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ASYMMETRIES IN IDEOLOGIES – A QUESTION OF MEASUREMENTS?

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Differences in psychological needs and interests have been connected to the endorsement of different belief systems (Jost, Federico & Napier, 2009, p. 314). In 2017, Jost summarized findings connecting existential, relational and epistemic needs to ideology (Jost, 2017, p. 167). This thesis reevaluates the reported results concerning their assessment of ideology, differentiating between indirect and direct measures, symbolic and operational as well as economic and social ideology. Further, additional information on direct measures was derived from the source samples indicated in Jost, 2017. A total of 295 effect sizes was analyzed. Overall, Jost's (2017) results were reproducible, with the averages reported in it and the results found never deviating more than $r = .10$ from each other and straying $r \leq .05$ in nearly 89%. Next, separate analyses were conducted to assess the impact of scale-type on the results. Indirect and direct averages differed around $r(8) = .12$ ($.35 < r < .03$) from each other, the symbolic and operational averages deviated $r(9) = .07$ ($0 < r < .28$) and social and economic ideology differed on average the most with around $r(8) = .19$ ($0 < r < .36$). As the sample size for social and economic ideology was rather small, an overall average across the epistemic needs was assessed as well, supporting the previously established impact of measures with the average magnitude sizes deviating $r = .21$ from each other. All in all, the findings support a more detailed differentiation on measures of ideology in regard of asymmetric psychological predispositions, with averages of different measures only coinciding in three cases and deviating $r \geq .05$ in 16 out of 25 cases.

1. Introduction

Political ideology has been of scientific interest for decades and across fields, being examined from a political, social and psychological perspective (Jost, Fitzsimons & Kay, 2004, pp. 264; Jost, Federico & Napier, 2009, p. 309). A recurring question in this context is what exactly draws an individual towards one (and not another) ideology. Depending on the perspective taken, the answers focus on different areas to offer explanation for the endorsement of certain ideological beliefs. One such explanation draws back on psychological predispositions that are supposed to lead individuals to be attracted towards ideological contents (Jost, Federico & Napier, 2009, p. 314). In 2017, Jost summarized the current state of research regarding such asymmetries in ideologies, compiling results on the relation of epistemic, existential and relational motives (Jost, 2017, p. 171-194). The overall results were a clear indication of ideology being connected to psychological needs, supporting the idea of individuals being attracted to ideology partly because of structural fits between an ideology's content and an individual's needs and interests (Jost, 2017, p. 167). However, the assumption of asymmetrical psychological predispositions in ideologies is by no means generally acknowledged, with meta-analyses producing inconsistent results (see e.g. Jost, Sterling & Stern, 2018; Ditto et al., 2019, p. 286). While meta-analyses are generally hard to compare (Schulze, 2004, p. 191), the contradicting results, in combination with the intense debate (Jost, 2017, p. 195; Ditto et al., 2019, p. 283), are still puzzling.

To tap into this problem, this thesis will take a closer look on the measures used to assess ideology by Jost (2017), to see whether the used measures have an impact on the results. First, the terms ideology, conservatism and liberalism are clarified and popular approaches to explain their endorsement are introduced. The results reported by Jost (2017) are epitomized and compared to the results reported with the cited (Jost, 2017) source's results. Afterwards, the found results are categorized according to their type of scale and supplemented with additional findings on direct measures from the source samples. Following, the averages reported by Jost (2017) are compared to the averages calculated based on the findings from the reported source samples. To estimate the impact of measurements to assess ideology, sets of analyses were conducted that separately calculate the average effect sizes for the relation of epistemic needs according to the used measure-types. However, because of the time and extent limitations of this thesis, the focus exclusively lies on the asymmetries in ideologies regarding epistemic needs.

2. Ideology

Liberalism, nationalism, ideologies of Left and Right (Schwarzmantel, 2008, p. 25), traditionalism (Johnson & Tamney, 2001, p. 234), conservatism (Grossmann & Hopkins, 2016, p. 71) – there are many terms that are connected to ideology. And even though the general public seems to have a basic understanding of ideological content, at the same time, this knowledge proves to be shallow at best (Jost, Federico & Napier, pp. 316). Furthermore, while ideology had and has an important role in politics (Schwarzmantel, 2008, p. 8, p. 19), the term ideology is seldom used in a flattering way but instead is negatively connotated (Schwarzmantel, 2008, p. 25). So, what exactly is this concept everyone seems to know and at the same time lacks the knowledge in?

2.1 Concept and classifications of ideology

The interest to better understand ideology has especially risen in the context of the dramatic 20th century that was characterized by ideological conflict, warfare and genocide. Starting with the Frankfurt School that focused on Marx and Freud, ideology was defined as a set of socially shared beliefs that give humans meaning and inspiration but can also lead to social illusions regarding social arrangements and endanger individual freedom (Jost, Fitzsimons & Kay, 2004, pp. 264). These potential risks have been a core component of approaches defining ideologies for a long time. Conceptualized in line with dogmatism, they were understood as systems simplifying the complex world to a degree that it no longer truly relates to the real world, or even as dangerous instruments of social control, feeding totalitarian systems. However, this negative definition of ideology has been challenged since the 1960s and

ideology was redefined in neutral terms (Heywood, 2017, pp. 8). Nowadays, social sciences conceptualize ideologies as sets of ideas or beliefs that address societal order, modelling a desirable society (Schwarzmantel, 2008, p. 25; Jost, 2017, p. 186). It includes three features: (1) a perspective of the current world, a “world-view”, (2) a vision of how a better society would look like and (3) the means by which this changed order should be realized or maintained. (Heywood, 2017, p. 10; Erikson & Tedin, 2001, p. 64). These notions are socially shared and therefore contribute to an individual’s sense of belonging to a certain group as well as identity (Jost, 2017, p. 168). Political ideologies thus are normative calls for a better society, aiming and contributing to unify individuals to change the future according to a system of beliefs (Schwarzmantel, 2008, p. 26).

Historically, these systems of beliefs have been categorized on a linear axis: differentiating between “the right” and “the left”. On this axis, while communism would be an ideology of the very left, fascism would be its right pendant, enclosing (from left to right) socialism, liberalism and conservatism (Heywood, 2017, p. 15). This left-right categorization mirrors the old seating arrangements of the French Assembly hall during the late-eighteenth century. Supporters of the old establishment sat on the right side, while the opponents of the status quo sat on the left, splitting the room according to a first core difference, the preference for stability versus change (Jost, Federico & Napier, p. 310). A second, interrelated but distinguishable core dimension of the struggle between the left and the right is the acceptance of inequality versus the advocating of equality (Jost et al., 2003b, p. 342).

In more detail, liberalism is a doctrine promoting structures such as free press and elections as well as stressing the importance of a free individual (Žižek, 2012, p. 9). They support a government that is highly active in healthcare as well as welfare and see chances in planned changes. On the other hand, the conservative values tradition, order, are thought to venerate authority and prefer a less interfering government, with law-and-order and national security being exceptions. They are perceived as more moralistic and religious, while liberals are perceived as more permissive (Erikson & Tedin, 2001, pp. 65). Thus, the labeling of liberals and conservatives as “left” and “right” stems from a conflict that dates back at least to the French Revolution. As this substitution of labels has become more and more common, especially in the USA (Jost, Federico & Napier, p. 310), this thesis will use the terms “left” and “liberal” as well as “right” and “conservative” interchangeably as well.

However, this singular left-right categorization has lately been criticized as too simplifying and insufficient. For example, as complex structures, ideologies often unify contradicting elements, which can make it difficult to categorize them based on a single criterion. For instance, anarchism features both, anarcho-communist and anarcho-capitalist elements, which qualifies

it for being both, a far-left and a far-right ideology. A possible alternative is the conceptualization on a two-dimensional spectrum, e.g. with an Authority-Liberty axis, next to the traditional Left-Right dimension. Another criticism concerns similarities of the far-left and the far-right. It is often argued that extreme positions on the one-dimensional ideology axis resemble each other more than the more centrists do, calling for a horseshoe rather than a linear spectrum of ideologies (Heywood, 2017, pp. 16). Some go even further and suggest an independent dimensional structure of liberal and conservative attitudes (Tetlock, 1985, p. 746).

Still, the unidimensional conservative-liberal conceptualization remains a popular way to categorize ideology (Heywood, 2017, p. 15; Everett, 2013, p. 2). This approach is, at least partially, supported by factorial studies. Even though “liberal” and “conservative” attitudes seem to be not entirely dependent on each other, measures of liberalism and conservatism also appear to not be entirely independent either (Jost, Federico & Napier, pp. 312). As the reviewed literature in this thesis does not include non-binary measurements for ideology, this work won't be able to shed light on possible implications a poly-dimensional conceptualization would have in the context of asymmetries in ideologies. Instead, it will focus on differences and similarities between individuals that score differently on the common conservative-liberal axis.

2.2 What draws individuals towards (different) ideologies?

With classifying ideologies on a left-right dimension, the question of what draws individuals to a certain ideological direction arises. There have been many approaches that can help understanding ideology and what attracts people to it. Important approaches include Cognitive Dissonance Theory, Just World Theory, Terror Management Theory and System Justification Theory (Jost, Fitzsimons & Kay, 2004, pp. 264). A striking part of ideological beliefs is their power to legitimate actions that would usually be inexcusable. With the Cognitive Dissonance Theory's emphasis on the role of justification and rationalization for humans in a social context, it poses first theoretical explanations for this phenomenon. However, in the context of ideology, Cognitive Dissonance Theory focuses too narrowly on self-justification of hypocrisy. It lacks in explaining dynamics of complex ideologies and doesn't give information on why people justify the status quo when there is no personal choice or responsibility involved (Jost, Fitzsimons & Kay, 2004, p. 265). The Just World Theory on the other hand lays its focus on the relationship between humans and their environment, theorizing humans to have universal needs to feel in control of their surroundings. Here, ideological beliefs are understood to offer the illusion that “people get what they deserve and deserve what they get” and therefore to enable such control (Jost, Fitzsimons & Kay, 2004; pp. 265). However, this theory provides little information on why political beliefs vary and how they differ in causes and consequences. These variations

are accounted for by the Terror Management Theory that stresses defensive responses, stemming from existential anxiety triggered by threats to self-esteem and/or mortality reminders. Behavioral and ideological responses to such threat are thought to possibly vary; yet, this theory does not include information concerning distinctive determinants of specific ideologies (Jost, Fitzsimons & Kay, 2004, p. 266). Like the Terror Management Theory, the System Justification Theory sees threats to the system as triggers to intensify the justification of the existing social system. Here, cognitive, motivational, social and structural factors all contribute to the tendency to rationalize existing social, economic and political arrangements, even if they are contradictory to self- or in-group interests (Jost, 2019, p. 3).

All these approaches place factors for the preference of an ideology in surroundings as well as in self-inherent factors of an individual. The literature categorizes these factors into top-down and bottom-up processes, with top-down processes focusing on effects of the political environment and bottom-up processes stressing the importance of an individual's psychological characteristics (Jost, 2009, pp. 132).

2.2.1 Top-down processes

Top-down processes focus on the political environment for explaining ideological preferences and shifts. For example, political elites have an impact on ideological structures and content (Jost, Federico & Napier, 2009, pp. 314). In fact, even though Non-Government-Organizations have been shown to increasingly influence the political agenda (Layman & Carsey, 2002, p. 800), it can be argued that it is a minority within politics that constructs ideology. It is this minority that is perceived as having a major impact on the ideological discourse: stressing, introducing and overplaying certain ideas, topics and arguments (Federico & Goren, 2009, p. 271; Jost, Federico & Napier, 2009, pp. 315). With them institutionally and structurally having such power, political issues are most likely disproportionately portrayed and concluded in favor of the small and unrepresentative ruling groups. Yet, the political elite of a society seldom belongs exclusively to one ideological belief system but rather spreads from the right to the left side. They create an ideological "menu" ordinary citizen can refer to for e.g. voting and preferences of policies. However, constructing a system of beliefs and successfully spreading it are two different things (Jost, Federico & Napier, 2009, p. 316). Thus, it is not surprising that different levels of political sophistication concerning ideologies and their contents among the mass public have been found, with the general citizen having relatively low ideological constraint (Bennet, 2006, p. 117, 123; Barber & Pope, 2018, p. 119). Yet, this doesn't mean that ordinary citizens know nothing of ideological content (Jost, Federico & Napier, 2009, p. 316). While political knowledge is a major factor for ideological consistency and constraint (Barber & Pope, 2018, p. 115), data also suggests that even the relatively uninterested know

at least the core differences of liberal and conservative stands (Freeze & Montgomery, 2016, p. 20, 25). Lately, the consumption of partisan news channels was also shown to increase the ability of individuals to correctly perceive ideological differences of the political elite (Darr & Dunaway, 2018, p. 964). Therefore, it seems like most people possess at least a latent form of ideologies and ideological understanding and that political elites, such as politicians and media, indeed play a role in the context of ideology (Jost, Federico & Napier, 2009, p. 315-317).

Usually, top-down processes refer only to acquisition of attitudes that were mediated over ideological content produced by political elites (Jost, Federico & Napier, 2009, p. 314). However, the social environment of an individual can influence ideological attitudes beyond. For example, close personal relationships such as family and peers also affect political ideological beliefs of an individual. For example, it has been shown that individuals express more conservative attitudes after having recalled an interaction with a conservative parent, stressing the importance of such reference groups for ideological beliefs (Jost, Ledgerwood & Hardin, 2008, p. 179). Further, various psychological variables connected to an individual's environment have proven to influence ideological attitudes. Specifically, death anxiety, system instability and fear of threat and loss have been found to predict political conservatism (Jost, 2003, p. 339).

2.2.2. Bottom-up processes

While political sciences tend to focus on top-down processes of ideology, the psychological perspective usually stresses psychological antecedents of ideological beliefs. Assuming that ability and motivation but also interest affects the understanding and openness to ideological messages, the endorsed ideology of an individual should not only say something about their political environment but also about their psychological characteristics (Jost, Federico & Napier, 2009, p. 314, 317). While some reject the idea of a link between distinctive personality traits and affinities towards certain ideological beliefs (Jost, 2017, pp. 194), the idea of a connection between ideas and interests is actually not too young. Goethe wrote in his novel "Die Wahlverwandtschaften" "every attraction is reciprocal" (dt. "jede Anziehung ist wechselseitig" (Goethe, 1840, p. 216). This concept, translated as "elective affinity" in English, introduces a bidirectional concept of ideas. While people are understood to be able to choose them, it also suggests reciprocal processes, with ideas being able to choose people to a certain extent as well (Jost, 2009, p. 133).

Early thoughts on such personality-based preferences for not only certain ideas but ideologies can be traced back to the Nazi psychologist Erich Jaensch, who differentiated between a certain "J-Type" and an "S-Type". While the former was characterized by firm, consistently

pursued beliefs, the latter would judge situations ambiguously and without much persistence. Further, the J-Type would believe that human behavior is inherited, while the S-Type would stress environment and education as determinants (Carney et al., 2008, p. 810). Since then, approaches to connect ideology with psychological variables have come a long way. Many have tried to unveil whether and in which way psychological aspects are related to political attitudes. From influential work on authoritarianism by Adorno et al. (Spears & Tausch, 2014, p. 512), to left-wing “biophilous characters” and right-wing “necrophilous characters”, assessed on “live-loving” and “mechanical” scales to the inclusion of emotional differences, there indeed have been several approaches (Carney et al., 2008, p. 810-815).

In line with this perspective, Jost (2017, pp. 168) suggests that different ideologies answer to different needs and therefore attract different kinds of mindsets. This notion leads to two important implications. First, ideologies do not, contrary to a common assumption, cater the same psychological needs to the same extent. Indeed, there has been found evidence supporting this statement (Hennes et al., 2012, p. 680). Second, ideologies can be understood as motivated social cognition, used to give sought out meaning to an individual and their political environment (Jost et al., 2017, p. 343). Specifically, three categories that connect with conservative and liberal ideology on different levels have been found: relational, existential and epistemic motives (Jost, Federico & Napier, 2009, p. 308).

Relational motives sum up the desire to connect with others and to build interpersonal relationships, as well as the wish for personal and social identification. These are e.g. sought out in form of solidarity with others or a shared reality (Jost, Federico & Napier, 2009, p. 309). There are some indications for a relational aspect in ideology. For instance, data indicates conservatism to be related to personal valuation of conformity and a heightened desire to share reality with others sharing the same beliefs (Jost et al., 2018, p. 78, p. 79; Cavazza & Mucchi-Faina, 2008, p. 340). Interestingly, conservatives were not only shown to have heightened needs to share reality, but they also perceived such ingroup consensus more often (Stern et al., 2014, p. 1165). Further, data shows relations of political attitudes in children with the ones of their parents. Such transgression of partisanship from parents to children seems to be especially successful if the parents themselves hold stable attitudes, are interested in politics and if they talk about politics with their children (Sears & Brown, 2013, p. 4). In addition to parents, peers are also known for influencing ideological preferences (Jost, Federico & Napier, 2009, p. 322). With political attitudes becoming increasingly stable with adulthood, such influences seem to be especially potent through childhood and early adulthood (Sears & Brown, 2013, p. 18).

Additionally, in giving meaning to their life, assuring them to be worthy and living in a secure and meaningful system, as well as offering a way to deal with threatening circumstances, conservatism is argued to cater to existential motives (Jost, Federico & Napier, 2009, p. 320). Here, fear of death, mortality salience and threat are shown to correlate with conservatism or even facilitate a conservative shift, with not only originally conservatives but also liberals exhibiting more conservative attitudes in such cases (Hennes et al., 2012, p. 678; Jost et al., 2017, p. 339, p. 341). This supports the former assumption that ideologies do not cater to the same needs to the same extent but instead answer different motives (Hennes et al., 2012, p. 680).

Finally, conservatism and liberalism respond to epistemic motives. By offering certainty, explanations, evaluations and orientation, they address needs to reduce uncertainty and ambiguity, lower complexity and provide structure order, as well as closure (Jost, Federico & Napier, 2009, p. 318). Indeed, evidence supports a linkage between varying epistemic needs and ideological preferences. While intolerance of ambiguity, personal needs for order, structure and closure are associated with conservatism, openness to new experience, need for cognition and tolerance of uncertainty were shown to empirically relate with liberalism (Jost, 2017, pp. 174, p. 176, pp. 178; Thorisdottir, Jost & Kay, 2009, p. 16).

Interestingly, data suggests that such personality differences between liberals and conservatives can be traced back as far as into childhood, with personalities of later becoming to self-identify as liberals or conservatives already differing during preschool. Individuals who self-categorized themselves as liberal in their adulthood were described by their teachers as self-reliant, energetic, emotionally expressive, gregarious and impulsive in childhood. On the other hand, conservatives were perceived as rigid, inhibited, indecisive, fearful and overcontrolled during their childhood. This is especially interesting in this context, as children at this age don't have a set idea of ideological beliefs yet, supporting the assumption that certain ideological content does attract specific psychological variables (Block & Block, 2005, pp. 734).

As already mentioned, there is also criticism regarding the suggestion of psychological antecedents for differences in ideological preferences. For example, referring to the rigidity of the left (Jost, 2017, p. 170), critiques suggest that the psychological profiles would rather differ between people of the political center and extreme positions, disagreeing with the notion of distinctive psychological characteristics for conservatives and liberals (Jost, 2009, p. 135). However, data suggests that, while there might be a connection between closed-mindedness and ideological extremity, conservatives still score higher compared to liberals when adjusting for distance from the political center (Jost et al., 2003a, pp. 389). Further, even after adjusting

for ideological extremity, uncertainty and threat management were found to still correlate with conservatism. Additionally, while individual differences in death anxiety contributed to conservatism, such a connection was not established for general ideological extremity (Jost et al., 2007, p. 1004). It therefore seems like there indeed is a special affinity of certain psychological variables with conservatism rather than with general extremism (Jost, 2009, p. 136).

Thus, it seems like both – environmental and psychological variables – offer valuable insight for understanding ideological preferences of individuals (Jost, Federico & Napier, 2009, p. 314).

While some research focuses on the asymmetries in ideologies, other work repeatedly finds symmetries between the left and the right. For example, there has been work suggesting that conservatism as a social motivated cognition is connected to partisan bias (Ditto et al., 2019, p. 275) via heightened dogmatism and high need for structure and closure (Jost et al., 2003b, p. 339). Yet, Ditto et al. (2019) meta-analyzed 51 experiential studies on the topic of partisan bias, which's results indicated a rather contradicting outcome to the evidence supporting asymmetrical psychological variables for conservatism and liberalism. While conservatives did indeed exhibit partisan bias during decision making based on politically congenial and uncongenial information, they found such partisan bias to be just as strong among liberals (Ditto et al., 2009, p. 280).

However, the notion of asymmetries in ideologies doesn't claim that there aren't any symmetries in the psychology of liberals and conservatives. It suggests that in addition to generic psychological processes applying to the left and right alike, there are also differentiating psychological antecedents (Jost, 2017, pp. 170). Furthermore, none of the psychological variables associated with conservatism or liberalism are evaluated as being "better" or "inferior" than the other. It depends on the context, whether a trait is advantageous or disadvantageous and therefore shouldn't be evaluated without such environmental demands (Jost, 2017, p. 195).

Still, the topic of psychological asymmetries in ideologies remains a controversial one, with seemingly contradicting results, challenging theoretical underpinnings and supporting data on both sides (Jost, 2017; Ditto et al., 2019). At the very least, it remains a field that would benefit from more research and deeper insights. While the work on symmetries in ideologies is compelling as well, this thesis takes a closer look at the research addressing the asymmetries summarized by Jost (2017), specifically asymmetries regarding epistemic motivation.

3. Jost (2017) – psychological differences of the left and right

The meta-analysis by Jost (2017) reviewed the work on asymmetries in ideology, focusing on relational, epistemic and existential motives. Regarding studies on epistemic motives, the used data stems from a former meta-analysis by Jost, Sterling & Stern (2017, published 2018), which summarized data of 181 distinct samples from 14 countries, summing up to 133,796 individual participants. Separate analyses were conducted for nine different categories: dogmatism, cognitive/perceptual rigidities, need for cognitive closure, personal needs for order and structure, intolerance of ambiguity, need for cognition, cognitive reflection, integrative complexity and tolerance of uncertainties (Jost, 2017, p. 171).

While especially dogmatism and cognitive rigidity were associated with conservatism, the smallest effect sizes were observed for uncertainty tolerance. Still, all nine variables turned out to be significantly correlated with conservatism and liberalism, even though the effect sizes differed in regard of magnitude (see Figure 1) (Jost, Sterling & Stern., 2018, pp. 64). The following will give a short insight into the specific findings for each category.

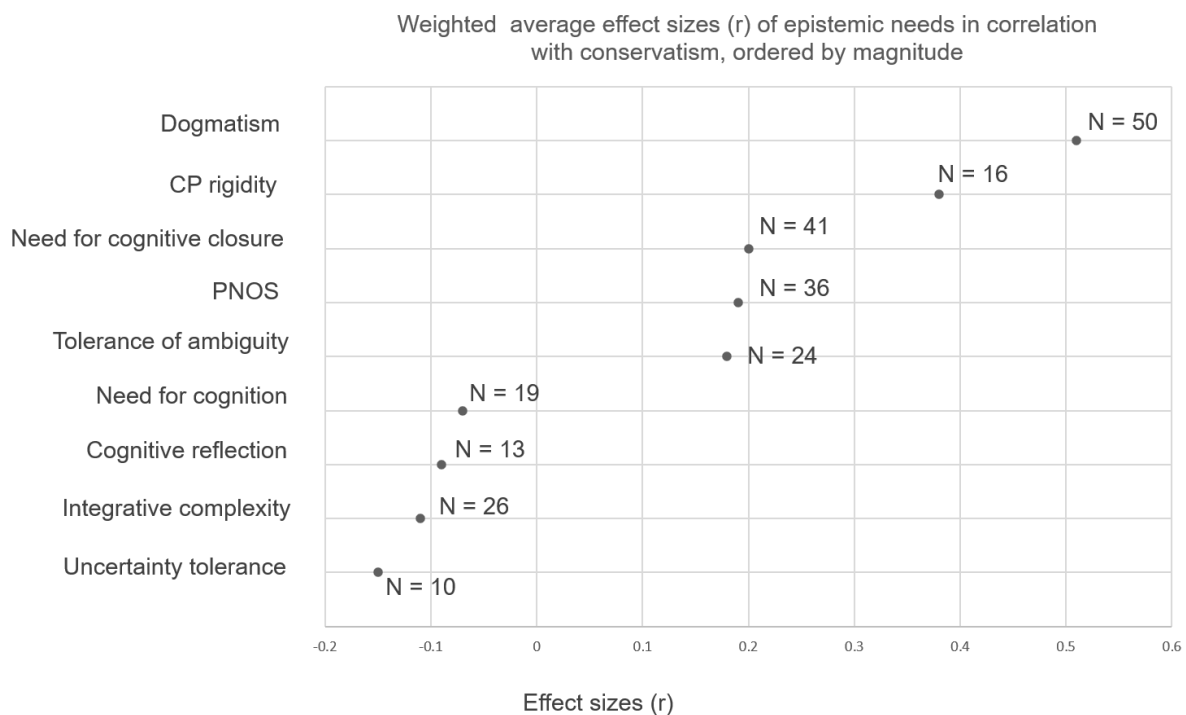


Figure 1. Weighted average effect sizes for studies investigating hypotheses of political ideology being associated with epistemic needs. PNOS: personal needs for order and structure; CP rigidity: cognitive and perceptual rigidity; number of studies included marked as N

Source. This figure was modeled after the meta-analysis by Jost, Sterling & Stern (2018) and Jost (2017)

Dogmatism, as introduced by Rokeach in the mid-1900s has to be understood in the context of authoritarianism. Trying to free the hitherto popular measure of authoritarianism of ideological content, he conceptualized a general authoritarianism as a cognitive style, naming

it dogmatism (Brown, 2004, p. 66). It focuses on closed-mindedness, characterized by a central set of beliefs concerning reality that includes convictions about absolute authority, constructing a framework for intolerance (Rokeach, 1954, p. 203). His dogmatism scale, introduced in 1956 is widely used in the psychological field and consists of ideologically neutral items (Jost et al., 2003b, p. 353) such as *“There are two kinds of people in this world: those who are for the truth and those who are against the truth”*, *“To compromise with our political opponents is dangerous because it usually leads to the betrayal of our own side”*, *“Of all the different philosophies which exist in this world there is probably only one which is correct”*, *“Most people are failures and it is the system which is responsible for this”* and *“It is only natural that a person would have a much better acquaintance with ideas he believes in than with ideas he opposes”* (Rokeach, 1956, p. 7-9). Since conservatives are thought to prefer structure and order and valuing tradition in opposition to novelty, social change and ambiguity, they are theorized to relate to the psychological construct of dogmatism (Choma et al., 2012, p. 433). To test whether dogmatism and political orientation on a right-left axis would correlate, they scrutinized 77 samples out of which 68 supported the hypothesis that dogmatism would be stronger amongst the political right. In only one case there was a negative significant relationship reported (Jost, Sterling & Stern, 2018, p. 68). Overall, both unweighted ($r = .48$) and weighted ($r = .51$) average effect sizes turned out to be positive and relatively large (Jost, 2017, p. 171).

Cognitive rigidity commonly refers to a resistance of an individual to change their beliefs, attitudes or habits, in addition to tending to develop or insist on using established mental or behavioral patterns (Greenberg, Reiner & Meiran, 2012, p. 1). Usually, cognitive or perceptual rigidity is measured with objective behavioral tasks (Jost, 2017, p. 171), such as the Rosch’s Cognitive Representations of Semantic Categories task (Rock & Janoff-Bulman, 2010, p. 28) or the Similarity-matching Navon task (Caparos et al., 2015, p. 157). Such tests measure tendencies to exclude non-prototypical examples from categories (Jost, 2017, p. 171). The Breskin (1968) rigidity test asks participants to rate their preference for abstract visual symbols, out of which some were modeled in accordance to the Gestalt course, while others were designed to alter the course of Praeganz. For example, the participants are inclined to choose between (1) two triangles, with a smaller one being perfectly placed in the middle of a bigger sized one and (2) two triangles, one smaller, one bigger, being arranged offset. Here, more rigid individuals are assumed to show preference for the “better” fit – in this case fit 1 (Breskin, 1968, p. 1203). Classic personality theories postulate that character rigidity is related to endorsing conservative beliefs (Jost et al., 2003b, p. 340). Indeed, Jost, Sterling & Stern (2018, p. 67) identified 16 studies investigating whether conservatism is empirically connected to perceptual or cognitive rigidity. The hypothesis that conservatives would score higher than

liberals on perceptual or cognitive rigidity measures was supported in nine studies and in additional six, the effect did not reach significance, yet the results were still in the predicted direction. The overall unweighted ($r = .32$) and weighted ($r = .38$) average effect sizes were not only fairly large but also significant (Jost, 2017, p. 171).

Needs for cognitive closure represents a personality disposition that describes the desire for a clear interpretation of the world, avoiding ambiguity and ambivalent cues. Individuals with heightened needs for cognitive closure prefer order, seek for predictability and certainty but when confronted with inconsistencies they feel stressed and are reluctant to accept information conflicting set beliefs and opinions. Not surprisingly, this disposition is connected to other psychological variables such as closed-mindedness and intolerance of ambiguity and is generally seen to impact an individuals' epistemic motivation (Panno et al., 2018, p. 104). A common way to measure need for closure is the need for closure scale, conceptualized by Webster and Kruglanski (Jost et al., 2003, p. 348). This scale consists of five different dimensions: preference for order and structure, affective discomfort related to ambiguity, urgency and impatience to come to congruent, closed judgments and decisions, desire for predictability and closed-mindedness and sums up to 42 items. Specifically, the scale contains items such as *"I think that having clear rules and order at work is essential for success"*, *"I'd rather know bad news than stay in a state of uncertainty"* and *"I do not usually consult many different opinions before forming my own view"* (Webster & Kruglanski, 1994, p. 1050). Jost et al. derived their motivated social cognition model from need for cognitive closure theory, proposing that people belonging to the right-wing political spectrum would show heightened desires to avoid uncertainty and risks, insofar as conservatism might answer especially well to needs of epistemic stability, clarity, order and uniformity (Jost et al., 2003b, pp. 340, pp. 344, p. 348). Jost, Sterling and Stern (2018, p. 66) identified 100 tests across seven different countries of the hypothesis that conservatism would be linked to heightened need for cognitive closure. This hypothesis was upheld in 79 cases and the overall unweighted ($r = .23$) and weighted ($r = .19$) average effect sizes were indeed positive and significant.

Personal needs for structure can be defined as a chronic need to avoid ambiguity and unpredictability by having the tendency to perceive the world as fitting into simplified schemata as well as acting according to set routines, thus structuring one's personal environment into a less complex form (Meiser & Machunsky, 2008, p. 27; Neuberg & Newsom, 1993, p. 113). Such simple, i.e. homogenous, clear and distinct structures enable the individual to form clear interpretation of new information with minimal use of cognitive resources (Neuberg & Newsom, 1993, pp. 113). Typically, this psychological variable is assessed using questionnaires (Jost, Sterling & Stern, 2018, p. 66). These questionnaires feature items such as *"It upsets me to go into a situation without knowing what I can expect from it"*, *"I find that a well-ordered life with*

regular hours makes my life tedious” and *“I become uncomfortable when the rules in a situation are not clear”* (Neuberg & Newsom, 1993, p. 131). There are several theories connecting conservatism to heightened personal needs for order and structure, such as theories of authoritarianism and uncertainty avoidance (Jost et al., 2003b, p. 358). Investigating this connection, out of 36 studies across six different countries, the hypothesis of conservatives scoring higher on personal needs for order and structure than liberals was upheld in 24 studies. In another ten studies, while the effect was not found to be significant, it still was in the predicted direction. Overall, both unweighted ($r = .20$) and weighted ($r = .18$), were positive and significant (Jost, 2017, p. 171; Jost, Sterling & Stern, 2018, p. 66).

Tolerance of ambiguity can be defined as *“the way an individual [...] perceives and processes information about ambiguous situations or stimuli when confronted by an array of unfamiliar, complex or incongruent clues”* (Furnham & Ribchester, 1995, p. 179). In turn, intolerance of ambiguity describes the tendency to react to such ambiguity with psychological discomfort. Thus, in new, unfamiliar or complex situations, individuals with low tolerance of ambiguity are theorized to experience psychological stress and have heightened ambitions to avoid such situations or contradictory cues. On the other hand, individuals with high tolerance are believed to not feel such discomfort. (Hancock et al., 2015, p. 114). There is a wide range of techniques of measurement when it comes to tolerance of ambiguity, including questionnaires such as the scale developed by Budner in 1962 (Jost et al., 2003b, p. 353). The scale features items such as *“An expert who doesn't come up with a definite answer probably doesn't know too much”*, *“I like parties where I know most of the people more than ones where all or most of the people are complete strangers”* and *“Many of our most important decisions are based upon insufficient information”*, Budner (1962, p. 34). With this, Budner's construct of tolerance of ambiguity not only assumes an aversion of ambiguity of individuals with low tolerance but even suggests individuals with high tolerance to actively seek out equivocal stimuli (Hancock et al., 2015, p. 115). Regarding political attitudes, a major psychological model theorizes individuals endorsing right-wing orientated attitudes to have higher needs of cognitive closure and them to be less tolerant of uncertainty and ambiguity than their left counter parts (Caparos et al., 2015, p. 155). Testing this hypothesis of conservatives to be less tolerant of ambiguity than liberals, 33 of 44 cases supported such assumption with intolerance of ambiguity correlating positively and significantly with right-wing orientation (Jost, Sterling et al., p. 66). There has been no case observed, where liberals were less tolerant of ambiguity and the overall effect sizes, unweighted ($r = .26$) and weighted ($r = .20$) were again positive and significant (Jost, 2017, p. 172).

A popular approach to understand information processing is the dual process theory, suggesting that human information processing can operate in two distinct ways. The first way

to process information would be associative, heavily driven by heuristics, while the second way could be described as deliberative, analytic and based on systematic reasoning (Kahan, 2013, p. 408; Pennycook & Rand, 2019, p. 224). Since conservatives are believed to rely more heavily on heuristic information processing and liberals are argued to think more analytically, it can be assumed that they score *higher in need for cognition* (Talhelm et al., 2015, pp. 251; Jost, Sterling & Stern, 2018, p. 69). Need for cognition has been defined as an individual's "tendency to engage in and enjoy effortful cognitive endeavors" (Cacioppo et al., 1996, p. 197). While individuals high in need for cognition are thought to naturally process information by seeking, thinking about and reflecting to interpret their surroundings and stimuli, people low in cognition are proposed to rely on cues given by other persons such as celebrities or experts and cognitive heuristics to make sense of their world (Cacioppo et al., 1996, p. 198). This psychological disposition can be measured with questionnaires, featuring items such as "*I find satisfaction in deliberating hard and for long hours*", "*I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought*" and "*I like tasks that require little thought once I've learned them*" (Cacioppo et al., 1996, p. 253). Jost, Sterling and Stern (2018, p. 67) found 40 samples testing the relationship of left- and right-wing orientation and need for cognition. In 25 of these cases, the association observed was indeed significant and negative with conservatism and in only three cases an opposite relationship was found. Overall, the average unweighted ($r = -.16$) and weighted ($r = -.09$) effect sizes were significant and negative, although relatively small in magnitude.

Further, from the dual process theory, another hypothesis other than the assumption that conservatives score lower on need for cognition, can be derived. Specifically, conservatives are theorized to score lower on *cognitive reflection*, which refers to the tendency of an individual to rely more on heuristics and intuition or on reflection in their reasoning, thus to either process information in a heuristic or analytical manner (Deppe et al., 2015, p. 315). Amongst others, cognitive reflection can be measured using the Cognitive Reflection Test (Frederick, 2005), which is composed of three items, designed to determine whether the subject answered the question intuitively, resulting in an incorrect answer, or whether they would reflect their answers, resulting in the correct response (Deppe et al., 2015, p. 315). One such question is: "*A bat and a ball cost \$1.10 in total. The bat costs \$1.00 more than the ball. How much does the ball cost?*" (Frederick, 2005, p. 27). While the intuitive answer would be \$.10, the correct answer is \$.05. Thus, the answer given would indicate whether the individual processes information in a more intuitive or analytical manner (Deppe et al., 2015, p. 315). In line with Talhelm et al. 's (2015, pp. 251) argumentation, liberals should think more analytically, as they are less conformity orientated. Studies investigating such connection of ideology and cognitive reflection showed that there seems to be such a connection. In the 13 studies

analyzed, 11 studies upheld such hypothesis and negative and significant unweighted ($r = -.13$) and weighted ($r = -.10$) average effect sizes indicated that conservatives are indeed less cognitive reflective (Jost, Sterling & Stern, 2018, p. 69; Jost, 2017, p. 176).

Integrative complexity describes the extent to which an individual differentiates among multiple perspectives and to which degree they integrate such complexity to their argumentation (Jost et al., 2003b, p. 353). It therefore measures a central part of deliberativeness, namely the degree to which contributions in favor or against a given proposition are supported with arguments (Brundidge et al., 2014, p. 743). In contrast to research concerning relations of political ideology and e.g. dogmatism and rigidity, which usually focuses on the general population, research on integrative complexity has had a predominant focus on the political elites. To measure integrative complexity, usually content-analytic techniques are employed (Jost et al., 2003b, p. 353), analyzing e.g. the structure of written passages (Conway et al., 2016, p. 783) or the used language in terms of exclusive and tentative vocabulary, negations and conjunctions (Brundidge et al., 2014, p. 747). It can be theorized that liberals think more analytically since they value individualism, have looser social bonds and endorse individual identities over group identities, in contrast to conservatives, who prioritize loyalty, authority and sanctity (Talhelm et al., 2015, pp. 251). This would culturally make them less open to the integration of multiple perspectives on a topic. Jost, Sterling & Stern (2018, p. 67) analyzed 40 samples on the hypothesis that political ideology is correlated with integrative complexity. Out of these, they identified 20 cases that upheld such hypothesis, with significant negative relationships between integrative complexity and conservatism. Even though the opposite relationship was observed in two cases, the overall negative and significant effect sizes, unweighted ($r = -.19$) and weighted ($r = -.15$), support the initial hypothesis of integrative complexity being more endorsed by the left-wing.

Intolerance of uncertainty describes the tendency to react negatively towards equivocal stimuli possibly having negative consequences. Although ambiguity intolerance and intolerance for uncertainty are often thought to be synonymous, they actually do refer to slightly different constructs. Whereas intolerance for ambiguity corresponds to the (in)capacity to deal with ambiguous present situations, intolerance for uncertainty tolerance describes the ability to deal with an uncertain future, with possible negative consequences. Thus, in case of ambiguity intolerance, the present is perceived threatening and in case of uncertainty intolerance, the stimuli regarding the future is deemed threatening. While both these constructs do theoretically overlap with need for cognitive closure in some facets and are somewhat correlated, this overlap is only partial. Need for cognitive closure describes the motivation to pursue or avoid cognitive closure, while tolerance for ambiguity and uncertainty have their focus on the negative reactions to ambivalent situations (Iannello et al., 2017, p. 2). Uncertainty tolerance

can be measured in various ways, including aesthetic preferences in art and literature or with questionnaires featuring items such as “*I can’t stand being taken by surprise*” (Jost, Sterling & Stern, 2018, p. 64). Since conservatism is understood to be linked with conservation, valuing conformity, security and tradition versus openness and stimulation, it can also be associated with making decisions based on established rules versus seeking and being open to the novel. Thus, conservatism can be theoretically linked to uncertainty tolerance, prioritizing traditional values in thought processes and maintaining the known and therefore safe status quo (Malka et al., 2014, p. 1032). Such linkage has indeed been found. From 16 investigated cases, 13 upheld such hypothesis significantly, empirically associating uncertainty tolerance negatively with conservatism and the unweighted ($r = -.35$) and weighted ($r = -.07$) average effect sizes being significant and negative (Jost, Sterling & Stern, 2018, p. 64).

Overall, the findings of Jost, Sterling and Stern (2018) seem to support the suggestion that ideological beliefs can be associated with psychological predispositions connected to epistemic motivation, underpinning the idea of conservatism as a motivational social cognition.

4. Asymmetries or symmetries – a question of measuring?

On the first glance, the meta-analysis by Jost, Sterling and Stern (2018) does indeed paint a uniform picture of psychological underpinnings of asymmetries in ideologies. Most of the average effect sizes are significant and even though they might vary in their magnitude, they all surpass or at least scrape at $r = .10$ (Jost, Sterling & Stern, pp. 64 – 69). However, taking a closer look at the data, it turns out to not be unanimous, with the predicted directions and statistical significance observed in the majority of but not in all samples (Jost, 2017, p. 172 – 180). Further, the former criticism of the conceptualized individual psychological differences also adds to a confusion. How can one meta-analysis come to a seemingly contradictory result in regard of ideology and epistemic motivation to another (see Jost, Sterling & Stern, 2018; Ditto et al., 2019)? Or to put it in more simple terms: how can the results largely vary when measuring the same phenomenon? One possible answer to this question would be because they perhaps don’t.

Schimmack (2019) proposes that one major challenge of today’s psychology is its “validation crisis” (Schimmack, 2019, p. 3). In the field of psychology, used measurements often lack in construct validity, meaning they don’t measure variations in the construct they are applied for but instead measure something else, which might very well be connected to the construct in question but should not be mistaken for the same (Schimmack, 2019, p. 3, p. 7, p. 17). However, since psychological research usually deals with constructs that are not directly observable, building instruments to measure these constructs reliably poses a challenge. This

difficulty is mirrored in social sciences practice, where measurements are often used without proper references concerning their validity (Flake & Fried, pp. 3). In the context of asymmetries in ideologies, this critique opens the question about the used measurements behind this field of research. How is ideology operationalized and what impact could these measurements have on the results? Exactly which measures make up the term ideology in case of the meta-analysis by Jost (2017)?

Though alluring, this thesis will not include a deeper analysis on additional meta-analyses such as Ditto et al.'s (2019) study, as the time restrictions of this thesis do not allow a broader sample size. Therefore, this thesis will keep its focus on Jost's presidential address (2017).

4.1 The current thesis

Based on the question of the measures used in the studies summarized in Jost's (2017) paper, this thesis will take a closer look at the instruments used to assess ideology and will compare the results stemming from different types of scales amongst each other. This might not only provide a better insight into the meta-analysis itself but also on the topic of asymmetries in ideologies in general as well. It is expected that different types of measures will impact the results on asymmetric psychological predispositions, which could offer an explanation to some seemingly controversial results in this field.

Regarding the measurement of ideology, while many studies collect data by means of multiple scales, there are several techniques frequently used to assess this concept. For example, some directly ask the subjects about their ideological stance (Rock & Janoff-Bulman, p. 28; Kossowska & Van Hiel, 2003, p. 506; Kelemen et al., p. 202), others concentrate more on or include the evaluation of policies (Soenens, Duriez & Goossens, 2005, pp. 114; Crowson, 2009, pp. 455) or use indirect measures such as personality variables to empirically gauge ideology (Everett, 2013, pp. 2). This thesis will focus on three specific categories of such measures: psychological/indirect versus direct, symbolic versus operational and social versus economic scales.

Indirect measure use concepts related to conservatism to assess ideology (Everett, 2013, p. 3). As the work by Adorno et al. (1950) on authoritarianism influenced the research in underlying psychological variables of political attitudes without doubt (Spears & Tausch, 2014, p. 512), it is not too surprising that their concept and developed scale, the F-scale, has been further developed and reviewed regarding its informative value on ideology (Adorno et al., 1950, pp. 262; Everett, 2013, p. 3). One such development is Altemeyer's Right-Wing Authoritarianism (RWA) that combines authoritarian aggression, authoritarian submission and conventionality. Presumably, RWA is distinguishable from general conservatism (Knight, 1998,

p. 102). Others concluded that RWA is in fact “just another conservatism scale” (Ray, 1985, p. 272). Anyhow, RWA has been conceptualized and understood as a measure of conservatism, even if designed as a niche form of conservatism (Knight, 1998, pp. 102), especially regarding the characteristic resistance towards change of conservatism (Leone & Chirumbolo, 2008, p. 757). Another personality variable often named in relation with conservatism is an individual’s Social Dominance Orientation (SDO) (Everett, 2013, p. 3). SDO is understood as an individual’s inclination to interpret their social environment as a competitive jungle in which they desire their own in-group to be superior to outgroups (Pratto et al., 1994, p. 742; Soenens, Duriez & Goossens, 2005, p. 111). As such it has been connected to the acceptance of inequality characteristic of conservatism (Malka et al., 2014, p. 1046; Leone & Chirumbolo, 2008, p. 757). However, even though clearly and theoretically linked to conservatism, both, RWA and SDO, should not be mistaken for being synonymous with ideology. For example, it is possible to endorse conservative values without the general desire to be dominant towards an outgroup but rather because of e.g. a strong belief in equity and responsibility. In an analogous manner, conservatism and RWA might oftentimes but not always occur simultaneously. Theoretically, authoritarianism describes an “aversion to differences regarding space [...], while conservatism reflects aversion to differences over time” (Everett, 2013, p. 3). While authoritarian people would therefore reject e.g. divers beliefs in shared space, conservatives are thought to reject the change of e.g. beliefs held by a society. Thus neither, RWA nor SDO, are the same as ideology and should therefore also not be used as measures for conservatism (Everett, 2013, p. 3).

Instead of measuring ideology indirectly by relying on certain correlations between attitudinal constructs such as RWA and SDO, it’s therefore recommended to approach ideology in a direct fashion (Everett, 2013, p. 1-3). Such direct measures include instruments that e.g. ask the participant directly to indicate the ideology they feel to endorse, or that assess ideological beliefs through questioning their attitudes on political objects through e.g. so called “feeling thermometers” (Knight, 1998, p. 61-66). While there are many variations regarding the exact wording (Knight, 1998, p. 6), in general, ideological self-labeling, or ideological self-identification (ISD), asks the participant a question such as “*Generally speaking, would you consider yourself to be a liberal, a conservative, a moderate, or haven’t you thought much about this?*” (Federico, Fisher & Deason, 2012, p. 385). Possible answering formats are commonly either arranged in a e.g. 1 (very liberal) to 7 (very conservative) scaling or structured in a way allowing less choices in the moderate spectrum with e.g. forced choice items (Knight, 1998, p. 6).

While the ideology assessed through self-identification is also referred to as *symbolic* ideology, beliefs that are expressed through attitudes on certain policies are summarized under the term

operational ideology (Ellis & Stimson, 2012, p. 11). Interestingly, while scales of both types are used to assess ideology on the same conservatism-liberalism spectrum, the results can heavily vary within an individual. Reviewing data on symbolic and operational ideology of American citizens, Ellis & Stimson (2012, p. 72) conclude that while the majority of Americans symbolically identify as conservative, they appear operationally liberal at the same time. This phenomenon could possibly be due to a non-coherent concept of ideology. Indeed, data suggests that the concepts of ideological “left” and “right” are too abstract for the general citizen, indicating that operational measures might give a better understanding of an individual’s ideological beliefs (Bauer et al., 2017, pp. 572). Additionally, in the US, the public image of “liberals” has historically been a difficult matter, associated with e.g. the race riots of 1965 to 1968 and ideas going against the American mainstream, such as the “Acid, Amnesty, and Abortion” supporters in the early 1970s (Ellis & Stimson, 2012, p. 81, p. 84). Such negative imagery might add to a reluctance to identify as liberal in an US-American context. Thus, symbolical and operational ideology seem to be very different (Ellis & Stimson, 2012, p. 72), which should be noted and considered in research concerning ideology (Everett, 2013, pp. 2). Problematic in case of operational instruments are their expiration dates and validity of portraying attitudes distinguishing between the left and the right. Since political issues change with time, a conservatism scale developed in the 60s will likely have troubles to properly relate to contemporary conservatives. Further, such scales rely on the scientists behind the instrument to properly identify topics typifying ideological beliefs. Because of this, operational scales can give important insight on an individual’s ideology but do have to be carefully applied and evaluated (Everett, 2013, p. 2).

Another possible categorization concerning ideology is the differentiation between social or cultural and economic ideology (Bauer et al., 2017, p. 557). While social conservatism focuses on social traditions, values and norms, economic conservatism refers to attitudes on the governmental involvement in regulating private companies and economic life of the individual. Following this logic, it can be possible to be economically conservative while being socially liberal and vice versa (Everett, 2013, p. 1). On the other hand, research has shown that the social and economic ideology assessed through ISD are highly intertwined, sharing a variance of about 50%. When concentrating on the operational measures, they shared a variance of up to 60%, although for individuals low in political sophistication the shared variance reached up to only 36% (Azevedo et al., 2019, pp. 69). Yet, undoubtedly related, there indeed seems to be at least some variance between social and economic attitudes, which encourages to include such measurement differentiation when taking a closer look on asymmetries in ideologies.

4.2 Methods

To analyze the impact measurement-methods have on results regarding asymmetries in ideology, the results reported by Jost (2017) concerning the nine sub-categories of epistemic needs were reviewed. There were few papers used by Jost (2017) that are inaccessible, e.g. unpublished data, missing archives of old articles. These papers are commented with *source not found* and are excluded from the categorization process as well as from the following analysis. If it was possible to find a paper matching with the information given by Jost (2017) on certain unpublished data, i.e. fitting authors and content, the paper was included and marked as following: *author (unpublished/year)*.

In a first step, the effect sizes reported by Jost (2017) were compared to the results of the original papers, in terms of used type of scale, whether the effect size reported by Jost (2017) were able to be matched with results of the cited source. Further, additionally reported information on correlations of the concerned psychological variable, such as e.g. dogmatism, and symbolic, operational, social and economic ideology was recorded.

Reproducibility. The effect sizes reported by Jost (2017) were compared to the results of the indicated sources. Option *NO* applied to cases where no good match between source and Jost (2017) was formable, where the source did not report fitting correlations (no fitting results found) or where effect size of the original source was not reported in the correlation-coefficient r . Option *YES* was marked when a match between source and Jost (2017) was found. Since Jost (2017) did not mention exact numbers but presented the effect sizes on graphs this matching process was impeded and information on the level of assurances included. Option *VERY SURE* was marked when the number deducted from Jost's (2017) graphs posed a possible perfect match regarding their magnitude with the source reported results. Additionally, the information on significance given by Jost (2017) (significant or not significant) had to coincide. In cases where the significance information was not reported by the paper, the categorization was taken in favor of Jost (2017), assuming that the reported significance levels were deducted from the additional information given by the studies. The same applies to the by Jost (2017) reported effect sizes that were averaged. In these cases, the significance information reported in the chart was deducted from the significance information for the effect sizes that were averaged. If at least 80% were significant, the average was marked as significant, otherwise, they were marked as not significant (n.s.). However, since this is only a rough approximation to significance, if this deducted information differed from the significance information given by Jost (2017) it was nevertheless indicated as a perfect match. Option *KIND OF SURE* was noted when the effect sizes reported by Jost (2017) and results reported by the sources felt to differ only marginally and/or the significance

information differed. Option *NOT SURE* was marked when the magnitudes only roughly matched up, e.g. in cases where Jost's (2017) graph clearly indicates a different magnitude size but the magnitude difference to the results of the source in total doesn't seem to be too far off.

Type of Scale. The scales used by Jost (2017) to assess ideology in the referred sources were examined. Scales were identified as being used by Jost (2017) based on matching effect sizes in combination with matching content, meaning the scale could have theoretically been used as an ideology-measure. If the study only included one measure that could possibly measure ideology, this scale was still categorized even in the case of the magnitude sizes not matching up with Jost's (2017) or if the study did not include any information on a correlation of the scale and psychological variable in question. If there were more than one measure possible for measuring ideology but no correlation matched with Jost's (2017) reported effect size, the type of scale was marked as *NOT IDENTIFIABLE*. This also applied if no possible measure of ideology was found in the cited study. The scales that were identifiable were categorized into six types, namely *Psychological*, *Direct*, *Symbolic*, *Operational*, social (*Operational^s*) and economic (*Operational^e*). *Psychological* applied to scales that measured ideology indirectly, i.e. taking psychological constructs, such as RWA, SDO or morals, as indicators for an individual's ideology. A scale was categorized as *direct*, if ideology was measured directly, i.e. either operationally, symbolically or any combination. Measures of ISD were summarized under the category of *symbolic*, which was also the case if the ISD only referred to e.g. social ideology. *Operational* measures included an array of instruments assessing political attitudes. These could be identified in the form of e.g. political beliefs questionnaires, conservatism scales such as the C scale (Wilson-Patterson, 1968) but also in the form of external ratings. For example, Tetlock et al. (1984, p. 982) used valuations by the political organization Americans for Democratic Action (ADA) of senatorial voting records to identify the ideological beliefs of senators. Usually, voting is only indirectly influenced by ideology and cannot be entirely explained by it (Jacoby, 2009, p. 591; Holm & Robinson, 1978, p. 238). However, in case of the politically sophisticated, to which the political elite belongs (Lupton, Myers & Thornton, 2015, p. 373), it was shown that voting is highly ideology consistent (Knight, 1985, pp. 849; Levitt, 1996, p. 434). Based on these circumstances, the ADA ratings of senatorial voting records were included as an operational measure of ideology, assuming that these votes effectively mirrored the senators' evaluation of the given political objects. Furthermore, party affiliation was usually not regarded as an ideological measure, as they certainly are bound to be related to a certain degree but are not entirely dependent on each other (Holm & Robinson, 1978, pp. 241; Barber & Pope, 2019, p. 43; Lupton, Smallpage & Enders, 2020, p. 246). However, in case that party affiliation was

incorporated with ideological measurements to an index, the results were still incorporated. This decision was based on the assumption that the variable on party affiliation would not distort the indication of ideological belonging obtained through the other measures of the index too heavily. Support for this decision can be drawn from research regarding the relationship of political affiliation and symbolic as well as operational ideology. As for symbolic ideology, political affiliation is indeed intertwined with ideological self-identification and data suggests that this trend is further getting stronger with time (Twenge et al., 2016, p. 1377). In case of operational ideology, party affiliation has been shown to significantly impact policy preferences (Carsey & Layman, 2006, p. 474), indicating a stable connection between one's party preferences and one's evaluation of policies. Therefore, albeit not the same, when combined into an index with ideological measures, ideology and party preferences should not intervene with each other heavily enough to render such index ineffective for probing ideological beliefs. Some scales specifically concentrated on economic or social attitudes to assess ideology, such as the Middendorp Cultural conservatism scale (Duckitt & Sibley, 2009, p. 297; Crowson, 2009, pp. 454). These cases were categorized accordingly as either *Operational^S* in case of a social focus and *Operational^E* if only economic ideology was assessed. Only operational scales were categorized as gauging social or economic ideology. Therefore, if participants were asked to self-identify regarding social or economic ideology, the instrument was classified as symbolic. When different types of scales were combined, e.g. in form of indices or formed averages of multiple scales, the according scales used are listed together.

Magnitude size reported by Jost. If the results reported by Jost (2017) and the found results from the original source did not seem to match up perfectly, the magnitude size reported by Jost (2017), including the information on significance, was approximately noted. In case that the significance level was not marked in the original source, the significance level reported by Jost (2017) was commented. All magnitude sizes are, in line with the original graphs by Jost (2017), reported in measures of r (Pearson's correlation coefficient).

Magnitude size reported by source paper. The correlations between the psychological variable in question and by Jost (2017) used scale are reported in r . If the paper provided information on the significance of these correlations, they were indicated. In case the paper did not indicate information regarding the significance of the correlation, the reported effect size is followed by *significance information not found*. Only effect sizes reported in r were included. If alternative coefficients were used, *reported size not r* is commented. Some cases indicated zero-order as well as partial correlations. Here, only zero-order correlations were reported, as these are better comparable with the others samples. If the paper did not include correlations on the variables in question, *no fitting results found* is marked. In some cases, the

reported effect size by Jost (2017) is an average taken of multiple correlations. These effect sizes were marked using square brackets.

Additional magnitude sizes given by source samples. The reported source samples were checked on additional information concerning correlations of the target variable (e.g. dogmatism) and ideological measures apart from the scale used by Jost (2017). If such additional correlations of operational, symbolic, economic and symbolic ideology and the target variable were reported in r , the effect sizes were noted accordingly, including information on significance and exact type of scale. Since measures that assess ideology indirectly with the help of psychological constructs such as e.g. RWA have been shown to be not fit to measure an individual's ideology (Everett, 2013, p. 3), no additional information was collected on according correlations. The categorization was conducted following the same pattern as the classification of the scale used by Jost (2017). If information on liberalism and conservatism was assessed separately for one type of ideological measure, the correlation coefficients were averaged, as this would have happened during the second step anyway. The full categorization can be found in the appendix, Table 1.

In a second step, average effect sizes were calculated in a multiple-step procedure based on the formerly obtained findings for each of the nine psychological variables connected to epistemic needs featured in Jost's (2017) meta-analysis. First, averages were calculated for cases categorized as *very surely* reproducible, followed by averages that combined cases categorized as *kind of surely* and *not surely* reproducible. In case of the *kind of surely* and *not surely* reproducible effect sizes, instead of relying on the information indicated by Jost (2017), only verifiable data, i.e. the data taken from the source samples, was included. This ensures that the categorizations of the scales in these cases are valid. Further, averages of the non-reproducible results and averages of the additional information given by the source samples were calculated. Second, combined averages were formed, adding and averaging the four separate average sizes until an average effect size that contains all assessed information is calculated.

This process was separately conducted four times in each psychological variable, separating information on the dimensions *psychological* versus *direct*, *symbolic* versus *operational* and *economic* versus *social* types of measures. However, as symbolic and operational measures belong to direct measures and social and economic ideology can only be identified operationally, instead of allotting results exclusively to one average dimension, the data was rather thinned out. In other words, effect sizes e.g. obtained through economic measures were also included in the averages of operational and direct measures but not vice versa. Yet, if a result was identified to stem from unrelated types of scales simultaneously, e.g. symbolic and

psychological, the results were excluded from all these analyzing dimensions, except for the following. In addition to the mentioned averages, a combinational average effect size of all types was assessed as well. This allowed, on one hand, to try reproducing Jost's (2017) results, and on the other hand, to have a basis for estimating the impact of different measurement types on found asymmetries in ideologies. Because of the aim to reproduce Jost's (2017) results in comparison to the psychological-direct, the operational-symbolic and the social-economic averages, the average of the total combinational average was built up with minimal difference. While in the former cases, the additional data collected from the source samples directly followed the very likely reproducible average, in the latter total combination average these sizes were fused in last. However, this process would not allow the calculation of an average made up of entirely verified effect sizes for the other combinational averages. Hence, this process was not adapted to all cases. Information on significance was added up and recorded, but since the information was not obtainable in many cases, final significance levels of the averages were not estimated. For the results reported by Jost (2017) that represented averages, the self-estimated significance information was recorded.

Since there were very few data concerning correlations of social or economic ideology and the featured psychological variables, an average combining all effect sizes across was calculated. Even though the specification toward specific variables was thereby lost, at least an overall impact of the social and the economic dimension on asymmetries in ideologies was deducible. To have a base for such a comparison, an average of the general asymmetries in ideologies including all types of measures was additionally calculated. However, as the measures for conservative ideology related to some featured variables positively and to others negatively, taking an average as such would be distorted. Therefore, adjusted averages were additionally calculated, in which all algebraic signs of its components were switched. This applied to the results of cognitive reflection, need for cognition, integrative complexity and tolerance of uncertainties.

Five studies were excluded from all analyses, even though the effect sizes reported by Jost (2017) and the source sample appeared to match. However, in these samples, the measures that seemed to be used by Jost (2017) to assess ideology were not categorizable into the scale-types of interest. Specifically, this decision affected indications of voting behavior in elections (Chirumbolo et al., 2004, p. 249), measures of political open-mindedness (Price et al., 2015, p. 1497), the Authoritarianism Rebellion Scale (Kohn, 1974, p. 249), the form 60 of the Levinson-Sanford scale (Levinson & Sanford, 1944; used by Barron, 1953, p. 168) and the membership to student political organizations (Kohn, 1974, p. 253). While voting behavior is empirically indeed impacted by ideology, it is usually not directly reflecting ideological beliefs

(Smith, 1999, p. 40; Jacoby, 2009, p. 591) and was therefore excluded as an ideological measure, the exemption being the ADA ratings mentioned above. The political open-mindedness focused was taken out from the analyses since its focus lied on the endorsement of tolerance rather than of certain attitudes (Price et al., 2015, p. 1489). The Authoritarianism Rebellion Scale was excluded from the analyses as it supposedly is an authoritarian measure void of a conservatism hinge (Kohn, 1974, p. 245) and the form 60 of the Levinson-Sanford scale was not classifiable in the given context as it is a measure of anti-Semitism, not ideology (Barron, 1953, p. 172). Finally, the membership of a political student organization was not deemed sufficient as an indicator of ideology.

4.3 Results

With nine sources being undiscoverable, 217 samples reported by Jost (2017) were evaluated. From the source samples, additionally 84 effect sizes were acquired, adding up to 301 sizes that were looked at. Six correlations were excluded from the analyses, as their ideology-measure did not fulfill the requirements, leaving a total of 295 effect sizes being analyzed.

Splitting up the sample according to the analyses' steps proved to greatly reduce some of the sample sizes, preventing meaningful comparisons. So, the focus was laid on averages that combined *surely*, *kind of surely* and *not surely* reproducible data, as well as not reproducible results in addition to the effect sizes additionally given by the source samples. For the cases marked not reproducible because the effect sizes found in the sources did not match with the size reported by Jost (2017), the source sizes were considered in the calculations. Therefore, the inclusion of this category should not have distorted the results effectively. The same applies to the cases that were marked as not reproducible because the original source did not report the concerning relation in r . Since such sizes were only included in the analyses differentiating scale types if the original source only gave one specific measure possibly measuring ideology, the decision to include these magnitude sizes should not distort the concerning results, here as well. A full report of all separate averages can be found in the appendix, Table 3 – Table 6.

In the first set of analyses, the unweighted average effect sizes reported by Jost (2017) were compared to (1) the combinational averages including reproducible and not reproducible results deducted from the original source samples and (2) to the combinational averages including all deducible information from the original source samples, including the additionally found data (see Figure 2). On one hand, this allowed trying to reproduce the finding of Jost (2017) and on the other hand established a basis for comparison regarding the following averages that include the additionally obtained information. The unweighted average effect

sizes were chosen for comparison as the averages calculated for this thesis are unweighted as well, and therefore less comparable to weighted averages.

Jost's (2017) averages on epistemic needs were only reproducible in three cases and were fairly close in additionally two cases. In the cases where Jost's (2017) averages were not exactly reproducible, in four out of six cases, the average excluding the additional data derived from the original sources was closer to the reported averages by Jost (2017). Looking at both combinational averages including reproducible and not reproducible results deducted from the original source samples and the combinational averages including all deducible information from the original source samples including the additionally deducted date, Jost's (2017) results were fairly well reproducible. The averages never deviated more than $r = .10$ from each other and in nearly 89 % they strayed $r \leq .05$. Including all concerning information deducible from the sources cited by Jost (2017), the largest average effect size remained being observed for dogmatism ($r(61) = .41$ ($.04 < r < .82$), significant (s.): 29, n.s.: 6, significance information not found (n.f.): 26).

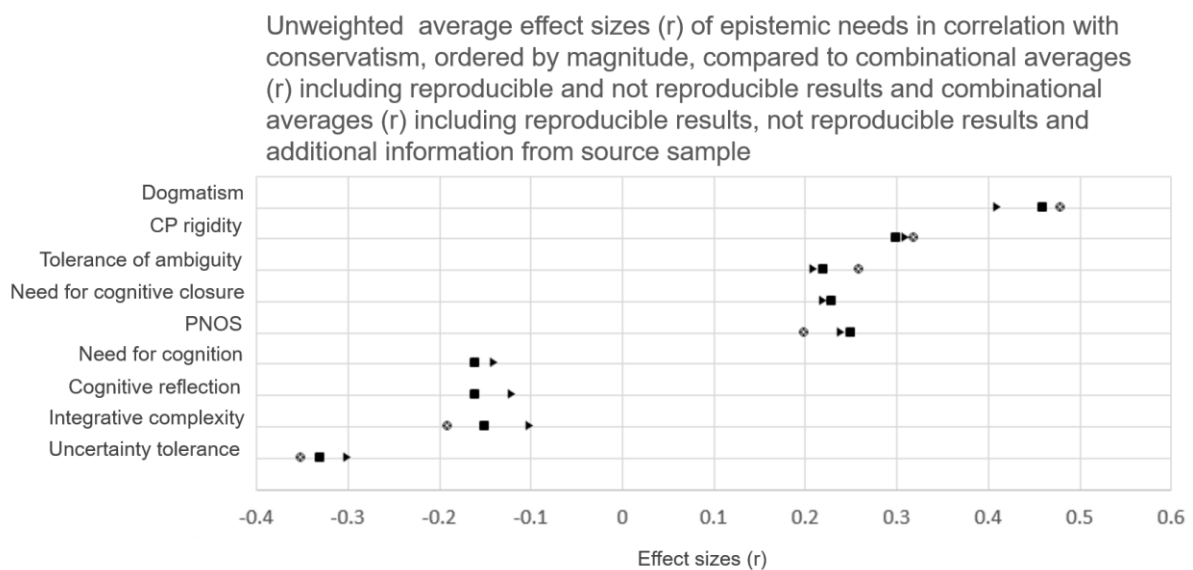


Figure 2. Unweighted average effect sizes for studies investigating hypotheses that political ideology is associated with epistemic needs in comparison with combinational averages deduced from the source samples. \diamond marks averages reported by Jost (2017); \blacksquare marks combinational averages of surely reproducible, maybe reproducible, not surely reproducible and not reproducible effect sizes; \blacktriangleright marks combinational averages of surely reproducible, maybe reproducible, not surely reproducible, not reproducible effect sizes and additional information from source samples; PNOS: personal needs for order and structure; CP rigidity: cognitive and perceptual rigidity
Source. This figure was modeled based on the reported effect sizes and additional results from the sources cited by Jost (2017).

Following, the average effect sizes observed for cognitive and perceptual rigidity ($r(18) = .31$ ($-.06 < r < .76$), s.: 5, n.s.: 6, n.f.: 7) and for tolerance of uncertainties ($r(12) = -.30$ ($-.58 < r < .09$), s.: 10, n.s.: 1, n.f.: 1) were similarly high. Average effect sizes around $r = .20$ were

observed in case of personal needs for order and structure ($r(34) = .24$ ($-.06 < r < .55$), $s.: 23$, $n.s.: 9$, $n.f.: 2$), need for cognitive closure ($r(61) = .22$ ($-.30 < r < .61$), $s.: 49$, $n.s.: 8$, $n.f.: 4$) and intolerance of ambiguity ($r(30) = .21$ ($-.075 < r < .59$), $s.: 20$, $n.s. 7$, $n.f.: 3$). The smallest average effect size was observed for integrative complexity ($r(26) = .10$ ($-.50 < r < .19$), $s.: 8$, $n.s.: 15$, $n.f.: 3$), preceded by cognitive reflection ($r(28) = -.12$ ($-.29 < r < .07$), $s.: 14$, $n.s.: 14$) and need for cognition ($r(25) = -.14$ ($-.34 < r < .02$), $s.: 15$, $n.s.: 9$, $n.f.: 1$). In five out of nine psychological variables, the significant cases clearly outweigh the non-significant ones, clearly supporting the hypothesis of ideological asymmetries. Yet, in case of cognitive and perceptual rigidity and dogmatism, the results are not as clearly backing up the assumption of asymmetries, with the significance information for a deciding amount of cases not found. Furthermore, for cognitive reflection, the hypothesis was as often supported as it was not. While in case of integrative complexity, the non-significant cases actually outweighed the significant ones. 20 cases were categorized as stemming from direct as well as psychological measures and were thus not included into the following sets of analyses. For a full disclosure of the categorizations and effect sizes, see Table 1 in the appendix.

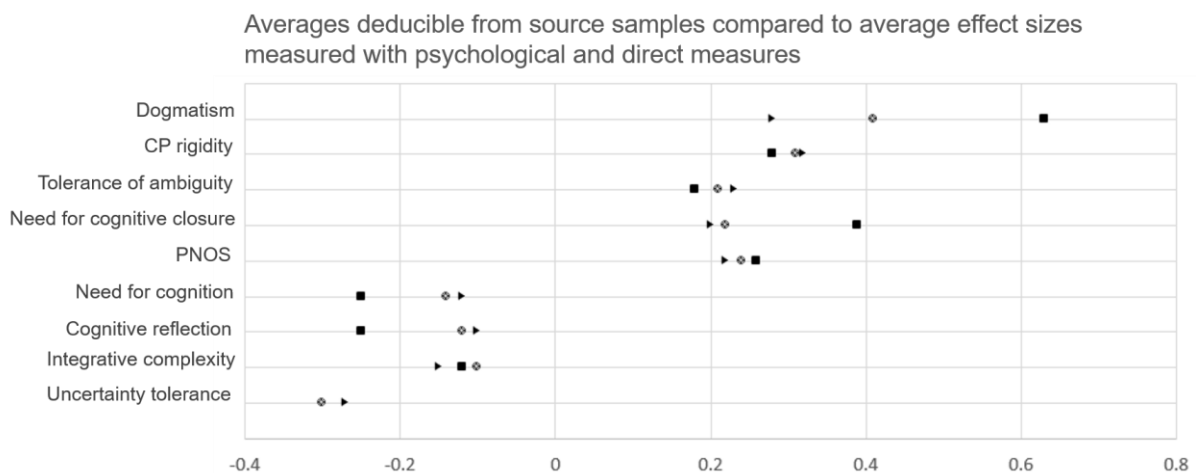


Figure 3. Average effect sizes for studies investigating hypotheses that political ideology is associated with epistemic needs divided into effect sizes measured with psychological and direct measures. \diamond marks overall average effect sizes deducible from source samples; \blacksquare marks average effect sizes measured with psychological measures; \blacktriangleright marks average effect sizes measured with direct measures; PNOS: personal needs for order and structure; CP rigidity: cognitive and perceptual rigidity
Source. This figure was modeled based on the reported effect sizes and additional results from the sources cited by Jost (2017).

In a second set of analyses, the impact of psychological versus direct measures was examined (see Figure 3). Overall, 58 cases stemmed from psychological measures and 195 cases were measured with direct measures. Except for tolerance of uncertainties, every psychological variable was measured with psychological as well as with direct scales. As expected, the resulted averages did indeed vary between the measures, with deviations up to $r = .35$. On the other hand, there are also cases where the results only marginally differed from each other,

with e.g. psychologically and directly measured averages only differing $r = .03$ from each other in case of integrative complexity.

With a difference of $r = .35$, the biggest deviation between indirect and direct measures occurred for dogmatism ($r_{\text{psychological}}(22) = .63$ (.10 < r < .82), s.: 4, n.s.: 1, n.f.: 17; ($r_{\text{direct}}(29) = .28$ (.04 < r < .58), s.: 18, n.s.: 3, n.f.: 8). Following, indirectly and directly assessed correlations of ideology with need for cognitive closure ($r_{\text{psychological}}(3) = .39$ (.27 < r < .61), s.: 3; $r_{\text{direct}}(47) = 0.20$ (-.30 < r < .56), s.: 38, n.s.: 7, n.f.: 2) varied $r = .19$. The smallest variations were observed for cognitive and perceptual rigidity ($r_{\text{psychological}}(8) = .28$ (-.06 < r < .76), s.: 4, n.s.: 2, n.f.: 2; $r_{\text{direct}}(7) = .32$ (.13 < r < .56), s.: 1, n.s.: 2, n.f.: 4), personal needs for order and structure ($r_{\text{psychological}}(6) = .26$ (.11 < r < .35), s.: 3, n.s.: 1, n.f.: 2; $r_{\text{direct}}(22) = .22$ (-.06 < r < .55), s.: 16, n.s.: 6) and integrative complexity ($r_{\text{psychological}}(6) = -.12$ (-.20 < r < -.02), n.s.: 3, n.f.: 3; $r_{\text{direct}}(20) = -.15$ (-.50 < r < .19), s.: 8, n.s.: 12).

Regarding the significance information, once again, there are cases where determining weight lies in the cases for which the concerning information is not found. In the remaining cases, the majority of the averages contain more significant cases than not. However, four cases where the majority of the averages are made up of majorly non-significant results were observed. Three of these cases are averages of direct measures and for integrative complexity, both averages turned out to be dominantly non-significant. Overall, the psychological and direct averages differed around $r(8) = .12$ (.35 < r < .03) from each other. Except for the cases of integrative complexity and personal needs for order and structure, the psychological measures' average effect sizes deviated more from the overall averages than did the directly measured. This however might also be due to the more than doubled sample size of direct measures compared to the psychological ones. Interestingly, the overall averages usually lie in between the averages observed for psychological and direct measures, indicating that the type of measure does indeed pull the results to different directions.

Additionally, out of the existing eight pairs of psychological and direct averages, in five cases, the average effect sizes stemming from direct measures were smaller in magnitude than the ones stemming from psychological measures.

The third set of analyses examined the impact of operational versus symbolic measures of ideology on psychological predispositions (see Figure 4). Overall, 80 cases stemmed from symbolic measures and 103 cases were measured with operational measures. All psychological variables were correlated with ideology assessed with symbolic as well as ideology measured with operational scales. Again, the resulted averages did indeed vary between the measures, deviating up to $r = .28$. However, this time, there were also results that did not differ from each other when measured with different scale-types. This was the case for

tolerance of uncertainties ($r_{\text{symbolic}}(2) = -.21$ ($-.39 < r < -.03$), $s.: 2$; $r_{\text{operational}}(6) = -.21$ ($-.45 < r < -.09$), $s.: 5$, $n.s.: 1$) and personal needs for order and structure ($r_{\text{symbolic}}(8) = .23$ ($.13 < r < .29$), $s.: 8$; $r_{\text{operational}}(13) = .23$ ($-.06 < r < .55$), $s.: 8$, $n.s.: 5$). Again, some results differed only marginally between measures, e.g. the averages of need for cognitive closure only deviated $r = .01$. The biggest deviation between symbolic and operational measures occurred for cognitive and perceptual rigidities ($r_{\text{symbolic}}(3) = .20$ ($.13 < r < .35$), $s.: 1$, $n.s.: 2$; $r_{\text{operational}}(3) = .48$ ($.35 < r < .56$), $s.: 2$, $n.f.: 1$). Following, averages of symbolic and direct measures varied $r = .13$ in case of integrative complexity ($r_{\text{symbolic}}(5) = -.06$ ($-.29 < r < .19$), $s.: 2$, $n.s.: 3$; $r_{\text{operational}}(14) = -.19$ ($-.50 < r < .16$), $s.: 6$, $n.s.: 8$). The smallest variations were observed in case of need for cognition ($r_{\text{symbolic}}(9) = -.14$ ($-.27 < r < .02$), $s.: 6$, $n.s.: 3$; $r_{\text{operational}}(8) = -.10$ ($-.23 < r < -.01$), $s.: 4$, $n.s.: 4$) and need for cognitive closure ($r_{\text{symbolic}}(26) = .20$ ($-.03 < r < .38$), $s.: 20$, $n.s.: 5$, $n.f.: 1$; $r_{\text{operational}}(21) = .21$ ($-.01 < r < .56$), $s.: 18$, $n.s.: 2$, $n.f.: 1$).

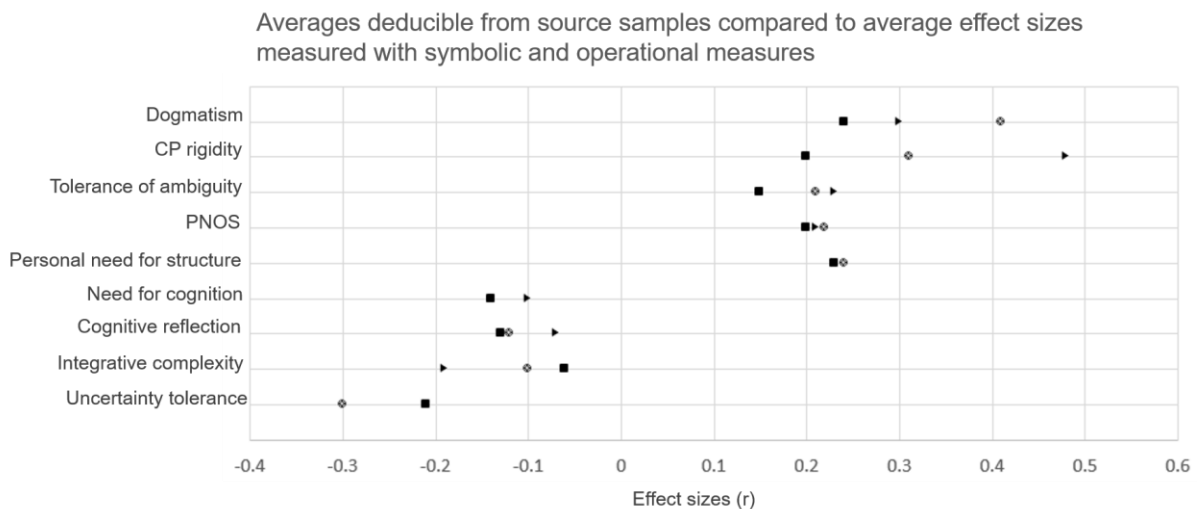


Figure 4. Average effect sizes for studies investigating hypotheses that political ideology is associated with epistemic needs divided into effect sizes measured with symbolic and operational measures. \diamond marks overall average effect sizes deducible from source samples; \blacksquare marks average effect sizes measured with symbolic measures; \blacktriangleright marks average effect sizes measured with operational measures; PNOS: personal needs for order and structure; CP rigidity: cognitive and perceptual rigidity
Source. This figure was modeled based on the reported effect sizes and additional results from the sources cited by Jost (2017).

Regarding the significance information, this time, only one average had a deciding amount of cases for which the concerning information was not found. From the remaining averages, ten are predominantly made up of significant results and six are predominantly made up of non-significant results. These six cases apply to symbolic and operational averages equally. On average, the symbolic and operational averages deviated around $r(9) = .07$ ($0 < r < .28$). Except for need for cognition, all symbolic and operational measures differed from the overall average. This time, no particular measuring type was observed to be generally closer to the overall averages than the other. The same applies to their positioning. In the cases of cognitive rigidity, tolerance of ambiguity and integrative complexity, the averages stemming from

symbolic and operational averages place in opposite directions in comparison to the overall averages, while in four cases, both averages are positioned further to zero than the overall averages. For uncertainty tolerance and personal need for structure, the operationally measured average effect sizes coincided with the overall averages, but the symbolic average is again positioned closer to zero. The symbolical average being closer to zero applied to five cases, while for uncertainty tolerance and personal need for structure, the symbolic and operational averages were equal. Thus, averages of operationally measured results were smaller in magnitude size in comparison to the symbolically measured averages only twice.

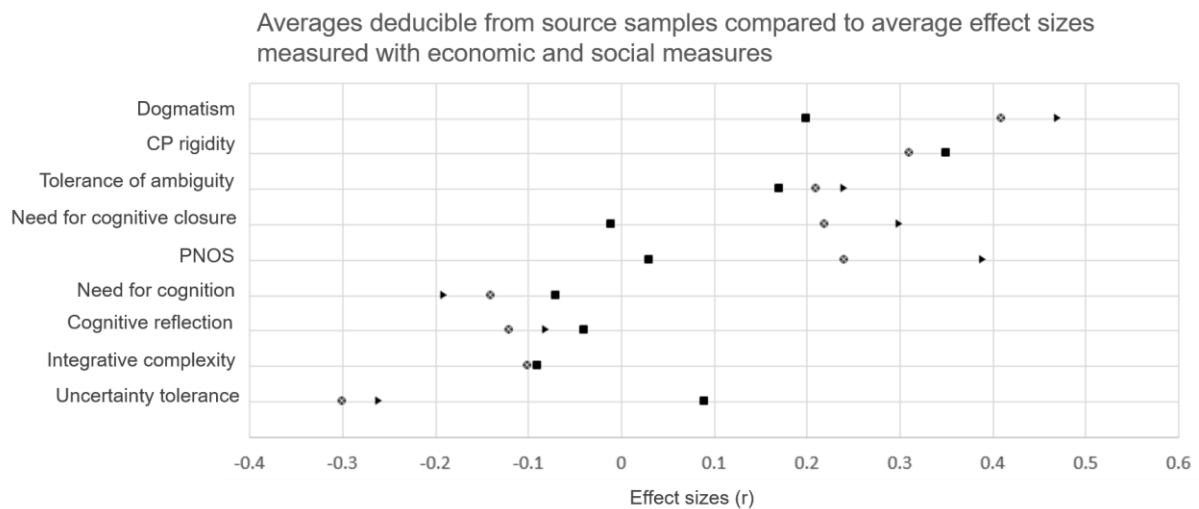


Figure 5. Average effect sizes for studies investigating hypotheses that political ideology is associated with epistemic needs, separately observing economic and social ideology. \diamond marks overall average effect sizes deducible from source samples; \blacksquare marks average effect sizes measured with economic measures; \blacktriangleright marks average effect sizes measured with social measures; PNOS: personal needs for order and structure; CP rigidity: cognitive and perceptual rigidity

Source. This figure was modeled based on the reported effect sizes and additional results from the sources cited by Jost (2017).

In the fourth set of analyses, the impact of economic ideology versus social ideology was examined (see Figure 5). Overall, 28 cases measuring economic ideology and 20 cases of social ideology were assessed. All except one psychological variable were correlated at least once with economic and social ideology. Even though the representativeness of this set of analyses is heavily impaired due to the small sample sizes, the deviations here are quite interesting. With averages deviating up to $r = .36$, in comparison to the other measures, social and economic ideology differed on average the most with around $r(8) = .19$ ($0 < r < .36$). Only in case of integrative complexity, economic and social ideology correlated equally with the psychological predisposition ($r_{\text{economic}}(3) = -.09$ ($-.22 < r < .06$), n.s.: 3; $r_{\text{social}}(2) = -.09$ ($-.11 < r < -.06$), n.s.: 2). Additionally, the average effect sizes for social and economic ideology only slightly deviated in case of cognitive reflection ($r_{\text{economic}}(6) = -.04$ ($-.09 < r < .07$), s.: 1, n.s.: 5; $r_{\text{social}}(2) = -.08$ ($-.16 < r < -.01$), s.: 1, n.s.: 1).

The biggest difference in average effect sizes between social and economic ideology was observed in case of personal needs for order and structure ($r_{\text{economic}}(3) = .03$ ($-.06 < r < .16$), n.s.: 3; $r_{\text{social}}(4) = .39$ ($.18 < r < .55$), s.: 4). For tolerance of uncertainties, the values observed also varied to a large extent ($r_{\text{economic}} = .09$, s.: 1; $r_{\text{social}} = -.26$, s.: 1). However, only one result per category was recorded and hence no average was calculated. As the overall sample size was quite small to begin with, the information on significance is unsurprisingly relatively low, too. While most of the averages are stemming from more significant results than from non-significant, there are cases like dogmatism, where the information on significance are in the majority of cases not found, as well. Additionally, five averages contained predominantly non-significant results, of which four are correlations with economic ideology. However, as already mentioned, the sample size is quite small, leading to many averages being made up of only four or less cases. Average correlations of social and economic ideology differed from the overall average in all cases and except for integrative complexity ($r_{\text{economic}}(3) = -.09$ ($-.22 < r < .06$), n.s.: 3; $r_{\text{social}}(2) = -.09$ ($-.11 < r < -.06$), n.s.: 2) deviated from each other as well. Except for the averages in case of integrative complexity, where social and economic ideology correlated identically and in case of cognitive and perceptual rigidity, where social ideology was not measured, all average magnitude sizes were smaller for economic ideology compared to social ideology. Further, not only were the average effect sizes for economic ideology smaller, cognitive closure was in fact on average negatively correlated with economic conservatism ($r_{\text{economic}}(4) = -.01$ ($-.30 < r < .22$), s.: 4), opposite to the hypothesized direction. In addition, the overall averages were also generally closer to the averages of social ideology. This indicates that in regard of asymmetries in ideology, social ideology might indeed correlate differently to psychological predispositions than economic ideology does.

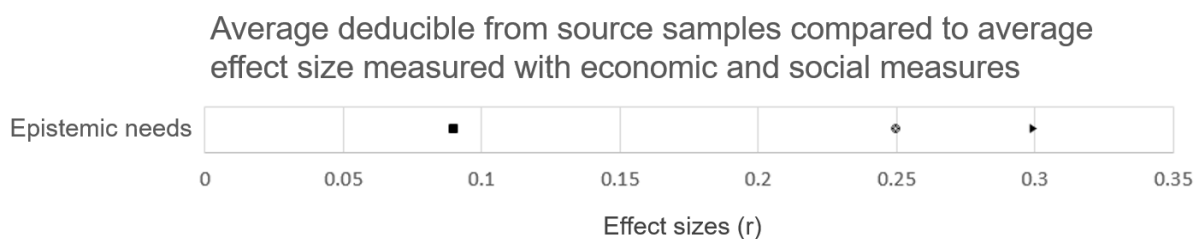


Figure 6. Average effect size for studies investigating hypotheses that political ideology is associated with epistemic needs, related to separate observations of economic and social ideology. \diamond marks overall average effect size deducible from source samples; \blacksquare marks average effect size measured with economic measures; \blacktriangleright marks average effect size measured with social measures
Source. This figure was modeled based on the reported effect sizes and additional results from the sources cited by Jost (2017).

This assumption is further supported by the final set of analyses that examined economic and social ideology in correlation with psychological predispositions on a more general level. This was achieved by combining all the separate averages on economic and social ideology and

comparing them to an average on all deducible information regarding correlations of ideology and the featured psychological variables (see Figure 6).

Comparing all the 48 correlations of the featured variables related to epistemic needs and economic and social ideology, the indications for economic and social ideology relating differently to psychological predispositions further grow. Even though in general, both are correlated in the hypothesized direction to the featured psychological variables, the average magnitude sizes deviated $r = .21$ from each other. Again, the average based on social ideology ($r_{\text{social}(20)} = .30$ ($.01 < r < .55$), $s.: 17$, $n.s.: 3$) was positioned closer to the overall average ($r(295) = .25$ ($-.58 < r < .82$), $s.: 173$, $n.s.: 75$, $n.f.: 47$) than the economic ideology's ($r_{\text{economic}(28)} = .09$ ($-.30 < r < .35$), $s.: 9$, $n.s.: 13$, $n.f.: 6$) and the asymmetries were smaller in their magnitude for economic ideology, as well. These differences are also portrayed in their information on significance. While the averaged correlation with social ideology is predominantly stemming from significant results, overall, the averaged correlation with economic ideology does not support the hypothesized asymmetries as clearly when focusing on the information regarding significance. The average effect sizes of economic ideology were predominantly featuring non-significant results and cases for which the information on significance was not found.

4.4 Discussion

The first goal of reproducing Jost's (2017) results was moderately well achieved. Even though a perfect match was only achieved for need for cognitive closure, need for cognition and cognitive reflection, around 89% of the reevaluated data deviated only $r \leq .05$ from the results reported by Jost (2017). Considering that not all samples used by Jost (2017) were able to be found and thus excluded from the analysis, a perfect match was unlikely to be achievable from the beginning. However, in comparison to the magnitude sizes, the information regarding significance was not as well reproducible, with many results for which the concerning information was not directly obtainable from the cited source (see appendix, Table 1). Yet, this should not be interpreted as indicating that ideology is not related to the featured variables, as the method used to assess significance in this thesis is rudimentary at best and should not be taken as allowing more than a first insight. This should be kept in mind for all the information on significance referred to by this thesis.

The second goal of the thesis was to see whether measurement-methods have an impact on the resulted asymmetries. The quality of science is determined by its success to define and measure the targeted concept precisely. In context of social sciences, this poses some difficulties, as the investigated constructs are usually not directly observable (Flake & Fried, 2019, p. 3). Regarding ideology, there have been many approaches to define and measure its characteristics, endorsement and implications for an individual's behavior (Jost, Fitzsimons &

Kay, 2004, pp. 264; Heywood, 2017, pp. 8; Everett, 2013, pp. 2; Jost, Federico & Napier, 2009, pp.323). Following this tradition, Jost (2017) included in his meta-analyses results regarding the relationship of psychological predispositions and ideology that stemmed from diverse measures (see appendix Table 2). On the upside, such a multi-method approach ensures a certain degree of validity, as discriminant validity statistically requires the construct being assessed with more than one measure (Schimmack, 2019, p. 9). However, to achieve validity, it also has to be ensured that the various instruments used do in fact measure the investigated construct (Flake & Fried, 2019, p. 3). Yet, correlations between the measures are not sufficient to ensure a relation of the instrument based on the examined construct (Schimmack, 2019, p. 7). Thus, on the downside, diverse approaches to one concept could also potentially heighten the danger of measuring variables beyond the targeted construct.

From the perspective of construct validity, the inclusion of instruments assessing ideology indirectly, through constructs such as RWA and SDO by Jost (2017) has to be evaluated as critical at least (see Everett, 2013, p. 3). However, even though the direct and indirect averages differed on average around $r(8) = .12$ ($.35 < r < .03$), the hypothesized asymmetries were still observable when excluding the indirectly measured results. Yet, in more than half of the cases a comparison between direct and indirect measures was achievable, the magnitude sizes observed for the direct measures were smaller, indicating that Jost's (2017) results were possibly overestimating the connection of ideology with the featured psychological variables. Interestingly, some variables seemed to be more impacted by excluding indirect measures than others. For example, the measured averages only deviated $r = .03$ from each other for integrative complexity. This might be due to similar processes underlying ideological preferences as well as variables such as RWA that produce similar results especially in case of integrative complexity. A possible explanation could be that the tendency to perceive the world as a dangerous one connected to RWA (Duckitt & Sibley, 2009, p. 299) leads to a tendency to averse diverse perspectives in their argumentation similar to what the desire to maintain current conditions driven conservative spectrum of ideology induces (Jost, Federico & Napier, p. 310). From this perspective, individuals high in RWA might be similarly inclined to focus on one perspective in their argumentation as individuals endorsing conservatism are but for different reasons. While individuals high in RWA would reject pluralist arguments as a defense mechanism against perceived danger from the very fact that they are divers, conservatives would averse such argumentation out of the desire to simply keep conditions as they currently are. In this sense, both RWA and conservatism could be related to the same variable, but not because they represent the same construct (also see Everett, 2013, p. 3). The results from this second set of analyses support a variation between indirect and direct

measures for ideology, indicating that here, even though seemingly sharing similarities, indeed different constructs seem to be measured.

In addition, research and theoretical considerations that indicate differences between social and economic as well as between symbolic and operational ideology (Everett, 2013, p. 1; Ellis & Stimson, 2012, p. 72) encourage a deeper look into the measures used by Jost (2017). This applies especially to the measure's relations to psychological predispositions precedingly characterized as differentiating between individuals endorsing different ideological beliefs on a liberalism-conservatism spectrum (Jost, 2017, p. 167). As expected, results measured with symbolic and operational measures of ideology did on average deviate from each other. Surprisingly, this was not the case for tolerance of uncertainties as well as for personal needs for order and structure. This could be interpreted as either symbolic and operational ideology not being completely different constructs, or as indicating that these variables relate to both constructs independently equally well. However, in context of the remaining results of the analyses and aggregated data that does support the assumption of differences between operational and symbolic ideology (Ellis & Stimson, 2012, p. 72), the second interpretive approach seems more accurate. A third possibility is that the results of the analyses are tapping into but only approximately portraying the true relationships of symbolic versus operational ideology and the featured variables. Keeping in mind that the sample sizes especially in these cases ranged in between two to thirteen, this case seems to be very likely and should at least be considered when trying to interpret the results. Overall, in comparison with symbolic ideology, there was a tendency for operational measures to relate more strongly to the featured psychological variables. In other words, the featured epistemic motives seem to better relate to operational ideology, i.e. policy preferences, compared to symbolic ideology. Bearing in mind that symbolic ideology has been shown to rather act as a social identity (Barber & Pope, 2019, p.53), this connection doesn't seem too surprising. After all, while especially social identity is additionally influenced by factors such as social networks or life-changing experiences (Ng et al., 2018, p. 172, pp. 181), with epistemic motivation shaping information processing (Jost & Krochik, 2014, p. 183) its relationship to forming policy preferences seems to be more direct.

However, the tendency for one measuring type to relate more strongly to the psychological predispositions doesn't manifest as strongly as in the previous set of analyses. This could be due to the sample size being considerably smaller in the symbolic-operational analyses or could be based on a distortion of the results due to conflicting subcategories. Here, economic and social ideology could pose such conflicting subcategories for operational ideology (see Perry & Sibley, 2013, p. 264). This consideration seems to be supported by the acquired data. While in case of integrative complexity, economic and social ideology correlated equally, these

measures deviated with on average $r(8) = .19$ ($0 < r < .36$)., compared to the other sets of analyses, the most from each other. In comparison to social ideology, economic ideology seemed to relate less to epistemic motives. Interestingly, for economic ideology, one psychological variable was observed to relate oppositely to the hypothesized direction, indicating that economic conservatism is in fact, even though only slightly, related to lowered need for cognitive closure. Because the sample sizes for this set of analyses were considerably smaller than the other sets, both measures were additionally examined in a combined context, revealing similar results on a more general level of asymmetric epistemic motivation in ideologies. Again, social ideology seemed to relate considerably more to the featured psychological variables than economic ideology. This difference even carries through to the information on significance, with social ideology producing mostly significant and economic ideology mostly non-significant results and cases for which concerning information was not found. Johnson and Tamney (2001, p. 236) proposed that individuals who endorse social conservative beliefs might feel their beliefs to be more endangered in the modern world than individuals endorsing conservative economic beliefs since these are better integrated into the progressive and complex present. Additionally, they suggest that economic conservative beliefs should especially well attract the wealthy as they e.g. feature lowered taxes, less governmental participation in private business and higher requirements for access to social welfare (Johnson & Tamney, 2001, pp. 233). Taking this into consideration, economic conservatism could relate to people differently in terms of offered security, depending on their economic standing. Possibly, for the citizen who does not belong to the “wealthy”, economic conservatism could actually mean less security, leading to economic liberalism better satisfying such needs. Therefore, the link between epistemic needs and economic conservatism could be weaker and possibly even opposite to social conservatism, because it would depend on an individual’s income as to whether it answers the needs of security or not.

The key strength of this thesis is its detailed approach to the measures used to assess ideology. However, naturally, it also has limitations that restrict the conclusions that can be drawn from the findings. The most obvious of these is its sample size. As this work’s goal was to reevaluate the findings reported by Jost (2017), the sample size was restricted to the selection previously done by Jost, Sterling and Stern (2018). This potentially means a systematic distortion based on applied categorization. Further, even though the sample size was adequate for the initial analyses done by Jost (2017), splitting the samples according to their scale-types did reduce them considerably. In some cases, this reduction led to averages being taken from samples only consisting of two data points, which may not be ideal to draw a statistical value. Hence, the analyses conducted can only tap into but not well represent the impact measurements of ideology have in the context of asymmetrical epistemic needs.

Furthermore, results were only included into the analyses if they were reported in r by the source samples. This not only limited the information regarding certain results reported by Jost but also restricted the acquiring of additional information from the source samples. Additionally, another problem rises from the exclusive attention towards measures of ideology. However, the measures of the epistemic needs were not further examined, leaving the question of their validity and impact on the results. Yet, trusting that the initial selection by Jost, Sterling & Stern (2018) did only include cases of where the epistemic needs in question were adequately measured, this should not pose too big of an issue. Another limitation stems from the presentation format chosen by Jost (2017). Because the effect sizes are presented in a graph, a perfect comparison between the results of the sources and the reported was not possible and the choices regarding match in magnitude sizes had to be based on feelings. Also problematic were the calls on significance, as for one many source samples did not give the necessary information and the method used to determine whether a taken average was significant or not is rudimentary at best. Further, the source samples were not cross-checked for additional information on other epistemic needs apart from the one it was used for by Jost (2017). In other words, samples of which results were reported for dogmatism by Jost (2017) were not searched for additional information on the relation of ideology and e.g. needs for order and structure. However, as Jost (2017) did use the same samples for multiple epistemic needs, this shouldn't have overly distorted the results. Finally, the general limitations of meta-analyses apply, such as difficulties in replicating findings of other meta-analyses and unstandardized meta-analytic methods (Schulze, 2004, pp. 191).

Still, the findings of this thesis encourage further research in the field of asymmetrical epistemic needs in ideology with greater care to the used measurements, especially in regard to economic ideology. Minding the known differences between symbolic and operational ideology (Barber & Pope, 2019, p.53; Ellis & Stimson, 2012, p. 72), here too, the findings urge for a better differentiation. This not only includes more awareness regarding measures but also more attention on theoretical distinctions and implications. Furthermore, it would be interesting to examine the impact of a more differentiated approach to ideology not only in context of epistemic needs but also in connection with existential and relational needs. As to whether such a differentiated approach to ideology would be able to explain the contradictory results of existing meta-analyses cannot be answered with the current findings. However, the results of this thesis do encourage further research in this direction.

5. Conclusions

One key issue in research concerning ideology has been the question of what draws an individual to a certain ideology (Jost, Federico & Napier, 2009, pp. 313). In his presidential

address, Jost (2017) summarized the work on asymmetries in ideologies and amongst them, results concerning differences in epistemic needs. While a multi-method approach is central for validity (Schimmack, 2019, p. 9), such approach requires the used methods to be valid measures of the construct in question (see Schimmack, 2019, p. 3). In five sets of analyses, Jost's (2017) results were reevaluated in regard to their reproducibility and used measures of ideology. Collectively, the general direction indicated by the results reported by Jost (2017) was reproducible, even after removing results stemming from scales that are not measuring ideology, such as scales assessing e.g. RWA. The inclusion of such non-direct measures by Jost (2017) might have over-estimated the effect sizes, however, in most cases, the hypothesis of asymmetrical epistemic needs in ideologies was supported across all measures.

Yet, the overall findings support a more detailed differentiation on measures of ideology in regard to asymmetric psychological predispositions, with averages of different measures only coinciding in three cases and deviating $r \geq .05$ in 16 out of 25 cases. Especially for social and economic ideology, epistemic needs seemed to relate differently, with the overall direction of averages being as expected for both but considerably varying in magnitude size.

Validation has been shown to be a major challenge in today's social sciences (Schimmack, 2009, p. 3; Flake & Fried, 2019, pp. 3). The findings of this thesis indicate that such challenge is also present in the current research regarding asymmetries in ideologies. While a multi-method approach is encouraged to assess constructs (Schimmack, 2009, p. 3), taking a step back and reevaluating each used measure should not be forgotten. Implementing such care and attention towards measures of ideologies will undoubtedly enhance the quality of future research and give a better understanding of ideology itself and asymmetries connected to their endorsement.

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Appendix

Paper	Type of scale	Repro- ducible	Very sure	Kind of sure	Not sure	Magnitude size reported by Jost	Magnitude size reported by source paper	Additional magnitude sizes given by source samples	
								Social and economic ideology	Operational and symbolic ideology
Cognitive/Perceptual Rigidities									
French (1995)	Psychological	yes	x					r = -0.06, n.s.	
Pettigrew (1958)	Psychological	yes	x					r = .03, n.s.	
Rock & Janoff- Bulman (2010), sample1	<i>Symbolic</i>	no				~.125, n.s.		Reported size not r	
Rock & Janoff- Bulman (2010), sample2	<i>Symbolic</i>	no				~.13, n.s.		Reported size not r	
Hession & McCarthy (1975) group 1	Psychological	yes	x			significant		r = .53, significance information not found	
Hession & McCarthy (1975) group 2	Psychological	yes	x			n.s.		r = .14, significance information not found	
Caparos et al. (2015), sample1	Symbolic, Operational & Psychological	no				~.22, n.s.		No fitting results found	
Caparos et al. (2015), sample2	Symbolic & Operational	yes	x			n.s.		[r = .22, significance information not found]	
Zelen (1955)	Psychological	yes	x					r = 0.22, significant	

Steiner & Johnson (1963)	Psychological	yes	x			r = .26, significant	
Neuringer (1964)	Psychological	yes	x			r = .33, significant	
Kemmelmeier (2007)	Symbolic	yes	x			r = .35, significant	
Kirton (1978), sample 1	<i>Operational</i>	yes	x		significant	r = .53, significance information not found	
Kirton (1978), sample 2	<i>Operational</i>	yes	x		significant	[r = .56, significance information not found]	
Rokeach & Fruchter (1956)	Operational & Psychological	yes	x		significant	[r = .53, significance information not found]	r = .35, significance level not found (economic)
Kidd & Kidd (1972)	Psychological	yes	x			r = .76, significant	

Dogmatism

Kossowska & Van Hiel (2003), sample 1 (study 1)	<i>Symbolic</i>	yes		x	~.24, significant	r = .21, significant	r = .22, significant (operational)
Kossowska & Van Hiel (2003), sample 2 (study 1)	<i>Symbolic</i>	yes	x			r = .06, n.s.	r = .04, n.s. (operational)
Kelemen et al. (2014)	<i>Symbolic</i>	no			~.10, significant	Reported size not in r	
Webster & Kruglanski (1994), sample 2	Psychological	no			~.12, n.s.	r = 0.0979, n.s.	

Rokeach (1960), sample 1	Not identifiable	no		~.60, significant	No fitting results found		
Rokeach (1960), sample 2	Not identifiable	no		~.126, n.s.	No fitting results found		
Rokeach (1960), sample 3	Not identifiable	no		~.124, n.s.	No fitting results found		
Rokeach (1960), sample 4	Not identifiable	no		~.23, significant	No fitting results found		
Rokeach (1960), sample 5	Not identifiable	no		~.26, significant	No fitting results found		
Schlenker (2012)	<i>Symbolic</i>	yes	x		r = .17, significant		
Choma (2012)	<i>Symbolic</i>	yes	x		r = .19, significant		
Smithers & Lobley (1978)		no		~.21, significant	no fitting results found		
Price et al. (2015)							
▼	Psychological	yes	x		r = .238, significant		
Thorisdottir & Jost (2011) sample 3	<i>Symbolic</i>	no		~.24, significant	No fitting results found		
Kemmelmeier (2007)	<i>Symbolic</i>	yes	x		r = .27, significant		
Conway (2015)	<i>Symbolic</i>	yes	x		r = .27, significant		
Crowson (2005), sample 1	Operational & Psychological	yes	x		[r = .285, significant]		r = .24, significant, (operational)
Crowson (2005), sample 2	Symbolic, Operational & Psychological	yes	x		[r = .32, significant]		r = .25, significant (symbolic) r = .35, significant (operational)
Everett (2013)	Not identifiable	no		~.36, significant	No fitting results found	r = .44, significant (social) r = .24,	r = .39, significant (symbolic) r = .42,

							significant (economic)	significant (operational)
							r = .500, significant (social)	
Crowson (2009)	<i>Operational</i>	yes	x	~.37, significant	[r = .353, significant]		r = .205, significant (economic)	
Kirton (1978), sample 1	<i>Operational</i>	yes	x	~.40, significant	r = .38, significance information not found			
Kirton (1978), sample 2	<i>Operational</i>	no		~.49, significant	[r = .46, significance information not found]			
Rule & Hewitt (1970)	Source not found							
Kohn (1974) ▼	Psychological	yes	x		r = .48, significant			
Jost et al. (2007)	<i>Symbolic</i>	yes	x	~.48, significant	r = .45, n.s			
Rokeach & Fruchter (1956)	Not identifiable	no		~.48, significant	No fitting results found		r = .23; significance level not found (economic)	
Rokeach (1956), sample 1	Psychological	yes	x	significant	r = .67, significance information not found		r = .13, significance level not found (economic)	
Rokeach (1956), sample 2	Psychological	yes	x	significant	r = .58, significance information not found		r = .11, significance level not	

							found (economic)
Rokeach (1956), sample 3	Psychological	yes	x		significant	r = .61, significance information not found	r = .20, significance level not found (economic)
Rokeach (1956), sample 4	Psychological	yes	x		significant	r = .54, significance information not found	r = .28, significance level not found (economic)
Rokeach (1956), sample 5	Psychological	yes	x		significant	r = .57, significance information not found	
Rokeach (1956), sample 6	Psychological	yes	x		significant	r = .62, significance information not found	
Rokeach (1956), sample 7	Psychological	yes	x		significant	r = .77, significance information not found	
Pyron (1966)	Psychological	yes	x		significant	r = .53, significant	
Hession & McCarthy (1975), sample 1	Psychological	yes	x		significant	r = .64, significance information not found	
Hession & McCarthy (1975), sample 2	Psychological	yes	x		n.s.	r = .53, significance information not found	
Schroder & Streufert (1962)	Source not found						
Webster & Stewart (2013)	<i>Operational</i>	yes	x		significant	r = .58, significance	

						information not found
Plant (1960), sample 1	Psychological	yes	x		significant	r = .77, significance information not found
Plant (1960), sample 2	Psychological	yes	x		significant	r = .62, significance information not found
Plant (1960), sample 3	Psychological	yes	x		significant	r = .75, significance information not found
Plant (1960), sample 4	Psychological	yes	x		significant	r = .70, significance information not found
Thompson & Michel (1972)	Psychological	yes	x		significant	r = .64, significance information not found
Kerlinger & Rokeach (1966), sample 1	Psychological	yes	x			r = .652, significant
Kerlinger & Rokeach (1966), sample 2	Psychological	yes	x			r = .700, significant
Kerlinger & Rokeach (1966), sample 3	Psychological	yes	x			r = .773, significant
Kahoe (1974)	Psychological	yes	x		significant	r = .66, significance information not found

Zippel & Norman (1966)	Psychological	yes	x	significant	r = .67, significance information not found
Pettigrew (1958)	Psychological	yes	x	significant	r = .82, significance information not found

Tolerance of Uncertainties

Wilson (1973)		no			~-.58, significant	No fitting results found
Block & Block (2006), sample 1 (men)	<i>Symbolic & Operational</i>	yes	x			r = -.45, significant
Block & Block (2006), sample 2 (women)	<i>Symbolic & Operational</i>	yes	x			r = -.49, significant
McAllister & Anderson (1991)	<i>Operational</i>	no			~-.45, significant	no fitting results found
Jost (2007), sample 3	<i>Symbolic</i>	no			~-.39, significant	Reported size not in r
Gillies and Campbell (1985)	<i>Operational</i>	no			~-.31, n.s.	Reported size not in r
Caparos et al. (2015), sample 2	<i>Symbolic & Operational</i>	yes	x			r = .28, significant
Glasgow & Cartier (1985)	<i>Operational</i>	yes	x			r = .24, significant
Atieh et al. (1987)	<i>Operational</i>	yes	x			r = -.16, significant
Malka et al. (2014)	<i>Operational^e</i>	yes	x			r = -.09, significant
						r = .26, significant (social)
						r = .03, significant (symbolic)

Integrative Complexity

Tetlock et al. (1984), sample 1	<i>Operational</i>	no			~- .50, significant	Reported size not r
Tetlock et al. (1984), sample 2	<i>Operational</i>	no			~- .32, significant	Reported size not r
Tetlock et al. (1985)	<i>Operational</i>	yes	x			r = -.45, significant
Pyron (1966)	Psychological	no			~- .42, significant	r = -.02, n.s.
Schroder & Streufert (1962)	Source not found					
Rule & Hewitt (1970)	Source not found					
Tetlock (1983)	<i>Operational</i>	no			~- .42, significant	Reported size not r
Tetlock (1984)	<i>Operational</i>	yes	x			r = -.30, significant
Talhelm et al. (2015), sample 1	<i>Symbolic</i>	yes	x			r = -.29, significant
Talhelm et al. (2015), sample 2	<i>Symbolic</i>	yes	x			r = -.19, significant
Barron (1953) ▼	<i>Operational</i>	yes	x			r = -.22, n.s. (economic)
Rudin & Stagner (1958)	Psychological	yes		x	~- .21, n.s.	r = -.20, significance information not found
Brundidge (2014)	<i>Operational</i>	yes	x			r = -.20, significant
Streufert & Driver (1967)	Psychological	yes	x		significant	r = -.18, significance information not found
Vannoy (1965)	Psychological	yes	x		n.s.	r = -.18, significance information not found

Van Hiel & Mervielde (2003)	<i>Symbolic & Operational</i>	yes	x		r = -.12, n.s.	
Sidanius (1985)	<i>Operational^s</i>	yes	x		r = -.11, n.s.	r = .06, n.s. (economic)
Hinze et al. (1997)	<i>Operational</i>	no		~- .11, n.s.	Reported size not r	
Stuart (1965), sample 1	Psychological	yes	x		r = -.08, n.s.	
Stuart (1965), sample 2	Psychological	yes	x		r = -.06, n.s.	
Cornelis & Van Hiel (2006)	<i>Operational^s</i>	yes		x	~- .07, n.s.	r = -.06, n.s. (economic)
Conway et al. (2015), sample 2	<i>Symbolic</i>	no			~.0, n.s.	Reported size not r
Conway et al. (2015), sample 3	<i>Symbolic</i>	no			~- .001, n.s.	No fitting result found
Gruenfeld (1995), sample 1	<i>Symbolic</i>	no			~.19, n.s.	Reported size not r
Gruenfeld (1995), sample 2	<i>Operational</i>	no			~.16, n.s.	Reported size not r
Gruenfeld (1995), sample 3	<i>Operational</i>	no			~- .01, n.s.	Reported size not r

Intolerance of Ambiguity

French (1995)	Psychological	yes	x		r = .01, n.s.	
Kelemen et al. (2014)	<i>Symbolic</i>	no			~.07, significant	reported size not r
Daivids & Eriksen (1957)	Psychological	yes	x		r = .10, n.s.	
Okimoto & Gromet (2015), sample 1A	<i>Symbolic</i>	no			~.145, significant	reported size not r

Okimoto & Gromet (2015), sample 2A	<i>Symbolic</i>	no		~.12, significant	reported size not r	
Okimoto & Gromet (2015), sample 3	Not identifiable	no		~.13, significant	reported size not r	
Okimoto & Gromet (2015), sample 4	Not identifiable	no		~.115, significant	reported size not r	
Choma et al. (2012)	<i>Symbolic</i>	yes	x		r = .14, significant	[r = 0.085, n.s. (economic)] [r = .19, significant (social)]
Crowson et al. (2005), sample 1	Operational & Psychological	yes	x		[r = .225; significant]	r = .19, significant (operational)
Crowson et al. (2005), sample 2	Symbolic, Operational & Psychological	yes	x		[r = .16, n.s.]	r = .18, significant (operational) r = .13, n.s. (symbolic)
Sidanius (1978)	Operational & Psychological	yes	x		[r = .19, n.s.]	r = .25, significant (economic) r = .29, significant (social)
Daivids (1955)	Psychological	yes	x		r = .18, n.s.	
Kossowska & Van Hiel (2003), sample 1 (study 1)	<i>Symbolic & Operational</i>	yes	x		r = .22, significant	

Kossowska & Van Hiel (2003), sample 2 (study 1)	<i>Symbolic & Operational</i>	yes	x		r = .36, significant
Zacker (1973)	Psychological	no		~.26, significant	probably an average taken, however, components only partly reported in r
De Rojas (2015)	Psychological	yes	x		[r = .245, significant]
Vannoy (1965)	Psychological	yes	x	significant	r = .28, significance information not found
Jost et al. (2007), sample 3	<i>Symbolic</i>	yes	x		r = .30, significant
Kirton (1978), sample 1	<i>Operational</i>	yes	x	significant	r = .36, significance information not found
Kirton (1978), sample 2	<i>Operational</i>	yes	x	~.53, significant	r = .59, significance information not found
Filbert & Ressler (1998)	<i>Symbolic & Operational</i>	no		~.39, significant	reported size not r
Caparos et al. (2015), sample 2	<i>Symbolic & Operational</i>	yes	x		r = .45, significant
Lytwyn (2012)	<i>Operational</i>	no		~.51, significant	r = -.075, significant
Kohn (1974) ▼	Not identifiable	no		~.60, significant	reported size not r

Need for Cognitive Closure

Brandt et al. (2015), sample 1	<i>Symbolic</i>	no		~.04, n.s	no fitting results found	
Brandt et al. (2015), sample 2	<i>Symbolic</i>	no		~.12, n.s.	no fitting results found	
Brandt et al. (2015), sample 3	<i>Symbolic</i>	no		~-0.03, n.s.	no fitting results found	
Feldman & Johnston (2014), sample 2	<i>Operational</i>	no		~-0.01, n.s	reported size not r	
Nilsson & Jost (2016), sample 1	<i>Symbolic</i>	yes	x		r = .23, significant	
Nilsson & Jost (2016), sample 2	Symbolic, Operational & Psychological	yes	x		[r = .1175, significant]	r = .18, significant (operational) r = .13, significant (symbolic)
Nilsson & Jost (2016), sample 3	Symbolic & Psychological	yes	x		[r = .28, significant]	
Phelan et al. (2015)	Not identifiable	no		~.122, significance level not found	no fitting results found	
Burke et al. (2015)	Not identifiable	no		~.122, significance level not found	no fitting results found	
Brandt & Reyna (2010), sample 2	Not identifiable	no		~.124, n.s.	no fitting results found	
Johnston & Wronski (2015), control sample	<i>Operational</i>	no		~.124, n.s.	no fitting results found	
Johnston & Wronski (2015), RWA sample	Psychological	no		~.28, sign.	no fitting results found	

Kossowska & Van Hiel (2003), sample 1 study 1	<i>Symbolic</i>	yes	x		$r = .22$, significant	$r = .22$, significant (operational)
Kossowska & Van Hiel (2003), sample 2	<i>Symbolic</i>	yes		x	$\sim .40$, sign. $r = .38$, significant	$r = .52$, significant (operational) $r = .38$, significant (symbolic)
Kossowska & Van Hiel (2003), sample 3	<i>Symbolic</i>	no			$\sim .125$, significant $r = .26$, significant	$r = .44$, significant (social) $r = -.30$, significant (economic)
Kossowska & Van Hiel (2003), sample 4	<i>Symbolic</i>	yes	x		$r = .32$, significant	$r = .26$, significant (social) $r = .22$, significant (economic)
Brandt & Crawford (unpublished)	Source not found					
Meirick & Bessarabova (2016)	<i>Symbolic</i>	yes	x		$r = .12$, n.s.	
Federico, Fisher & Deason (2012)	<i>Symbolic</i>	yes	x		$r = .15$, significant	$r = .18$, significant (operational) $r = .15$, significant (symbolic)

Ksiazkiewicz, Ludeke, & Krueger (2016)	<i>Operational^s</i>	yes	x		r = .20, significant	r = .13, significant (economic)	r = .23, significant level not found (operational) r = .14, significance level not found (symbolic)
Brandt & Crawford (2013)	<i>Symbolic</i>	no		~.126, n.s.	reported size not r		
Okimoto & Gromet (2015), sample 1 (study 1A)	<i>Symbolic</i>	yes	x		r = .19, significant		
Okimoto & Gromet (2015), sample 3 (study 3)	<i>Symbolic</i>	yes	x		r = .18, significant		
Schlenker et al. (2012)	<i>Symbolic</i>	yes	x		r = .19, significant		
Brandt, Evans, & Crawford (2015), sample 2	Not identifiable	no		~.21, significant	no fitting results found		
Jost et al. (1999), sample 1	<i>Symbolic</i>	yes	x		r = .21, significant		
Jost et al. (1999), sample 2	<i>Symbolic</i>	yes	x		r = .26, significant		
Golec de Zavala et al. (2010), sample 1	<i>Symbolic</i>	yes	x		r = .22, significant		
Golec de Zavala et al. (2010), sample 2	<i>Symbolic</i>	yes	x		r = .24, significant		
Yilmaz & Saribay (2016), sample 2	<i>Symbolic</i>	no		~.25, significant	r = .164, significant	r = -.091, significant (economic)	

								r = .188, significant (social)
Chirumbolo et al. (2004) ▼	Not identifiable	no			~.23, sign.	reported size not r		
Webster & Kruglanski (1994), sample 2 (study 2)	Psychological	yes	x				r = .2660, significant	
Crowson et al. (2005), sample 1	Operational & Psychological	yes	x				[r = .285, significant]	r = .18, significant (operational)
Crowson et al. (2005), sample 2	Symbolic, Operational & Psychological	yes	x				[r = .27, significant]	r = .25, significant (operational) r = .24, significant (symbolic)
Leone & Chirumbolo (2008)	Operational & Psychological	yes	x				[r = .267, significant]	r = .19, significant (operational)
Golec de Zavala & van Bergh (2007)	<i>Operational</i>	yes	x				r = .28, significant	
Kemmelmeier (1997)	<i>Symbolic</i>	yes	x				r = .29, significant	
Chirumbolo (2002)	<i>Symbolic</i>	no			~.36, significant	reported size not r		
Soenens, Duriez & Goossens (2005)	Operational & Psychological	yes	x				[r = .367, significant]	r = .39, significant (social)
Johnston et al. (2015)	Not identifiable	no			~.48, significant	no fitting results found		
Onraet et al. (2011), sample 1	Psychological	yes	x				r = .61, significant	
Onraet et al. (2011), sample 2	<i>Operational</i>	yes	x				r = .56, significant	

Personal Needs for Order and Structure

Burke et al. (unpublished)	Source not found					
Burke (unpublished)	Source not found					
Cichocka et al. (2016), sample 1	<i>Symbolic & Operational</i>	yes	x		[r = .06, n.s.]	r = .18, significant (social) r = -.06, n.s. (economic)
Burke & LaFrance (unpublished), sample 1	Source not found					
French (1955)	Psychological	yes	x		r = .11, n.s.	
Kelemen et al. (2014)	<i>Symbolic</i>	no			~.13, significant reported size not r	
Crowson (2009)	<i>Operational</i>	yes	x		[r = .1455, n.s.]	r = .287, significant (social) r = .004, n.s. (economic)
Crowson et al. (2005), sample 1	Operational & Psychological	yes	x		[r = .16, n.s.]	r = .05, n.s. (operational) r = .15, significant (operational) r = .17, significant (symbolic)
Crowson et al. (2005), sample 2	Symbolic, Operational & Psychological	yes	x		[r = .1967, significant]	
Jost et al. (2008)	Not identifiable	no			~.18, significant no fitting results found	
Jost et al. (2007), sample 1	<i>Symbolic</i>	yes	x		r = .26, significant	

Jost et al. (2007), sample 2	<i>Symbolic</i>	yes	x			r = .26, significant	
Jost et al. (2007), sample 3	<i>Symbolic</i>	yes	x			r = .18, significant	
Krosch et al. (2013), sample 1	Symbolic & Psychological	yes	x			[r = .18, n.s.]	r = .28, significant (symbolic)
Altemeyer (1998)	Psychological	yes		x	~.21, significant	[r = .20, significance information not found]	
Webster & Stewart (2013)	<i>Operational</i>	yes	x			r = .24, significant	
Jugert et al. (2009), sample 1	Psychological	yes	x		significant	r = .35, significance information not found	
Jugert et al. (2009), sample 2	Psychological	yes	x			r = .24, significant	
Kossowska & Van Hiel (2003), sample 1, study 1	<i>Symbolic</i>	no			~.24, significant	r = .28, significant	r = .28, significant (operational)
Kossowska & Van Hiel (2003), sample 2, study 1	<i>Symbolic</i>	no			~.32, significant	r = .29, significant	r = .46, significant (operational)
Kemmelmeier (2010), sample 1	Psychological	yes	x			r = .34, significant	
Kemmelmeier (2010), sample 2	Psychological	yes	x			r = .30, significant	
Van Hiel et al. (2004), sample 1	Operational & Psychological	yes	x			[r = .4467, significant]	r = .55, significant (social)
Van Hiel et al. (2004), sample 2	Operational & Psychological	yes	x			[r = .41, n.s.]	r = .16, n.s. (economic)

Van Hiel et al. (2004), sample 3	<i>Operational^s</i>	no			~.51, sign.	r = .55, significant			
Need for Cognition									
Tam et al. (2008), sample 1	Psychological	yes	x			r = -.25, significant			
Tam et al. (2008), sample 2	Psychological	yes	x			r = -.34, significant			
Benjamin (2014)	Psychological	yes	x			r = -.28, significant			
Stern et al. (2013), sample 3	<i>Symbolic</i>	yes	x			r = -.27, significant			
Sargent (2004)	<i>Symbolic</i>	no			~-.27, sign.	no fitting results found			
Hennes et al. (2012)	<i>Symbolic</i>	yes		x	~-.21, sign.	r = -.24, significant			
Kemmelmeier (2010), sample 1	Psychological	yes	x			r = -.21, significant			
Stern & West (unpublished)	Source not found								
Sterling et al. (unpublished/2016)	<i>Symbolic</i>	no			~ -.19, sign.	no fitting results found			
Sterling, Jost & Pennycook (2016)	<i>Symbolic</i>	yes		x	~ -.19, sign.	r = -.19, significant			
Ksiazkiewicz, Ludke & Krueger (2016)	<i>Symbolic</i>	yes	x			r = -.16, significant	r = -.23, significant (social) r = -.07, n.s. (economic)	r = -.21, significant (operational)	
Altemeyer (1998)	Psychological	yes	x			[r = -.18, significance level not found]			
Crowson (2009)	<i>Operational^s</i>	no			~-.14, sign.	reported size not r			

Bizer et al. (2004), sample 1	<i>Symbolic</i>	yes	x		$r = -.08$, significant	
Bizer et al. (2004), sample 2	<i>Symbolic</i>	yes	x		$r = -.03$, n.s.	
Crowson et al. (2005), sample 1	Operational & Psychological	yes	x		[$r = -.07$, n.s.]	$r = -.05$ n.s. (operational)
Crowson et al. (2005), sample 2	Symbolic, Operational & Psychological	yes	x		[$r = -.0467$, n.s.]	$r = -.01$, n.s. (operational) $r = .02$, n.s. (symbolic)
Feldman & Johnston (2014), sample 1	<i>Operational</i>	no		$\sim -.05$, sign.	reported size not r	
Feldman & Johnston (2014), sample 2	<i>Operational</i>	no		$\sim -.03$, n.s.	reported size not r	
Kelemen et al. (2014)	<i>Symbolic</i>	no		$\sim -.04$, n.s.	reported size not r	

Cognitive Reflection

Kemmelmeier (2010), sample 1	Psychological	yes	x		$r = -.29$, significant	
Deppe (2015), sample 1	Symbolic, Operational + Psychological	yes	x		[$r = -.23$, n.s.]	$r = -.20$, significant (economic) [$r = -.21$, significant (operational)] $r = -.09$, n.s. (symbolic)
Deppe (2015), sample 2	Symbolic, Operational + Psychological	yes	x		[$r = -.21$, significant]	$r = .07$, n.s. (economic) [$r = -.134$, n.s. (operational)] $r = -.19$, significant (symbolic)

Deppe (2015), sample 3	Symbolic, Operational + Psychological	yes	x		[r = -.195, significant]	r = -.09, n.s. (economic)	[r = -0.165, n.s. (operational)] r = -.18, significant (symbolic)
Deppe (2015), sample 4	Symbolic, Operational + Psychological	yes	x		[r = -.135, n.s.]	r = .04, n.s. (economic)	[r = 0.015, n.s. (operational)] r = -.11, n.s. (symbolic)
Duriez & Soenens (2006)	Psychological	yes	x		[r = -.215, significant]		
Sterling, Jost & Pennycook (2016)	<i>Symbolic</i>	yes	x		r = -.17, significant		
Talhelm et al. (2015) sample 1	<i>Symbolic</i>	no		~-.17, significant	no fitting results found		
Talhelm et al. (2015) sample 2	<i>Symbolic</i>	no		~-.12, significant	no fitting results found		
Yilmaz & Saribay (2016), study 1	<i>Symbolic</i>	yes	x		r = -.163, significant		
Yilmaz & Saribay (2016), study 2	<i>Symbolic</i>	yes	x		r = -.106, significant	r = -.157, significant (social) r = -0.020, n.s. (economic)	
Cornelis & Van Hiel (2006)	<i>Operational^s</i>	yes	x	~-.015, n.s.	r = -.01, n.s.	r = -.03, n.s. (economic)	
Kahan (2013)	<i>Symbolic</i>	no		~.01, n.s.	r = -.02, n.s.		

Table 1 Information on papers from Jost, Sterling and Stern (2018) meta-analysis regarding the relationship of epistemic needs and ideology regarding the type of scale, reproducibility categorized into three levels of certainty, magnitude sizes reported by Jost and the original paper and additional magnitude sizes concerning social, economic, operational and symbolic ideology given by the original.

In italic: direct measurements of ideology; in brackets: r is the average of multiple, separately conducted correlations of ideology measures and the concerning epistemic need; studies marked with ▼ were excluded from the analyses as they featured scales unfit to measure ideology; Operational^s marks a measure of social ideology, Operational^e marks a measure of economic ideology, see further information in the appendix.

Source. This table's selection of papers and effect sizes of column 7 was generated based on the meta-analysis by Jost (2017).

Paper	Scale Used to measure ideology
French (1995)	F Scale
Pettigrew (1958)	F Scale
Rock & Janoff-Bulman (2010), sample1	ISD
Rock & Janoff-Bulman (2010), sample2	Ideological Self-Identification (ISD)
Hession & McCarthy (1975) group 1	F Scale
Hession & McCarthy (1975) group 2	F Scale
	ISD + Opinions on rising university fees, involvement in demonstrations + language scale for policy opinions for policies related to socioeconomics, identity, responsibility and moral values
Caparos et al. (2015), sample1	
	ISD + opinions on rising university fees, involvement in demonstrations + language scale for policy opinions for policies related to socioeconomics, identity and responsibility
Caparos et al. (2015), sample2	
	Children Authoritarianism Scale (children's version of the F scale)
Zelen (1955)	
Steiner & Johnson (1963), sample 1	F Scale
Steiner & Johnson (1963), sample 2	F Scale
Neuringer (1964)	F Scale
Kemmelmeier (2007)	ISD
Kirton (1978), sample 1	Wilson-Patterson C Scale
Kirton (1978), sample 2	Wilson-Patterson C Scale, shortened
Rokeach & Fruchter (1956)	F Scale + E Scale + PEC
Kidd & Kidd (1972)	F Scale
Kossowska & Van Hiel (2003), sample 1 (study 1)	ISD
Kossowska & Van Hiel (2003), sample 2 (study 1)	ISD
Kelemen (2014)	ISD
Webster & Kruglanski (1994), sample 2	F Scale
Rokeach (1960), sample 1	Not identifiable
Rokeach (1960), sample 2	Not identifiable
Rokeach (1960), sample 3	Not identifiable
Rokeach (1960), sample 4	Not identifiable
Rokeach (1960), sample 5	Not identifiable
Schlenker (2012)	ISD
Choma (2012)	ISD
Smithers & Lobley (1978)	Not identifiable
Price et al. (2015) ▼	Political Open-Minded Cognition (OMC-P)
Thorisdottir & Jost (2011), sample 3	ISD
Kemmelmeier (2007)	ISD
Conway (2015)	ISD
	McClosky & Bonn's Conservatism-Liberalism Scale + RWA
Crowson (2005), sample 1	
	McClosky and Bann's Conservatism-Liberalism Scale + ISD + RWA
Crowson (2005), sample 2	
Everett (2013)	Not identifiable

Crowson (2009)	Middendorp Cultural Conservatism Scale + Middendorp Economic Conservatism Scale
Kirton (1978), sample 1	Wilson-Patterson C Scale
Kirton (1978), sample 2	Wilson-Patterson C Scale, shortened
Rule & Hewitt (1970)	
Kohn (1974) ▼	Authoritarianism Rebellion Scale (ARS) - rid of the conservatism hinge of the F scale (Kohn, 1974, p. 245)
Jost et al. (2007)	ISD
Rokeach & Fruchter (1956)	Not identifiable
Rokeach (1956), sample 1	F Scale
Rokeach (1956), sample 2	F Scale
Rokeach (1956), sample 3	F Scale
Rokeach (1956), sample 4	F Scale
Rokeach (1956), sample 5	F Scale
Rokeach (1956), sample 6	F Scale
Rokeach (1956), sample 7	F Scale
Pyron (1966)	F Scale
Hession & McCarthy (1975), sample 1	F Scale
Hession & McCarthy (1975), sample 2	F Scale
Schroder & Streufert (1962)	
Webster & Stewart (2013)	Wilson-Patterson C Scale
Plant (1960), sample 1	F Scale
Plant (1960), sample 2	F Scale
Plant (1960), sample 3	F Scale
Plant (1960), sample 4	F Scale
Thompson & Michel (1972)	F Scale
Kerlinger & Rokeach (1966), sample 1	F Scale
Kerlinger & Rokeach (1966), sample 2	F Scale
Kerlinger & Rokeach (1966), sample 3	F Scale
Kahoe (1974)	F Scale
Zippel & Norman (1966)	F Scale
Pettigrew (1958)	F Scale
Wilson (1973)	Not identifiable
	Agreement to 10 issues generally viewed as distinguishing the Democratic and Republican Parties + position regarding political rights (McClosky's Dimensions of Political Tolerance approach) + Kerlinger Liberalism Scale + Kerlinger Conservatism Scale + Political Activism + ISD
Block & Block (2006), sample 1 (men)	
	Agreement to 10 issues generally viewed as distinguishing the Democratic and Republican Parties + position regarding political rights (McClosky's Dimensions of Political Tolerance approach) + Kerlinger Liberalism Scale + Kerlinger Conservatism Scale + Political Activism + ISD
Block & Block (2006), sample 2 (women)	
	Wilson-Patterson Inventory, altered in case of three items
McAllister & Anderson (1991)	
Jost (2007), sample 3	ISD
Gillies & Campbell (1985)	Wilson-Patterson Attitude Inventory

Caparos et al. (2015), sample 2	ISD +Opinions on rising university fees + policy opinions for policies related to socioeconomics and identity and responsibility
Glasgow & Cartier (1985)	Wilson-Patterson Attitude Inventory
Atieh et al. (1987)	Wilson-Patterson C Scale
Malka et al. (2014)	Economic attitudes
Tetlock et al. (1984), sample 1	Classifications based on ratings by Americans for Democratic Action (ADA) of records of Congressional speeches given by senators who held office in the five Congresses under study: the 82nd, the 83rd & the 94th, the 96th
Tetlock et al. (1984), sample 2	Classifications based on ratings by Americans for Democratic Action (ADA) of records of Congressional speeches given by senators who held office in the five Congresses under study: the 94th, the 96th & the 97th
Tetlock et al. (1985)	Classifying liberal positions: pro civil liberties and civil rights, pro-government, pro-union, pro small business against large corporations, pro-consumer, pro environmentalist + classifying conservative positions
Pyron (1966)	F Scale
Schroder & Streufert (1962)	
Rule & Hewitt (1970)	
Tetlock (1983)	Classifications based on ratings of 1975 and 1976 senatorial voting records by Americans for Democratic Action (ADA)
Tetlock (1984)	Ratings of parliamentarians' responses to a question concerning their views on the proper role of government in regulating the economy and providing social welfare
Talhelm et al. (2015), sample 1	ISD
Talhelm et al. (2015), sample 2	ISD
Barron (1953) ▼	Form 60 of the Levinson-Sanford scale - a measure of anti-Semitism (Barron, 1953, p. 172)
Rudin & Stagner (1958)	F Scale
Brundidge (2014)	Unambiguously conservative sites: e.g. Breitbart, Hit & Run, Instapundit, Michelle Malkin, Red State, The Blaze, The Foundry, and Town Hall + unambiguously liberal sites: Crooks and Liars, Fire Dog Lake, Hullabaloo, Outside the Beltway, Talking Points Memo, The Daily Kos, The Huffington Post, and Think Progress
Streufert & Driver (1967)	F Scale
Vannoy (1965)	F Scale
Van Hiel & Mervielde (2003)	ISD + 10 items referring to general conservatism + 15 items of the current political beliefs questionnaire
Sidanius (1985)	S4 Conservatism Scale: Sociopolitical attitudes
Hinze et al. (1997)	Wilson-Patterson C Scale

Stuart (1965), sample 1	F Scale
Stuart (1965), sample 2	F Scale
Cornelis & Van Hiel (2006)	12-item cultural conservatism scale
Conway et al. (2015), sample 2	ISD
Conway et al. (2015), sample 3	ISD
Gruenfeld (1995), sample 1	Justices were categorized based on their voting records
Gruenfeld (1995), sample 2	Ideological outcome of a legal outcome was categorized
Gruenfeld (1995), sample 3	Ideological outcome of a legal outcome was categorized
French (1995)	F Scale
Kelemen (2014)	ISD
Davids & Eriksen (1957)	F Scale
Okimoto & Gromet (2015), sample 1A	ISD
Okimoto & Gromet (2015), sample 2A	ISD
Okimoto & Gromet (2015), sample 3	not identifiable
Okimoto & Gromet (2015), sample 4	not identifiable
Choma et al. (2012)	ISD
Crowson et al. (2005), sample 1	McClosky and Bann's Conservatism– Liberalism Scale + RWA
Crowson et al. (2005), sample 2	McClosky and Bann's (1979) Conservatism– Liberalism Scale + RWA + ISD
Sidanius (1978)	S4 Conservatism Scale + Authoritarian Aggression
Davids (1955)	F Scale
Kossowska & Van Hiel (2003), sample 1 (study 1)	ISD + agreement to program of major political parties + questionnaires designed to assess conservative beliefs
Kossowska & Van Hiel (2003), sample 2 (study 1)	ISD + agreement of program of major political parties + questionnaires designed to assess conservative beliefs
Zacker (1973)	F Scale
De Rojas (2015)	RWA+ SDO
Vannoy (1965)	F Scale
Jost et al. (2007), sample 3	ISD
Kirton (1978), sample 1	Wilson & Patterson C Scale, shortened
Kirton (1978), sample 2	Wilson & Patterson C Scale, shortened
Filbert & Ressler (1998)	Political attitudes concerning Arab-Israeli conflict + Political party preference + ISD regarding foreign and security issues
Caparos et al. (2015), sample 2	ISD + opinion about a political debate over increasing university fees, involvement in demonstrations and + policy opinions for policies related to socioeconomics, identity and responsibility
Lytwyn (2012)	Agreement with perspectives on certain political issues
Kohn (1974) ▼	Membership to student political organizations (socialist, liberal, conservative, labor)
Brandt et al. (2015), sample 1	ISD

Brandt et al. (2015), sample 2	ISD
Brandt et al. (2015), sample 3	ISD
Feldman & Johnston (2014), sample 2	4 questions on economic ideology + 3 questions on social ideology
Nilsson & Jost (2016), sample 1	ISD
Nilsson & Jost (2016), sample 2	ISD + Everett's conservatism scale + SDO + RWA
Nilsson & Jost (2016), sample 3	ISD + RWA + SDO
Phelan et al. (2015)	Not identifiable
Burke et al. (2015)	Not identifiable
Brandt & Reyna (2010), sample 2	Not identifiable
Johnston & Wronski (2015), control sample	Political opinions
Johnston & Wronski (2015), RWA sample	4-item RWA scale
Kossowska & Van Hiel (2003), sample 1 study 1	ISD
Kossowska & Van Hiel (2003), sample 2	ISD
Kossowska & Van Hiel (2003), sample 3	ISD
Kossowska & Van Hiel (2003), sample 4	ISD
Brandt & Crawford (unpublished)	
Meirick & Bessarabova (2016)	ISD
Frederico et al. (2012)	ISD
Ksiazkiewicz, Ludke & Krueger (2016)	Social policy attitudes from Wilson-Patterson C Scale
Brandt & Crawford (2013)	ISD
Okimoto & Gromet (2015), sample 1 (study 1A)	ISD
Okimoto & Gromet (2015), sample 3 (study 3)	ISD
Schlenker et al. (2012)	ISD
Brandt, Evans, & Crawford (2015), sample 2	Not identifiable
Jost et al. (1999), sample 1	ISD
Jost et al. (1999), sample 2	ISD
Golec de Zavala et al. (2010), sample 1	ISD
Golec de Zavala et al. (2010), sample 2	ISD
Yilmaz & Saribay (2016), sample 2	ISD
Chirumbolo et al. (2004) ▼	Voting choices in the most recent election
Webster & Kruglanski (1994), sample 2 (study 2)	F Scale
Crowson et al. (2005), sample 1	McClosky and Ban's Conservatism-Liberalism Scale + RWA
Crowson et al. (2005), sample 2	McClosky and Ban's Conservatism-Liberalism Scale + RWA
Leone & Chirumbolo (2008)	RWA + SDO + support for conservative policies
Golec de Zavala & van Bergh (2007)	10-item political beliefs scale
Kemmelmeier (1997)	ISD
Chirumbolo (2002)	ISD

Soenens et al. (2005)	12-item cultural conservatism scale + RWA + SDO
Johnston et al. (2015)	
Onraet et al. (2011), sample 1	11-item RWA scale
Onraet et al. (2011), sample 2	10-item General Conservatism Scale
Burke et al. (unpublished)	
Burke (unpublished)	
Cichocka et al. (2016), sample 1	ISD + support for certain social and economic policies
Burke & LaFrance (unpublished), sample 1	
French (1955)	F Scale
Kelemen et al. (2014)	ISD
Crowson (2009)	Middendorp Cultural conservatism Scale + Middendorp Economic Conservatism Scale
Crowson et al. (2005), sample 1	McClosky and Ban's Conservatism-Liberalism Scale + RWA
Crowson et al. (2005), sample 2	ISD + RWA + McClosky and Ban's Conservatism-Liberalism Scale
Jost et al. (2008)	Not identifiable
Jost et al. (2007), sample 1	ISD
Jost et al. (2007), sample 2	ISD
Jost et al. (2007), sample 3	ISD
Krosch et al. (2013), sample 1	ISD + group-based dominance
Altemeyer (1998)	RWA + SDO
Webster & Stewart (2013)	Wilson-Patterson C-Scale
Jugert et al. (2009), sample 1	Altemeyer's RWA scale, slightly modified
Jugert et al. (2009), sample 2	Funke's RWA scale
Kossowska & Van Hiel (2003), sample 1, study 1	ISD
Kossowska & Van Hiel (2003), sample 2, study 1	ISD
Kemmelmeier (2010), sample 1	RWA
Kemmelmeier (2010), sample 2	RWA
Van Hiel et al. (2004), sample 1	12-item cultural conservatism scale + RWA + SDO
Van Hiel et al. (2004), sample 2	18-item cultural and economic conservatism scale RWA + SDO
Van Hiel et al. (2004), sample 3	10-item conservatism scale
Tam et al. (2008), sample 1	RWA
Tam et al. (2008), sample 2	SDO
Benjamin (2014)	RWA
Stern et al. (2013), sample 3	ISD
Sargent (2004)	ISD
Hennes et al. (2012)	ISD
Kemmelmeier (2010), sample 1	RWA
Stern & West (unpublished)	
Sterling et al. (unpublished/2016)	ISD
Sterling, Jost & Pennycook (2016)	Single ideological self-placement regarding fiscal conservatism
Ksiazkiewicz, Ludke & Krueger (2016)	ISD

Altemeyer (1998)	RWA + SDO
Crowson (2009)	Middendorp Cultural Conservatism Scale
Bizer et al. (2004), sample 1	ISD
Bizer et al. (2004), sample 2	ISD
Crowson et al. (2005), sample 1	McClosky and Bann's (1979) Conservatism-Liberalism Scale on social, economic and political issues + RWA
Crowson et al. (2005), sample 2	McClosky and Bann's Conservatism-Liberalism Scale on social, economic and political issues
Feldman & Johnston (2014), sample 1	Operational measure of economic conservatism + Operational measure of social conservatism
Feldman & Johnston (2014), sample 2	Operational measure of economic conservatism + Operational measure of social conservatism
Kelemen et al. (2014)	ISD
Kemmelmeier (2010), sample 1	Altemeyer's RWA Scale
Deppe (2015), sample 1	attitudes on 19 issues (moral, punishment and economic issues) + ISD
Deppe (2015), sample 2	attitudes towards the legality of i.e. abortion, same sex marriage, prayer in public schools etc. (punishment, moral and economic issues) + ISD
Deppe (2015), sample 3	attitudes on 20 issues + ISD
Deppe (2015), sample 4	Agree/Disagree on 20 "issue positions" indicating ideology + ISD
Duriez & Soenens (2006)	RWA + SDO
Sterling, Jost & Pennycook (2016)	ISD
Talhelm et al. (2015) sample 1	ISD
Talhelm et al. (2015) sample 2	ISD
Yilmaz & Saribay (2016), study 1	ISD
Yilmaz & Saribay (2016), study 2	ISD
Cornelis & Van Hiel (2006)	12-item Cultural Conservatism Scale
Kahan (2013)	ISD

Table 2 Information on papers from Jost, Sterling and Stern (2018) meta-analysis regarding the relationship of epistemic needs and ideology regarding the scale used to measure ideology. ▼ marks studies that were excluded from the analyses as they featured scales unfit to measure ideology.

Source. This table's selection of papers was generated based on the meta-analysis by Jost (2017)

Overall average effect sizes (r)							
	Very surely reproducible	Kind of surely & Not surely reproducible		Not reproducible (except ▼)	Additional magnitude sizes given by source samples		
Cognitive and perceptual rigidities							
Separate averages	0.34	s.: 5 n.s.: 3 n.f.: 6		0.16	s.: n.s.: 3 n.f.:	0.35	s.: n.s.: n.f.: 1
Combined averages	0.34	s.: 5 n.s.: 3 n.f.: 6	0.34	s.: 5 n.s.: 3 n.f.: 6	0.30	s.: 5 n.s.: 6 n.f.: 6	s.: 5 n.s.: 6 n.f.: 7
Dogmatism							
Separate averages	0.55	s.: 10 n.s.: 1 n.f.: 18	0.35	s.: 2 n.s.: 1 n.f.: 1	0.27	s.: 7 n.s.: 3 n.f.: 2	s.: 10 n.s.: 1 n.f.: 5
Combined averages	0.55	s.: 10 n.s.: 1 n.f.: 18	0.53	s.: 12 n.s.: 2 n.f.: 19	0.46	s.: 19 n.s.: 5 n.f.: 21	s.: 29 n.s.: 6 n.f.: 26
Tolerance of Uncertainties							
Separate averages	-0.26	s.: 6 n.s.: n.f.:		-0.43	s.: 2 n.s.: 1 n.f.: 1	-0.15	s.: 2 n.s.: n.f.:
Combined averages	-0.26	s.: 6 n.s.: n.f.:		-0.33	s.: 8 n.s.: 1 n.f.: 1	-0.30	s.: 10 n.s.: 1 n.f.: 1
Integrative Complexity							
Separate averages	-0.20	s.: 5 n.s.: 4 n.f.: 2	-0.13	s.: n.s.: 1 n.f.: 1	-0.10	s.: 3 n.s.: 7 n.f.:	s.: n.s.: 3 n.f.:
Combined averages	-0.20	s.: 5 n.s.: 4 n.f.: 2	-0.19	s.: 5 n.s.: 5 n.f.: 3	-0.15	s.: 8 n.s.: 12 n.f.: 3	s.: 8 n.s.: 15 n.f.: 3
Intolerance of Ambiguity							

Separate averages	0.23	s.: 7 n.s: 5 n.f.: 2	0.59	s.: n.s: n.f.: 1	0.14	s.: 8 n.s: n.f.: 1	0.19	s.: 5 n.s: 2 n.f.:
Combined averages	0.23	s.: 7 n.s: 5 n.f.: 2	0.25	s.: 7 n.s: 5 n.f.: 3	0.22	s.: 15 n.s: 5 n.f.: 3	0.21	s.: 20 n.s: 7 n.f.: 3
Need for Cognitive Closure								
Separate averages	0.26	s.: 23 n.s: 1 n.f.:	0.38	s.: 1 n.s: n.f.:	0.17	s.: 6 n.s: 7 n.f.: 2	0.20	s.: 19 n.s: n.f.: 2
Combined averages	0.26	s.: 23 n.s: 1 n.f.:	0.27	s.: 24 n.s: 1 n.f.:	0.23	s.: 30 n.s: 8 n.f.: 2	0.22	s.: 49 n.s: 8 n.f.: 4
Personal Needs for Order and Structure								
Separate averages	0.24	s.: 10 n.s: 5 n.f.: 1	0.2	s.: n.s: n.f.: 1	0.29	s.: 5 n.s: n.f.:	0.21	s.: 8 n.s: 4 n.f.:
Combined averages	0.24	s.: 10 n.s: 5 n.f.: 1	0.24	s.: 10 n.s: 5 n.f.: 2	0.25	s.: 15 n.s: 5 n.f.: 2	0.24	s.: 23 n.s: 9 n.f.: 2
Need for Cognition								
Separate averages	-0.17	s.: 7 n.s: 3 n.f.: 1	-0.22	s.: 2 n.s: n.f.:	-0.12	s.: 4 n.s: 2 n.f.:	-0.09	s.: 2 n.s: 4 n.f.:
Combined averages	-0.17	s.: 7 n.s: 3 n.f.: 1	-0.18	s.: 9 n.s: 3 n.f.: 1	-0.16	s.: 13 n.s: 5 n.f.: 1	-0.14	s.: 15 n.s: 9 n.f.: 1
Cognitive Reflection								
Separate averages	-0.19	s.: 7 n.s: 2 n.f.:	-0.01	s.: n.s: 1 n.f.:	-0.13	s.: 2 n.s: 1 n.f.:	-0.10	s.: 5 n.s: 10 n.f.:
Combined averages	-0.19	s.: 7 n.s: 2 n.f.:	-0.17	s.: 7 n.s: 3 n.f.:	-0.16	s.: 9 n.s: 4 n.f.:	-0.12	s.: 14 n.s: 14 n.f.:

Table 3 Overall average effect sizes (r) of epistemic needs and ideology. S.: significant; n.s.: not significance; n.f.: information on significance not found. Combined averages include the results of all the previously noted results for the specific type of scale. ▼ marks studies that were excluded from the analyses as they featured scales unfit to measure ideology.

Source. This table's selection of papers was generated based on the meta-analysis by Jost (2017).

Average effect sizes: Psychological and Direct (r)														
		Very surely reproducible		Additional magnitude sizes given by source samples		Kind of surely & Not surely reproducible		Not reproducible (except ▼)						
		Psychological		Direct		Psychological		Direct		Psychological		Direct		
Cognitive and perceptual rigidities														
Separate averages	0.28	s.: 4 n.s.: 2 n.f.: 2	0.42	s.: 1 n.s.: n.f.: 3	0.35	s.: n.s.: n.f.: 1		0.13	s.: n.s.: 2 n.f.:					
Combined averages	0.28	s.: 4 n.s.: 2 n.f.: 2	0.42	s.: 1 n.s.: n.f.: 3	0.40	s.: 1 n.s.: n.f.: 4	0.28	s.: 4 n.s.: 2 n.f.: 2	0.32	s.: 1 n.s.: 2 n.f.: 4	0.28	s.: 4 n.s.: 2 n.f.: 2	0.32	s.: 1 n.s.: 2 n.f.: 4
Dogmatism														
Separate averages	0.66	s.: 4 n.s.: n.f.: 17	0.26	s.: 4 n.s.: 1 n.f.: 1	0.27	s.: 10 n.s.: 1 n.f.: 5		0.35	s.: 2 n.s.: 1 n.f.: 1	0.10	s.: n.s.: 1 n.f.:	0.27	s.: 2 n.s.: n.f.: 1	
Combined averages	0.66	s.: 4 n.s.: n.f.: 17	0.26	s.: 4 n.s.: 1 n.f.: 1	0.26	s.: 14 n.s.: 2 n.f.: 6	0.66	s.: 4 n.s.: n.f.: 17	0.28	s.: 16 n.s.: 3 n.f.: 7	0.63	s.: 4 n.s.: 1 n.f.: 17	0.28	s.: 18 n.s.: 3 n.f.: 8
Tolerance of Uncertainties														
Separate averages			-0.26	s.: 6 n.s.: n.f.:	-0.15	s.: 2 n.s.: n.f.:						-0.38	s.: 2 n.s.: 1 n.f.:	
Combined averages			-0.26	s.: 6 n.s.: n.f.:	-0.23	s.: 8 n.s.: n.f.:		-0.23	s.: 8 n.s.: n.f.:			-0.27	s.: 10 n.s.: 1 n.f.:	
Integrative Complexity														

Separate averages	-0.14	s.: n.s: 2 n.f.: 3	-0.24	s.: 5 n.s: 2 n.f.:	-0.09	s.: n.s: 3 n.f.:	-0.06	s.: n.s: 1 n.f.:	-0.02	s.: n.s: 1 n.f.:	-0.11	s.: 3 n.s: 6 n.f.:	
Combined averages	-0.14	s.: n.s: 2 n.f.: 3	-0.24	s.: 5 n.s: 2 n.f.:	-0.19	s.: 5 n.s: 5 n.f.:	-0.14	s.: n.s: 2 n.f.: 3	-0.18	s.: 5 n.s: 6 n.f.:	-0.12	s.: n.s: 3 n.f.: 3	s.: 8 n.s: 12 n.f.:
Intolerance of Ambiguity													
Separate averages	0.16	s.: 1 n.s: 3 n.f.: 1	0.31	s.: 5 n.s: 1 n.f.: 1	0.19	s.: 5 n.s: 2 n.f.:	0.59	s.: n.s: 1 n.f.: 1	0.26	s.: 1 n.s: 1 n.f.:	0.13	s.: 5 n.s: 1 n.f.:	
Combined averages	0.16	s.: 1 n.s: 3 n.f.: 1	0.31	s.: 5 n.s: 1 n.f.: 1	0.24	s.: 10 n.s: 2 n.f.: 1	0.16	s.: 1 n.s: 3 n.f.: 1	0.27	s.: 10 n.s: 2 n.f.: 2	0.18	s.: 2 n.s: 3 n.f.: 1	s.: 15 n.s: 2 n.f.: 2
Need for Cognitive Closure													
Separate averages	0.44	s.: 2 n.s: 1 n.f.:	0.24	s.: 15 n.s: 1 n.f.:	0.20	s.: 19 n.s: 1 n.f.: 2	0.38	s.: 1 n.s: 1 n.f.:	0.28	s.: 1 n.s: 1 n.f.:	0.13	s.: 3 n.s: 6 n.f.:	
Combined averages	0.44	s.: 2 n.s: 1 n.f.:	0.24	s.: 15 n.s: 1 n.f.:	0.22	s.: 34 n.s: 1 n.f.: 2	0.44	s.: 2 n.s: 1 n.f.:	0.22	s.: 35 n.s: 1 n.f.: 2	0.39	s.: 3 n.s: 1 n.f.:	s.: 38 n.s: 7 n.f.: 2
Personal Needs for Order and Structure													
Separate averages	0.27	s.: 3 n.s: 1 n.f.: 1	0.19	s.: 4 n.s: 2 n.f.:	0.21	s.: 8 n.s: 4 n.f.:	0.2	s.: n.s: 1 n.f.: 1			0.31	s.: 4 n.s: 1 n.f.:	
Combined averages	0.27	s.: 3 n.s: 1 n.f.: 1	0.19	s.: 4 n.s: 2 n.f.:	0.20	s.: 12 n.s: 6 n.f.:	0.26	s.: 3 n.s: 1 n.f.: 2	0.20	s.: 12 n.s: 6 n.f.:	0.26	s.: 3 n.s: 1 n.f.: 2	s.: 16 n.s: 6 n.f.:
Need for Cognition													
Separate averages	-0.25	s.: 4 n.s: 1 n.f.: 1	-0.14	s.: 3 n.s: 1 n.f.:	-0.09	s.: 2 n.s: 4 n.f.:	-0.22	s.: 2 n.s: 1 n.f.:			-0.12	s.: 4 n.s: 2 n.f.:	
Combined averages	-0.25	s.: 4 n.s: 1 n.f.: 1	-0.14	s.: 3 n.s: 1 n.f.:	-0.11	s.: 5 n.s: 5 n.f.:	-0.25	s.: 4 n.s: 1 n.f.:	-0.13	s.: 7 n.s: 5 n.f.:	-0.25	s.: 4 n.s: 1 n.f.:	s.: 11 n.s: 7 n.f.:
Cognitive Reflection													

Separate averages	-0.25	s.: 2 n.s: n.f.:	-0.15	s.: 3 n.s: n.f.:	-0.10	s.: 5 n.s: 10 n.f.:		-0.01	s.: n.s: 1 n.f.:		-0.10	s.: 2 n.s: 1 n.f.:		
Combined averages	-0.25	s.: 2 n.s: n.f.:	-0.15	s.: 3 n.s: n.f.:	-0.11	s.: 8 n.s: 10 n.f.:	-0.25	s.: 2 n.s: n.f.:	-0.1	s.: 8 n.s: 11 n.f.:	-0.25	s.: 2 n.s: n.f.:	-0.10	s.: 10 n.s: 11 n.f.:

Table 4 Average effect sizes (r) of epistemic needs and ideology measured with Psychological and Direct scales. S.: significant; n.s.: not significance; n.f.: information on significance not found. Combined averages include the results of all the previously noted results for the specific type of scale. ▼ marks studies that were excluded from the analyses as they featured scales unfit to measure ideology.

Source. This table's selection of papers was generated based on the meta-analysis by Jost (2017).

Average effect sizes: Symbolic and Operational (r)																
		Very surely reproducible				Additional magnitude sizes given by source samples				Kind of surely & Not surely reproducible				Not reproducible (except ▼)		
		Symbolic		Operational		Symbolic		Operational		Symbolic		Operational		Symbolic	Operational	
Cognitive and perceptual rigidities																
Separate averages	0.35	s.: 1 n.s: n.f.:		s.: 2 n.s: n.f.:				0.35	s.: n.s: n.f.: 1				0.13	s.: n.s: 2 n.f.:		
Combined averages	0.35	s.: 1 n.s: n.f.:		s.: 2 n.s: n.f.:	0.35	s.: 1 n.s: n.f.:	0.48	s.: 2 n.s: n.f.: 1	0.35	s.: 1 n.s: n.f.:	0.48	s.: 2 n.s: n.f.: 1	0.20	s.: 1 n.s: 2 n.f.:	0.48	s.: 2 n.s: n.f.: 1
Dogmatism																
Separate averages	0.19	s.: 4 n.s: 1 n.f.:		s.: n.s: n.f.: 1	0.32	s.: 2 n.s: n.f.:	0.26	s.: 8 n.s: 1 n.f.: 5	0.33	s.: 1 n.s: 1 n.f.:	0.37	s.: 1 n.s: n.f.: 1	0.17	s.: 2 n.s: n.f.:	0.46	s.: n.s: n.f.: 1
Combined averages	0.19	s.: 4 n.s: 1 n.f.:		s.: n.s: n.f.: 1	0.23	s.: 6 n.s: 1 n.f.:	0.28	s.: 8 n.s: 1 n.f.: 6	0.25	s.: 7 n.s: 2 n.f.:	0.29	s.: 9 n.s: 1 n.f.: 7	0.24	s.: 9 n.s: 2 n.f.:	0.30	s.: 9 n.s: 1 n.f.: 8
Tolerance of Uncertainties																
Separate averages				s.: 3 n.s: n.f.:	-0.16	s.: 1 n.s: n.f.:	-0.03	s.: 1 n.s: n.f.:	-0.26					s.: 1 n.s: n.f.:	-0.39	s.: 1 n.s: 1 n.f.:

Combined averages				s.: 3 n.s: n.f.:				s.: 1 n.s: n.f.:				s.: 4 n.s: n.f.:			s.: 1 n.s: n.f.:			s.: 4 n.s: n.f.:			s.: 2 n.s: n.f.:			s.: 5 n.s: n.f.:				
			-0.16					-0.03							-0.19				-0.21						-0.21			
Integrative Complexity																												
Separate averages		s.: 2 n.s: n.f.:																										
	-0.24																											
Combined averages		s.: 2 n.s: n.f.:																										
	-0.24																											
Intolerance of Ambiguity																												
Separate averages		s.: 2 n.s: n.f.:																										
	0.22																											
Combined averages		s.: 2 n.s: n.f.:																										
	0.22																											
Need for Cognitive Closure																												
Separate averages		s.: 12 n.s: n.f.:																										
	0.22																											
Combined averages		s.: 12 n.s: n.f.:																										
	0.22																											
Personal Needs for Order and Structure																												
Separate averages		s.: 3 n.s: n.f.:																										
	0.23																											
Combined averages		s.: 3 n.s: n.f.:																										
	0.23																											
Need for Cognition																												
Separate averages		s.: 3 n.s: n.f.:																										
	-0.14																											

Combined averages	-0.14	s.: 3 n.s.: 1 n.f.:	-0.10	s.: 3 n.s.: 2 n.f.:	-0.11	s.: 2 n.s.: 3 n.f.:	-0.13	s.: 4 n.s.: 2 n.f.:	-0.11	s.: 2 n.s.: 3 n.f.:	-0.14	s.: 6 n.s.: 3 n.f.:	-0.10	s.: 4 n.s.: 4 n.f.:
Cognitive Reflection														
Separate averages	-0.15	s.: 3 n.s.: n.f.:	-0.14	s.: 3 n.s.: 1 n.f.:	-0.08	s.: 3 n.s.: 8 n.f.:			-0.01	s.: n.s.: 1 n.f.:	-0.10	s.: 2 n.s.: 1 n.f.:		
Combined averages	-0.15	s.: 3 n.s.: n.f.:	-0.14	s.: 6 n.s.: 1 n.f.:	-0.08	s.: 3 n.s.: 8 n.f.:	-0.14	s.: 6 n.s.: 1 n.f.:	-0.07	s.: 3 n.s.: 9 n.f.:	-0.13	s.: 8 n.s.: 2 n.f.:	-0.07	s.: 3 n.s.: 9 n.f.:

Table 5 Average effect sizes (r) of epistemic needs and ideology measured with Symbolic and Operational scales. S.: significant; n.s.: not significance; n.f.: information on significance not found. Combined averages include the results of all the previously noted results for the specific type of scale. ▼ marks studies that were excluded from the analyses as they featured scales unfit to measure ideology.

Source. This table's selection of papers was generated based on the meta-analysis by Jost (2017).

Average effect sizes: Economic and Social (r)									
Very surely reproducible		Additional magnitude sizes given by source samples				Kind of surely & Not surely reproducible		Not reproducible (except ▼)	
Economic	Social	Economic	Social	Economic	Social	Economic	Social	Economic	Social
Cognitive and perceptual rigidities									
Separate averages		0.35	s.: n.s.: n.f.: 1			0.35	s.: n.s.: n.f.: 1	0.35	s.: n.s.: n.f.: 1
Combined averages		0.35	s.: n.s.: n.f.: 1			0.35	s.: n.s.: n.f.: 1	0.35	s.: n.s.: n.f.: 1
Dogmatism									
Separate averages		0.20	s.: 2 n.s.: n.f.: 5	0.47	s.: 2 n.s.: n.f.:				
Combined averages		0.20	s.: 2 n.s.: n.f.: 5	0.47	s.: 2 n.s.: n.f.:	0.20	s.: 2 n.s.: n.f.: 5	0.47	s.: 2 n.s.: n.f.:
Tolerance of Uncertainties									

Separate averages	-0.07	s.: n.s: 1 n.f.: 1	-0.23	s.: 1 n.s: n.f.:						-0.14 (N = 1)	s.: 1 n.s: n.f.:	
Combined averages	-0.07	s.: n.s: 1 n.f.:	-0.23	s.: 1 n.s: n.f.:	-0.07	s.: n.s: 1 n.f.:	-0.23	s.: 1 n.s: n.f.:	-0.07	s.: n.s: 1 n.f.:	-0.19	s.: 2 n.s: n.f.:
Cognitive Reflection												
Separate averages	-0.04	s.: 1 n.s: 5 n.f.:	-0.16	s.: 1 n.s: n.f.:					-0.01	s.: n.s: 1 n.f.:		
Combined averages	-0.04	s.: 1 n.s: 5 n.f.:	-0.16	s.: 1 n.s: n.f.:	-0.04	s.: 1 n.s: 5 n.f.:	-0.08	s.: 1 n.s: 1 n.f.:	-0.04	s.: 1 n.s: 5 n.f.:	-0.08	s.: 1 n.s: 1 n.f.:

Table 6 Average effect sizes (r) of epistemic needs and economic and social ideology. S.: significant; n.s.: not significance; n.f.: information on significance not found. Combined averages include the results of all the previously noted results for the specific type of scale. ▼ marks studies that were excluded from the analyses as they featured scales unfit to measure ideology.

Source. This table's selection of papers was generated based on the meta-analysis by Jost (2017).

		Total overall Average effect sizes (r)			
		Economic Ideology		Social Ideology	
average normal	0.06	s.: 9 n.s: 13 n.f.: 6	0.17	s.: 17 n.s: 3 n.f.:	
average adjusted	0.09	s.: 9 n.s: 13 n.f.: 6	0.3	s.: 17 n.s: 3 n.f.:	
Ideological asymmetries					
average normal	0.15			s.: 173 n.s: 75 n.f.: 47	
average adjusted	0.25			s.: 173 n.s: 75 n.f.: 47	

Table 7 Total overall average effect sizes (r) of ideological asymmetries regarding cognitive and perceptual rigidities, dogmatism, tolerance of uncertainties, integrative complexity, intolerance of ambiguity, need for cognitive closure, personal needs for order and structure, need for cognition, cognitive reflection as well as in combination with economic and social ideology. S.: significant; n.s.: not significance; n.f.: information on significance not found.

Source. This table's selection of papers was generated based on the meta-analysis by Jost (2017).

Deutsche Zusammenfassung der Bachelor-Arbeit „Asymmetries in ideologies, a question of measurements?“ von Adriane Klaus, eingereicht am 15.04.2020

Seit Jahrzehnten wird politische Ideologie von der Wissenschaft aus politischer, sozialwissenschaftlicher und psychologischer Perspektive betrachtet (Jost, Fitzsimons & Kay, 2004, pp. 264; Jost, Federico & Napier, 2009, p. 309). Ein wiederkehrendes Thema im Kontext der Ideologie betrifft die Frage, was genau Individuen dazu bewegt eine bestimmte Ideologie anzunehmen und andere Glaubenssysteme in diesem Zuge abzuweisen. Die psychologische Perspektive verweist hier auf mögliche Verbindungen zwischen psychologischen Bedürfnissen und Inhalten von Ideologien (Jost, Federico & Napier, 2009, p. 314). Vor knapp drei Jahren fasste Jost die bis dahin erhobene Ergebnisse zusammen, die existentielle, relationale und epistemische Motive mit Ideologie in Zusammenhang setzten (Jost, 2017, p. 171-194). Diese Analysen deuteten eindeutig auf eine Verbindung zwischen psychologischen Bedürfnissen und Ideologie. So stützten diese Ergebnisse die Annahme, dass Individuen zumindest teilweise von gewissen Ideologien auf Grund von strukturellen Passungen zwischen deren Inhalten und persönlichen Bedürfnissen angezogen werden (Jost, 2017, p. 167). Bezüglich der epistemischen Motive umfassten diese Analysen 181 Stichproben aus 14 Ländern mit insgesamt 133,796 Teilnehmern. Es wurden separate Analysen durchgeführt für Dogmatismus, kognitive Rigidität/ Rigidität der Wahrnehmung, Bedürfnisse nach kognitiver Geschlossenheit, persönliche Bedürfnisse nach Struktur und Ordnung, Intoleranz von Ambiguität, Bedürfnisse nach Kognition, kognitive Reflektion, integrative Komplexität und Toleranz von Unsicherheiten (Jost, 2017, p. 171).

Diese Arbeit reevaluierte die von Jost (2017) zusammengetragenen Ergebnisse bezüglich ihrer Erhebungsmethoden des Konstrukts der Ideologie. Hierbei wurde zwischen direkten und indirekten Methoden, symbolischer und operationaler, sowie ökonomischer und sozialer Ideologie differenziert. Darüber hinaus wurden zusätzliche Ergebnisse aus den angegebenen Quellen-samples (Jost, 2017) erhoben, die direkt gemessene Ideologie und epistemische Bedürfnisse in Zusammenhang setzten aber nicht von Jost (2017) einbezogen wurden. Insgesamt wurden 295 Effektgrößen analysiert. Die mittleren Ergebnisse dieser Analysen wichen von Jost's (2017) Analysen nie mehr als $r = .10$ ab und streuten in fast 89% der Fälle $r \leq .05$. Somit konnten die Resultate von Jost (2017) überwiegend reproduziert werden. Anschließend werden separate Analysen durchgeführt, um den Einfluss eines Skalen-Typus auf die Ergebnisse zu untersuchen. Mittelwerte von indirekten und direkten Messmethoden wichen ungefähr $r(8) = .12$ ($.35 < r < .03$) voneinander ab, Mittelwerte zugehörig zu symbolischer und operationaler Ideologie unterschieden sich durchschnittlich um $r(9) = .07$ (0

$< r < .28$) und die zu sozialer und ökonomischer Ideologie zugehörigen Werte wichen mit ungefähr $r(8) = .19$ ($0 < r < .36$) am meisten im Durchschnitt voneinander ab. Da die Sample-Größen im Falle von sozialer und ökonomischer Ideologie vergleichsweise klein waren, wurde jeweils ein Gesamt-Mittelwert ermittelt, der die Relationen von sozialer sowie ökonomischer Ideologie und allen betrachteten epistemischen Motiven umfasste. Auch diese Mittelwerte wiesen auf einen Einfluss der Messmethode auf die Ergebnisse hin und die mittleren Effektgrößen wichen um $r = .21$ voneinander ab.

Zusammengefasst stimmten Mittelwerte unterschiedlicher Messmethoden nur in drei Fällen überein und wichen $r \geq .05$ in 16 von 25 Fällen voneinander ab. Somit unterstützen die Ergebnisse dieser Arbeit eine differenziertere Herangehensweise an die Methoden zur Erhebung von Ideologie im Kontext von asymmetrischen psychologischen Prädispositionen.

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