211 | 166 | 377 |

Table C.8.

*Study 1: Multiple Regression Predicting Affective Polarization From Time of Disclosure, Identification with Perceived Sender, Ideological Orientation, and their Interaction.*

| | | 95% CI | | |
|---|---|---|---|---|
| | *B (SE)* | *LL* | *UL* | *t* |
| In-group sender | 1.25*** | .56 | 1.95 | 3.55 |
| | (.35) | | | |
| Out-group sender | 1.30*** | .65 | 1.95 | 3.95 |
| | (.33) | | | |
| Disclosure | .50 | −.20 | 1.21 | 1.40 |
| | (.36) | | | |
| Liberal | .78† | −.06 | 1.63 | 1.82 |
| | (.43) | | | |
| In-group sender X Disclosure | −.92† | −1.97 | .14 | −1.71 |
| | (.54) | | | |
| Out-group sender X Disclosure | −1.34** | −2.26 | −.42 | −2.86 |
| | (.47) | | | |
| In-group sender X Liberal | −.37 | −1.44 | .70 | −.68 |
| | (.54) | | | |
| Out-group sender X Liberal | −.69 | −1.73 | .35 | −1.31 |
| | (.53) | | | |
| Disclosure early X Liberal | −.51 | −1.76 | .74 | −.81 |
| | (.64) | | | |
| In-group sender X Disclosure X Liberal | .97 | −.72 | 2.66 | 1.13 |
| | (.86) | | | |
| Out-group sender X Disclosure X Liberal | .93 | −.60 | 2.46 | 1.20 |
| | (.78) | | | |
| Age | .01 | −.00 | .02 | 1.37 |
| | (.01) | | | |
| Male | .06 | −.25 | .36 | .38 |
| | (.16) | | | |
| Higher education | .01 | −.29 | .31 | 1.18 |
| | (.15) | | | |
| Constant | 2.54*** | 1.83 | 3.25 | 7.03 |
| | (.36) | | | |
| *N* | 377 | | | |
| $R^2$ | .12 | | | |
| Adjusted $R^2$ | .09 | | | |
| $F(15, 357)$ | 3.34*** | | | |

*Note:* †p<.1; **p<.01; ***p<.001

Table C.9.

*Study 2: Sample Size per Disclosure Condition and Stimulus.*

| | Hambach forest | Taxes | Greens parliament | Greta Thunberg |
|---|---|---|---|---|
| Overall | 94 | 103 | 117 | 118 |
| No disclosure | 48 | 56 | 63 | 60 |
| Disclosure | 46 | 47 | 54 | 58 |

Table C.10.

*Study 2: Intercorrelations of Indices.*

| | IO | F1 | F2 | F3 | F4 | F5 | AP F1 | AP F2 | AP F3 | AP F4 |
|---|---|---|---|---|---|---|---|---|---|---|
| IO | | | | | | | | | | |
| F1 | $-.36^{***}$ | | | | | | | | | |
| F2 | $-.42^{***}$ | .07 | | | | | | | | |
| F3 | $-.43^{***}$ | $.41^{***}$ | $.39^{***}$ | | | | | | | |
| F4 | $.44^{***}$ | $-.12^{*}$ | $-.22^{***}$ | $-.25^{***}$ | | | | | | |
| F5 | .02 | $.19^{***}$ | $-.07$ | $-.03$ | $.28^{***}$ | | | | | |
| AP F1 | $-.11^{*}$ | $.32^{***}$ | .03 | .03 | $.11^{*}$ | $.26^{***}$ | | | | |
| AP F2 | $-.22^{***}$ | $.25^{***}$ | $.31^{***}$ | $.17^{***}$ | .01 | $.25^{***}$ | $.68^{***}$ | | | |
| AP F3 | $-.12^{*}$ | $.26^{***}$ | $.11^{*}$ | $.25^{***}$ | .03 | $.21^{***}$ | $.66^{***}$ | $.64^{***}$ | | |
| AP F4 | $.18^{***}$ | $.12^{*}$ | $-.08$ | $-.07$ | $.46^{***}$ | $.24^{***}$ | $.63^{***}$ | $.52^{***}$ | $.53^{***}$ | |
| AP F5 | .05 | $.15^{**}$ | $-.05$ | $-.08$ | $.26^{***}$ | $.67^{***}$ | $.57^{***}$ | $.49^{***}$ | $.45^{***}$ | $.49^{***}$ |

*Note.* $^{***}p < .001$; $^{**}p < .01$; $^{*}p < .05$. IO = Ideological orientation, higher values indicate a more right-wing/conservative orientation; F = Factor; AP = Attitude polarization.

Table C.11.

*Study 2: Correlation of Identification with Perceived Sender and Ideological Orientation per Stimulus and Time of Disclosure.*

| | Hambach Forest | Taxes | Green Party | Greta Thunberg |
|---|---|---|---|---|
| Overall | $-.476^{***}$ | $-.392^{***}$ | $.293^{**}$ | $.240^{**}$ |
| No disclosure | $-.481^{***}$ | $-.574^{***}$ | $.403^{***}$ | $.279^{*}$ |
| Disclosure | $-.468^{**}$ | $-.119$ | .104 | .156 |

*Note.* $^{***}p < .001$; $^{**}p < .01$; $^{*}p < .05$.

Table C.12.

*Study 2: Intercorrelations of Indices Per Time of Disclosure.*

| | IO | F1 | F2 | F3 | F4 | F5 | AP F1 | AP F2 | AP F3 | AP F4 | AP F5 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| IO | | −.37*** | −.43*** | −.46*** | .51*** | −.01 | −.04 | −.20** | −.07 | .20** | .07 |
| F1 | −.35*** | | .06 | .41*** | −.18* | .18* | .38*** | .25*** | .29*** | .14* | .17* |
| F2 | −.42*** | .07 | | .43*** | −.30*** | −.11 | .03 | .30*** | .09 | −.07 | −.11 |
| F3 | −.40*** | .41*** | .35*** | | −.28*** | .01 | −.02 | .09 | .19** | −.09 | −.13 |
| F4 | .37*** | −.06 | −.14* | −.22*** | | .28*** | .06 | −.04 | −.03 | .43*** | .26*** |
| F5 | .05 | .19** | −.03 | −.06 | .29*** | | .22** | .21** | .21** | .23*** | .66*** |
| AP F1 | −.16* | .26*** | .03 | .07 | .16* | .29*** | | .65*** | .63*** | .59*** | .54*** |
| AP F2 | −.24*** | .24*** | .32*** | .24*** | .07 | .28*** | .69*** | | .60*** | .48*** | .43*** |
| AP F3 | −.17** | .24*** | .13 | .30*** | .09 | .22*** | .69*** | .67*** | | .48*** | .41*** |
| AP F4 | .16* | .11 | −.09 | −.05 | .48*** | .25*** | .67*** | .54*** | .57*** | | .43*** |
| AP F5 | .04 | .12 | −.01 | −.04 | .28*** | .67*** | .58*** | .55*** | .48*** | .54*** | |

*Note.* $^{***}p < .001$; $^{**}p < .01$; $^{*}p < .05$. Intercorrelations for participants in the disclosure early condition ($n = 205$) are presented above the diagonal, and intercorrelations for participants in the disclosure late condition ($n = 227$) are presented below the diagonal. IO = Ideological orientation, higher values indicate a more right-wing/conservative orientation; F = Factor; AP = Attitude polarization.

Table C.13.

*Study 2: Sample Size per Disclosure Condition, Identification with Sender, and Ideological Orientation.*

| | | Conservative | Liberal | Sum |
|---|---|---|---|---|
| No disclosure | Ambiguous | 48 | 21 | 69 |
| | Sender ingroup | 29 | 29 | 58 |
| | Sender outgroup | 62 | 38 | 100 |
| | Sum | 139 | 88 | 227 |
| Disclosure | Ambiguous | 42 | 15 | 57 |
| | Sender ingroup | 20 | 24 | 44 |
| | Sender outgroup | 53 | 51 | 104 |
| | Sum | 115 | 90 | 205 |
| Sum | Ambiguous | 90 | 36 | 126 |
| | Sender ingroup | 49 | 53 | 102 |
| | Sender outgroup | 115 | 89 | 204 |
| | Sum | 254 | 178 | 432 |

Table C.14.

*Study 2: Estimated Marginal Means and Standard Errors of Attitude Polarization per Factor as a Function of Identification with Perceived Sender, Time of Disclosure, and Ideological Orientation.*

| | Liberals | | | | | | | | Conservatives | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Overall | | Ambiguous | | In-group | | Out-group | | Overall | | Ambiguous | | In-group | | Out-group | |
| | *EMM* | *SE* | *EMM* | *SE* | *EMM* | *SE* | *EMM* | *SE* | *EMM* | *SE* | *EMM* | *SE* | *EMM* | *SE* | *EMM* | *SE* |
| Factor 1 | | | | | | | | | | | | | | | | |
| Overall | 1.86 | .05 | 1.78 | .11 | 1.82 | .09 | 1.97 | .07 | 1.70 | .04 | 1.67 | .07 | 1.46 | .09 | 1.95 | .06 |
| No disclosure | 1.89 | .08 | 1.91 | .14 | 1.81 | .12 | 1.96 | .11 | 1.67 | .06 | 1.60 | .09 | 1.51 | .12 | 1.90 | .08 |
| Disclosure | 1.82 | .08 | 1.64 | .16 | 1.83 | .13 | 1.98 | .09 | 1.72 | .06 | 1.74 | .10 | 1.41 | .14 | 2.01 | .09 |
| Factor 2 | | | | | | | | | | | | | | | | |
| Overall | 2.09 | .05 | 2.02 | .10 | 2.05 | .08 | 2.19 | .07 | 1.77 | .04 | 1.74 | .06 | 1.53 | .09 | 2.02 | .06 |
| No disclosure | 2.11 | .07 | 2.12 | .13 | 2.13 | .11 | 2.09 | .10 | 1.74 | .05 | 1.71 | .09 | 1.50 | .11 | 2.02 | .08 |
| Disclosure | 2.07 | .07 | 1.92 | .16 | 1.97 | .12 | 2.30 | .09 | 1.79 | .06 | 1.77 | .09 | 1.57 | .14 | 2.02 | .08 |
| Factor 3 | | | | | | | | | | | | | | | | |
| Overall | 1.90 | .06 | 1.77 | .12 | 1.98 | .09 | 1.94 | .07 | 1.67 | .05 | 1.67 | .07 | 1.53 | .10 | 1.82 | .06 |
| No disclosure | 1.98 | .08 | 2.03 | .15 | 2.07 | .13 | 1.84 | .11 | 1.67 | .06 | 1.61 | .10 | 1.57 | .13 | 1.82 | .09 |
| Disclosure | 1.82 | .08 | 1.51 | .18 | 1.89 | .14 | 2.05 | .10 | 1.68 | .07 | 1.73 | .11 | 1.48 | .15 | 1.81 | .09 |
| Factor 4 | | | | | | | | | | | | | | | | |
| Overall | 1.71 | .06 | 1.75 | .12 | 1.64 | .09 | 1.74 | .07 | 1.89 | .05 | 1.82 | .07 | 1.65 | .10 | 2.19 | .06 |
| No disclosure | 1.74 | .08 | 1.79 | .15 | 1.74 | .13 | 1.69 | .11 | 1.89 | .06 | 1.73 | .10 | 1.72 | .13 | 2.24 | .09 |
| Disclosure | 1.69 | .08 | 1.71 | .18 | 1.55 | .14 | 1.80 | .10 | 1.88 | .07 | 1.92 | .11 | 1.58 | .15 | 2.14 | .09 |
| Factor 5 | | | | | | | | | | | | | | | | |
| Overall | 1.99 | .07 | 2.01 | .09 | 1.85 | .12 | 2.12 | .09 | 2.02 | .06 | 2.00 | .09 | 1.77 | .12 | 2.28 | .08 |
| No disclosure | 2.00 | .09 | 2.13 | .18 | 1.82 | .15 | 2.05 | .13 | 1.99 | .07 | 1.92 | .12 | 1.78 | .15 | 2.28 | .10 |
| Disclosure | 1.99 | .10 | 1.89 | .21 | 1.89 | .17 | 2.20 | .11 | 2.04 | .08 | 2.08 | .13 | 1.75 | .18 | 2.29 | .11 |

*Note.* *EMM* = Estimated marginal means.

# D. Supplementary Materials Chapter 7

## D.1. Additional Tables

Table D.1.

*Ten Most Frequently Coded National Origin of Samples.*

| Rank | Country | *n* | % |
|---|---|---|---|
| 1 | USA | 128 | 28.01 |
| 2 | England | 23 | 5.03 |
| 3 | Australia | 19 | 4.16 |
| 4 | Sweden | 17 | 3.72 |
| 5 | Belgium | 13 | 2.84 |
| 6 | Wales | 12 | 2.63 |
| 7 | Germany | 11 | 2.41 |
| 8 | Scotland | 10 | 2.19 |
| 9 | Netherlands | 9 | 1.97 |
| 10 | Canada | 8 | 1.75 |

## D.2. Additional Figures

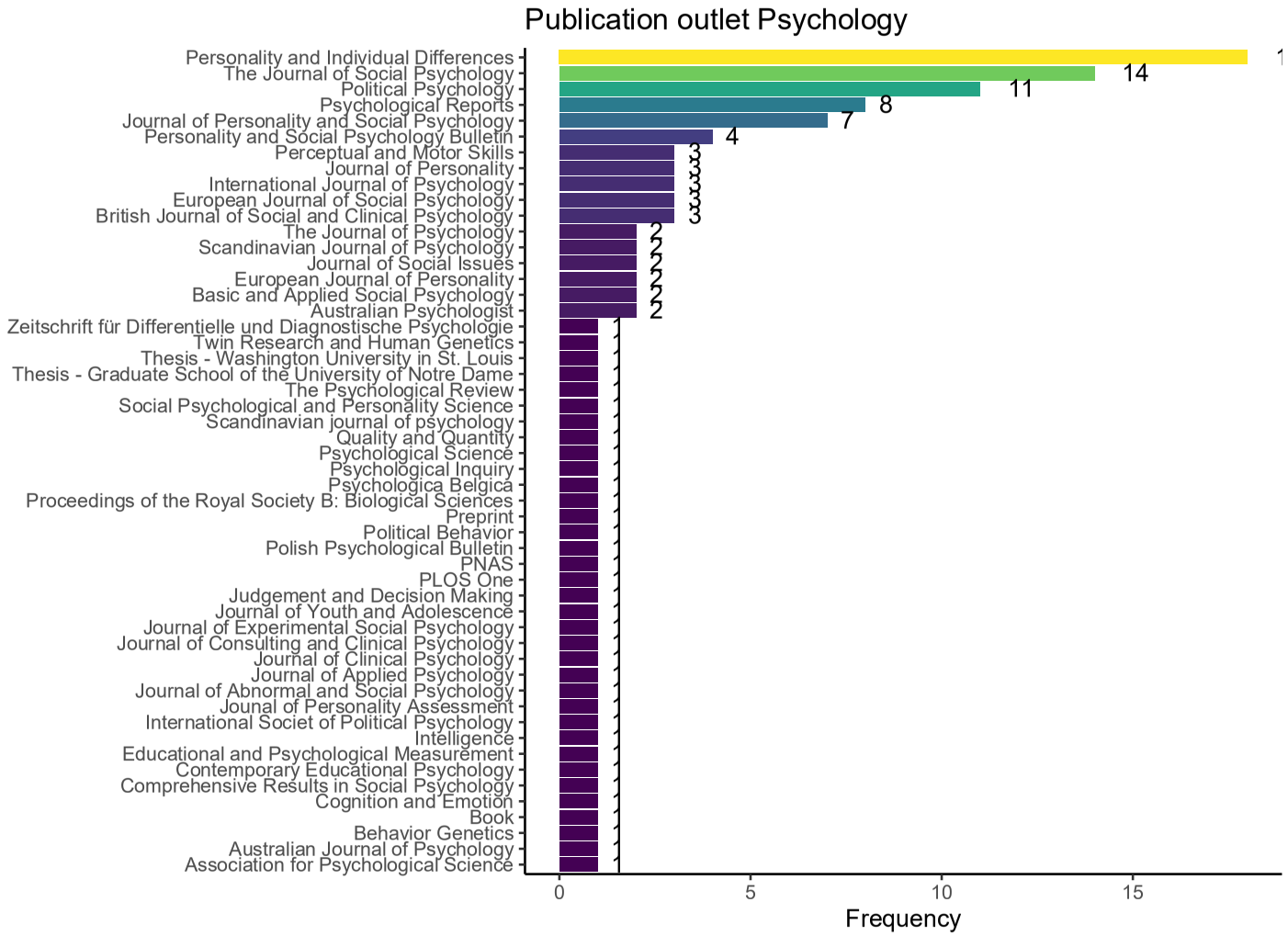



*Figure D.1.*. Absolute Frequencies of Coded Publication Outlets in Psychology.

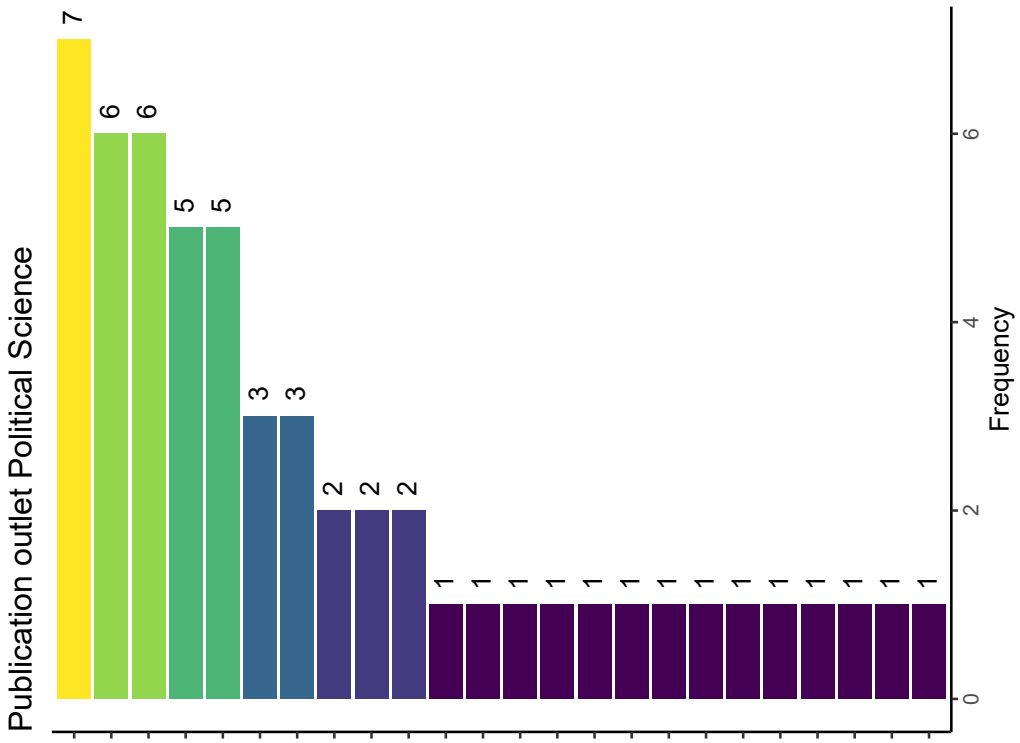



*Figure D.2..* Absolute Frequencies of Coded Publication Outlets in Political Science.

# References

References marked with an asterisk indicate studies included in the systematic review.

## References

References marked with an asterisk indicate studies included in the meta-analysis.


Abele, A. E., & Gendolla, G. H. E. (2002). Die Theorie der Laienepistemologie und weitere Modelle motivierten Denkens. In D. Frey & M. Irle (Eds.), *Theorien der Sozialpsychologie. Band III (Motivations- und Informationsverarbeitungstheorien)* (Vol. 3, pp. 312–333). Huber.

*Abramowitz, A. I., & Saunders, K. L. (1998). Ideological realignment in the us electorate. *The Journal of Politics*, *60*(3), 634–652. doi: 10.2307/2647642

*Abramowitz, A. I., & Saunders, K. L. (2005). Why can't we all just get along? The reality of a polarized America. *The Forum*, *3*(2), 1–22.

Abramowitz, A. I., & Saunders, K. L. (2006). Exploring the bases of partisanship in the american electorate: Social identity vs. ideology. *Political Research Quarterly*, *59*(2), 175–187. doi: 10.1177/106591290605900201

*Abramowitz, A. I., & Saunders, K. L. (2008). Is polarization a myth? *The Journal of Politics*, *70*(2), 542–555. doi: 10.1017/S0022381608080493

*Abramowitz, A. I., & Stone, W. J. (2006). The bush effect: Polarization, turnout, and activism in the 2004 presidential election. *Presidential Studies Quarterly*, *36*(2), 141–154. doi: 10.1111/j.1741-5705.2006.00295.x

Abrams, D., & Hogg, M. A. (2004). Metatheory: Lessons from social identity research. *Personality and Social Psychology Review*, *8*(2), 98–106. doi: 10.1207/s15327957pspr0802_2

Abrams, D., Wetherell, M., Cochrane, S., Hogg, M. A., & Turner, J. C. (1990). Knowing what to think by knowing who you are: Self-categorization and the nature of norm

formation, conformity and group polarization. *British Journal of Social Psychology*, *29*(2), 97–119. doi: 10.1111/j.2044-8309.1990.tb00892.x

*Achen, C. H. (1975). Mass political attitudes and the survey response. *The American Political Science Review*, *69*(4), 1218–1231. doi: 10.2307/1955282

Ackland, R., & Gwynn, K. (2021). Truth and the dynamics of news diffusion on twitter. In R. Greifeneder, M. E. Jaffé, E. J. Newman, & N. Schwarz (Eds.), *The psychology of fake news: Accepting, sharing, and correcting misinformation.* (pp. 27–46). Routledge.

Adkins, T., & Castle, J. J. (2014). Moving pictures? Experimental evidence of cinematic influence on political attitudes. *Social Science Quarterly*, *95*(5), 1230–1244. doi: 10.1111/ssqu.12070

Alexander, J. (2015). The major ideologies of liberalism, socialism and conservatism. *Political Studies*, *63*(5), 980–994. doi: 10.1111/1467-9248.12136

*Alford, J. R., Funk, C. L., & Hibbing, J. R. (2005). Are political orientations genetically transmitted? *American Political Science Review*, *99*(2), 153–167. doi: 10.1017/S0003055405051579

*Alford, J. R., & Hibbing, J. R. (2007). Personal, interpersonal, and political temperaments. *The Annals of the American Academy of Political and Social Science*, *614*(1), 196–212. doi: 10.1177/0002716207305621

Allcott, H., & Gentzkow, M. (2017). Social media and fake news in the 2016 election. *Journal of Economic Perspectives*, *31*(2), 211–36. doi: 10.1257/jep.31.2.211

Allen, J., Howland, B., Mobius, M., Rothschild, D., & Watts, D. J. (2020). Evaluating the fake news problem at the scale of the information ecosystem. *Science Advances*, *6*(14), eaay3539. doi: 10.1126/sciadv.aay3539

*Allport, G. W. (1929). The composition of political attitudes. *American Journal of Sociology*, *35*(2), 220–238. doi: 10.1086/214980

Allport, G. W. (1935). Attitudes. In C. A. Murchison (Ed.), *A Handbook of Social Psychology* (pp. 798–844). Clark University Press.

Altemeyer, B. (1996). *The authoritarian specter*. Harvard University Press.

American Dialect Society. (2018). *"Fake news" is 2017 American Dialect Society word of the year.* `https://www.americandialect.org/fake-news-is-2017-american-dialect-society-word-of-the-year`. (Accessed: February 20, 2020)

American Psychological Association. (2020). *Ingroup bias.* https://dictionary.apa.org/ingroup-bias. American Psychological Association. (Accessed: August 19, 2020)

*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*(2), 215–232. doi: 10.1017/S0003055408080210

Applebaum, A. (2020, October, 03). Trump is a super-spreader of disinformation. *The Atlantic*. Retrieved from https://www.theatlantic.com/ideas/archive/2020/10/trump-super-spreader-disinformation/616604/ (Accessed: January 12, 2021)

Arceneaux, K., & Johnson, M. (2013). *Changing minds or changing channels? Partisan news in an age of choice.* University of Chicago Press.

Arendt, H. (1961). *Between past and future - eight exercises in political thought.* The Viking Press.

Aristotle. (trans. 2009). *Politics.* Oxford World's Classics.

Arnett, J. J. (2008). The neglected 95%: why american psychology needs to become less american. *American Psychologist*, *63*(7), 602–614. doi: 10.1037/0003-066X.63.7.602

Ashton, M. C., Danso, H. A., Maio, G. R., Esses, V. M., Bond, M. H., & Keung, D. K. Y. (2005). Two dimensions of political attitudes and their individual difference correlates: A cross-cultural perspective. In R. M. Sorrentino, D. Cohen, J. M. Olson, & M. P. Zanna (Eds.), *Culture and social behavior: The ontario symposium* (pp. 1–29). Lawrence Erlbaum.

Atkinson, K. M., Koenka, A. C., Sanchez, C. E., Moshontz, H., & Cooper, H. (2015). Reporting standards for literature searches and report inclusion criteria: making research syntheses more transparent and easy to replicate. *Research Synthesis Methods*, *6*(1), 87–95. doi: 10.1002/jrsm.1127

*Azevedo, F., Jost, J. T., Rothmund, T., & Sterling, J. (2019). Neoliberal ideology and the justification of inequality in capitalist societies: Why social and economic dimensions of ideology are intertwined. *Journal of Social Issues*, *75*(1), 49–88. doi: 10.1111/josi.12310

Azzimonti, M., & Fernandes, M. (2018). Social media networks, fake news, and polarization. *NBER Working Paper*(w24462).

*Bafumi, J., & Shapiro, R. Y. (2009). A new partisan voter. *The Journal of Politics*, *71*(1), 1–24. doi: 10.1017/S0022381608090014

*Bagley, C. (1970). Racial prejudice and the "conservative" personality: A british sample. *Political Studies*, *18*(1), 134–141. doi: 10.1111/j.1467-9248.1970.tb00663.x

*Bahr, H. M., & Chadwick, B. A. (1974). Conservatism, racial intolerance, and attitudes toward racial assimilation among whites and american indians. *The Journal of Social Psychology*, *94*(1), 45–56. doi: 10.1080/00224545.1974.9923181

Bail, C. A., Argyle, L. P., Brown, T. W., Bumpus, J. P., Chen, H., Hunzaker, M. F., ... Volfovsky, A. (2018). Exposure to opposing views on social media can increase political polarization. *Proceedings of the National Academy of Sciences*, *115*(37), 9216–9221. doi: 10.1073/pnas.1804840115

Bailey, M., Sigelman, L., & Wilcox, C. (2003). Presidential persuasion on social issues: A two-way street? *Political Research Quarterly*, *56*(1), 49–58. doi: 10.1177/106591290305600105

*Baldassarri, D., & Gelman, A. (2008). Partisans without constraint: Political polarization and trends in american public opinion. *American Journal of Sociology*, *114*(2), 408–446. doi: 10.1086/590649

Banaji, M. R., & Heiphetz, L. (2010). Attitudes. In S. T. Fiske, D. T. Gilbert, & G. Lindzey (Eds.), *Handbook of Social Psychology* (5th ed., Vol. 1, pp. 353–393). John Wiley & Sons Inc.

Barnea, M. F., & Schwartz, S. H. (1998). Values and voting. *Political Psychology*, *19*(1), 17–40. doi: 10.1111/0162-895X.00090

Barry, A. E., Chaney, B., Piazza-Gardner, A. K., & Chavarria, E. A. (2014). Validity and reliability reporting practices in the field of health education and behavior: A review of seven journals. *Health Education & Behavior*, *41*(1), 12–18. doi: 10.1177/1090198113483139

Barthel, M., Mitchell, A., & Holcomb, J. (2016, December, 15). *Many Americans believe fake news is sowing confusion.* Retrieved from `https://www.journalism.org/2016/12/15/many-americans-believe-fake-news-is-sowing-confusion/` (Accessed: January 12, 2021)

Bates, D., Sarkar, D., Bates, M. D., & Matrix, L. (2007). The lme4 package. *R package version*, *2*(1), 74.

BBC. (2021, January, 09). *Twitter bans trump's account.* Retrieved from `https://www.bbc.com/news/world-us-canada-55597840` (Accessed: January 12, 2021)

Bem, D. J. (1970). *Beliefs, attitudes, and human affairs.* Brooks/Cole.

Benjamini, Y., & Hochberg, Y. (1995). Controlling the false discovery rate: a practical and powerful approach to multiple testing. *Journal of the Royal Statistical Society: Series B (Methodological)*, *57*(1), 289–300.

Bennett, S. E. (2006). Democratic competence, before converse and after. *Critical Review*, *18*(1-3), 105–141. doi: 10.1080/08913810608443652

Benson, J. (1998). Developing a strong program of construct validation: A test anxiety example. *Educational measurement: Issues and practice*, *17*(1), 10–17. doi: 10.1111/j.1745-3992.1998.tb00616.x

Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, *107*(2), 238. doi: 10.1037/0033-2909.107.2.238

Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin*, *88*(3), 588. doi: 10.1037/0033-2909.88.3.588

Berry, W. D., Ringquist, E. J., Fording, R. C., & Hanson, R. L. (2007). The measurement and stability of state citizen ideology. *State Politics & Policy Quarterly*, *7*(2), 111–132. doi: 10.1177/153244000700700201

Bhushan, L. I., & Amal, S. B. (1986). A situational test of intolerance of ambiguity. *Psychologia: An International Journal of Psychology in the Orient*.

Bobbio, N. (1996). *Left and right: The significance of a political distinction.* University of Chicago Press.

Bolesta, D. S. (2017). Disentangling the authoritarian personality. *Master's Thesis*.

Bors, D., Gruman, J., & Shukla, S. (2010). Measuring tolerance of ambiguity: Item polarity, dimensionality, and criterion validity. *Revue Européenne de Psychologie Appliquée/European Review of Applied Psychology*, *60*(4), 239–245. doi: 10.1016/j.erap.2010.07.001

Boxell, L., Gentzkow, M., & Shapiro, J. M. (2020). Cross-country trends in affective polarization. *NBER Working Paper*(w26669).

Brandt, M. J., Reyna, C., Chambers, J. R., Crawford, J. T., & Wetherell, G. (2014). The ideological-conflict hypothesis: Intolerance among both liberals and conservatives. *Current Directions in Psychological Science*, *23*(1), 27–34. doi: 10.1177/0963721413510932

Branscombe, N. R., & Wann, D. L. (1994). Collective self-esteem consequences of outgroup derogation when a valued social identity is on trial. *European Journal of Social Psychology*, *24*(6), 641–657. doi: 10.1002/ejsp.2420240603

Brewer, M. B. (1979). In-group bias in the minimal intergroup situation: A cognitive-motivational analysis. *Psychological Bulletin*, *86*(2), 307. doi: 10.1037/0033-2909.86.2.307

Brewer, M. B. (1991). The social self: On being the same and different at the same time. *Personality and Social Psychology Bulletin*, *17*(5), 475–482. doi: 10.1177/0146167291175001

Brewer, M. B., & Campbell, D. T. (1976). *Ethnocentrism and intergroup attitudes: East african evidence.* SAGE.

Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Harvard University Press.

*Brooks, J. A. (2011). *Helping the less fortunate: The interaction between cultural and economic conservatism* (Doctoral dissertation, University of Notre Dame). `https://curate.nd.edu/show/kk91fj25f6b`.

Browne, M. W., & Cudeck, R. (1992). Alternative ways of assessing model fit. *Sociological Methods & Research*, *21*(2), 230–258. doi: 10.1177/0049124192021002005

Bruner, J. S. (1957). On perceptual readiness. *Psychological Review*, *64*(2), 123. doi: 10.1037/h0043805

Brunswik, E. (1955). Representative design and probabilistic theory in a functional psychology. *Psychological Review*, *62*(3), 193. doi: 10.1037/h0047470

Brunswik, E. (1956). *Perception and the representative design of psychological experiments*. University of California Press.

Budner, S. (1962). Intolerance of ambiguity as a personality variable. *Journal of Personality*, *30*(1), 29–50. doi: 10.1111/j.1467-6494.1962.tb02303.x

*Camobreco, J. (2016). Ideological realignment and the primacy of symbolic ideology. *American Politics Research*, *44*(3), 471–495. doi: 10.1177/1532673X15624011

Campbell, A., Converse, P. E., Miller, W. E., & Stokes, D. E. (1980). *The american voter*. University of Chicago Press.

Caprara, G. V., Schwartz, S., Capanna, C., Vecchione, M., & Barbaranelli, C. (2006). Personality and politics: Values, traits, and political choice. *Political Psychology*, *27*(1), 1–28. doi: 10.1111/j.1467-9221.2006.00447.x

Caprara, G. V., & Vecchione, M. (2013). Personality approaches to political behavior. In L. Huddy, D. O. Sears, & J. S. Levy (Eds.), *The oxford handbook of political psychology* (2nd ed., pp. 23–58). Oxford University Press.

*Carey, J. M., & Paulhus, D. L. (2013). Worldview implications of believing in free will and/or determinism: Politics, morality, and punitiveness. *Journal of Personality*, *81*(2), 130–141. doi: 10.1111/j.1467-6494.2012.00799.x

*Carl, N. (2015). Cognitive ability and political beliefs in the united states. *Personality and Individual Differences*, *83*, 245–248. doi: 10.1016/j.paid.2015.04.029

Carmil, D., & Breznitz, S. (1991). Personal trauma and world view—are extremely stressful experiences related to political attitudes, religious beliefs, and future orientation? *Journal of Traumatic Stress*, *4*(3), 393–405. doi: 10.1002/jts.2490040307

*Carmines, E. G., Ensley, M. J., & Wagner, M. W. (2011). Issue preferences, civic engagement, and the transformation of american politics. In P. M. Sniderman & B. Highton (Eds.), *Facing the challenge of democracy: Explorations in the analysis of public opinion and political participation* (pp. 329–354). Princeton University Press Princeton, NJ.

*Carmines, E. G., Ensley, M. J., & Wagner, M. W. (2012a). Political ideology in american politics: One, two, or none? *The Forum*, *10*(3). doi: 10.1515/1540-8884.1526

*Carmines, E. G., Ensley, M. J., & Wagner, M. W. (2012b). Who fits the left-right divide? partisan polarization in the american electorate. *American Behavioral Scientist*, *56*(12), 1631–1653. doi: 10.1177/0002764212463353

Carmines, E. G., & Stimson, J. A. (1980). The two faces of issue voting. *The American Political Science Review*, 78–91. doi: 10.2307/1955648

Carsey, T. M., & Layman, G. C. (2006). Changing sides or changing minds? party identification and policy preferences in the american electorate. *American Journal of Political Science*, *50*(2), 464–477. doi: 10.1111/j.1540-5907.2006.00196.x

Chaiken, S., Wood, W., & Eagly, A. H. (1996). Principles of persuasion. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 702–742). Guilford Press.

Chirumbolo, A. (2002). The relationship between need for cognitive closure and political orientation: The mediating role of authoritarianism. *Personality and Individual Differences*, *32*(4), 603–610. doi: 10.1016/S0191-8869(01)00062-9

Choma, B. L., Ashton, M. C., & Hafer, C. L. (2010). Conceptualizing political orientation in canadian political candidates: A tale of two (correlated) dimensions. *Canadian Journal of Behavioural Science/Revue canadienne des sciences du comportement*, *42*(1), 24. doi: 10.1037/a0015650

Choma, B. L., Busseri, M. A., & Sadava, S. W. (2009). Liberal and conservative political ideologies: Different routes to happiness? *Journal of Research in Personality*, *43*(3), 502–505. doi: 10.1016/j.jrp.2008.12.016

Choma, B. L., Hafer, C. L., Dywan, J., Segalowitz, S. J., & Busseri, M. A. (2012). Political liberalism and political conservatism: Functionally independent? *Personality and Individual Differences*, *53*(4), 431–436. doi: 10.1016/j.paid.2012.04.012

Chong, D., McClosky, H., & Zaller, J. (1983). Patterns of support for democratic and capitalist values in the united states. *British Journal of Political Science*, *13*(4), 401–440. doi: 10.1017/S0007123400003343

Christensen, A. P., Golino, H., & Silvia, P. J. (2020). A psychometric network perspective on the validity and validation of personality trait questionnaires. *European Journal of Personality*, *34*(6), 1095–1108. doi: 10.1002/per.2265

Cialdini, R. B., & Goldstein, N. J. (2004). Social influence: Compliance and conformity. *Annual Review of Psychology*, *55*, 591–621. doi: 10.1146/annurev.psych.55.090902.142015

Cizmar, A. (2011). *"easy issues" in american politics* (Doctoral dissertation). `http://hdl.handle.net/1903/11649`. (Accessed: November 24, 2020)

Clark, L. A., & Watson, D. (2016). Constructing validity: Basic issues in objective scale development. In A. E. Kazdin (Ed.), *Methodological issues and strategies in clinical research.* American Psychological Association.

Coan, T. G., Merolla, J. L., Stephenson, L. B., & Zechmeister, E. J. (2008). It's not easy being green: Minor party labels as heuristic aids. *Political Psychology*, *29*(3), 389–405. doi: 10.1111/j.1467-9221.2008.00636.x

Cobb, M. D., & Kuklinski, J. H. (1997). Changing minds: Political arguments and political persuasion. *American Journal of Political Science*, 88–121. doi: 10.2307/2111710

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

Cohrs, J. C., Moschner, B., Maes, J., & Kielmann, S. (2005). Personal values and attitudes toward war. *Peace and Conflict*, *11*(3), 293–312. doi: 10.1207/s15327949pac1103_5

*Conover, P. J., & Feldman, S. (1981). The origins and meaning of liberal/conservative self-identifications. *American Journal of Political Science*, 617–645. doi: 10.2307/2110756

*Conover, P. J., & Feldman, S. (1984). How people organize the political world: A schematic model. *American Journal of Political Science*, 95–126. doi: 10.2307/2110789

*Converse, P. E. (1964). The nature of belief systems in mass publics. In D. E. Apter (Ed.), *Ideology and discontent* (pp. 206–261). Free Press.

Converse, P. E. (1970). Attitudes and non-attitudes: Continuation of a dialogue. In E. R. Tufte (Ed.), *Analysis of social problems* (Vol. 168, pp. 168–189). Addison-Wesley.

Converse, P. E. (2000). Assessing the capacity of mass electorates. *Annual Review of Political Science*, *3*(1), 331–353. doi: 10.1146/annurev.polisci.3.1.331

Conway, L. G., Gornick, L. J., Houck, S. C., Anderson, C., Stockert, J., Sessoms, D., & McCue, K. (2016). Are conservatives really more simple-minded than liberals? the domain specificity of complex thinking. *Political Psychology*, *37*(6), 777–798. doi: 10.1111/pops.12304

Conway, L. G., Houck, S. C., Gornick, L. J., & Repke, M. A. (2018). Finding the loch ness monster: Left-wing authoritarianism in the united states. *Political Psychology*, *39*(5), 1049–1067. doi: 10.1111/pops.12470

*Cornelis, I., Van Hiel, A., Roets, A., & Kossowska, M. (2009). Age differences in conservatism: Evidence on the mediating effects of personality and cognitive style. *Journal of Personality*, *77*(1), 51–88. doi: 10.1111/j.1467-6494.2008.00538.x

*Costello, T. H., & Lilienfeld, S. O. (2020). Social and economic political ideology consistently operate as mutual suppressors: implications for personality, social, and political psychology. *Social Psychological and Personality Science*, 1948550620964679. doi: 10.1177/1948550620964679

Crawford, J. T., & Pilanski, J. M. (2014). Political intolerance, right and left. *Political Psychology*, *35*(6), 841–851. doi: 10.1111/j.1467-9221.2012.00926.x

*Crowson, H. M. (2009). Are all conservatives alike? a study of the psychological correlates of cultural and economic conservatism. *The Journal of Psychology*, *143*(5), 449–463. doi: 10.3200/JRL.143.5.449-463

Day, M. V., Fiske, S. T., Downing, E. L., & Trail, T. E. (2014). Shifting liberal and conservative attitudes using moral foundations theory. *Personality and Social Psychology Bulletin*, *40*(12), 1559–1573. doi: 10.1177/0146167214551152

Deaux, K., Reid, A., Mizrahi, K., & Ethier, K. A. (1995). Parameters of social identity. *Journal of Personality and Social Psychology*, *68*(2), 280. doi: 10.1037/0022-3514.68.2.280

Deng, L., & Chan, W. (2017). Testing the difference between reliability coefficients alpha and omega. *Educational and Psychological Measurement*, *77*(2), 185–203. doi: 10.1177/0013164416658325

Denzau, A. T., & North, D. C. (2000). Shared mental models: ideologies and institutions. In A. Lupia, M. D. McCubbins, & S. L. Popkin (Eds.), *Elements of reason: Cognition, choice, and the bounds of rationality* (pp. 23–46). Cambridge University Press.

Devine, C. J. (2015). Ideological social identity: Psychological attachment to ideological in-groups as a political phenomenon and a behavioral influence. *Political Behavior*, *37*(3), 509–535. doi: 10.1007/s11109-014-9280-6

De Witte, H. (1990). *Conformisme, radicalisme en machteloosheid: Een onderzoek naar de sociaal-culturele en sociaal-economische opvattingen van arbeiders in vlaanderen [conformism, radicalism and powerlessness: In search of socio-cultural and socio-economical attitudes among workers in flanders]*. K. U. Leuven, HIVA.

De Zavala, A. G., Cislak, A., & Wesolowska, E. (2010). Political conservatism, need for cognitive closure, and intergroup hostility. *Political Psychology*, *31*(4), 521–541. doi: 10.1111/j.1467-9221.2010.00767.x

Dhami, M. K., Hertwig, R., & Hoffrage, U. (2004). The role of representative design in an ecological approach to cognition. *Psychological Bulletin*, *130*(6), 959. doi: 10.1037/0033-2909.130.6.959

*Dimock, M., Kiley, J., Keeter, S., & Doherty, C. (2014). *Political polarization in the american public.* `https://www.pewresearch.org/politics/2014/06/12/political-polarization-in-the-american-public/`. (Accessed: July 5, 2019)

Ditto, P. H., Liu, B. S., Clark, C. J., Wojcik, S. P., Chen, E. E., Grady, R. H., ... Zinger, J. F. (2019). At least bias is bipartisan: A meta-analytic comparison of partisan bias in liberals and conservatives. *Perspectives on Psychological Science*, *14*(2), 273–291. doi: 10.1177/1745691617746796

Druckman, J. N., & Levendusky, M. S. (2019). What do we measure when we measure affective polarization? *Public Opinion Quarterly*, *83*(1), 114–122. doi: 10.1093/poq/nfz003

Druckman, J. N., Peterson, E., & Slothuus, R. (2013). How elite partisan polarization affects public opinion formation. *American Political Science Review*, 57–79. doi: 10.1017/S0003055412000500

Duckitt, J. (2001). A dual-process cognitive-motivational theory of ideology and prejudice. *Advances in Experimental Social Psychology*, *33*, 41–113. doi: 10.1016/S0065-2601(01)80004-6

*Duckitt, J., Bizumic, B., Krauss, S. W., & Heled, E. (2010). A tripartite approach to right-wing authoritarianism: The authoritarianism-conservatism-traditionalism model. *Political Psychology*, *31*(5), 685–715. doi: 10.1111/j.1467-9221.2010.00781.x

*Durante, K. M., Rae, A., & Griskevicius, V. (2013). The fluctuating female vote: Politics, religion, and the ovulatory cycle. *Psychological Science*, *24*(6), 1007–1016. doi: 10.1177/0956797612466416

*Duriez, B., Luyten, P., Snauwaert, B., & Hutsebaut, D. (2002). The importance of religiosity and values in predicting political attitudes: Evidence for the continuing importance of religiosity in flanders (belgium). *Mental Health, Religion & Culture*, *5*(1), 35–54. doi: 10.1080/13674670110066831

*Duriez, B., Van Hiel, A., & Kossowska, M. (2005). Authoritarianism and social dominance in western and eastern europe: The importance of the sociopolitical context and of political interest and involvement. *Political Psychology*, *26*(2), 299–320. doi: 10.1111/j.1467-9221.2005.00419.x

*Durrheim, K., & Foster, D. (1995). The structure of sociopolitical attitudes in south africa. *The Journal of Social Psychology*, *135*(3), 387–402. doi: 10.1080/00224545.1995.9713967

Dutton, D. G. (1976). Tokenism, reverse discrimination, and egalitarianism in interracial behavior. *Journal of Social Issues*, *32*(2), 93–107. doi: 10.1111/j.1540-4560.1976.tb02496.x

Eagly, A. H., & Chaiken, S. (1993). *The psychology of attitudes*. Harcourt Brace Jovanovich.

*Eaves, L., Heath, A., Martin, N., Maes, H., Neale, M., Kendler, K., ... Corey, L. (1999). Comparing the biological and cultural inheritance of personality and social attitudes in the virginia 30 000 study of twins and their relatives. *Twin Research and Human Genetics*, *2*(2), 62–80. doi: 10.1375/twin.2.2.62

*Eaves, L., Martin, N., Heath, A., Schieken, R., Meyer, J., Silberg, J., ... Corey, L. (1997). Age changes in the causes of individual differences in conservatism. *Behavior Genetics*, *27*(2), 121–124. doi: 10.1023/A:1025633307992

Ecker, U. K., & Ang, L. C. (2019). Political attitudes and the processing of misinformation corrections. *Political Psychology*, *40*(2), 241–260. doi: 10.1111/pops.12494

Eckstein, K. (2019). Politische entwicklung im jugend-und jungen erwachsenenalter. In B. Kracke & P. Noack (Eds.), *Handbuch entwicklungs-und erziehungspsychologie* (pp. 405–423). Springer. doi: 10.1007/978-3-642-54061-5_20-1

Egan, P. J., & Mullin, M. (2012). Turning personal experience into political attitudes: The effect of local weather on americans' perceptions about global warming. *The Journal of Politics*, *74*(3), 796–809. doi: 10.1017/S0022381612000448

*Eidelman, S., Crandall, C. S., Goodman, J. A., & Blanchar, J. C. (2012). Low-effort thought promotes political conservatism. *Personality and Social Psychology Bulletin*, *38*(6), 808–820. doi: 10.1177/0146167212439213

*Ekman, G., & Kuennapas, T. (1963). Scales of conservatism. *Perceptual and Motor Skills*, *16*(2), 329–334. doi: 10.2466/pms.1963.16.2.329

Elad-Strenger, J., Proch, J., & Kessler, T. (2020). Is disgust a "conservative" emotion? *Personality and Social Psychology Bulletin*, *46*(6), 896–912. doi: 10.1177/0146167219880191

Ellemers, N., Kortekaas, P., & Ouwerkerk, J. W. (1999). Self-categorisation, commitment to the group and group self-esteem as related but distinct aspects of social identity. *European Journal of Social Psychology*, *29*(2-3), 371–389.

Ellemers, N., Van Knippenberg, A., & Wilke, H. (1990). The influence of permeability of group boundaries and stability of group status on strategies of individual mobility and social change. *British Journal of Social Psychology*, *29*(3), 233–246. doi: 10.1111/j.2044-8309.1990.tb00902.x

Elliot, A. J., & Devine, P. G. (1994). On the motivational nature of cognitive dissonance: Dissonance as psychological discomfort. *Journal of Personality and Social Psychology*, *67*(3), 382. doi: 10.1037/0022-3514.67.3.382

*Ellis, C., & Stimson, J. A. (2007). Pathways to ideology in american politics: the operational-symbolic paradox revisited. *Unpublished Manuscript*.

Ellis, C., & Stimson, J. A. (2009). Symbolic ideology in the american electorate. *Electoral Studies*, *28*(3), 388–402. doi: 10.1016/j.electstud.2009.05.010

Ellis, C., & Stimson, J. A. (2012). *Ideology in america*. Cambridge University Press.

Elms, A. C. (1975). The crisis of confidence in social psychology. *American Psychologist*, *30*(10), 967. doi: 10.1037/0003-066X.30.10.967

*Enyedi, Z., & Todosijevic, B. (2003). Organization of mass political attitudes in hungary. *Polish Psychological Bulletin*, *34*(1), 15–26.

Erikson, R. S., & Stoker, L. (2011). Caught in the draft: The effects of vietnam draft lottery status on political attitudes. *American Political Science Review*, 221–237. doi: 10.1017/S0003055411000141

Erikson, R. S., & Tedin, K. L. (2015). *American public opinion: Its origins, content and impact*. Routledge.

European Commission. (2020, July). *The european digital media observatory.* Retrieved from `https://ec.europa.eu/digital-single-market/en/european-digital-media-observatory` (Accessed: January 15, 2021)

*Evans, G., Heath, A., & Lalljee, M. (1996). Measuring left-right and libertarian-authoritarian values in the british electorate. *British Journal of Sociology*, 93–112. doi: 10.2307/591118

*Everett, J. A. (2013). The 12 item social and economic conservatism scale (secs). *PloS one*, *8*(12), e82131. doi: 10.1371/journal.pone.0082131

*Eysenck, H. J. (1975). The structure of social attitudes. *British Journal of Social and Clinical Psychology*, *14*(4), 323–331. doi: 10.1111/j.2044-8260.1975.tb00188.x

*Eysenck, H. J. (1976). Structure of social attitudes. *Psychological Reports*, *39*(2), 463–466. doi: 10.2466/pr0.1976.39.2.463

Farrar, C., Fishkin, J. S., Green, D. P., List, C., Luskin, R. C., & Paluck, E. L. (2010). Disaggregating deliberation's effects: An experiment within a deliberative poll. *British Journal of Political Science*, 333–347. doi: 10.1017/S0007123409990433

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using g* power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, *41*(4), 1149–1160. doi: 10.3758/BRM.41.4.1149

*Feather, N. T. (1975). Factor structure of the conservatism scale. *Australian Psychologist*, *10*(2), 179–184. doi: 10.1080/00050067508256455

*Feather, N. T. (1984). Protestant ethic, conservatism, and values. *Journal of Personality and Social Psychology*, *46*(5), 1132. doi: 10.1037/0022-3514.46.5.1132

Federal Agency for Civic Education. (2017, July). *Wahl-o-mat zur bundestagswahl 2017*. Bundeszentrale für politische Bildung/bpb. Retrieved from `\url{https://www.wahl-o-mat.de/bundestagswahl2017}`

Federico, C. M., & Schneider, M. C. (2007). Political expertise and the use of ideology: Moderating effects of evaluative motivation. *Public Opinion Quarterly*, *71*(2), 221–252. doi: 10.1093/poq/nfm010

*Feldman, S. (1988). Structure and consistency in public opinion: The role of core beliefs and values. *American Journal of Political Science*, 416–440. doi: 10.2307/2111130

*Feldman, S. (2003a). Enforcing social conformity: A theory of authoritarianism. *Political Psychology*, *24*(1), 41–74. doi: 10.1111/0162-895X.00316

Feldman, S. (2003b). Values, ideology, and the structure of political attitudes. In D. O. Sears, L. Huddy, & R. Jervis (Eds.), *The oxford handbook of political psychology* (pp. 477–508). Oxford University Press.

Feldman, S. (2013). Political ideology. In L. Huddy, D. O. Sears, & J. S. Levy (Eds.), *The oxford handbook of political psychology* (2nd ed., pp. 591–626). Oxford University Press.

*Feldman, S., & Johnston, C. (2014). Understanding the determinants of political ideology: Implications of structural complexity. *Political Psychology*, *35*(3), 337–358. doi: 10.1111/pops.12055

*Feldman, S., & Steenbergen, M. R. (2001). The humanitarian foundation of public support for social welfare. *American Journal of Political Science*, 658–677. doi: 10.2307/2669244

*Ferguson, L. W. (1939). Primary social attitudes. *The Journal of Psychology*, *8*(2), 217–223. doi: 10.1080/00223980.1939.9917660

*Ferguson, L. W. (1973). Primary social attitudes of the 1960s and those of the 1930s. *Psychological Reports*, *33*(2), 655–664. doi: 10.2466/pr0.1973.33.2.655

*Fessler, D. M., Pisor, A. C., & Holbrook, C. (2017). Political orientation predicts credulity regarding putative hazards. *Psychological Science*, *28*(5), 651–660. doi: 10.1177/0956797617692108

Festinger, L. (1957). *A theory of cognitive dissonance* (Vol. 2). Stanford University Press.

Fiagbenu, M. E., Proch, J., & Kessler, T. (2019). Of deadly beans and risky stocks: Political ideology and attitude formation via exploration depend on the nature of the attitude stimuli. *British Journal of Psychology*. doi: 10.1111/bjop.12430

Fiagbenu, M. E., Proch, J., & Kessler, T. (2020). Stimulus sampling and other recommendations for assessing domain-general processes of attitude formation through exploration: Reply to ruisch, shook, and fazio (2020). *British Journal of Psychology*. doi: 10.1111/bjop.12470

*Fibert, Z., & Ressler, W. H. (1998). Intolerance of ambiguity and political orientation among israeli university students. *The Journal of Social Psychology*, *138*(1), 33–40. doi: 10.1080/00224549809600351

*Fiorina, M. P., & Abrams, S. J. (2008). Political polarization in the american public. *Annual Review of Political Science*, *11*, 563–588. doi: 10.1146/annurev.polisci.11.053106.153836

*Fiorina, M. P., Abrams, S. J., & Pope, J. C. (2005). *Culture war? the myth of a polarized america*. Pearson Longman.

Flake, J. K., & Fried, E. I. (2020). Measurement schmeasurement: Questionable measurement practices and how to avoid them. *Advances in Methods and Practices in Psychological Science*, *3*(4), 456–465. doi: 10.1177/2515245920952393

Flake, J. K., Pek, J., & Hehman, E. (2017). Construct validation in social and personality research: Current practice and recommendations. *Social Psychological and Personality Science*, *8*(4), 370–378. doi: 10.1177/1948550617693063

*Flanagan, S. C., & Lee, A.-R. (2003). The new politics, culture wars, and the authoritarian-libertarian value change in advanced industrial democracies. *Comparative Political Studies*, *36*(3), 235–270. doi: 10.1177/0010414002250664

*Forgas, J. P., & Jolliffe, C. D. (1994). How conservative are greenies? environmental attitudes, conservatism, and traditional morality among university students. *Australian Journal of Psychology*, *46*(3), 123–130. doi: 10.1080/00049539408259486

Free, L., & Cantril, H. (1967). *The political beliefs of americans*. Rutgers University Press.

Freeden, M. (1996). *Ideologies and political theory: A conceptual approach*. Oxford University Press.

Freeden, M., Sargent, L. T., & Stears, M. (2013). *The Oxford Handbook of Political Ideologies*. Oxford University Press.

Freeden, M., & Stears, M. (2013). Liberalism. In M. Freeden, L. T. Sargent, & M. Stears (Eds.), *The oxford handbook of political ideologies* (pp. 329–347). Oxford University Press.

Frenkel-Brunswik, E. (1949). Intolerance of ambiguity as an emotional and perceptual personality variable. *Journal of Personality*, *18*(1), 108–143. doi: 10.1111/j.1467-6494.1949.tb01236.x

Friedrich, W., & Förster, P. (1997). Politische orientierungen ostdeutscher jugendlicher und junger erwachsener im transformationsprozess. In *Entwicklung und sozialisation von jugendlichen vor und nach der vereinigung deutschlands* (pp. 17–73). Springer.

*Friesen, A., & Ksiazkiewicz, A. (2015). Do political attitudes and religiosity share a genetic path? *Political Behavior*, *37*(4), 791–818. doi: 10.1007/s11109-014-9291-3

Frimer, J. A., Gaucher, D., & Schaefer, N. K. (2014). Political conservatives' affinity for obedience to authority is loyal, not blind. *Personality and Social Psychology Bulletin*, *40*(9), 1205–1214. doi: 10.1177/0146167214538672

Frimer, J. A., Skitka, L. J., & Motyl, M. (2017). Liberals and conservatives are similarly motivated to avoid exposure to one another's opinions. *Journal of Experimental Social Psychology*, *72*, 1–12. doi: 10.1016/j.jesp.2017.04.003

Fuchs, D., & Klingemann, H.-D. (1990). The left-right schema. In K. M. Jennings et al. (Eds.), *Continuities in political action: A longitudinal study of political orientations in three western democracies* (pp. 203–234). Walter de Gruyter Berlim/Nova Iorque.

Funk, C. L., Smith, K. B., Alford, J. R., Hibbing, M. V., Eaton, N. R., Krueger, R. F., ... Hibbing, J. R. (2013). Genetic and environmental transmission of political orientations. *Political Psychology*, *34*(6), 805–819. doi: 10.1111/j.1467-9221.2012.00915.x

*Furnham, A. (1984). Many sides of the coin: The psychology of money usage. *Personality and Individual Differences*, *5*(5), 501–509. doi: 10.1016/0191-8869(84)90025-4

*Furnham, A. (1985a). Adolescents' sociopolitical attitudes: A study of sex and national differences. *Political Psychology*, 621–636. doi: 10.2307/3791020

*Furnham, A. (1985b). A short measure of economic beliefs. *Personality and Individual Differences*, *6*(1), 123–126. doi: 10.1016/0191-8869(85)90038-8

*Furnham, A., & Heaven, P. (1988). The paradox of socialism: The relationship between social and economic political beliefs. *Psychological Reports*, *62*(1), 327–332. doi: 10.2466/pr0.1988.62.1.327

Furnham, A., & Ribchester, T. (1995). Tolerance of ambiguity: A review of the concept, its measurement and applications. *Current Psychology*, *14*(3), 179–199. doi: 10.1007/BF02686907

*Furnham, A., & Walker, J. (2001). The influence of personality traits, previous experience of art, and demographic variables on artistic preference. *Personality and Individual Differences*, *31*(6), 997–1017. doi: 10.1016/S0191-8869(00)00202-6

Gaertner, L., Sedikides, C., & Graetz, K. (1999). In search of self-definition: Motivational primacy of the individual self, motivational primacy of the collective self, or

contextual primacy? *Journal of Personality and Social Psychology*, *76*(1), 5. doi: 10.1037/0022-3514.76.1.5

Gangarosa, E. J., Galazka, A. M., Wolfe, C. R., Phillips, L. M., Miller, E., Chen, R. T., & Gangarosa, R. (1998). Impact of anti-vaccine movements on pertussis control: the untold story. *The Lancet*, *351*(9099), 356–361. doi: 10.1016/S0140-6736(97)04334-1

Garrett, R. K., Gvirsman, S. D., Johnson, B. K., Tsfati, Y., Neo, R., & Dal, A. (2014). Implications of pro-and counterattitudinal information exposure for affective polarization. *Human Communication Research*, *40*(3), 309–332. doi: 10.1111/hcre.12028

Gentzkow, M., & Shapiro, J. M. (2006). Media bias and reputation. *Journal of Political Economy*, *114*(2), 280–316. doi: 10.1086/499414

*Gerber, A. S., Huber, G., Ha, S. E., Dowling, C., & Doherty, D. (2009). *Personality traits and the dimensions of political ideology.* `https://dx.doi.org/10.2139/ssrn.1412863`.

*Gerber, A. S., Huber, G. A., Doherty, D., Dowling, C. M., & Ha, S. E. (2010). Personality and political attitudes: Relationships across issue domains and political contexts. *American Political Science Review*, *104*(1), 111–133. doi: 10.1017/S0003055410000031

Gerring, J. (1997). Ideology: A definitional analysis. *Political Research Quarterly*, *50*(4), 957–994. doi: 10.1177/106591299705000412

*Geser, H. (2008). The limits of ideological globalization. current patterns of" left and right" in different geographical regions. *Sociology in Switzerland: World Society and International Relations*(5).

Golino, H. F., & Christensen, A. (2019). *Eganet: Exploratory graph analysis: A framework for estimating the number of dimensions in multivariate data using network psychometrics.* Retrieved from `https://CRAN.R-project.org/package=EGAnet` (Accessed: January 15, 2021)

Golino, H. F., & Demetriou, A. (2017). Estimating the dimensionality of intelligence like data using exploratory graph analysis. *Intelligence*, *62*, 54–70. doi: 10.1016/j.intell.2017.02.007

Golino, H. F., & Epskamp, S. (2017). Exploratory graph analysis: A new approach for estimating the number of dimensions in psychological research. *PloS One*, *12*(6), e0174035.

Golino, H. F., Shi, D., Christensen, A. P., Garrido, L. E., Nieto, M. D., Sadana, R., ... Martinez-Molina, A. (2020). Investigating the performance of exploratory graph analysis and traditional techniques to identify the number of latent factors: A simulation and tutorial. *Psychological Methods*.

*Gonsalves, S. V., & Bernard, G. A. (1985). The protestant ethic and conservatism scales: Correlation and validation among different ethnic groups. *The High School Journal*, *68*(4), 247–253.

Goren, P. (2001). Core principles and policy reasoning in mass publics: A test of two theories. *British Journal of Political Science*, 159–177.

Goren, P. (2004). Political sophistication and policy reasoning: A reconsideration. *American Journal of Political Science*, *48*(3), 462–478. doi: 10.1111/j.0092-5853.2004.00081.x

*Goren, P. (2005). Party identification and core political values. *American Journal of Political Science*, *49*(4), 881–896. doi: 10.1111/j.1540-5907.2005.00161.x

Goren, P. (2012). Political values and political awareness. *Critical Review*, *24*(4), 505–525. doi: 10.1080/08913811.2012.788279

Goren, P., Federico, C. M., & Kittilson, M. C. (2009). Source cues, partisan identities, and political value expression. *American Journal of Political Science*, *53*(4), 805–820. doi: 10.1111/j.1540-5907.2009.00402.x

Graham, J., Haidt, J., Koleva, S., Motyl, M., Iyer, R., Wojcik, S. P., & Ditto, P. H. (2013). Moral foundations theory: The pragmatic validity of moral pluralism. *Advances in Experimental Social Psychology*, *47*, 55–130. doi: 10.1016/B978-0-12-407236-7.00002-4

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. doi: 10.1037/a0015141

*Graham, J., Nosek, B. A., Haidt, J., Iyer, R., Koleva, S., & Ditto, P. H. (2011). Mapping the moral domain. *Journal of Personality and Social Psychology*, *101*(2), 366. doi: 10.1037/a0021847

Grant, P. R. (1993). Ethnocentrism in response to a threat to social identity. *Journal of Social Behavior and Personality*, *8*(6), 143.

Green, D. P., Palmquist, B., & Schickler, E. (2004). *Partisan hearts and minds: Political parties and the social identities of voters.* Yale University Press.

Greifeneder, R., Jaffé, M. E., Newman, E. J., & Schwarz, N. (2021). What is new and true about fake news? In R. Greifeneder, M. E. Jaffé, E. J. Newman, & N. Schwarz (Eds.), *The psychology of fake news: Accepting, sharing, and correcting misinformation.* (pp. 1 – 8). Routledge.

Grenier, S., Barrette, A.-M., & Ladouceur, R. (2005). Intolerance of uncertainty and intolerance of ambiguity: Similarities and differences. *Personality and Individual Differences*, *39*(3), 593–600. doi: 10.1016/j.paid.2005.02.014

Guess, A., Nagler, J., & Tucker, J. (2019). Less than you think: Prevalence and predictors of fake news dissemination on facebook. *Science Advances*, *5*(1), eaau4586. doi: 10.1126/sciadv.aau4586

Guess, A., Nyhan, B., & Reifler, J. (2018). Selective exposure to misinformation: Evidence from the consumption of fake news during the 2016 us presidential campaign. *European Research Council*, *9*.

Haberman, M., Rutenberg, J., Corasaniti, N., & Epstein, R. J. (2020, November, 19). Trump targets michigan in his ploy to subvert the election. *The New York Times*. Retrieved from `https://www.nytimes.com/2020/11/19/us/politics/trump-michigan-election.html` (Accessed: January 12, 2021)

Haglin, K. (2017). The limitations of the backfire effect. *Research & Politics*, *4*(3), 2053168017716547. doi: 10.1177/2053168017716547

Haidt, J. (2008). Morality. *Perspectives on Psychological Science*, *3*(1), 65–72. doi: 10.1111/j.1745-6916.2008.00063.x

Haidt, J., & Graham, J. (2007). When morality opposes justice: Conservatives have moral intuitions that liberals may not recognize. *Social Justice Research*, *20*(1), 98–116. doi: 10.1007/s11211-007-0034-z

Haidt, J., Graham, J., & Joseph, C. (2009). Above and below left–right: Ideological narratives and moral foundations. *Psychological Inquiry*, *20*(2-3), 110–119. doi: 10.1080/10478400903028573

Haidt, J., & Hetherington, M. J. (2012, September, 17). Look how far we've come apart. *The New York Times*. Retrieved from `https://campaignstops.blogs.nytimes`

.com/2012/09/17/look-how-far-weve-come-apart/?smid=tw-share (Accessed: January 21, 2021)

Haidt, J., & Joseph, C. (2004). Intuitive ethics: How innately prepared intuitions generate culturally variable virtues. *Daedalus*, *133*(4), 55–66. doi: 10.1162/0011526042365555

Haidt, J., & Joseph, C. (2007). The moral mind: How five sets of innate intuitions guide the development of many culture-specific virtues, and perhaps even modules. In P. Carruthers, S. Laurence, & S. Stich (Eds.), *The innate mind* (Vol. 3, pp. 367–392).

Hamilton, A. (2020). Conservatism. In E. N. Zalta (Ed.), *The Stanford encyclopedia of philosophy* (Spring 2020 ed.). Metaphysics Research Lab, Stanford University. https://plato.stanford.edu/archives/spr2020/entries/conservatism/.

Hansen, P. R., & Schmidtblaicher, M. (2019). A dynamic model of vaccine compliance: how fake news undermined the danish hpv vaccine program. *Journal of Business & Economic Statistics*, 1–21. doi: 10.1080/07350015.2019.1623045

Hart, P. S., & Nisbet, E. C. (2012). Boomerang effects in science communication: How motivated reasoning and identity cues amplify opinion polarization about climate mitigation policies. *Communication Research*, *39*(6), 701–723. doi: 10.1177/0093650211416646

Hart, W., Albarracín, D., Eagly, A. H., Brechan, I., Lindberg, M. J., & Merrill, L. (2009). Feeling validated versus being correct: a meta-analysis of selective exposure to information. *Psychological Bulletin*, *135*(4), 555. doi: 10.1037/a0015701

Haslam, S. A., Oakes, P. J., Reynolds, K. J., & Turner, J. C. (1999). Social identity salience and the emergence of stereotype consensus. *Personality and Social Psychology Bulletin*, *25*(7), 809–818. doi: 10.1177/0146167299025007004

Hayes, A. F., & Coutts, J. J. (2020). Use omega rather than cronbach's alpha for estimating reliability. but.... *Communication Methods and Measures*, *14*(1), 1–24. doi: 10.1080/19312458.2020.1718629

Hennes, E. P., Nam, H. H., Stern, C., & Jost, J. T. (2012). Not all ideologies are created equal: Epistemic, existential, and relational needs predict system-justifying attitudes. *Social Cognition*, *30*(6), 669–688. doi: 10.1521/soco.2012.30.6.669

*Henningham, J. P. (1996). A 12-item scale of social conservatism. *Personality and Individual Differences*, *20*(4), 517–519. doi: 10.1016/0191-8869(95)00192-1

*Henningham, J. P. (1997). A short scale of economic conservatism. *Psychological Reports*, *81*(3), 1019–1024. doi: 10.2466/pr0.1997.81.3.1019

Henrich, J., Heine, S. J., & Norenzayan, A. (2010a). Most people are not weird. *Nature*, *466*(7302), 29–29. doi: 10.1038/466029a

Henrich, J., Heine, S. J., & Norenzayan, A. (2010b). The weirdest people in the world? *Behavioral and Brain Sciences*, *33*(2-3), 61–83. doi: 10.1017/S0140525X0999152X

*Hiel, A. V., & Kossowska, M. (2007). Contemporary attitudes and their ideological representation in flanders (belgium), poland, and the ukraine. *International Journal of Psychology*, *42*(1), 16–26. doi: 10.1080/00207590500411443

*Hirsh, J. B., DeYoung, C. G., Xu, X., & Peterson, J. B. (2010). Compassionate liberals and polite conservatives: Associations of agreeableness with political ideology and moral values. *Personality and Social Psychology Bulletin*, *36*(5), 655–664. doi: 10.1177/0146167210366854

Hitlin, S. (2003). Values as the core of personal identity: Drawing links between two theories of self. *Social Psychology Quarterly*, 118–137. doi: 10.2307/1519843

Hodgson, G. M. (2018). *Wrong turnings: How the left got lost*. University of Chicago Press.

Hogg, M. A., & Hains, S. C. (1996). Intergroup relations and group solidarity: Effects of group identification and social beliefs on depersonalized attraction. *Journal of Personality and Social Psychology*, *70*(2), 295. doi: 10.1037/0022-3514.70.2.295

Hogg, M. A., & Smith, J. R. (2007). Attitudes in social context: A social identity perspective. *European Review of Social Psychology*, *18*(1), 89–131. doi: 10.1080/10463280701592070

Hogg, M. A., Turner, J. C., & Davidson, B. (1990). Polarized norms and social frames of reference: A test of the self-categorization theory of group polarization. *Basic and Applied Social Psychology*, *11*(1), 77-100. doi: 10.1207/s15324834basp1101_6

Hogg, M. A., & Williams, K. D. (2000). From i to we: Social identity and the collective self. *Group Dynamics: Theory, Research, and Practice*, *4*(1), 81. doi: 10.1037/1089-2699.4.1.81

Holbrook, A. L., Berent, M. K., Krosnick, J. A., Visser, P. S., & Boninger, D. S. (2005). Attitude importance and the accumulation of attitude-relevant knowledge in memory. *Journal of Personality and Social Psychology*, *88*(5), 749. doi: 10.1037/0022-3514.88.5.749

Hornsey, M. J. (2008). Social identity theory and self-categorization theory: A historical review. *Social and Personality Psychology Compass*, *2*(1), 204–222. doi: 10.1111/j.1751-9004.2007.00066.x

Hornsey, M. J., Spears, R., Cremers, I., & Hogg, M. A. (2003). Relations between high and low power groups: The importance of legitimacy. *Personality and Social Psychology Bulletin*, *29*(2), 216–227. doi: 10.1177/0146167202239047

Hsiao, C. (2007). Panel data analysis—advantages and challenges. *Test*, *16*(1), 1–22. doi: 10.1007/s11749-007-0046-x

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1–55. doi: 10.1080/10705519909540118

Huddy, L. (2001). From social to political identity: A critical examination of social identity theory. *Political Psychology*, *22*(1), 127–156. doi: 10.1111/0162-895X.00230

Huddy, L. (2013). From group identity to political cohesion and commitment. In L. Huddy, D. O. Sears, & J. S. Levy (Eds.), *The oxford handbook of political psychology* (2nd ed., pp. 737–773). Oxford University Press.

Hussey, I., & Hughes, S. (2020). Hidden invalidity among 15 commonly used measures in social and personality psychology. *Advances in Methods and Practices in Psychological Science*, 2515245919882903. doi: 10.1177/2515245919882903

*Inbar, Y., Pizarro, D. A., & Bloom, P. (2009). Conservatives are more easily disgusted than liberals. *Cognition & Emotion*, *23*(4), 714–725. doi: 10.1080/02699930802110007

Iyengar, S., Lelkes, Y., Levendusky, M., Malhotra, N., & Westwood, S. J. (2019). The origins and consequences of affective polarization in the united states. *Annual Review of Political Science*, *22*, 129–146. doi: 10.1146/annurev-polisci-051117-073034

Iyengar, S., Sood, G., & Lelkes, Y. (2012). Affect, not ideology. a social identity perspective on polarization. *Public Opinion Quarterly*, *76*(3), 405–431. doi: 10.1093/poq/nfs038

Iyengar, S., & Westwood, S. J. (2015). Fear and loathing across party lines: New evidence on group polarization. *American Journal of Political Science*, *59*(3), 690–707. doi: 10.1111/ajps.12152

*Jackstadt, S. L., Brennan, J., & Thompson, S. (1985). The effect of introductory economics courses on college students' conservatism. *The Journal of Economic Education*, *16*(1), 37–51. doi: 10.1080/00220485.1985.10845098

*Jacobson, G. C. (2003). Partisan polarization in presidential support: The electoral connection. In *Congress & the presidency: A journal of capital studies* (Vol. 30, pp. 1–36).

*Jacobson, G. C. (2004). Partisan and ideological polarization in the california electorate. *State Politics & Policy Quarterly*, *4*(2), 113–139. doi: 10.1177/153244000400400201

Jalali, S., & Wohlin, C. (2012). Systematic literature studies: Database searches vs. backward snowballing. In *Proceedings of the 2012 acm-ieee international symposium on empirical software engineering and measurement* (pp. 29–38). doi: 10.1145/2372251.2372257

James, W. (1975). *The meaning of truth*. Harvard University Press.

Jamieson, K. H., & Cappella, J. N. (2008). *Echo chamber: Rush limbaugh and the conservative media establishment*. Oxford University Press.

Janda, K., Berry, J. M., Goldman, J., & Hula, K. W. (2004). *The challenge of democracy*. Houghton Mifflin Company.

Jennings, M. K. (1990). The crystallization of orientations. In M. K. Jennings et al. (Eds.), *Continuities in political action: A longitudinal study of political orientations in three western democracies* (Vol. 5, pp. 313–348). W. de Gruyter.

Jetten, J., Spears, R., & Manstead, A. S. (1997). Distinctiveness threat and prototypicality: Combined effects on intergroup discrimination and collective self-esteem. *European Journal of Social Psychology*, *27*(6), 635–657. doi: 10.1002/(SICI)1099-0992(199711/12)27:6⟨635::AID-EJSP835⟩3.0.CO;2-%23

*Joe, V. C., Jones, R. N., & Ryder, S. (1977). Conservatism, openness to experience and sample bias. *Journal of Personality Assessment*, *41*(5), 527–531. doi: 10.1207/s15327752jpa4105_11

John, L. K., Loewenstein, G., & Prelec, D. (2012). Measuring the prevalence of questionable research practices with incentives for truth telling. *Psychological Science*, *23*(5), 524–532. doi: 10.1177/0956797611430953

Johnson, B. T., & Eagly, A. H. (1989). Effects of involvement on persuasion: A meta-analysis. *Psychological Bulletin*, *106*(2), 290. doi: 10.1037/0033-2909.106.2.290

Johnson, H. M., & Seifert, C. M. (1994). Sources of the continued influence effect: When misinformation in memory affects later inferences. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *20*(6), 1420. doi: 10.1037/0278-7393.20.6.1420

*Johnson, S. D., & Tamney, J. B. (2001). Social traditionalism and economic conservatism: Two conservative political ideologies in the united states. *The Journal of Social Psychology*, *141*(2), 233–243. doi: 10.1080/00224540109600549

*Johnston, C. D., & Wronski, J. (2015). Personality dispositions and political preferences across hard and easy issues. *Political Psychology*, *36*(1), 35–53. doi: 10.1111/pops.12068

Jost, J. T. (2017). Ideological asymmetries and the essence of political psychology. *Political Psychology*, *38*(2), 167–208. doi: 10.1111/pops.12407

Jost, J. T., & Amodio, D. M. (2012). Political ideology as motivated social cognition: Behavioral and neuroscientific evidence. *Motivation and Emotion*, *36*(1), 55–64. doi: 10.1007/s11031-011-9260-7

Jost, J. T., Federico, C. M., & Napier, J. L. (2009). Political ideology: Its structure, functions, and elective affinities. *Annual Review of Psychology*, *60*, 307–337. doi: 10.1146/annurev.psych.60.110707.163600

Jost, J. T., 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. T., 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. T., Kay, A. C., & Thorisdottir, H. (2009). *Social and psychological bases of ideology and system justification*. Oxford University Press.

Jost, J. T., Kruglanski, A. W., & Simon, L. (1999). Shared cognition in organizations: The management of knowledge. In (pp. 91–116).

Jost, J. T., Ledgerwood, A., & Hardin, C. D. (2008). Shared reality, system justification, and the relational basis of ideological beliefs. *Social and Personality Psychology Compass*, *2*(1), 171–186. doi: 10.1111/j.1751-9004.2007.00056.x

Jost, J. T., 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 and Social Psychology Bulletin*, *33*(7), 989–1007. doi: 10.1177/0146167207301028

Jost, J. T., 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

Jost, J. T., Sterling, J., & Stern, C. (2017). Getting closure on conservatism, or the politics of epistemic and existential motivation. In C. E. Kopetz & A. Fishbach (Eds.), *The motivation-cognition interface* (pp. 56–87). Routledge.

Jost, J. T., Stern, C., Rule, N. O., & Sterling, J. (2017). The politics of fear: Is there an ideological asymmetry in existential motivation? *Social Cognition*, *35*(4), 324–353. doi: 10.1521/soco.2017.35.4.324

*Jost, J. T., & Thompson, E. P. (2000). Group-based dominance and opposition to equality as independent predictors of self-esteem, ethnocentrism, and social policy attitudes among african americans and european americans. *Journal of Experimental Social Psychology*, *36*(3), 209–232. doi: 10.1006/jesp.1999.1403

*Kalmoe, N. P. (2020). Uses and abuses of ideology in political psychology. *Political Psychology*, *41*(4), 771–793. doi: 10.1111/pops.12650

*Kandler, C., Bleidorn, W., & Riemann, R. (2012). Left or right? sources of political orientation: The roles of genetic factors, cultural transmission, assortative mating, and personality. *Journal of Personality and Social Psychology*, *102*(3), 633. doi: 10.1037/a0025560

Kant, I. (1790). *Kritik der urteilskraft*. Reclam.

*Katz, Y. J. (1988). Conservatism of israeli arabs and jews. *The Journal of Social Psychology*, *128*(5), 695–696. doi: 10.1080/00224545.1988.9922924

*Katz, Y. J., & Ronen, M. (1990). Conservatism in the adult israeli jewish population. *Personality and Individual Differences*, *11*(12), 1307–1308. doi: 10.1016/0191-8869(90)90158-N

Kelemen, L., Péter Szabó, Z., Mészáros, N., Forgas, J. P., & László, J. (2014). Social cognition and democracy: The relationship between system justification, just world beliefs, authoritarianism, need for closure, and need for cognition in hungary. *Journal of Social and Political Psychology*, 197–219. doi: 10.23668/psycharchives.1707

Kelley, T. L. (1927). *Interpretation of educational measurements.* World Book Co.

Kelly, C. (1989). Political identity and perceived intragroup homogeneity. *British Journal of Social Psychology*, *28*(3), 239–250. doi: 10.1111/j.2044-8309.1989.tb00866.x

Kelly, C. (1990). Social identity and intergroup perceptions in minority-majority contexts. *Human Relations*, *43*(6), 583–599. doi: 10.1177/001872679004300606

Kemmelmeier, M. (2007). Political conservatism, rigidity, and dogmatism in american foreign policy officials: The 1966 mennis data. *The Journal of Psychology*, *141*(1), 77–90. doi: 10.3200/JRLP.141.1.77-90

*Kemmelmeier, M. (2008). Is there a relationship between political orientation and cognitive ability? a test of three hypotheses in two studies. *Personality and Individual Differences*, *45*(8), 767–772. doi: 10.1016/j.paid.2008.08.003

Kerlinger, F. N. (1967). Social attitudes and their criterial referents: A structural theory. *Psychological Review*, *74*(2), 110. doi: 10.1037/h0024301

*Kerlinger, F. N. (1972). The structure and content of social attitude referents: A preliminary study. *Educational and Psychological Measurement*, *32*(3), 613–630. doi: 10.1177/001316447203200305

Kerlinger, F. N. (1984). *Liberalism and conservatism: The nature and structure of social attitudes* (Vol. 1). Lawrence Erlbaum Assoc. Incorporated.

*Kerlinger, F. N., Middendorp, C. P., & Amón, J. (1976). The structure of social attitudes in three countries: Tests of a criterial referent theory. *International Journal of Psychology*, *11*(4), 265–279. doi: 10.1080/00207597608247362

Kerlinger, F. N., & Rokeach, M. (1966). The factorial nature of the f and d scales. *Journal of Personality and Social Psychology*, *4*(4), 391. doi: 10.1037/h0023731

Kertzer, J. D., Powers, K. E., Rathbun, B. C., & Iyer, R. (2014). Moral support: How moral values shape foreign policy attitudes. *The Journal of Politics*, *76*(3), 825–840. doi: 10.1017/S0022381614000073

Kessler, G., & Rizzo, S. (2020, November, 05). President trump's false claims of vote fraud: A chronology. *Washington Post*. Retrieved from `https://www.washingtonpost.com/politics/2020/11/05/president-trumps-false-claims-vote-fraud-chronology/` (Accessed: January 12, 2021)

Kessler, T., Proch, J., Hechler, S., & Nägler, L. A. (2015). Political diversity versus stimuli diversity: Alternative ways to improve social psychological science. *Behavioral and Brain Sciences*, *38*, 30–31. doi: 10.1017/S0140525X14001241

Kim, Y. (2015). Does disagreement mitigate polarization? how selective exposure and disagreement affect political polarization. *Journalism & Mass Communication Quarterly*, *92*(4), 915–937. doi: 10.1177/1077699015596328

Kinder, D. R. (1983). Diversity and complexity in american public opinion. In A. Finifter (Ed.), *Political science: The state of the discipline* (pp. 389–425).

*Kirton, M. (1978). Wilson and patterson's conservatism scale: A shortened alternative form. *British Journal of Social and Clinical Psychology*, *17*(4), 319–323. doi: 10.1111/j.2044-8260.1978.tb00286.x

Kitchenham, B., & Charters, S. (2007). *Guidelines for performing systematic literature reviews in software engineering.* Citeseer.

Klar, S. (2014). A multidimensional study of ideological preferences and priorities among the american public. *Public Opinion Quarterly*, *78*(S1), 344–359. doi: 10.1093/poq/nfu010

Knight, K. (1999). Liberalism and conservatism. In J. P. Robinson, P. R. Shaver, & L. S. Wrightsman (Eds.), *Measures of social psychological attitudes: Measures of political attitudes* (Vol. 2). Academic Press.

Knight, K. (2006). Transformations of the concept of ideology in the twentieth century. *American Political Science Review*, 619–626.

Knobloch-Westerwick, S., Johnson, B. K., & Westerwick, A. (2015). Confirmation bias in online searches: Impacts of selective exposure before an election on political attitude strength and shifts. *Journal of Computer-Mediated Communication*, *20*(2), 171–187. doi: 10.1111/jcc4.12105

Knobloch-Westerwick, S., Mothes, C., & Polavin, N. (2020). Confirmation bias, ingroup bias, and negativity bias in selective exposure to political information. *Communication Research*, *47*(1), 104–124. doi: 10.1177/0093650217719596

Koleva, S. P., Graham, J., Iyer, R., Ditto, P. H., & Haidt, J. (2012). Tracing the threads: How five moral concerns (especially purity) help explain culture war attitudes. *Journal of Research in Personality*, *46*(2), 184–194. doi: 10.1016/j.jrp.2012.01.006

*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

*Kritzer, H. M. (1978). Ideology and american political elites. *Public Opinion Quarterly*, *42*(4), 484–502. doi: 10.1086/268475

Kruglanski, A. W. (1990). Motivations for judging and knowing: Implications for causal attribution. In E. T. Higgins & R. M. Sorrentino (Eds.), *Handbook of motivation and cognition: Foundations of social behavior* (Vol. 2, pp. 333–368). The Guilford Press.

Kruglanski, A. W. (1996). Motivated social cognition: Principles of the interface. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 493–520). The Guilford Press.

Kruglanski, A. W. (2013). *The psychology of closed mindedness*. Psychology Press.

Kruglanski, A. W., & Freund, T. (1983). The freezing and unfreezing of lay-inferences: Effects on impressional primacy, ethnic stereotyping, and numerical anchoring. *Journal of Experimental Social Psychology*, *19*(5), 448–468. doi: 10.1016/0022-1031(83)90022-7

Kruglanski, A. W., & Webster, D. M. (1996). Motivated closing of the mind: "seizing" and "freezing". *Psychological Review*, *103*(2), 263–283. doi: 10.1037/0033-295X.103.2.263

*Kteily, N. S., Rocklage, M. D., McClanahan, K., & Ho, A. K. (2019). Political ideology shapes the amplification of the accomplishments of disadvantaged vs. advantaged group members. *Proceedings of the National Academy of Sciences*, *116*(5), 1559–1568. doi: 10.1073/pnas.1818545116

*Kubin, E., & Brandt, M. J. (2020). Identifying the domains of ideological similarities and differences in attitudes. *Comprehensive Results in Social Psychology*, 1–25. doi: 10.1080/23743603.2020.1756242

*Kurzban, R., Dukes, A., & Weeden, J. (2010). Sex, drugs and moral goals: Reproductive strategies and views about recreational drugs. *Proceedings of the Royal Society B: Biological Sciences*, *277*(1699), 3501–3508. doi: 10.1098/rspb.2010.0608

Kuznetsova, A., Brockhoff, P. B., & Christensen, R. H. (2017). lmertest package: tests in linear mixed effects models. *Journal of Statistical Software*, *82*(13), 1–26. doi: 10.18637/JSS.V082.I13

*Lachat, R. (2011). *The issue basis of citizens' ideological self-placement.* `https://romain-lachat.ch/papers/left_right.pdf`.

Lalancette, M., & Raynauld, V. (2019). The power of political image: Justin trudeau, instagram, and celebrity politics. *American Behavioral Scientist*, *63*(7), 888–924. doi: 10.1177/0002764217744838

*Laméris, M. (2015). *On the measurement and validation of political ideology* (Unpublished doctoral dissertation). Master's thesis, University of Groningen). Retrieved from https://www. rug ....

*Lapsley, D. K., & Enright, R. D. (1979). The effects of social desirability, intelligence, and milieu on an american validation of the conservatism scale. *The Journal of Social Psychology*, *107*(1), 9–14. doi: 10.1080/00224545.1979.9922668

*Lapsley, D. K., Harwell, M. R., Olson, L. M., Flannery, D., & Quintana, S. M. (1984). Moral judgment, personality, and attitude to authority in early and late adolescence. *Journal of Youth and Adolescence*, *13*(6), 527–542. doi: 10.1007/BF02088597

Larson, H. J., Cooper, L. Z., Eskola, J., Katz, S. L., & Ratzan, S. (2011). Addressing the vaccine confidence gap. *The Lancet*, *378*(9790), 526–535. doi: 10.1016/S0140-6736(11)60678-8

*Lauderdale, B. E. (2007). *Latent versus self-reported ideology.* `http://benjaminlauderdale.net/files/papers/Lauderdale2007WP.pdf`.

Lauritzen, S. L. (1996). *Graphical models* (Vol. 17). Clarendon Press.

Lavine, H., & Latané, B. (1996). A cognitive-social theory of public opinion: Dynamic social impact and cognitive structure. *Journal of Communication*. doi: 10.1111/j.1460-2466.1996.tb01504.x

*Layman, G. C., & Carsey, T. M. (2002). Party polarization and" conflict extension" in the american electorate. *American Journal of Political Science*, 786–802. doi: 10.2307/3088434

Layman, G. C., Carsey, T. M., & Horowitz, J. M. (2006). Party polarization in american politics: Characteristics, causes, and consequences. *Annual Review of Political Science*, *9*, 83–110. doi: 10.1146/annurev.polisci.9.070204.105138

Lazer, D. M., Baum, M. A., Benkler, Y., Berinsky, A. J., Greenhill, K. M., Menczer, F., ... Zittrain, J. L. (2018). The science of fake news. *Science*, *359*(6380), 1094–1096. doi: 10.1126/science.aao2998

Lecheler, S., & De Vreese, C. H. (2012). News framing and public opinion: A mediation analysis of framing effects on political attitudes. *Journalism & Mass Communication Quarterly*, *89*(2), 185–204. doi: 10.1177/1077699011430064

Lee, G., & Cappella, J. N. (2001). The effects of political talk radio on political attitude formation: Exposure versus knowledge. *Political Communication*, *18*(4), 369–394. doi: 10.1080/10584600152647092

Lee, J. K., Choi, J., Kim, C., & Kim, Y. (2014). Social media, network heterogeneity, and opinion polarization. *Journal of Communication*, *64*(4), 702–722. doi: 10.1111/jcom.12077

Lelkes, Y. (2016). Mass polarization: Manifestations and measurements. *Public Opinion Quarterly*, *80*(S1), 392–410. doi: 10.1093/poq/nfw005

*Lentz, T. F. (1938). Generality and specificity of conservatism-radicalism. *Journal of Educational Psychology*, *29*(7), 540. doi: 10.1037/h0054001

Levendusky, M. S. (2013a). Partisan media exposure and attitudes toward the opposition. *Political Communication*, *30*(4), 565–581. doi: 10.1080/10584609.2012.737435

Levendusky, M. S. (2013b). Why do partisan media polarize viewers? *American Journal of Political Science*, *57*(3), 611–623. doi: 10.1111/ajps.12008

Lewandowsky, S., Ecker, U. K., & Cook, J. (2017). Beyond misinformation: Understanding and coping with the "post-truth" era. *Journal of Applied Research in Memory and Cognition*, *6*(4), 353–369. doi: 10.1016/j.jarmac.2017.07.008

Lewandowsky, S., Ecker, U. K., Seifert, C. M., Schwarz, N., & Cook, J. (2012). Misinformation and its correction: Continued influence and successful debiasing. *Psychological Science in the Public Interest*, *13*(3), 106–131. doi: 10.1177/1529100612451018

*Lewis, C. A., & Maltby, J. (2000). Conservatism and attitude towards christianity. *Personality and Individual Differences*, *29*(5), 793–798. doi: 10.1016/S0191-8869(99)00232-9

Lewis-Beck, M. S., Norpoth, H., Jacoby, W., & Weisberg, H. F. (2008). *The american voter revisited*. University of Michigan Press.

*Lilie, S. A., & Maddox, W. S. (1981). An alternative analysis of mass belief systems: Liberal, conservative, populist, and libertarian. *Cato Institute Policy Analysis*, *3*. `https://www.cato.org/sites/cato.org/files/pubs/pdf/pa003.pdf`.

Lodge, M., & Taber, C. S. (2005). The automaticity of affect for political leaders, groups, and issues: An experimental test of the hot cognition hypothesis. *Political Psychology*, *26*(3), 455–482. doi: 10.1111/j.1467-9221.2005.00426.x

Lodge, M., & Taber, C. S. (2013). *The rationalizing voter*. Cambridge University Press.

Loevinger, J. (1957). Objective tests as instruments of psychological theory. *Psychological reports*, *3*(3), 635–694. doi: 10.2466/pr0.1957.3.3.635

Luke, S. G. (2017). Evaluating significance in linear mixed-effects models in r. *Behavior Research Methods*, *49*(4), 1494–1502. doi: 10.3758/s13428-016-0809-y

*Lupton, R. N., Myers, W. M., & Thornton, J. R. (2015). Political sophistication and the dimensionality of elite and mass attitudes, 1980- 2004. *The Journal of Politics*, *77*(2), 368–380. doi: 10.1086/679493

*Lupton, R. N., Myers, W. M., & Thornton, J. R. (2017). Party animals: asymmetric ideological constraint among democratic and republican party activists. *Political Research Quarterly*, *70*(4), 889–904. doi: 10.1177/1065912917718960

Mackie, D. M., Gastardo-Conaco, M. C., & Skelly, J. J. (1992). Knowledge of the advocated position and the processing of in-group and out-group persuasive messages. *Personality and Social Psychology Bulletin*, *18*(2), 145–151. doi: 10.1177/0146167292182005

Mackie, D. M., Worth, L. T., & Asuncion, A. G. (1990). Processing of persuasive in-group messages. *Journal of Personality and Social Psychology*, *58*(5), 812. doi: 10.1037/0022-3514.58.5.812

Maddox, W. S., & Lilie, S. A. (1984). *Beyond liberal and conservative: Reassessing the political spectrum*. Cato Institute.

Malka, A., & Lelkes, Y. (2010). More than ideology: Conservative–liberal identity and receptivity to political cues. *Social Justice Research*, *23*(2-3), 156–188. doi: 10.1007/s11211-010-0114-3

*Maltby, J. (1997). The concurrent validity of a short measure of social conservatism among english students. *Personality and Individual Differences*, *23*(5), 901–903. doi: 10.1016/S0191-8869(97)00115-3

*Mann, W. R., & Fusfeld, D. R. (1970). Attitude sophistication and effective teaching in economics. *The Journal of Economic Education*, *1*(2), 111–129. doi: 10.1080/00220485.1970.10845306

*Maranell, G. M., & Eitzen, D. S. (1970). The effect of discipline, region, and rank on the political attitudes of college professors. *The Sociological Quarterly*, *11*(1), 112–118. doi: 10.1111/j.1533-8525.1970.tb02080.x

*Marjoribanks, K., & Josefowitz, N. (1975). Kerlinger's theory of social attitudes: An analysis. *Psychological Reports*, *37*(3), 819–823. doi: 10.2466/pr0.1975.37.3.819

Marwick, A., & Lewis, R. (2017). Media manipulation and disinformation online. *New York: Data & Society Research Institute*.

Maskor, M., Steffens, N. K., & Haslam, S. A. (2020). The psychology of leadership destabilization: An analysis of the 2016 us presidential debates. *Political Psychology*. doi: 10.1111/pops.12698

McCann, J. A. (1997). Electoral choices and core value change: The 1992 presidential campaign. *American Journal of Political Science*, 564–583. doi: 10.2307/2111777

*McCarty, N., Poole, K. T., & Rosenthal, H. (2016). *Polarized america: The dance of ideology and unequal riches*. mit Press.

*McClosky, H. (1958). Conservatism and personality. *American Political Science Review*, *52*(1), 27–45. doi: 10.2307/1953011

McCright, A. M., Dunlap, R. E., & Marquart-Pyatt, S. T. (2016). Political ideology and views about climate change in the european union. *Environmental Politics*, *25*(2), 338–358. doi: 10.1080/09644016.2015.1090371

McGarty, C., Turner, J. C., Hogg, M. A., David, B., & Wetherell, M. S. (1992). Group polarization as conformity to the prototypical group member. *British Journal of Social Psychology*, *31*(1), 1–19. doi: 10.1111/j.2044-8309.1992.tb00952.x

McGreal, C. (2020, October, 03). 'it's a hoax. there's no pandemic': Trump's base stays loyal as president fights covid. *The Guardian*. Retrieved from `https://www.theguardian.com/us-news/2020/oct/03/donald-trump-base-stays-loyal-president-fights-covid-19` (Accessed: February 08, 2021)

McKimmie, B. M., Terry, D. J., & Hogg, M. A. (2009). Dissonance reduction in the context of group membership: The role of metaconsistency. *Group Dynamics: Theory, Research, and Practice*, *13*(2), 103. doi: 10.1037/a0014554

McKimmie, B. M., Terry, D. J., Hogg, M. A., Manstead, A. S., Spears, R., & Doosje, B. (2003). I'm a hypocrite, but so is everyone else: Group support and the reduction of cognitive dissonance. *Group Dynamics: Theory, Research, and Practice*, *7*(3), 214. doi: 10.1037/1089-2699.7.3.214

McNemar, Q. (1946). Opinion-attitude methodology. *Psychological Bulletin*, *43*(4), 289–374.

*Mehrabian, A. (1996). Relations among political attitudes, personality, and psychopathology assessed with new measures of libertarianism and conservatism. *Basic and Applied Social Psychology*, *18*(4), 469–491. doi: 10.1207/s15324834basp1804_7

*Melville, D. J., & Cornish, I. M. (1993). Conservatism and gender in the perception of sex-roles in television advertisements. *Perceptual and Motor Skills*, *77*(2), 642–642. doi: 10.2466/pms.1993.77.2.642

*Middendorp, C. P., & De Vries, G. (1981). Attitudinal referents, statement items and response set: The effect of using differential item-formats on the structure of an ideological domain. *Quality and Quantity*, *15*(3), 249–277. doi: 10.1007/BF00164640

Milesi, P. (2016). Moral foundations and political attitudes: The moderating role of political sophistication. *International Journal of Psychology*, *51*(4), 252–260. doi: ijop.12158

Miller, A. S. (1994). Dynamic indicators of self-perceived conservatism. *The Sociological Quarterly*, *35*(1), 175–182. doi: 10.1111/j.1533-8525.1994.tb00405.x

Mischel, W. (2005). Alternative futures for our science. *APS Observer*, *18*(3).

Mischel, W. (2008). The toothbrush problem. *APS Observer*, *21*(11).

Morgan, G. S., Mullen, E., & Skitka, L. J. (2010). When values and attributions collide: Liberals' and conservatives' values motivate attributions for alleged misdeeds. *Personality and Social Psychology Bulletin*, *36*(9), 1241–1254. doi: 10.1177/0146167210380605

Mullainathan, S., & Shleifer, A. (2005). The market for news. *American Economic Review*, *95*(4), 1031–1053. doi: 10.1257/0002828054825619

Mullen, B., Brown, R., & Smith, C. (1992). Ingroup bias as a function of salience, relevance, and status: An integration. *European Journal of Social Psychology*, *22*(2), 103–122. doi: 10.1002/ejsp.2420220202

Myers, C. D., & Mendelberg, T. (2013). Political ideology. In L. Huddy, D. O. Sears, & J. S. Levy (Eds.), *The oxford handbook of political psychology* (2nd ed., pp. 699–734). Oxford University Press.

*Napier, J. L., & Jost, J. T. (2008). The "antidemocratic personality" revisited: A cross-national investigation of working-class authoritarianism. *Journal of Social Issues*, *64*(3), 595–617. doi: 10.1111/j.1540-4560.2008.00579.x

Newton, C. (2020, April, 28). *Youtube brings fact-check panels to searches in the united states.* Retrieved from `https://www.theverge.com/2020/4/28/21239792/youtube-fact-check-panels-videos-united-states-misinformation-covid-coronavirus` (Accessed: January 15, 2021)

Nickerson, R. S. (1998). Confirmation bias: A ubiquitous phenomenon in many guises. *Review of General Psychology*, *2*(2), 175–220. doi: 10.1037/1089-2680.2.2.175

Nie, N. H., Verba, S., & Petrocik, J. R. (1976). *The changing american voter*. Harvard University Press.

Niemi, R. G., Weisberg, H. F., & Kimball, D. C. (2001). *Controversies in voting behavior*. Cq Press Washington, DC.

*Nilsson, A., Montgomery, H., Dimdins, G., Sandgren, M., Erlandsson, A., & Taleny, A. (2020). Beyond 'liberals' and 'conservatives': Complexity in ideology, moral intuitions, and worldview among swedish voters. *European Journal of Personality*, *34*(3), 448–469. doi: 10.1002/per.2249

*Nilsson, I., & Ekehammar, B. (1990). A new swedish social attitude scale: Reliability and construct validity. *Scandinavian Journal of Psychology*, *31*(1), 55–64. doi: 10.1111/j.1467-9450.1990.tb00802.x

Nyhan, B., & Reifler, J. (2010). When corrections fail: The persistence of political misperceptions. *Political Behavior*, *32*(2), 303–330. doi: 10.1007/s11109-010-9112-2

Nyhan, B., & Reifler, J. (2015). Does correcting myths about the flu vaccine work? an experimental evaluation of the effects of corrective information. *Vaccine*, *33*(3), 459–464. doi: 10.1016/j.vaccine.2014.11.017

Nyhan, B., Reifler, J., & Ubel, P. A. (2013). The hazards of correcting myths about health care reform. *Medical Care*, 127–132. doi: 10.1097/MLR.0b013e318279486b

Oakes, P. J. (1987). The salience of social categories. In J. C. Turner, M. A. Hogg, P. J. Oakes, S. D. Reicher, & M. S. Wetherell (Eds.), *Rediscovering the social group: A self-categorization theory* (pp. 117–141). Basil Blackwell.

*O'Brien, M. U., & Ingels, S. J. (1987). The economics values inventory. *The Journal of Economic Education*, *18*(1), 7–17. doi: 10.1080/00220485.1987.10845183

Okimoto, T. G., & Gromet, D. M. (2016). Differences in sensitivity to deviance partly explain ideological divides in social policy support. *Journal of Personality and Social Psychology*, *111*(1), 98. doi: 10.1037/pspp0000080

Onorato, R. S., & Turner, J. C. (2002). Depersonalized self-conception. In Y. Kashima, M. Foddy, & M. Platow (Eds.), *Self and identity: Personal, social, and symbolic* (pp. 145–178). Psychology Press.

*Onraet, E., Van Hiel, A., & Dhont, K. (2013). The relationship between right-wing ideological attitudes and psychological well-being. *Personality and Social Psychology Bulletin*, *39*(4), 509–522. doi: 10.1177/0146167213478199

*Onraet, E., Van Hiel, A., Dhont, K., & Pattyn, S. (2013). Internal and external threat in relationship with right-wing attitudes. *Journal of Personality*, *81*(3), 233–248. doi: 10.1111/jopy.12011

*Ortet, G., Perez, J., & Wilson, G. D. (1990). Social attitudes in catalonia. *Personality and Individual Differences*, *11*(8), 857–862. doi: 10.1016/0191-8869(90)90196-X

Ortutay, B. (2021, January, 06). Twitter, facebook remove trump video amid capitol violence. *Associated Press*. Retrieved from `https://www.fox13now.com/news/national-news/twitter-facebook-remove-trump-video-amid-capitol-violence` (Accessed: January 12, 2021)

*Oskarsson, S., Cesarini, D., Dawes, C. T., Fowler, J. H., Johannesson, M., Magnusson, P. K., & Teorell, J. (2015). Linking genes and political orientations: Testing the cognitive ability as mediator hypothesis. *Political Psychology*, *36*(6), 649–665. doi: 10.1111/pops.12230

Osmundsen, M., Bor, A., Vahlstrup, P. B., Bechmann, A., & Petersen, M. B. (2020). Partisan polarization is the primary psychological motivation behind "fake news" sharing on twitter. *PsyArXiv*. doi: 10.31234/osf.io/v45bk

O'Sullivan, N. (2013). Conservatism. In M. Freeden, L. T. Sargent, & M. Stears (Eds.), *The oxford handbook of political ideologies* (pp. 293–311). Oxford University Press.

Ouwerkerk, J. W., de Gilder, D., & de Vries, N. K. (2000). When the going gets tough, the tough get going: Social identification and individual effort in intergroup competition. *Personality and Social Psychology Bulletin*, *26*(12), 1550–1559. doi: 10.1177/01461672002612009

Ovide, S. (2021, January, 08). *Trump isn't the only one.* Retrieved from `https://www.nytimes.com/2021/01/08/technology/trump-misinformation-superspreaders.html` (Accessed: January 13, 2021)

Pariser, E. (2011). *The filter bubble: What the internet is hiding from you*. Penguin UK.

Pashler, H., & Wagenmakers, E.-J. (2012). Editors' introduction to the special section on replicability in psychological science: A crisis of confidence? *Perspectives on Psychological Science*, *7*(6), 528–530. doi: 10.1177/1745691612465253

Peffley, M. A., & Hurwitz, J. (1985). A hierarchical model of attitude constraint. *American Journal of Political Science*, 871–890. doi: 10.2307/2111185

Persily, N. (2017). The 2016 us election: Can democracy survive the internet? *Journal of Democracy*, *28*(2), 63–76. doi: 10.1353/jod.2017.0025

Petty, R. E., & Cacioppo, J. T. (1979). Issue involvement can increase or decrease persuasion by enhancing message-relevant cognitive responses. *Journal of Personality and Social Psychology*, *37*(10), 1915. doi: 10.1037/0022-3514.37.10.1915

Petty, R. E., & Cacioppo, J. T. (2012). *Communication and persuasion: Central and peripheral routes to attitude change*. Springer Science & Business Media.

Petty, R. E., Cacioppo, J. T., & Goldman, R. (1981). Personal involvement as a determinant of argument-based persuasion. *Journal of Personality and Social Psychology*, *41*(5), 847. doi: 10.1037/0022-3514.41.5.847

Petty, R. E., Priester, J. R., & Brinol, P. (2002). Mass media attitude change: Implications of the elaboration likelihood model of persuasion. In J. Bryant & M. B. Oliver (Eds.), *Media effects: Advances in theory and research* (pp. 125–164). Lawrence Erlbaum Associates Publishers.

Pew Research Center. (2012, August, 24). *Political party quiz: How we placed you.* Retrieved from `http://www.people-press.org/2012/08/24/political-party-quiz-how-we-placed-you/`

Pew Research Center. (2019a, May, 14). *Majority of public favors same-sex marriage, but divisions persist.* Retrieved from `https://www.pewresearch.org/politics/2019/05/14/majority-of-public-favors-same-sex-marriage-but-divisions-persist/`

Pew Research Center. (2019b, August, 29). *U.s. public continues to favor legal abortion, oppose overturning roe v. wade.* Retrieved from `https://www.pewresearch.org/politics/2019/08/29/u-s-public-continues-to-favor-legal-abortion-oppose-overturning-roe-v-wade/`

Piepenbrink, K. (2001). *Politische ordnungskonzeptionen in der attischen demokratie des vierten jahrhunderts v. chr: eine vergleichende untersuchung zum philosophischen und rhetorischen diskurs* (No. 154). Franz Steiner Verlag.

Piurko, Y., Schwartz, S. H., & Davidov, E. (2011). Basic personal values and the meaning of left-right political orientations in 20 countries. *Political Psychology*, *32*(4), 537–561. doi: 10.1111/j.1467-9221.2011.00828.x

Poland, G. A., & Spier, R. (2010). Fear, misinformation, and innumerates: how the wakefield paper, the press, and advocacy groups damaged the public health. *Vaccine*, *28*(12), 2361. doi: 10.1016/j.vaccine.2010.02.052

Pollock, P. H., Lilie, S. A., & Vittes, M. E. (1993). Hard issues, core values and vertical constraint: The case of nuclear power. *British Journal of Political Science*, 29–50.

Pontusson, J., & Rueda, D. (2008). Inequality as a source of political polarization: A comparative analysis of twelve oecd countries. In P. Beramendi & C. J. Anderson (Eds.), *Democracy, inequality, and representation in comparative perspective* (pp. 312–353). Russell Sage Foundation New York.

Pool, G. J., Wood, W., & Leck, K. (1998). The self-esteem motive in social influence: Agreement with valued majorities and disagreement with derogated minorities. *Journal of Personality and Social Psychology*, *75*(4), 967.

Popp, E., & Rudolph, T. J. (2011). A tale of two ideologies: Explaining public support for economic interventions. *The Journal of Politics*, *73*(3), 808–820. doi: 10.1017/S0022381611000478

Posetti, J., & Matthews, A. (2018). A short guide to the history of'fake news' and disinformation. *International Center for Journalists*. Retrieved from `https://www.icfj.org/sites/default/files/2018-07/A%20Short%20Guide%20to%20History%20of%20Fake%20News%20and%20Disinformation_ICFJ%20Final.pdf` (Accessed: January 12, 2021)

*Poteat, V. P., & Mereish, E. H. (2012). Ideology, prejudice, and attitudes toward sexual minority social policies and organizations. *Political Psychology*, *33*(2), 211–224. doi: 10.1111/j.1467-9221.2012.00871.x

*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. doi: 10.1037/0022-3514.67.4.741

Prior, M. (2013). Media and political polarization. *Annual Review of Political Science*, *16*, 101–127. doi: 10.1146/annurev-polisci-100711-135242

Pro Republica. (2021, January, 06). *Deleted tweets from donald j. trump, r-d.c.* Retrieved from `https://projects.propublica.org/politwoops/user/POTUS` (Accessed: January 12, 2021)

Proch, J., Elad-Strenger, J., & Kessler, T. (2019). Liberalism and conservatism, for a change! rethinking the association between political orientation and relation to societal change. *Political Psychology*, *40*(4), 877–903. doi: 10.1111/pops.12559

*Putnam, A. L. (2015). *How do voters remember flip-flopping? memorial and social consequences of change recollection.* `https://openscholarship.wustl.edu/art_sci_etds/562/`.

*Rambo, W. W. (1973). Validation of a scale measuring liberal-conservative attitudes. *Perceptual and Motor Skills*, *36*(1), 103–106. doi: 10.2466/pms.1973.36.1.103

*Rattazzi, A. M. M., Bobbio, A., & Canova, L. (2007). A short version of the right-wing authoritarianism (rwa) scale. *Personality and Individual Differences*, *43*(5), 1223–1234. doi: 10.1016/j.paid.2007.03.013

*Ray, J. J. (1982). Authoritarianism/libertarianism as the second dimension of social attitudes. *The Journal of Social Psychology*, *117*(1), 33–44. doi: 10.1080/00224545.1982.9713404

*Ray, J. J. (1983). A scale to measure conservatism of american public opinion. *Journal of Social Psychology*, *119*(2), 293–294. doi: 10.1080/00224545.1983.9922837

Reeskens, T., Muis, Q., Sieben, I., Vandecasteele, L., Luijkx, R., & Halman, L. (2020). Stability or change of public opinion and values during the coronavirus crisis? exploring dutch longitudinal panel data. *European Societies*, 1–19. doi: 10.1080/14616696.2020.1821075

Reichart, J. (2020, April, 04). *Afd verbreitet fake news zu corona.* Retrieved from `https://www.br.de/nachrichten/deutschland-welt/afd-verbreitet-fake-news-zu-corona,Rv7jler` (Accessed: February 08, 2021)

Reiljan, A. (2020). 'fear and loathing across party lines'(also) in europe: Affective polarisation in european party systems. *European Journal of Political Research*, *59*(2), 376–396. doi: 10.1111/1475-6765.12351

*RePass, D. E. (2008). Searching for voters along the liberal-conservative continuum: the infrequent ideologue and the missing middle. In *The forum* (Vol. 6). doi: 10.2202/1540-8884.1220

Ribeiro, M. H., Calais, P. H., Almeida, V. A. F., & Meira, W. J. (2017). "everything i disagree with is# fakenews": Correlating political polarization and spread of misinformation. *arXiv preprint arXiv:1706.05924*. doi: 10.475/1234

*Riemann, R., Grubich, C., Hempel, S., Mergl, S., & Richter, M. (1993). Personality and attitudes towards current political topics. *Personality and Individual Differences*, *15*(3), 313–321. doi: 10.1016/0191-8869(93)90222-O

*Robinson, J. P., & Shaver, P. R. (1973). *Measures of social psychological attitudes.* Survey Research Center, Institute for Social Research Ann Arbor, MI.

Rock, M. S., & Janoff-Bulman, R. (2010). Where do we draw our lines? politics, rigidity, and the role of self-regulation. *Social Psychological and Personality Science*, *1*(1), 26–33. doi: 10.1177/1948550609347386

Röcke, C., & Grühn, D. (2003). German translation of the panas-x. *Unpublished Manuscript, Free University Berlin*.

*Roets, A., & Van Hiel, A. (2006). Need for closure relations with authoritarianism, conservative beliefs and racism: The impact of urgency and permanence tendencies. *Psychologica Belgica*, *46*(3). doi: 10.5334/pb-46-3-235

Roets, A., & Van Hiel, A. (2007). Separating ability from need: Clarifying the dimensional structure of the need for closure scale. *Personality and Social Psychology Bulletin*, *33*(2), 266–280. doi: 10.1177/0146167206294744

Rokeach, M. (1960). *The open and closed mind: Investigations into the nature of belief systems and personality systems.* Basic Books.

Rokeach, M. (1973). *The nature of human values.* Free Press.

*Rokeach, M., & Fruchter, B. (1956). A factorial study of dogmatism and related concepts. *The Journal of Abnormal and Social Psychology*, *53*(3), 356–360. doi: 10.1037/h0042069

Rosch, E. (1978). Principles of categorization. In E. Rosch & B. B. Lloyd (Eds.), *Cognition and categorization* (Vol. 189, pp. 27–28).

Ross, A. S., & Rivers, D. J. (2018). Discursive deflection: Accusation of "fake news" and the spread of mis-and disinformation in the tweets of president trump. *Social Media + Society*, *4*(2). doi: 10.1177/2056305118776010

Rosseel, Y. (2012). Lavaan: An r package for structural equation modeling and more. version 0.5–12 (beta). *Journal of Statistical Software*, *48*(2), 1–36.

*Ruch, W., & Hehl, F.-J. (1986). Conservatism as a predictor of responses to humour-i: A comparison of four scales. *Personality and Individual Differences*, *7*(1), 1–14. doi: 10.1016/0191-8869(86)90102-9

Ruisch, B. C., Shook, N. J., & Fazio, R. H. (2020). Of unbiased beans and slanted stocks: Neutral stimuli reveal the fundamental relation between political ideology and exploratory behaviour. *British Journal of Psychology*. doi: 10.1111/bjop.12455

*Sanai, M. (1950). A factorial study of social attitudes. *The Journal of Social Psychology*, *31*(2), 167–182. doi: 10.1080/00224545.1950.9919005

*Saucier, G. (2000). Isms and the structure of social attitudes. *Journal of Personality and Social Psychology*, *78*(2), 366. doi: 10.1037/0022-3514.78.2.366

*Schiebel, B., Riemann, R., & Mummendey, H. D. (1984). Eine aktualisierte deutschsprachige form der konservatismusskala von wilson & patterson. *Zeitschrift für Differentielle und Diagnostische Psychologie*, *5*(4).

Schmitt, M. T., Branscombe, N. R., & Kappen, D. M. (2003). Attitudes toward group-based inequality: Social dominance or social identity? *British Journal of Social Psychology*, *42*(2), 161–186. doi: 10.1348/014466603322127166

Schmuck, D., Heiss, R., & Matthes, J. (2020). Drifting further apart? how exposure to media portrayals of muslims affects attitude polarization. *Political Psychology*. doi: 10.1111/pops.12664

*Schoon, I., Cheng, H., Gale, C. R., Batty, G. D., & Deary, I. J. (2010). Social status, cognitive ability, and educational attainment as predictors of liberal social attitudes and political trust. *Intelligence*, *38*(1), 144–150. doi: 10.1016/j.intell.2009.09.005

*Schwabe, I., Jonker, W., & Van Den Berg, S. M. (2016). Genes, culture and conservatism-a psychometric-genetic approach. *Behavior Genetics*, *46*(4), 516–528. doi: 10.1007/s10519-015-9768-9

Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. *Advances in Experimental Social Psychology*, *25*, 1–65. doi: 10.1016/s0065-2601(08)60281-6

Schwartz, S. H. (1994). Are there universal aspects in the structure and contents of human values? *Journal of Social Issues*, *50*(4), 19–45. doi: 10.1111/j.1540-4560.1994.tb01196.x

Schwartz, S. H. (1996). Value priorities and behavior: Applying a theory of integrated value systems. In C. Seligman, J. M. Olson, & M. P. Zanna (Eds.), *The psychology of values* (pp. 1–24). Erlbaum.

Schwartz, S. H. (2012). Basic personal values and political orientations. In J. H. Aldrich & K. M. McGraw (Eds.), *Improving public opinion surveys: Interdisciplinary innovation and the american national election studies* (pp. 63–82). Princeton University Press.

Schwartz, S. H., & Bilsky, W. (1987). Toward a universal psychological structure of human values. *Journal of Personality and Social Psychology*, *53*(3), 550.

Schwartz, S. H., & Bilsky, W. (1990). Toward a theory of the universal content and structure of values: Extensions and cross-cultural replications. *Journal of Personality and Social Psychology*, *58*(5), 878.

Schwartz, S. H., Caprara, G. V., & Vecchione, M. (2010). Basic personal values, core political values, and voting: A longitudinal analysis. *Political Psychology*, *31*(3), 421–452. doi: 10.1111/j.1467-9221.2010.00764.x

*Seltzer, R., & Smith, R. C. (1985). Race and ideology: A research note measuring liberalism and conservatism in black america. *Phylon (1960-)*, *46*(2), 98–105. doi: 10.2307/274409

Settle, J. E., Dawes, C. T., Christakis, N. A., & Fowler, J. H. (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

Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Cengage Learning.

*Sharma, S., Shimp, T. A., & Shin, J. (1994). Consumer ethnocentrism: A test of antecedents and moderators. *Journal of the Academy of Marketing Science*, *23*(1), 26–37. doi: 10.1177/0092070395231004

Shaw, M., Cloos, L., Luong, R., Elbaz, S., & Flake, J. K. (2020, October). *Measurement practices in large-scale replications: Insights from many labs 2.* Retrieved from `\url{https://psyarxiv.com/kdurz/}` doi: 10.1037/cap0000220

*Sidanius, J. (1978). Intolerance of ambiguity and socio-politico ideology: A multidimensional analysis. *European Journal of Social Psychology*, *8*(2), 215–235. doi: 10.1002/ejsp.2420080207

*Sidanius, J. (1985). Cognitive functioning and sociopolitical ideology revisited. *Political Psychology*, 637–661. doi: 10.2307/3791021

*Sidanius, J., & Duffy, G. (1988). The duality of attitude structure: A test of kerlinger's criterial referents theory within samples of swedish and american youth. *Political Psychology*, 649–670. doi: 10.2307/3791532

*Sidanius, J., & Ekehammar, B. (1976). Cognitive functioning and socio-political ideology a multidimensional and individualized analysis. *Scandinavian Journal of Psychology*, *17*(1), 205–216. doi: 10.1111/j.1467-9450.1976.tb00232.x

*Sidanius, J., & Ekehammar, B. (1977). Cognitive differentiation and socio-politico ideology: An exploratory study. *Psychological Reports*, *41*(1), 203–211. doi: 10.2466/pr0.1977.41.1.203

*Sidanius, J., & Ekehammar, B. (1979). Political socialization: A multivariate analysis of swedish political attitude and preference data. *European Journal of Social Psychology*, *9*(3), 265–279. doi: 10.1002/ejsp.2420090305

*Sidanius, J., & Ekehammar, B. (1980). Sex-related differences in socio-political ideology. *Scandinavian Journal of Psychology*, *21*(1), 17–26. doi: 10.1111/j.1467-9450.1980.tb00336.x

*Silvia, P. J., Nusbaum, E. C., & Beaty, R. E. (2014). Blessed are the meek? honesty–humility, agreeableness, and the hexaco structure of religious beliefs, motives, and values. *Personality and Individual Differences*, *66*, 19–23. doi: 10.1016/j.paid.2014.02.043

Simon, B. (1993). On the asymmetry in the cognitive construal of ingroup and outgroup: A model of egocentric social categorization. *European Journal of Social Psychology*, *23*(2), 131–147. doi: 10.1002/ejsp.2420230203

*Simpson, A., & Laham, S. M. (2015). Different relational models underlie prototypical left and right positions on social issues. *European Journal of Social Psychology*, *45*(2), 204–217. doi: 10.1002/ejsp.2074

Skitka, L. J., Bauman, C. W., & Mullen, E. (2004). Political tolerance and coming to psychological closure following the september 11, 2001, terrorist attacks: An integrative approach. *Personality and Social Psychology Bulletin*, *30*(6), 743–756. doi: 10.1177/0146167204263968

Skitka, L. J., Mullen, E., Griffin, T., Hutchinson, S., & Chamberlin, B. (2002). Dispositions, scripts, or motivated correction? understanding ideological differences in explanations for social problems. *Journal of Personality and Social Psychology*, *83*(2), 470. doi: 10.1037/0022-3514.83.2.470

Slater, M. D. (2007). Reinforcing spirals: The mutual influence of media selectivity and media effects and their impact on individual behavior and social identity. *Communication theory*, *17*(3), 281–303. doi: 10.1111/j.1468-2885.2007.00296.x

Smith, J. R., Hogg, M. A., Martin, R., & Terry, D. J. (2007). Uncertainty and the influence of group norms in the attitude–behaviour relationship. *British Journal of Social Psychology*, *46*(4), 769–792. doi: 10.1348/014466606X164439

*Smith, K. B., Alford, J. R., Hibbing, J. R., Martin, N. G., & Hatemi, P. K. (2017). Intuitive ethics and political orientations: Testing moral foundations as a theory of political ideology. *American Journal of Political Science*, *61*(2), 424–437. doi: 10.1111/ajps.12255

Sorrentino, R. M., Bobocel, D. R., Gitta, M. Z., Olson, J. M., & Hewitt, E. C. (1988). Uncertainty orientation and persuasion: Individual differences in the effects of personal relevance on social judgments. *Journal of Personality and Social Psychology*, *55*(3), 357. doi: 10.1037/0022-3514.55.3.357

Spears, R., Doosje, B., & Ellemers, N. (1997). Self-stereotyping in the face of threats to group status and distinctiveness: The role of group identification. *Personality and Social Psychology Bulletin*, *23*(5), 538–553. doi: 10.1177/0146167297235009

Spohr, D. (2017). Fake news and ideological polarization: Filter bubbles and selective exposure on social media. *Business Information Review*, *34*(3), 150–160. doi: 10.1177/0266382117722446

*Stenner, K. (2009). Three kinds of "conservatism". *Psychological Inquiry*, *20*(2-3), 142–159. doi: 10.1080/10478400903028615

Sterling, J., Jost, J. T., & Hardin, C. D. (2019). Liberal and conservative representations of the good society: A (social) structural topic modeling approach. *SAGE Open*, *9*(2), 2158244019846211. doi: 10.1177/2158244019846211

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

*Stone, W. F., Ommundsen, R., & Williams, S. (1985). The structure of ideology in norway and the united states. *The Journal of Social Psychology*, *125*(2), 169–179. doi: 10.1080/00224545.1985.9922869

Strauss, M. E., & Smith, G. T. (2009). Construct validity: Advances in theory and methodology. *Annual review of clinical psychology*, *5*, 1–25. doi: 10.1146/annurev.clinpsy.032408.153639

Stroud, N. J. (2010). Polarization and partisan selective exposure. *Journal of Communication*, *60*(3), 556–576. doi: 10.1111/j.1460-2466.2010.01497.x

*Sturdivant, F. D., Ginter, J. L., & Sawyer, A. G. (1985). Managers' conservatism and corporate performance. *Strategic Management Journal*, *6*(1), 17–38. doi: 10.1002/smj.4250060103

*Suhay, E. (2015). Explaining group influence: The role of identity and emotion in political conformity and polarization. *Political Behavior*, *37*(1), 221–251. doi: 10.1007/s11109-014-9269-1

Sunstein, C. R. (2018a). Is social media good or bad for democracy. *Sur - International Journal on Human Rights*, *27*, 83–89.

Sunstein, C. R. (2018b). *# republic: Divided democracy in the age of social media.* Princeton University Press.

*Surridge, P. (2016). Education and liberalism: pursuing the link. *Oxford Review of Education*, *42*(2), 146–164. doi: 10.1080/03054985.2016.1151408

*Swedlow, B. (2008). Beyond liberal and conservative: Two-dimensional conceptions of ideology and the structure of political attitudes and values. *Journal of Political Ideologies*, *13*(2), 157–180. doi: 10.1080/13569310802075969

*Swedlow, B., & Wyckoff, M. L. (2009). Value preferences and ideological structuring of attitudes in american public opinion. *American Politics Research*, *37*(6), 1048–1087. doi: 10.1177/1532673X09333959

Swire-Thompson, B., DeGutis, J., & Lazer, D. (2020, May). *Searching for the backfire effect: Measurement and design considerations.* PsyArXiv. Retrieved from `psyarxiv.com/ba2kc` doi: 10.31234/osf.io/ba2kc

Taber, C. S., Cann, D., & Kucsova, S. (2009). The motivated processing of political arguments. *Political Behavior*, *31*(2), 137–155. doi: 10.1007/sl1109-008-9075-8

Taber, C. S., & Lodge, M. (2006). Motivated skepticism in the evaluation of political beliefs. *American Journal of Political Science*, *50*(3), 755–769. doi: 10.1111/j.1540-5907.2006.00214.x

Tajfel, H. (1970). Experiments in intergroup discrimination. *Scientific American*, *223*(5), 96–103.

Tajfel, H. (1978). *Differentiation between social groups: Studies in the social psychology of intergroup relations.* Academic Press.

Tajfel, H. (1981). *Human groups and social categories: Studies in social psychology.* Cambridge University Press.

Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. In W. G. Austin & S. Worchel (Eds.), *The social psychology of intergroup relations* (Vol. 56, p. 33-47). Brooks/Cole.

Terry, D. J., & Hogg, M. A. (1996). Group norms and the attitude-behavior relationship: A role for group identification. *Personality and Social Psychology Bulletin*, *22*(8), 776–793. doi: 10.1177/0146167296228002

Tetlock, P. E. (1984). Cognitive style and political belief systems in the british house of commons. *Journal of Personality and Social psychology*, *46*(2), 365. doi: 10.1037/0022-3514.46.2.365

Thorndike, E. L. (1904). *An introduction to the theory of mental and social measurements.* Columbia University Press. doi: 10.1037/13283-000

Thorndike, E. L. (1916). *An introduction to the theory of mental and social measurements.* Teachers college, Columbia university.

*Thumin, F. J. (1972). The relation of liberalism to sex, age, academic field and college grades. *Journal of Clinical Psychology*. doi: 10.1002/1097-4679(197204)28:2⟨160::AID-JCLP2270280209⟩3.0.CO;2-Y

*Thurstone, L. L. (1934). The vectors of mind. *Psychological Review*, *41*(1), 1. doi: 10.1037/h0075959

Tidy, J. (2020, April, 16). *Coronavirus: Facebook alters virus action after damning misinformation report.* Retrieved from `https://www.bbc.com/news/technology-52309094` (Accessed: January 15, 2021)

*Todosijević, B., et al. (2008). The structure of political attitudes in hungary and serbia. *East European Politics and Societies*, *22*(04), 879–900. doi: 10.1177/0888325408319103

Tomkins, S. (1963). *Left and right: A basic dimension of ideology and personality.* Atherton Press.

Törnberg, P. (2018). Echo chambers and viral misinformation: Modeling fake news as complex contagion. *PLoS one*, *13*(9), e0203958. doi: 10.1371/journal.pone.0203958

Trafimow, D., Triandis, H. C., & Goto, S. G. (1991). Some tests of the distinction between the private self and the collective self. *Journal of Personality and Social Psychology*, *60*(5), 649. doi: 10.1037/0022-3514.60.5.649

*Treier, S., & Hillygus, D. S. (2009). The nature of political ideology in the contemporary electorate. *Public Opinion Quarterly*, *73*(4), 679–703. doi: 10.1093/poq/nfp067

Tropp, L. R., & Wright, S. C. (2001). Ingroup identification as the inclusion of ingroup in the self. *Personality and Social Psychology Bulletin*, *27*(5), 585–600. doi: 10.1177/0146167201275007

*Truett, K. R. (1993). Age differences in conservatism. *Personality and Individual Differences*, *14*(3), 405–411. doi: 10.1016/0191-8869(93)90309-Q

*Truett, K. R., Eaves, L. J., Meyer, J. M., Heath, A. C., & Martin, N. G. (1992). Religion and education as mediators of attitudes: a multivariate analysis. *Behavior Genetics*, *22*(1), 43–62. doi: 10.1007/BF01066792

Tucker, J. A., Guess, A., Barberá, P., Vaccari, C., Siegel, A., Sanovich, S., ... Nyhan, B. (2018). *Social media, political polarization, and political disinformation: A review of the scientific literature (march 19, 2018).* Retrieved from `https://ssrn.com/abstract=3144139` (Accessed: January 12, 2021) doi: 10.2139/ssrn.3144139

Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987). *Rediscovering the social group: A self-categorization theory.* Basil Blackwell.

Turner, J. C., Oakes, P. J., Haslam, S. A., & McGarty, C. (1994). Self and collective: Cognition and social context. *Personality and Social Psychology Bulletin*, *20*(5), 454–463. doi: 10.1177/0146167294205002

Twitter Inc. (2020, May, 11). *Updating our approach to misleading information.* Retrieved from `https://blog.twitter.com/en_us/topics/product/2020/updating-our-approach-to-misleading-information.html` (Accessed: January 15, 2021)

Twitter Inc. (2021, January, 08). *Permanent suspension of @realdonaldtrump.* Retrieved from `https://blog.twitter.com/en_us/topics/company/2020/suspension.html` (Accessed: January 12, 2021)

Valentino, N. S., & Nardis, Y. (2013). Political communication. In L. Huddy, D. O. Sears, & J. S. Levy (Eds.), *The oxford handbook of political psychology* (2nd ed., pp. 559–590). Oxford University Press.

*Van Hiel, A., Cornelis, I., Roets, A., & De Clercq, B. (2007). A comparison of various authoritarianism scales in belgian flanders. *European Journal of Personality*, *21*(2), 149–168. doi: 10.1002/per.617

Van Hiel, A., Onraet, E., & De Pauw, S. (2010). The relationship between social-cultural attitudes and behavioral measures of cognitive style: A meta-analytic integration of studies. *Journal of Personality*, *78*(6), 1765–1800. doi: 10.1111/j.1467-6494.2010.00669.x

*Van Hiel, A., Pandelaere, M., & Duriez, B. (2004). The impact of need for closure on conservative beliefs and racism: Differential mediation by authoritarian submission and authoritarian dominance. *Personality and Social Psychology Bulletin*, *30*(7), 824–837. doi: 10.1177/0146167204264333

Vartanian, O. (2014). Toward a cumulative psychological science of aesthetics, creativity, and the arts. *Psychology of Aesthetics, Creativity, and the Arts*, *8*(1), 15–17.

Verkuyten, M., & Nekuee, S. (1999). Ingroup bias: the effect of self-stereotyping, identification and group threat. *European Journal of Social Psychology*, *29*(2-3), 411–418. doi: 10.1002/(SICI)1099-0992(199903/05)29:2/3⟨411::AID-EJSP952⟩3.0.CO;2-8

*Verma, G. K. (1978). Conservatism and personality factors in a sample of adolescents. *Contemporary Educational Psychology*, *3*(1), 51–56. doi: 10.1016/0361-476X(78)90008-5

von Collani, G., & Grumm, M. (2009). On the dimensional structure of personality, ideological beliefs, social attitudes, and personal values. *Journal of Individual Differences*, *30*(2), 107–119. doi: 10.1027/1614-0001.30.2.107

Vosoughi, S., Roy, D., & Aral, S. (2018). The spread of true and false news online. *Science*, *359*(6380), 1146–1151. doi: 10.1126/science.aap9559

Wagner, M. (2020). Affective polarization in multiparty systems. *Electoral Studies*, 102199. doi: 10.1016/j.electstud.2020.102199

*Wald, K. D., Owen, D. E., & Hill Jr, S. S. (1988). Churches as political communities. *The American Political Science Review*, 531–548. doi: 10.2307/1957399

*Walkey, F. H., Katz, Y. J., & Green, D. E. (1990). The general factor in the conservatism scale: A multinational multicultural examination. *Personality and Individual Differences*, *11*(9), 985–988. doi: 10.1016/0191-8869(90)90282-V

Walter, N., Cohen, J., Holbert, R. L., & Morag, Y. (2020). Fact-checking: A meta-analysis of what works and for whom. *Political Communication*, *37*(3), 350–375. doi: 10.1080/10584609.2019.1668894

Wann, D. L., & Branscombe, N. R. (1990). Die-hard and fair-weather fans: Effects of identification on birging and corfing tendencies. *Journal of Sport and Social issues*, *14*(2), 103–117. doi: 10.1177/019372359001400203

Watson, D., & Clark, L. A. (1999). *The panas-x: Manual for the positive and negative affect schedule-expanded form.*

Weber, C. R., & Federico, C. M. (2013). Moral foundations and heterogeneity in ideological preferences. *Political Psychology*, *34*(1), 107–126. doi: 10.1111/j.1467-9221.2012.00922.x

Webster, D. M., & Kruglanski, A. W. (1994). Individual differences in need for cognitive closure. *Journal of Personality and Social Psychology*, *67*(6), 1049–1062. doi: 10.1037/0022-3514.67.6.1049

Webster, D. M., & Kruglanski, A. W. (1997). Cognitive and social consequences of the need for cognitive closure. *European Review of Social Psychology*, *8*(1), 133–173. doi: 10.1080/14792779643000100

Webster, D. M., Richter, L., & Kruglanski, A. W. (1996). On leaping to conclusions when feeling tired: Mental fatigue effects on impressional primacy. *Journal of Experimental Social Psychology*, *32*(2), 181–195. doi: 10.1006/jesp.1996.0009

Webster, J., & Watson, R. T. (2002). Analyzing the past to prepare for the future: Writing a literature review. *MIS Quarterly*, xiii–xxiii.

Webster, S. W., & Abramowitz, A. I. (2017). The ideological foundations of affective polarization in the us electorate. *American Politics Research*, *45*(4), 621–647. doi: 10.1177/1532673X17703132

Weidman, A. C., Steckler, C. M., & Tracy, J. L. (2017). The jingle and jangle of emotion assessment: Imprecise measurement, casual scale usage, and conceptual fuzziness in emotion research. *Emotion*, *17*(2), 267.

*Welch, S., & Foster, L. (1987). Class and conservatism in the black community. *American Politics Quarterly*, *15*(4), 445–470. doi: 10.1177/1532673X8701500402

Wells, G. L., & Windschitl, P. D. (1999). Stimulus sampling and social psychological experimentation. *Personality and Social Psychology Bulletin*, *25*(9), 1115–1125. doi: 10.1177/01461672992512005

Wilson, G. D. (1973). *The psychology of conservatism.* Academic Press.

*Wilson, G. D., Ausman, J., & Mathews, T. R. (1973). Conservatism and art preferences. *Journal of Personality and Social Psychology*, *25*(2), 286. doi: 10.1037/h0033972

*Wilson, G. D., & Patterson, J. R. (1968). A new measure of conservatism. *British Journal of Social and Clinical Psychology*, *7*(4), 264–269. doi: 10.1111/j.2044-8260.1968.tb00568.x

*Wilson, G. D., & Patterson, J. R. (1969). Conservatism as a predictor of humor preferences. *Journal of consulting and clinical Psychology*, *33*(3), 271. doi: 10.1037/h0027582

Wojcieszak, M., & Garrett, R. K. (2018). Social identity, selective exposure, and affective polarization: How priming national identity shapes attitudes toward immigrants via news selection. *Human Communication Research*, *44*(3), 247–273. doi: 10.1093/hcr/hqx010

Wojcieszak, M., & Price, V. (2010). Bridging the divide or intensifying the conflict? how disagreement affects strong predilections about sexual minorities. *Political Psychology*, *31*(3), 315–339. doi: 10.1111/j.1467-9221.2009.00753.x

Wojcieszak, M., & Rojas, H. (2011). Correlates of party, ideology and issue based extremity in an era of egocentric publics. *The International Journal of Press/Politics*, *16*(4), 488–507. doi: 10.1177/1940161211418226

*Wood, T., & Oliver, E. (2012). Toward a more reliable implementation of ideology in measures of public opinion. *Public Opinion Quarterly*, *76*(4), 636–662. doi: 10.1093/poq/nfs045

Wood, T., & Porter, E. (2019). The elusive backfire effect: Mass attitudes' steadfast factual adherence. *Political Behavior*, *41*(1), 135–163. doi: 10.1007/s11109-018-9443-y

World Health Organization. (2020a, November). *Coronavirus disease (covid-19) advice for the public: Mythbusters.* Retrieved from `https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/myth-busters` (Accessed: February 08, 2021)

World Health Organization. (2020b, February). *Novel coronavirus (2019-ncov) situation report - 13.* Retrieved from `https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200202-sitrep-13-ncov-v3.pdf` (Accessed: February 08, 2021)

*Wright, J. H., & Hicks, J. M. (1966). Construction and validation of a thurstone scale of liberalism—conservatism. *Journal of Applied Psychology*, *50*(1), 9. doi: 10.1037/h0022811

Yang, J., Rojas, H., Wojcieszak, M., Aalberg, T., Coen, S., Curran, J., ... Tiffen, R. (2016). Why are "others" so polarized? perceived political polarization and media use in 10 countries. *Journal of Computer-Mediated Communication*, *21*(5), 349–367. doi: 10.1111/jcc4.12166

*Yılmaz, O., & Sarıbay, S. A. (2016). An attempt to clarify the link between cognitive style and political ideology: A non-western replication and extension. *Judgment and Decision Making*, *11*(3), 287–300.

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

*Zell, E., & Bernstein, M. J. (2014). You may think you're right... young adults are more liberal than they realize. *Social Psychological and Personality Science*, *5*(3), 326–333. doi: 10.1177/1948550613492825

Zhou, J. (2016). Boomerangs versus javelins: how polarization constrains communication on climate change. *Environmental Politics*, *25*(5), 788–811. doi: 10.1080/09644016.2016.1166602

Zick, A., Pettigrew, T. F., & Wagner, U. (2008). Ethnic prejudice and discrimination in europe. *Journal of Social Issues*, *64*(2), 233–251. doi: 10.1111/j.1540-4560.2008.00559.x

Zimmermann, F., & Kohring, M. (2020). Mistrust, disinforming news, and vote choice: A panel survey on the origins and consequences of believing disinformation in the 2017 german parliamentary election. *Political Communication*, *37*(2), 215–237. doi: 10.1080/10584609.2019.1686095

*Zumbrunnen, J., & Gangl, A. (2008). Conflict, fusion, or coexistence? the complexity of contemporary american conservatism. *Political Behavior*, *30*(2), 199–221. doi: 10.1007/s11109-007-9047-4

# Acknowledgments

Throughout my time as a doctoral researcher at the IMPRS Uncertainty and the Department of Social Psychology at Friedrich Schiller University Jena, I have received an inspiring amount of support for which I am deeply grateful.

First and foremost I wish to thank my supervisor Thomas Kessler. Having started to write my Master's thesis with him in 2017, he has always inspired me to think outside the box, to challenge what is allegedly set in stone, and - eventually - to be daring enough to embark on this journey as a doctoral researcher. I am impressed by his passion for science and have yet to leave one of our meetings without a boost in motivation and a pile of new ideas. Knowing he would always have an open ear, I have could not have wished for better supervision and support.

I am very thankful to my second supervisor Christoph Engel who has made this interdisciplinary experience especially valuable. Not only did he always give me the feeling that I could meet him at eye level (although clearly impossible), his enthusiasm for research was contagious at all times and has been reflected not least in large parts of this work.

My special thanks go to Susanne Büchner without whom a generation of IMPRS students would have despaired. Thank you for all your advice and assistance - all the way from a bumpy start throughout the valley of the second year and to this day. Along with Susanne, I wish to thank Oliver Kirchkamp, Uwe Cantner, and the whole IMPRS program. If it weren't for Oliver I would have probably never learned R or TeX, nor would I have had met a scholar as inspiring as him. A wholehearted thanks to Uwe for your support throughout the years and the lengths you went to make sure we were funded. Every IMPRS meeting I attended made me feel like I was on the right path and part of something amazing. Thanks to all my fellow IMPRSes!

I would also like to say thank you to my colleagues who became friends along this journey. To my colleagues from the social psychology department, Elena Winter, Dana

Schneider, David Urschler, Stefanie Hechler and Wala' Maaitah for the amazing time at and outside of work, and the inspiring discussions. To Elisa Hofmann, with whom I spent afternoons and evenings, planning research, trying to understand mixed effects models (will we ever know?). I would leave any of our meetings inspired, remembering why I started working in academia in the first place. Her resilience and optimism at times when others would have long thrown in the towel is unparalleled. Thank you not only for proofreading earlier drafts of this thesis, but for having become my friend. A heartfelt thank you goes out to Flavio Azevedo, my academic soul-mate and close friend. Never have I met anyone as hard-working, sharp-minded, and tender-hearted as him. I will never forget our first meeting that was scheduled for one hour and ended after four hours with me feeling as if I had just witnessed the most captivating science blockbuster of all times. You are what is right with this world. I also wish to thank Bula Chaudhuri without whom I would have maybe never had the courage to pursue my dreams. Thank you for believing in me when even I wouldn't.

Finally I wish to thank my family. My parents Milena and Michael to whom I owe everything, who would always make me feel loved and self-efficacious. My sister Myriam who is my everything and of whom I could not be prouder. My grandparents Renate, Brigitte and Roland for your unconditional support and for letting me know that if push came to shove - you would always be there for me. Most of all, I want to thank Jochen, for being there for me every step of the way and for going out of his way to support me. I feel incredibly blessed to have you in my life - without your trust and affection none of this would have been possible.

# Ehrenwörtliche Erklärung

Hiermit erkläre ich, dass mir die Promotionsordnung der Fakultät für Sozial- und Verhaltenswissenschaften der Friedrich-Schiller-Universität Jena bekannt ist. Ich habe die vorgelegte Dissertation selbstständig und ohne unerlaubte fremde Hilfe sowie nur mit den Hilfen angefertigt, die ich in der Dissertation angegeben habe. Alle Textstellen eines Dritten oder eigener Prüfungsarbeiten, die wörtlich oder sinngemäß aus veröffentlichten Schriften entnommen sind, sind als solche kenntlich gemacht. Ich habe weder die Hilfe eines kommerziellen Promotionsvermittlers in Anspruch genommen, noch haben Dritte weder unmittelbar noch mittelbar geldwerte Leistungen von mir für Arbeiten erhalten haben, die im Zusammenhang mit dem Inhalt der vorgelegten Dissertation stehen. Ich habe die vorliegende Dissertation nicht, auch nicht in Teilen, für eine staatliche oder wissenschaftliche Prüfung bzw. als Dissertationsschrift bei einer anderen Hochschule bzw. Fakultät eingereicht.

Deliah Sarah Bolesta – Jena, den