

Political Motivation

Why some citizens engage with politics and others do not

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Summary

A politically informed citizenry that engages with public matters and participates in political affairs is the cornerstone of a thriving liberal democracy. This thesis thus examines the motivational underpinnings of citizens' engagement with politics. In particular, this thesis considers the structure and the origins of political motivation, i.e. the forces that drive, direct and sustain activities and attention towards the polity. In doing so, the thesis takes an interdisciplinary perspective and synthesizes psychological theories from motivation science to apply the derived motivational framework to the political domain. One of the central ideas proposed in this thesis is to import the concept of basic psychological needs into the literature on political participation. Paving the way for an explanation of political engagement that is based on first principles instead of proximate causes, this thesis considers basic psychological needs as the first mover among the psychological antecedents that ultimately lead up to engagement with politics. One of these basic needs – the need for autonomy – is leveraged to systemize the myriad of motivational pathways that the existing literature has identified as leading to political engagement. Accordingly, the forces that energize political engagement can be distinguished by how self-determined or controlling they are perceived by the actor. Political motivation is therefore conceptualized as a four-dimensional construct where each dimension is ordered on a continuum of relative autonomy and has distinct behavioral ramifications. In particular, it is argued that any type of motivation can lead to political engagement, but only autonomous motivation brings about self-sustained and deep forms of engagement. Because autonomous political motivation is thus central to a vivid society, two chapters examine the origins of why some people value or find pleasure in politics, but others do not. Again relying on the concept of basic psychological needs, need-satisfying contexts are theorized to foster political motivation in two ways. First, domain-specific need satisfaction may shape domain-related attitudes. Because need satisfaction is considered to elicit positively valenced sensations, prior need-satisfying encounters with politics should stimulate a person's intrinsic motivation to recurrently seek political encounters in the

future. Second, need satisfaction is argued to shape a personality that is conducive to political engagement. Growing up in need-satisfying environments promotes psychosocial functioning which, in turn, is argued to bring about personality traits that stimulate the valuation and enjoyment of political engagement. The motivational framework of political engagement is put to an empirical test in three separate studies, using original cross-sectional and longitudinal data with a novel measure of political motivation, examining self-reported and behavioral outcomes and employing experimental and observational methods. These studies yield mixed findings, providing substantial evidence for the developmental origins of political motivation in early need satisfaction and limited evidence for the role of the need for autonomy in structuring need satisfaction. Other central elements of the motivational framework received no empirical support, casting doubts on the relevance of some of the tested basic needs for engagement in the political domain. Altogether, the presented motivational framework thus does not represent a final word on the ultimate origins of political motivation. Nonetheless, this novel approach may serve as a steppingstone for further theoretical innovations that seek to understand political engagement using the conceptual toolbox from motivation science.

Keywords

Political Participation, Survey Experiment, Political Socialization, Voter Turnout, Social Pressure, Political Psychology

Publications

Chapters 2, 3, and 4 have appeared previously in the following publications:

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1 Introduction

1.1 Research question

Some of us are political animals. We consume every bit and piece about the newest political drama. Other people do not get excited over a recent cabinet resignation. With their friends, they rather talk about that show on Netflix or the last-minute goal in the soccer finals. While politics is not their passion, they might nonetheless see themselves as good citizens. To fulfill their civic duties, they never miss an election and follow the news at least every now and then. Finally, for some people politics is nothing but a chore. They will vote if forced to and they will watch a political TV show if their significant other insists but rather, they would avoid politics altogether and spend their time on activities they find more rewarding.

Whether, how and why citizens engage with politics thus differs tremendously. Understanding the commonalities and differences in what brings citizens to engage with politics is the central question that guides this thesis:

- What kinds of distinguishable motives energize citizens to engage with politics?
- What are the causes of individual differences in political engagement?

Understanding these questions is important for democracies because political involvement is a basic requirement for any society of citizens who govern themselves (Achen & Bartels, 2017). A democratic society does not require all citizens to engage with politics all the time and be knowledgeable about all aspects of the political process. Modern representative democracies have created systems that allow for task-sharing and information diffusion. Still, democratic systems are built on the idea that societal power ultimately rests in its citizens. Practically, it is the role of the demos to shackle the leviathan so that state power is invested in the interests of the population at large (Acemoglu & Robinson, 2019). Hence, a democratic society is hard to sustain if a majority of citizens finds no reason to vote, to engage in political organizations, to keep informed about political events or to take action that holds politicians to account

(Almond & Verba, 1972; Dalton, 2008; Lijphart, 1997; Rosanvallon, 2017). A democratic society without civic engagement runs shallow if it was to persist at all.

While it is therefore crucial to understand the underpinnings of political engagement, it is also important to keep in mind that political engagement is more than voting. Engaging with politics can materialize as any of the instantiations that are usually subsumed under the label of political participation such as protesting, organizational membership or canvassing (van Deth, Jan W, 2014). But it can even go beyond these active behaviors. In investigating the individual differences in reasons for political engagement, this thesis considers a wide range of behaviors that also includes attention or interest towards the political domain because attention and interest also constitute elements of good citizenship (Dalton, 2008) that equip individuals with the prerequisites to hold elites to account. Against this backdrop, throughout this thesis the main concept of interest will be *political engagement* as defined by Berger (2009), which entails attention and activities that are directed towards the polity.

1.2 Central idea

This thesis examines the structure and the antecedents of political engagement. To do so, I will employ an interdisciplinary perspective. The basic idea running through this thesis is to import insights from motivation science and to test their fruitfulness for understanding the reasons of why some people engage with politics, whereas others do not.

Motivation science is a subdiscipline of psychology that aims at identifying “what moves people to act and why people think and do what they do” (Wigfield et al., 2015, p. 657). Motivation scholars have proposed various and sometimes competing principles for explaining the energizing forces that move people into action. In this thesis, I draw on a selection of motivation science theories that seems valuable to understanding political engagement: the hierarchical model of motivation (Guay, Mageau,

1.3 Contribution

& Vallerand, 2003), self-determination theory and its various related mini theories (Ryan & Deci, 2017), the law of low effort (Kurzban, 2016), the unified theory of political motivation (Dweck, 2017) and means-end-fusion theory (Kruglanski et al., 2018). In this introductory chapter and in the following research chapters, I will synthesize these motivation theories to derive basic principles of motivation that describe how human behavior unfolds across social domains which then helps to understand the motivational processes that lead to engagement in the political domain.

Applying insights from motivation science about general behavioral principles on to the political domain is thus the specific angle and a contribution of this thesis. I discuss how these insights shed a new perspective on political engagement and I derive testable hypotheses on how the motivational framework predict patterns in political engagement. This endeavor in trans-disciplinary theory transmission may prove useful regardless of the specific empirical results. If the derived hypotheses pan out, then our understanding of political engagement is enhanced as these hypotheses are novel and go beyond what existing political science theories can predict. If these hypotheses do not pan out, then scholars of motivation science have learned about the boundary conditions of the tested theories and scholars of political participation would have learned about dead-ends and about the particularities of the political domain that make it distinct from other social domains. Most importantly, this thesis proposes a motivational framework that may stimulate future theorizing in political science by opening a new perspective for how to look on political engagement.

1.3 Contribution

In three ways, the perspective afforded by the motivational framework may provide new insights on political engagement.

First, in a field of research that is crowded with proximate explanations, the motivational perspective provides an account of political engagement that is based on ultimate explanations. In other words, this thesis builds on theoretical perspectives that

are predicated on the idea of “*primum movens*” of human behavior: those ultimate ends from which many or all other preferences are derived but which themselves are not reducible to any other psychological end. While this approach of ultimate explanations has occasionally been employed in other political science literatures such as on value orientations (Haidt, 2012; Inglehart, 1977, 2018; Rokeach, 1973; Welzel, 2013) or cognitive styles (Federico & Goren, 2009; Jost & Hunyady, 2003; Petty et al., 2009), it is not common in studies of political engagement. Second, we take a step back and consider antecedents of political engagement that are deeply engrained in the human psyche and thus far removed from political outcomes. Therefore, this perspective enables systemizing predictors of political engagement that existing research has identified as proximate causes of political engagement. Finally, a particular contribution concerns autonomous reasons for engaging with politics: political engagement as an end in itself or for the self-endorsed conviction of its importance. Proximate explanations struggle to understand why some individuals enjoy or value political activities such as following politics or canvassing for a candidate when the behavior does not produce any separable instrumental value. The motivational perspective assembles a conceptual toolkit that provides the words and ideas to explain self-sustained motivation to engage with politics that does not require external incentives.

1.4 Devising a motivational perspective on political engagement

A standard definition of motivation is to describe it as “any internal process that energizes, directs, and sustains behavior” (Reeve, 2016, p. 31). Some scholars simply refer to motivation as wanting to perform a specific behavior in a given situation (Schiefele, 2009, p. 197). In short, motivation is wanting (Baumeister, 2015, p. 1). Conceiving of motivation in a more colloquial way is instructive in that *motivation as wanting* emphasizes the conceptual differences to other constructs such as attitudes which may be understood as *liking* (Berridge, 2004, p. 194; Kruglanski et al., 2016, p. 13). In this vein, motivation would differ from the concept of attitudes in that attitudes concern the

1.4 Devising a motivational perspective on political engagement

evaluation of a particular object (Eagly & Chaiken, 1993, p. 1), which may or may not result in behavior whereas motivation is more directly related to behavior.

Yet, other scholars argue that “seeking” is just as essential to motivation as “wanting” (Reeve, 2016, p. 31), advising against simplistic definitions of motivation. Hence, in this thesis I follow the formal definition to consider motivation as the forces that drive, direct and sustain behavior (Dweck, 2017, p. 697). Applying this concept to the political domain and combining it with the definition of political engagement, we can conceive of *political motivation* as the forces that drive, direct and sustain activities and attention towards the polity.

Speaking of political motivation as a general term makes sense if a unifying latent force undergirds the various specific manifestations of political engagement. An alternative view could posit that different manifestations of political engagement flow from distinct causes and are thus hardly related to each other. Speaking of political motivation would not make sense if turning out to vote in elections would be entirely independent from following the news, membership in political parties or seeking political discussions. However, extensive research has identified clusters of these behaviors in the sense that citizens who enact one of these activities are likely to also pursue other forms of political engagement (Blais & Daoust, 2020; Verba et al., 1995), suggesting the presence of an underlying latent force. So, citizens differ in their latent inclination towards political engagement. In short, citizens differ in political motivation.

Political motivation must possess a dispositional, steady element if it underlies consistently recurring individual differences in citizen engagement with politics. Hence, we would expect a certain degree of stability in the forces that drive, direct and sustain activities and attentions towards the polity. Indeed, it is a common finding in the political participation literature that individual orientation towards political engagement rarely changes over the course of adulthood (Prior, 2010, 2019; Russo & Stattin, 2017). With regards to political interest, it has been shown that one’s level of curiosity towards politics develops throughout the teenage years and then remains largely stable

afterwards (Prior, 2019). In other words, political motivation has a strong dispositional core.

Citizens can thus be understood as differing in their general tendency to engage or not engage with politics. Naturally, while *dispositional political motivation* puts citizens on a particular trajectory, whether these predispositions translate into actual behavior in a given situation depends on the particular circumstances of that situation. Consequently, citizens with high levels of dispositional political motivation may end up forfeiting a particular opportunity for political engagement because in the specific situation other reasons lead them to prefer a different course of action. Therefore, we can distinguish dispositional and *situational political* motivation (for a corresponding distinction with regards to political interest, see Prior, 2019). Dispositional political motivation denotes one's general tendency to engage with politics. Situational political motivation denotes the forces that drive and direct activities and attentions towards the polity in a specific situation. In the long run, situational motivation should therefore reflect the general tendency but in particular cases one's motivation may fall below or above one's dispositional trajectory.

I have now laid the basic conceptual groundwork for what political motivation is. In the following, I will first discuss the distinction between proximate and ultimate explanations, using these concepts to situate this thesis's approach against the broader literature on political engagement. After introducing the need-based ultimate explanation offered by this thesis, I will demonstrate how basic psychological needs can serve as the foundation for a systemizing typology of the various motivational pathways to political engagement that exist in the current literature. Based on the multi-dimensional conception of political motivation, I will then turn towards explaining the origins of political motivation, again relying on the concept of basic psychological needs. Altogether, this introduction and the three research chapters shall demonstrate how a motivational perspective constitutes a coherent and integrated framework for the study of political engagement that is based on first principles.

1.4.1 Proximate and ultimate explanations

Some citizens are highly motivated to engage with politics on a recurring basis. These citizens find political participation important; often, engaging with politics provides them with a sense of satisfaction. Why does political engagement have value for some people – even when there is no apparent material outcome to be reaped? And why does it have no apparent value to others?

The political participation literature is rich in determinants of political engagement. Prior research has identified 176 determinants of voter turnout alone (Smets & van Ham, 2013). The objective of this thesis is not to add yet another predictor of political engagement or to refute the relevance of any one of them. Rather, the idea undergirding the motivational approach is to take a step back.

In order to investigate a particular phenomenon such as political engagement, the obvious strategy is starting the thinking process with the outcome that is to be explained. This strategy identifies proximate causes that have logical connections to the outcome concept (Nesse, 2019; Stephen & Sulikowski, 2020). Seeking for *proximate explanations* is the strategy that is often employed in studies of political engagement (see chapter 4 for a more extensive discussion). For instance, it is well established that citizens more often read political news when they report high levels of political interest (Hersh, 2020; Prior, 2019; Verba et al., 1995). Likewise, it is well established that the perception of voting as civic duty is often followed by turning out to vote (Blais & Achen, 2019; Blais & Daoust, 2020; Gerber et al., 2008). In this vein, proximate explanations are prevalent in the literature and they provide tremendous explanatory power at least in a statistical sense. The basic idea of proximate explanations is to enhance our understanding of a phenomenon by gradually adding nodes of well-understood concepts to the web of inter-connected antecedents of political engagement.

While proximate explanations are therefore a viable research strategy, it comes with drawbacks. For one, the high level of explained statistical variance may not correspond with theoretical import of similar value as it may simply reflect the conceptual proximity of the explanandum and the explanans. Even more crucially, the approach is not suitable to ultimately resolve questions. Rather, proximate explanations answer one question by raising another. For instance, any explanation of individual differences in political news consumption that points to individual differences in political interest raises the question about the causes of individual differences in political interest. Hence, proximate explanations succeed by pushing the explanatory burden one rung down the ladder.

The consequences of that expansion strategy are visible for any instrumental explanation of human behavior. Explaining activities by pointing to the outcomes that an actor seeks to achieve or the preferences she seeks to fulfill will always raise the question of why actors seek these outcomes or what generated the underlying preferences in the first place. These objections are well established with regard to rational choice theorizing (Green & Shapiro, 1994; Opp, 2013). Rational choice theorizing is a proximate explanation in the form of instrumental reasoning for which scholars have pointed to the problems of infinite regress, arguing that rational choice theory has become an “ever-expanding tent in which to house every plausible proposition advanced by anthropology, sociology, or social psychology” (Green & Shapiro, 2008, p. 76). A different approach is therefore to address the origins of human preferences head on and to ask why we want the things we want by investigating the fundamental dynamics that undergird human wanting.

Motivational approaches often seek to exit this loop by building on first principles. They reverse the line of reasoning by starting at the outset of the funnel of causality instead of its end point. In trying to identify first movers, *ultimate explanations* trace individual behaviors back to an all-encompassing framework with a specific set of general principles about human nature and desires (Dweck, 2017; Higgins, 2012;

1.4 Devising a motivational perspective on political engagement

Kenrick et al., 2010; Kruglanski et al., 2018; Kurzban, 2016; Maslow, 1970; Ryan & Deci, 2017). The idea is that when you know what undergirds action in the first place you can move down the funnel of causality from the outset down to the very last specific phenomenon of interest because one thing flows from the other. Naturally, the influence of first movers on outcomes of interest is more limited and less direct than that of proximate predictors. Moreover, the role of first movers is likely conditional or moderated by other factors so that explanations based on first principles entail higher degrees of complexity and are therefore more prone to errors in theory specification. Hence, ultimate explanations are hypothesis-generating machines whose predictions are not necessarily correct, but they are original in that they provide perspectives that are unavailable to proximate explanations. Therefore, ultimate explanations inhibit the potential for theoretical innovation in well-established areas of research (Al-Shawaf, 2019).

A novel angle pursued in this thesis is consequently to import the idea of first movers from motivation science and to apply it to the study of political engagement. Identifying ultimate causes is common in many other behavioral and biological sciences (Al-Shawaf, 2019; Deci & Ryan, 2000; Kenrick et al., 2010; Nesse, 2019; Stephen & Sulikowski, 2020) and it is also used in some subdisciplines of political science. In particular, political scientists frequently employ this perspective when the ultimate cause is not too far removed from proximate causes. For instance, scholars who study deep-rooted concepts such as value orientations (Haidt, 2012; Inglehart, 1977, 2018; Rokeach, 1973; Welzel, 2013) or cognitive styles (Federico & Goren, 2009; Jost & Hunyady, 2003; Petty et al., 2009) often base their theories on a set of assumptions about general principles that undergird human inclinations. In a similar direction, the literature on political engagement has gradually expanded the scope of proximate explanations to include various non-political influences that are conceptually remote to the outcome concepts (Bougher, 2017; Galais, 2018; Holbein, 2017; Holbein et al., 2019; Prior, 2019; Shani, 2009) but without embracing the idea of a unifying set of first principles. Hence, this

thesis seeks to go one step further and base the explanation of political engagement on the motivational idea of first movers.

1.4.2 Evolutionary theory: Finding first movers

Identifying antecedents of political engagement from the perspective of proximate causes is fairly straightforward, but how do we identify first movers? What is at the beginning of that causal chain that ultimately leads to political engagement?

In answering these questions, we can make use of evolutionary theory. Evolutionary theory regularly engages with questions where the answer is located early in the funnel of causality (e.g. Petersen, 2015). It is therefore not surprising that the distinction between proximate and ultimate explanations has its roots in evolutionary literature (Al-Shawaf, 2019; Nesse, 2019; Stephen & Sulikowski, 2020). Because of the similarities in the approach to answer questions, evolutionary arguments may also help to identify the first movers of political engagement or, at least, to sketch the scientific approach for doing so.

From the perspective of evolutionary theory, proximate and ultimate theories examine different aspects of the same phenomenon (Nesse, 2019; Stephen & Sulikowski, 2020). Ultimate explanations in evolutionary theory concern the adaptive or functional significance of an evolved trait: Which selection processes have favored the emergence of specific behavior over time? Importantly, the mere fact that that some behaviors provide fitness advantages for a particular species cannot explain why individual organisms enact a specific behavior since we cannot expect individuals to be aware of or have an interest in these group-related fitness advantages. This argument teaches us that actors need not be aware of the first movers that ultimately underlie their behavior. What is more, it suggests that a second process of mechanistic causes is needed to elicit individual behavior in a given situation. In this vein, we can distinguish between

1.4 Devising a motivational perspective on political engagement

adaptive functions and mechanistic functions, both of which are reflective of the same process that ultimately leads to behavior.

For examining adaptive functions, the evolutionary line of reasoning departs from the idea that the human species faced certain adaptive challenges in its history so that those organisms were more likely to prevail which possessed traits or behavioral inclinations that better aligned with these challenges (Al-Shawaf, 2019). To name but one speculative example, to better defend themselves against enemies it may have been beneficial for human beings not to live in solitude but to act in social groups. It might therefore make sense that, phylogenetically, human beings developed an inclination for sociality. Yet, because organisms are unaware of these processes the adaptive function on its own does not imply individual-level forces that direct, drive and sustain activities in line with these fitness advantages. Hence, in order for these evolutionary processes to stimulate individual behavior certain psychobiological or physiological mechanisms must have evolved that direct, drive and sustain individual activities and attention in line with adaptive advantages.

What are these psychobiological or physiological mechanisms? One of the basic insights on human psychology is the pleasure principle (Freud, 1961; Higgins, 2012), according to which human beings seek sensations that provide pleasure and avoid sensations that elicit pain. Hence, pain and pleasure constitute powerful devices to drive, direct and sustain behavior. Against this backdrop, it is reasonable to suspect that individuals have evolved to experience pleasure when engaging in activities that serve adaptive functions (Higgins, 2012, p. 30; Kahneman et al., 2003). Even though these specific desires may – particularly in today's environment – seem far removed from its adaptive functions (Kenrick et al., 2010), this line of reasoning suggests that human beings have evolved with regulatory systems that generate positive sensations when acting in line with these adaptive challenges and negative sensations when acting

against them.¹ To elaborate on the example above, assuming that sociality serves adaptive functions with certain fitness advantages, it would be reasonable to expect that human beings have evolved mechanisms that generate positive sensations when seeking sociality so that human beings have individual-level incentives to act in line with adaptive functions.² These psychological mechanisms are so deeply engrained in the human psyche that the evolved motivations can be considered as irreducible to any other psychological antecedents. In other words, the psychological mechanisms evolved from adaptive functions are located at the outset of those psychological causes that ultimately lead to behavioral outcomes such as political engagement. Ultimately, political engagement and any other social behavior may thus be rooted in evolved motivations that elicit pain or pleasure in a way that guides behavior towards evolutionary fitness advantages and that may be unknown to the unsuspecting actor and unrelated to any immediate political outcome.

Based on an evolutionary theory on adaptive challenges of the human species, this line of thought allows deriving a specific list of first principles that form the basis of human motivation which can then be applied to the political domain (e.g., Jost & Hunyady, 2003; Petersen, 2015). Notably, to the extent that larger groups of human beings faced similar adaptive challenges human beings will have evolved similar mechanistic adaptations. Against this backdrop, it is reasonable to assume that human beings share at least a certain set of motivational proclivities. While it depends on situational environment how these deeply rooted psychological predispositions materialize, some of the

¹ Note that I described the sensations elicited by the pleasure principles both as ultimate explanations and as proximate causes in this chapter. From the perspective of the development of the human species, they represent mechanistic functions and can therefore be considered proximate explanations. When trying to understand political engagement, which is the main concern of this this, they can be considered first movers in the sense of ultimate explanations because they are early in the causal chain when considering the psychological concepts that ultimately lead to political engagement.

² An analogy for political scientists might be that evolution confronts the human species with a collective action problem Olson (1971) where adaptive functions resemble the collective goods and mechanistic functions resemble the individual incentives.

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forces that drive, direct and sustain our behavior may therefore be universal across time and culture.

1.4.2 First mover: Basic psychological needs

While this line of reasoning allows to derive a specific list of first principles, it does not guarantee that scholars derive the same list of basic motivations. For instance, they may presuppose different adaptive challenges. Against this backdrop, it is not surprising that motivation scholars base their theories on different sets of first principles (Fiske, 2003). Disagreement even exists regarding the question of what type of psychological concept is located at the outset of the funnel of causality. Gestalt theory posits as first movers a universal set of motivational processes underlying human perception (Kruglanski et al., 2018). Other theories propose “core social motives” (Fiske, 2014) or “basic psychological needs” (Deci & Ryan, 2000; Dweck, 2017; Kenrick et al., 2010; Maslow, 1970; Sever, 2000; Vansteenkiste et al., 2020). Among these constructs, the concept of basic psychological needs is the one that has gained the most traction among motivation scientists and it is therefore the concept I will rely on to theorize how political engagement can be explained based on first principles.

Basic psychological needs do not refer to specific motives or the mental representations of particular goals. Rather, they represent general functional principles of the human organism (Krapp, 2013, p. 133). One influential way of specifying the concept of basic psychological needs in more detail and in a way that enables the identification of a specific list of basic needs is to use functional definitions (Dweck, 2017, p. 697; Ryan & Deci, 2017, p. 85). Building on the proposition that basic needs are deeply engrained in the human psyche, functionalist definitions consider it a benchmark of basic needs that their satisfaction fosters human psycho-social functioning. In this vein, basic psychological needs can be understood as „areas of chronically high value that are critical to well-being and optimal development” (Dweck, 2017, p. 697). Specifically, key criteria for basic psychological needs are that they are not derivative of other psychological

needs and therefore truly represent first movers, that their universal value is stable over time and that its value manifests in fostering psychosocial development (Dweck, 2017, p. 690).

With these criteria in mind, a list of basic psychologist needs can be derived using empirical regularities (e.g., Bagheri & Milyavskaya, 2020; González-Cutre et al., 2020). Self-determination theory, for instance, posits that three need candidates (needs for competence, autonomy, relatedness) qualify as basic psychological needs (Deci & Ryan, 2000; Vansteenkiste et al., 2020). While some empirical research supports the relevance of these needs across time and cultures (Chen et al., 2015; Nelson et al., 2015), other lines of literature propose different need candidates (e.g., Kenrick et al., 2010). While this state of affairs therefore implies that research will yield different results based on the specified list of first principles, need candidates are in principle falsifiable and there is an ongoing process of theoretical integration in motivation science towards synthesizing previous findings across schools of thought (Baumeister, 2015; Dweck, 2017). As this process is still ongoing, the question of specifying the list of basic needs will be a recurring topic in each of the research chapters that follow.

The concept of basic psychological needs is not unfamiliar to political scientists. Yet, it is rarely used in the literature on political engagement. Importantly, where political scientists do rely on basic needs, the concept often differs from the one that is employed in this thesis.

1.4.3 Basic needs in political science

One prominent application of basic needs is in post-materialist value theory (Inglehart, 1977, 2018; Welzel, 2013). Here, basic psychological needs build the theoretical foundations for predicting citizens' value orientations. There is a substantial overlap in the need concept as it is employed in post-materialist theorizing and in this thesis. Both approaches adopt an organismic perspective that considers human beings as naturally thriving towards growth (Ryan & Deci, 2017, p. 32). Against that backdrop, need satisfaction is viewed as fostering psychosocial development whereas need thwarting

1.4 Devising a motivational perspective on political engagement

would inhibit the realization of these potentials. Put differently, both approaches consider basic need as psychological nutrients that fuel development.

However, the conceptions differ in that post-materialist scholars follow a Maslowian conceptions of hierarchical needs. The Maslowian tradition proposes a hierarchical order of needs, considering the satisfaction of more primitive needs as prerequisites for the salience of other, more developed needs (Kenrick et al., 2010). Specifically, Inglehart (2018, p. 14) posits that people have “material needs for physical survival and safety, and non-material needs such as those for self-expression and esthetic satisfaction” where the first set of needs has prerogative over the second so that self-realization needs only become salient when survival needs are met. In contrast, this chapter has laid out a conception of basic needs as the evolved mechanistic function to drive human beings towards behaviors that fulfill adaptive functions. As these needs are deeply engrained in the human psyche and evolved to drive human behaviors in all domains of life, this thesis follows a line of motivation science literature (e.g., Deci & Ryan, 2000; Dweck, 2017; Vansteenkiste et al., 2020) which considers basic needs as unconditionally present and not subjected to inherent ordering.

Another frequent usage of the need construct is in terms of dispositional individual difference variables (Bou Zeineddine & Pratto, 2017; Petersen et al., 2020; Rinke & Moy, 2016; Sohlberg, 2016). These studies treat needs just like any other trait variable or personality facet without applying the definitional criteria of *basic* needs such as being non-derivative and beneficial for well-being. This thesis does not consider basic needs as denoting individual differences. Instead, needs are viewed as evolved mechanisms that are universally shared so that the same list of basic psychological needs is thought to energize the behavior of all human beings.

I have now sketched basic psychological needs as the evolved and universally shared first mover of human wanting that may ultimately help explain political engagement. In addition to illuminating why some people want to engage with politics and others do not, the concept will also help to get a better idea of what motivation is. In this vein,

what has been outlined so far forms the conceptual groundwork of the theory developed in the research chapters 2-4. In the following sections, I will recap and synthesize the theoretical arguments from the research chapters in order to underscore how the arguments in each chapter relate to each other.

1.5 Need for autonomy as systemizing principle of motivation (Ch. 4)

Having introduced the concept of basic needs opens the possibility of viewing the multiplicity of proximate predictors of political engagement from a wider angle. In the following, I will briefly sketch the four-dimensional typology of political motivation as derived from a standard theory in motivation science. Chapter 4 will discuss each type of political motivation at greater length, situating the typology of political motivation with regard to existing mid-range theories in the literature. For the purpose of this introduction, outlining the basic elements of the typology of political motivation will lay the ground to then discuss the origins of what I will call autonomous political motivation

In systemizing the various motivational pathways that lead to political engagement, this thesis relies on self-determination theory (Ryan & Deci, 2017). Self-determination theory (SDT) is among the most often cited theories of human motivation and has been widely applied across multiple domains of human behavior (volunteering: Bidee et al., 2013; work: Gagne, 2014; dieting: Georgiadis et al., 2006; value orientations: Kasser, 2002; religion: Sheldon, 2006; parenting: Soenens & Vansteenkiste, 2010; sports: Sweet et al., 2012; education: Vansteenkiste et al., 2005). SDT puts the idea of basic psychological needs front and center, focusing on one need in particular: the need for autonomy.

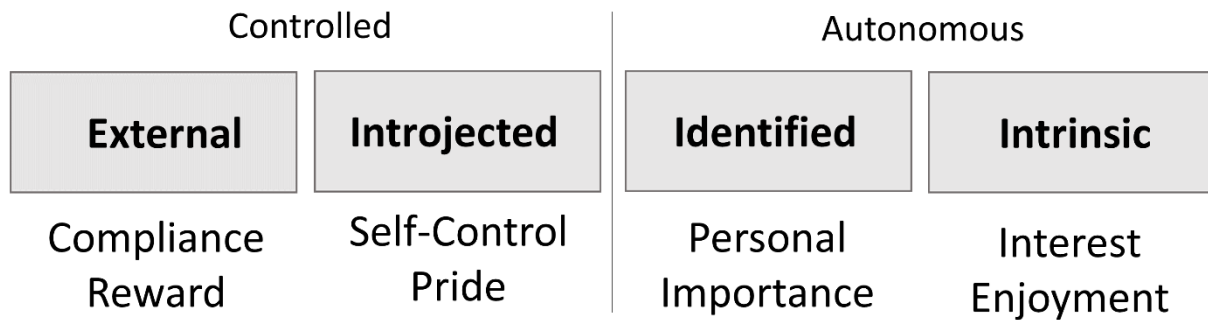
Based on previous studies on the behavioral importance of perceived self-determination (DeCharms, 1968), SDT posits that the need for autonomy is so central to the human nature that all motivation can be ordered on a relative continuum of how much a

1.5 Need for autonomy as systemizing principle of motivation (Ch. 4)

given behavior satisfies that need. In short, the argument is that human beings do not like to feel forced into action but will only embrace a behavior when they feel as origins of their doings. Human beings may not be consciously aware of how autonomy guides their behavior. Even unconsciously, the desire to act in accordance with our inner sense of selves is considered so deeply engrained in the psycho-social functioning of human beings that whether and how a behavior is enacted depends on the degree of perceived satisfaction of the need for autonomy.

Based on this reasoning, SDT distinguishes four types of motivation (Figure 1-1). On the continuum of relative autonomy, *external motivation* is located at the lowest end. External motivation drives behavior through sticks and carrots and is perceived as very controlling. *Introjected motivation* also energizes behavior through systems of rewards and punishments, but these are internal emotions of pride and shame, thus reflecting partly internalized norms. While still located on the controlled side of behavioral regulations, introjected motivation is therefore experienced as somewhat more self-determined. *Identified motivation* reflects norms that have been fully taken in and that are now integrated into one's sense of self. In this vein, identified motivation undergirds behavior that is self-endorsed and reflective of one's principles. *Intrinsic motivation*, finally, is the most autonomous form of motivation as it does not follow from any previously external antecedent. Instead, intrinsically motivated behavior is enacted as an end in itself for its inherently satisfying conditions. Altogether, the motivational typology distinguishes four types of motivation with distinct profiles and behavioral ramifications. For the sake of simplicity motivation scholars often group behavioral regulations at the lower (*controlled motivation*) and the upper end of the continuum of perceived self-determination (*autonomous motivation*).

Figure 1-1: Four types of political motivation



Continuum of relative autonomy

Note: The identical figure is again shown in chapter 4.

Chapter 4 discusses the typology's applicability on the political domain and shows how systemizing political motivation along the continuum of relative autonomy allows to derive original hypotheses on whether and how citizens will engage with politics depending on the types of political motivation. In particular, one of the insights afforded by the new perspectives is that autonomous and controlled motivational pathways will generate separable behavioral outcomes.

1.6 Autonomous political motivation (Ch. 2, 3, 4)

With respect to autonomous and controlled motivation, chapter 4 will develop the idea that both controlled and autonomous types of motivation energize citizens to act in the political domain, but only autonomous political motivation will lead to deep and self-sustained engagement. The distinction between the *quantity* and *quality* of political engagement builds on the *law of low effort* (Kurzban, 2016), according to which individuals are generally inclined to minimize efforts. The principle of effort minimization comes into play when citizens engage with politics mainly to comply with internal (introjected motivation) or external pressures (external motivation) whereas it applies less strongly when the behavior itself is valued or an end in itself. Hence, this line of reasoning demonstrates the conceptual value of the novel contrast between autonomous and controlled motivational pathways to political engagement. In particular,

while the typology of political motivation acknowledges the functional significance of all types of political motivation it underscores the special relevance and merit of autonomous reasons for political engagement.

Compared to controlled motivation, autonomous motivation is both more puzzling to understand and more fruitful to implement. Previous political science literature has much to tell about how to foster external and introjected motivation. For instance, external political motivation can be strengthened by imposing sanctions or promising rewards for political engagement. The social logic of politics (Zuckerman, 2008) partly rests on external motivation as it leverages people's fear of social rejection to elicit political participation. Likewise, institutional arrangements such as compulsory voting can also be understood as attempts to increase political engagement through external motivation as sanctions guide behavior without facilitating norm internalization (Birch, 2009). With different names introjected motivation is also a recurring topic in political science research. For instance, multiple field-experiments has shown that priming feelings of guilt and shame can be stimulated to increase turnout behavior (Gerber et al., 2010; but see: Matland & Murray, 2016). Hence, political science has devised a range of actionable strategies to stimulate external and introjected motivational pathways to political engagement.

But how do we foster intrinsic motivation to engage with politics? Making citizens find pleasure in political engagement who previously found politics boring and bothersome seems more complicated a task. Likewise, how do we foster the conviction that political engagement is a matter of principle (identified motivation)? In recent years, political science literature has increasingly turned attention towards these types of motivation (Galais, 2018; Prior, 2019; Shani, 2009) but the origins of autonomous political motivation are still not well understood.

Autonomous political motivation resembles a taste for politics. Some have it and others do not. But where do tastes come from? While there are select examples for deliberately manipulating the tastes of a society (Oreskes & Conway, 2012), understanding

the origins of individual differences in taste is as difficult in other domains of life as it is in politics (Bloom, 2011). Not understanding why some people prefer the color blue while others prefer the color red might leave our curiosity unsatisfied. Not understanding why many people lack a taste for politics, however, is problematic when considering the importance of autonomous motivation for liberal democracies. No get out to vote campaign, no celebrity endorsement is needed to convince citizens of the importance of voting if they already consider voting as a moral duty (Blais, 2000; Blais & Daoust, 2020). Citizens who value or find pleasure in political engagement are likely to be the bedrocks of a civic society as they keep up engagement even when institutional or social pressure are absent. Understanding the origins of autonomous political motivation is therefore crucial.

One reason for why autonomous motivation – and intrinsic political motivation in particular – is not well understood is that instrumental explanations struggle to explain behavior that is an end in itself. Here, ultimate explanations prove fruitful and may offer a new perspective. The final section will therefore assemble the instruments from the conceptual toolbox we have developed throughout this introductory chapter in order to devise a framework on the origins of autonomous political motivation.

1.7 How needs shape autonomous political motivation

The explanation put forward in this thesis for why only some people enjoy or value political engagement builds on the conceptual groundwork laid out above. Specifically, the degree to which citizens experienced basic psychological needs as satisfied or thwarted is argued to determine individual differences in autonomous political motivation. Basic need satisfaction shapes autonomous political motivation through two pathways: 1) a domain-specific route that shapes attitudes towards politics in terms of how need-supportive previous encounters with politics were experienced 2) the route of general need satisfaction that shapes personality traits which are conducive to engagement in the political domain.

1.7 How needs shape autonomous political motivation

1.7.1 General need satisfaction (Ch. 2)

Basic needs can be seen as nutrients that human beings need to blossom. From an organismic perspective on human behavior (Ryan & Deci, 2017, p. 32), need satisfaction facilitates the realization of human potential. Individuals who suffer from a chronic lack of need fulfillment have their resources bound and are therefore hindered in organismic growth.³ Basic psychological needs theory (Ryan & Deci, 2017; Vansteenkiste et al., 2020) posits that human growth is directed towards psychosocial functioning which consists of two processes: the inherent inclination towards exploring the environment (*curiosity*) and the propensity for adapting to it (*internalization of external demands*).

As a result of chronic differences in need satisfaction – in particular different need-related environments during the formative phases of early socialization – individuals differ in their propensity for curiosity and norm internalization. Because these traits – curiosity and adaptability to social environments – are conducive to a whole range of beneficial outcomes, we would expect positive effects of need satisfaction on many commonly appreciated attainments of social life. As reviewed in chapter 2, need satisfaction is indeed associated with a “positive manifold” (Spearman, 1904) of beneficial outcomes across many social domains.

If it is true that need satisfaction promotes qualities that are helpful in various domains of life, it is worth considering that these traits might also be conducive to living up to the qualities of good citizenship (Dalton, 2008). A similar argument was recently brought forward by Holbein et al. (2020) who posited that seemingly nonpolitical skills such as grid or perseverance are the common cause for diverse outcomes such as educational degrees and turnout behavior. Similarly, chapter 2 theorizes how the

³ This line of reasoning resembles the arguments of post-materialist value theory (Inglehart (1977, 2018)) as it also adopts an organismic perspective. However, different from post-materialist value theory, I do not consider needs as hierarchically ordered. Rather, needs are seen as simultaneously relevant and as prerequisites for the proper functioning of other organismic functions.

satisfaction of basic psychological needs may constitute the *common cause* of various outcomes both in the political domain and beyond.

Notably, this argument enables specific predictions for motivation understood as a multi-dimensional construct with the types of motivation described above. The first process of psychosocial functioning (curiosity) corresponds with intrinsic motivation. Hence, individuals who are particularly curious are more likely to engage with the world for intrinsic reasons. The second process of psychosocial functioning (internalization) refers to the remaining types of motivation but in a differential way: Individuals with a higher propensity to adapt to their social environment are more likely to engage with the world out of identified motivation compared to external motivation because these individuals are more likely to have fully internalized external demands. Consequently, both processes of curiosity and internalization which blossom in contexts of need satisfaction foster autonomous motivation. Applying this line of reasoning to the political domain suggests that citizens from backgrounds with high need satisfaction are theorized to value and enjoy political engagement as they generally find pleasure in exploring new things and are generally prone to internalize social norms.

1.7.2 Domain-specific need satisfaction (Ch. 3)

This thesis conceptualized basic psychological needs as the evolved mechanistic function that drives individuals through sensations of pleasure to act in accordance with adaptive fitness advantages. Put differently, human beings are thought to have evolved in such a way that engaging in need-satisfying activities feels good. Following the pleasure principle, human beings are therefore inclined to seek behavior they expect to fulfill their basic psychological needs.

Based on this line of reasoning, chapter 3 conceptualizes intrinsic motivation as the beliefs and expectations that a particular behavior will be experienced as need-satisfying. Applied to the political domain, individual differences in intrinsic political

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motivation therefore reflects different expectations about the likelihood that political engagement will provide actors with a sense of pleasure through need satisfaction. By rooting intrinsic political motivation in the satisfaction of basic psychological needs, the motivational framework developed in this thesis avoids the conceptual problems that instrumental approaches face when explaining the value of behaviors that are enacted for its own sake. From the perspective of basic needs as a first mover, the value of intrinsically motivated political behavior lies in the satisfaction of one or multiple basic psychological needs. The evolutionary origins may be unknown to ourselves but when young activists meet friends to take the streets for a 'Fridays for future' protest (Han & Harie, 2016), one reason for why the event feels satisfying is that we may have evolved to find joy pleasure in sociality – be it in the political domain and beyond.

While the pleasure principle is common to all human beings, chapter 3 locates the roots of individual differences in intrinsic political motivation in the fact that citizens make different experiences with politics. Depending on situational circumstances, political encounters are more or less need-satisfying. These differences are further entrenched due to biases in how human beings perceive their surroundings (Bloom, 2011; Murayama, 2019) as we are inclined to see once-formed beliefs confirmed even when there is no objective reason for it. In other words, once we have grown to expect a future encounter with politics to be boring or gratifying, we are likely to interpret our experiences in a way that is consistent with these expectations. In this way, even though basic needs are universally shared, the concept nonetheless may help to explain individual differences in why some people find pleasure in politics and others do not.

2 Political engagement's non-political roots: Examining the role of need-supportive parenting in the political domain⁴

Why some people value political engagement or even find pleasure in engaging with politics while others hardly bother about the political domain, is a crucial question for the functioning of democratic societies. Still, although scholars largely agree on the importance of childhood experiences in shaping individuals' political orientations later in life (Sapiro, 2004; Sears & Brown, 2013), political socialization research has made surprisingly little headway in systematically examining the origins of inter-individual differences in political engagement (i.e. attention and activities that are directed towards the polity, Berger, 2009). I propose that the seemingly non-political concept of basic psychological needs helps explaining varying inclinations for engaging with politics. More specifically, in this research, I theorize how need-supportive parenting during socialization's formative phase stimulates endorsement of and curiosity towards the political domain. This proposition is investigated using longitudinal cohort studies, which show that the seeds of political engagement and related social attainments are planted early in life and prosper in need-supportive environments.

To some degree, situational circumstances explain whether citizens act on a specific opportunity for political participation (e.g., Wuttke, 2017). However, large-scale longitudinal studies show that a person's level of curiosity towards politics is malleable

⁴ Replication material (data and Stata-syntax) is available at: <http://dx.doi.org/10.17605/OSF.IO/TNAX4>

until around 18 years of age yet remains remarkably stable afterward (Prior, 2019; Russo & Stattin, 2017). Hence, adult individuals differ in the dispositional propensity to engage with the political domain. In shaping varying proclivities for political engagement, political participation scholars unanimously attribute a substantial role to experiences in early developmental phases. Yet, factors that promote political engagement later in life have received remarkably little attention for several decades (Amnå et al., 2009, p. 27). Recently, there has been a re-emerging interest in the developmental origins of political orientations (e.g., Prior, 2019; Shani, 2009), but the majority of these studies proceed on the narrow theoretical paths of the earlier literature.

First, socialization studies usually investigate politics-related contextual influences, i.e., explaining political engagement in adulthood by early political experiences (e.g., Brady et al., 2015; Jennings et al., 2009; Miklikowska & Hurme, 2011). Accordingly, the dominant theoretical framework remains social learning theory (Bandura, 1977), according to which children approach the political domain by modeling parental behavior (e.g., Jennings et al., 2009). Yet, observational panel studies repeatedly demonstrated at best moderate correlations between parents' and their offspring's political engagement (Prior, 2019; Sapiro, 2004; Sears & Brown, 2013). Second, because children are often viewed as incapable of understanding political content, scholars still devote little attention to experiences during the first years of life (Abendschön, 2017, p. 164). Third, because previous research focused on concrete acts of participation (i.e., voting in particular), relatively little is known about the origins of dispositional differences of identifying with or developing curiosity towards the political domain which has only recently attracted scholarly attention (Bougher, 2017; Prior, 2019; Shani, 2009). Thus, the early predictors of individuals' *volitional political engagement*, i.e., engaging with politics for its perceived inherent pleasure or the self-endorsed conviction of its importance, remain largely unidentified. Hence, investigating early ontogenetic phases on the grounds of theoretical perspectives that look beyond parental imitation is a prospect for a better understanding of why some people enjoy or value engaging with politics whereas others do not.

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To get a grasp of the roots of dispositional political orientations in early socialization experiences, we can draw from classical participation literature. Reminiscent of the “positive manifold” (Spearman, 1904), we know that political engagement is associated with other commonly appreciated attainments of social life. Individuals who grow into politically active citizens are also more trustful (Flanagan, 2003), more satisfied with their lives (Pirralha, 2017), have higher incomes (Schlozman et al., 2018) and higher degrees of formal education (Smets & van Ham, 2013). Thus, politically engaged individuals who resemble the ideal of good citizens (Dalton, 2008) also thrive in other domains of life.

Interestingly, research in developmental psychology suggests that many indicators of optimal functioning and social adjustment share joint ontogenetic origins (Sears & Brown, 2013, 72f; Steinberg, 2001, p. 8). Specifically, research on various life domains revealed the *satisfaction of basic psychological needs* as common influence of those outcomes that also go along with political engagement (i.e., pro-social behavior and social trust, see: Bougher, 2017; Padilla-Walker, 2014; moral reasoning capacities, see: Grolnick et al., 1997, 153f; cognitive capabilities, see: Grolnick & Ryan, 1987; Ryan et al., 1990; social adaptability, see: Kasser et al., 2002; Laurin & Joussemet, 2017 and occupational performance, see: Deci et al., 2017). Despite an upsurge of research highlighting the importance of non-political experiences for the development of political engagement (e.g., Galais, 2018; Holbein, 2017; Shani, 2009), political socialization research has not considered the concept of basic psychological needs in examining the origins of political engagement so far. Considering the ubiquitous influence of basic needs for attainments in various life domains and their association with political participation, need-related experiences may also play a role in shaping political engagement.

2.0.1 Need-supportive contexts and political engagement

Our understanding of political engagement's developmental origins may benefit from self-determination theory (Ryan & Deci, 2017, for applications on politics see, e.g., Losier & Koestner, 1999), which posits that human beings strive for the basic needs of autonomy, competence, and relatedness. The theory argues that individual attainment and social adjustment often result from the satisfaction of these psychological needs because need-satisfaction enables individuals to carry out their inherent tendencies at the fullest potential. Studies in the tradition of SDT have repeatedly shown that deprivation of these needs undermines psychosocial functioning (Ryan & Deci, 2017; Vansteenkiste & Ryan, 2013), which entails two organismic processes: the inherent inclination towards exploring the environment (*intrinsic motivation*) and the propensity for adapting to it (*internalization of external demands*). By stimulating psychosocial functioning, growing up (Laurin & Joussemet, 2017), working (Deci et al., 2017), or learning (Grolnick & Ryan, 1987; Ryan et al., 1990) in contexts which nurture one's psychological needs thus helps to realize these organismic processes at the fullest potential.

Contextual influences on need satisfaction matter throughout the entire lifespan but having one's basic needs fulfilled during early years of childhood was shown to exert lasting impact in later decades of life (e.g., Bougher, 2017; Kasser et al., 2002; Soenens et al., 2017). As principal caregivers and most salient source of socializing efforts (Verba et al., 2008), parents play a central role in shaping need-satisfaction. Specifically, existing SDT-literature has shown that three social-contextual dimensions of parenting styles can be distinguished, each referring to the satisfaction of a basic psychological need (e.g. Grolnick et al., 1997; Joussemet et al., 2008; Soenens et al., 2017). Autonomy-supportive parenting promotes a child's independence and, more importantly, volitional functioning (Laurin & Joussemet, 2017; Soenens et al., 2018). It involves taking the children's frame of reference, minimizing excessive control, and providing choices and opportunities for self-initiated action. Involvement satisfies the needs for relatedness and involves caring about the child, taking interest in, and

2 Political engagement's non-political roots: Examining the role of need-supportive parenting in the political domain

having knowledge about his or her activities, spending time together and establishing a warm relationship. The provision of structure satisfies the need for competence and involves communicating age-adequate expectations, providing feedback and rationales for one's own actions. Altogether, growing up with parents who are excessively controlling, over-challenging or rejecting thwarts need satisfaction and, thereby, hinders the development of propensities for psychosocial functioning later in life (Deci & Ryan, 2000, p. 229; Soenens & Vansteenkiste, 2010).

Need satisfaction –facilitated by the socialization environment that the parents provide– stimulates intrinsic motivation and the internalization of values in various life domains such as delinquent behavior (Brauer, 2011), education (Joussemet et al., 2008) and morality (Kasser et al., 2002; Padilla-Walker & Carlo, 2014). There are several reasons to believe that a person's dispositional orientation towards the political domain is ultimately rooted in the same need-related and seemingly non-political origins that also affect behavior in other domains.

Considering the specific characteristics of the political domain it is apparent that both organismic processes (intrinsic motivation and the internalization of extrinsic demands) associated with psychosocial functioning may determine a person's propensity to value and enjoy political engagement. Regarding the first process, individual differences in one's inclination towards intrinsic motivation may have ramifications for volitional political engagement due to a general and a domain-specific mechanism. According to the hierarchical model of motivation (Guay et al., 2003), individuals differ in their general level of curiosity, and these differences spill over to specific domains. As a rising tide lifts all boats, citizens with a curious personality are also more likely to regard engagement with the political domain as stimulating. In other words, because some people are interested in many things, they are more likely to also include politics in their lists of interests, compared to individuals with lower inclinations towards intrinsic motivation (for empirical evidence for this tenet see: Prior, 2019). Concerning the potential domain-specific mechanism, scholars describe politics as the

1.7 How needs shape autonomous political motivation

“authoritative allocation of values” (Easton, 1953). Thus, by definition political affairs concern generalized considerations. Consequently, many citizens perceive politics as abstract and complex (Niemi et al., 1991). Hence, individual differences in the inclination towards intrinsic motivation may have a particular impact on the political realm: Individuals who generally refrain from spending energy on cognitive tasks may avoid domains they perceive as demanding whereas curiosity-inclined individuals who find pleasure in dealing with complex issues might engage with politics particularly because it entails abstract and complex issues (for empirical evidence, see: Sohlberg, 2016).

Regarding the second process, individual differences in the propensity for the internalization of extrinsic demands may have ramifications for volitional political engagement due to the social and moral nature of the political domain. Political decisions always bind the community as a whole, thus have bearings on concrete and abstract others. Due to the generalized nature of political decisions, the impetus of political engagement not always but often transcends pure egocentric concerns. This other-concerning component suggests a link between political engagement and the endorsement of intrinsic values such community orientations and their behavioral manifestations (e.g., empathic thinking, pro-social behavior) both of which are known to prosper in need-supportive environments (Flanagan, 2003; Padilla-Walker & Carlo, 2014). Moreover, political engagement represents a collective action problem in which participation runs against private self-interests although it enhances the greater good for all (Olson, 1971). In these social dilemmas, norms are powerful motivators even when the behavior itself has no instrumental value (Kollock, 1998). Accordingly, pro-participatory norms are pervasive features of democratic societies (Dalton & Welzel, 2014) and effective in ensuring the active participation of the citizenry in public affairs (Blais, 2000). Research has also shown that those who integrate pro-participatory norms into their sense of selves instead of merely perceiving them as external pressures are more likely to orient their political behavior to these normative standards (for empirical evidence, see: Blais & Galais, 2016). Hence, individual differences in the capacity to

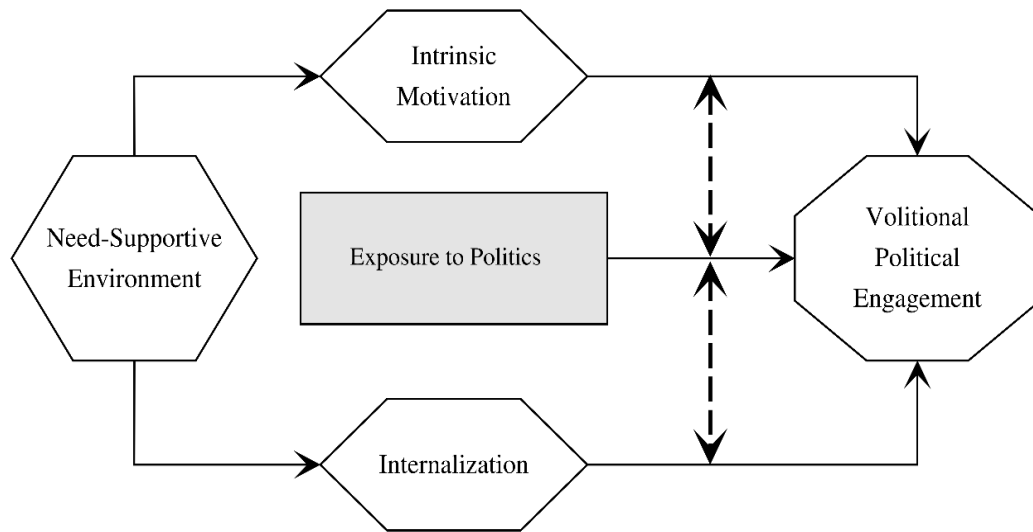
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internalize social demands have particular relevance for the political realm as they may distinguish individuals who reject or accept pro-participatory norms but social adaptability may also impact the quality of internalization: individuals with weak capacities for internalization might give in into social pressure to comply with pro-participatory demands without making them their own, hence, without valuing politics as a matter of principle.

2.0.2 The interaction of need-supportive contexts and social learning

There is reason to believe that need-supportive environments promote motivational propensities for volitional political engagement particularly if need-supportive influences co-occur with frequent and positive experiences with the political domain. Awareness of its existence is a prerequisite for developing interest towards any subject. Exposure to politics is therefore crucial for the promotion of political interest. The likelihood and frequency of exposure to politics reflect the level of involvement of peers and parents. Moreover, how individuals in one's context think about politics also matters because human beings long for relatedness, thus individuals are likely to consider the values their significant others endorse. Hence, growing up around politically engaged citizens raises awareness of political affairs and stimulates contemplating reasons for the political engagement exhibited by significant others. In this vein, the person-object theory of interest (Krapp, 2013) and Dweck's (2017) unified theory of motivation suggest that need satisfaction moderates how individuals process environmental influences. Hence, we may expect an interaction of need-satisfaction and social learning (Figure 2-1). Specifically, individuals from need-supportive contexts who developed psychosocial dispositions that are favorable for political engagement are more likely to imitate the political involvement of significant others. In reverse, stronger psychosocial predispositions towards political engagement are more likely to materialize in behavior if individuals grow up in contexts that facilitate frequent exposure to the political domain.

Figure 2-1: The origins of volitional political engagement



2.0.3 The current study

The goal of this study is to examine whether need-satisfying experiences in early developmental phases shape volitional political engagement later in life. Using parents who are often the principal caregivers as the illustrative case of need-supportive influences, this study makes use of two longitudinal cohort datasets to follow individuals throughout the lifespan and to survey parenting experiences during childhood and political engagement later in life. By measuring explanatory and outcome variables years or decades apart, cohort analyses avoid the reliance on biased recall questions. Also, the representative sampling frames of the cohort studies enable wide generalizability of the empirical findings. On the downside, secondary analyses of cohort data make it necessary to use imperfect indicators that were not tailored for study-specific needs. Yet, the insights drawn from each study supplement each other in order to examine the basic proposition that growing up in supportive contexts promotes political participation decades later.

2 Political engagement's non-political roots: Examining the role of need-supportive parenting in the political domain

H1: Experiencing need-supportive parenting in childhood is associated with higher levels of volitional political engagement in adulthood.

It was argued that need-satisfaction promotes psychosocial functioning, thereby facilitating attainments in various life domains. This suggests a positive correlation matrix of need-supportive experiences, volitional political engagement, psychosocial functioning, and individual attainments in other domains of life.

H2: Politically engaged citizens exhibit higher levels of psychosocial functioning and social adjustment, and each of these outcomes is associated with need-supportive parenting experiences in childhood.

Besides direct effects, it was argued that need-satisfaction and exposure to the political domain moderate the other's influence on political engagement.

H3: Need-supportive parenting interacts with the parents' orientation towards politics in shaping the offspring's level of political engagement.

2.1 Study 1: BCS

2.1.1 Procedures

The British Cohort Study (Centre For Longitudinal Studies, 2016) is a longitudinal panel study that follows the lives of all children born in the United Kingdom in a specific week in April 1970. Data has been collected using several sources (the midwife present at birth, parents of the cohort members, head and class teachers, school health service personnel and the cohort members themselves) in various ways (paper and electronic questionnaires, clinical records, medical examinations, physical measurements, tests of ability, educational assessments and diaries). Data was collected in eight sweeps immediately after the birth of the cohort members and when they were 5, 10, 16, 26, 30, 35, 38 and 42 years old.

2.1 Study 1: BCS

2.1.2 Sample

In the first survey wave, data on 17,287 newborns from the United Kingdom were collected. The following waves of data collection were subject to modest panel attrition and in the second survey wave at age 5 of the child, data was collected on 13,135 cohort members, including maternal self-reports and child assessments. In 2012, when adult cohort members were surveyed on various aspects of citizenship, 9,841 interviews were conducted. Male respondents from lower SES background had higher probabilities of panel attrition but differences between sociodemographic groups in systematic unit non-response are small (Mostafa & Wiggins, 2015). Because the analyses require information from sweeps at the ages 0, 5, 10, 16 and 42, the sample size shrinks to 5,927 observations with a small under-representation of men from parents in lower occupational classes (see supplement 1 for descriptive information on the sociodemographic distributions and supplement 3, table S2-3-3 for analyses on panel attrition).

2.1.3 Measures

Structural equation modeling is used to assess the main explanatory and outcome variables (see supplement 2, Figure S2-2-1 for a visualization of the measurement model). The dataset contains various indicators of involved and autonomy-supportive parenting but only weak measures on structure-providing parenting and on exposure to politics. Even though data availability impairs the diagnostic reliability on structure-providing parenting and on the interaction between need-supportive parenting and domain-specific exposure, all measures are included in the model to transparently report the empirical findings. All variables range from 0 to 1.

Volitional political engagement. Encompassing a motivational component of self-endorsed interaction with the political domain, volitional political engagement reflects the extent to which individuals value or find pleasure in engaging with politics. It was measured at age 42 using self-reported answers to three questions, which were aggregated into a summary score: *“How interested would you say you are in politics?”* and

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whether the respondent “usually reads factual books on politics” and “usually watches TV news”. The reliability coefficient H (McNeish, 2018) is 0.82.

Autonomy-supportive parenting. Autonomy-supportive parenting reflects the degree to which parents favor parenting styles that promote the satisfaction of the child's need for autonomy. It was measured using eleven attitudinal questions on parenting behaviors answered by the parents when the child was five years old (sample items “Unquestioning obedience is not a good thing in a young child,” “A child should not be allowed to talk back to his parents,” Coefficient H: .66).

Involvement. The degree to which parental behavior promotes the satisfaction of the need for relatedness is measured with ten exogenous indicators and three additional latent variables. The latent variable *mother's perception of family activities* measured with seven indicators at child's age 10 (sample item: “As a family how often do you do any of the following with your child: Have breakfast or tea together”, Coefficient H: .69), the *child's perception of family activities* measured with twelve indicators at age 16 (e.g. “How often do you go to cinema or theatre with your parents?” Coefficient H: .74) and *the time spent with each parent* is measured with three child responses at age 16 (Coefficient H: .84). The additional manifest indicators include teacher reports (e.g. “With regard to the child's education, how concerned or interested do the parents appear to be?”), parent reports (e.g. “On how many days has N been read to at home in the past 7 days?”) and reports from the child at ages 5 and 16 (e.g. “how much time do you spend talking to your parents each day?”).

Provision of structure. Acknowledging that BCS contains few indicators on the promotion of self-regulation (need for competence), the measure of structure-providing parenting is impaired. Yet, two single indicators were included: The mother's willingness to provide explanations for her demands to the child at age 5 and a summary index of age-adequate expectancies measured when the respondent was 10 and 16 (e.g. “Parents expect help in house when asked”).

2.1 Study 1: BCS

Politics at home. Acknowledging that BCS contains no direct measures of parental involvement with the political domain, I follow previous studies (Shani, 2009, p. 242) and measure the likelihood of exposure to politics using the quality of the newspaper read at the respondent's household at age 16 as a proxy.

Psychosocial adaptation. As indicators of psychosocial functioning, I employ single item self-reports on general health and a validated 14-item measure on positive mental health (Warwick-Edinburgh Mental Well-Being Scale). Moreover, I include several measures on attainments and social adaptability: income (the cohort member's total take-home income from all sources), education (highest nvq level from an academic or vocational qualification up to 2012), social class derived from the occupational status (NS-SEC analytic categories) and results from a 20-word vocabulary assessment.

Control variables. To minimize unobserved heterogeneity, I control for established concepts from the political socialization literature that might confound with need-supportive parenting in shaping political engagement. The indicator of parental political involvement covers the social learning approach (Bandura, 1977). To account for the status transmission approach (Brady et al., 2015), educational attainment of father and mother, quality of the neighborhood, and social class at birth were included. To account for cognitive resources, the Peabody Picture Vocabulary Test, the Human Draw Test, and the Copying Designs Test are included.

Further details. Supplement 2 contains a visualization of the measurement model. Supplement 5 lists question wordings. More detailed coding decisions are reported in the commented analysis syntax.

2.1.4 Analytical strategy

I estimated factor loadings for the main outcome variable and explanatory variables using structural equation measurement modeling (see supplement 2, Figure S2-1-1 for factor loadings; $N=12,640$; $\chi^2(967)=6817.525$, $p<.000$). Absolute fit indices

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(RMSEA = 0.022 [0.021; 0.022]; SRMR = 0.041) suggest good to excellent model fits. Indices which depend on the average size of correlations in the data perform less well (TLI = 0.857; CFI = 0.867), possibly reflecting the conscious choice to measure a broad concept with different measurement instruments at different points in time. For ease of interpretation throughout this study, Stata 15.1 was used to predict variables from the measurement model. The regression analysis in the main text used the predicted variables but structural models using latent variables are reported in supplement 2, Figure S2-2-2. To test hypotheses 1 and 2, I compute bivariate correlations between need-related experiences during the cohort members' early developmental phases and various attainments at age 42. To control for potential confounders of need-satisfaction in influencing political engagement (hypothesis 1), I conduct multivariate regression analyses.

2.1.5 Results

Children whose parents provide a need-supportive environment during early developmental phases are more engaged politically in adulthood and achieve higher levels of psychosocial functioning and various indicators of social attainments (table 2-1). Even though decades apart, volitional political engagement at age 42 correlates with autonomy-supportive parenting ($r = .16$; $p < .001$) and parental involvement ($r = .23$; $p < .001$), lending preliminary support for hypothesis 1. Likewise, more politically engaged citizens show higher levels of well-being (psychosocial functioning) and achieve higher levels of educational and economic attainments. Hence, in line with hypotheses 2, there is a joint association between need-satisfaction, attainments and psychosocial functioning, and volitional political engagement, all of which correlate with each other.

Table 2-1: Bivariate correlations between volitional political engagement and variables of interest (BCS)

Variable	M	SD	1	2	3	4	5	6	7	8	9	10
Volitional pol. engagement	0.40	0.20										
Autonomy-support	0.49	0.18	0.21***	1.00								
Involvement	0.64	0.14	0.33***	0.42***	1.00							
Str.-prov. rules	0.68	0.24	0.02	0.11***	0.11***	1.00						
Str.-prov. explanations	0.57	0.36	0.09***	0.28***	0.16***	0.04*	1.00					
Education	0.59	0.29	0.26***	0.18***	0.23***	0.09***	0.09***	1.00				
Vocabulary test	0.67	0.18	0.34***	0.24***	0.25***	0.12***	0.14***	0.39***	1.00			
Income	0.63	0.20	0.20***	0.13***	0.19***	0.05**	0.07***	0.27***	0.25***	1.00		
Social class	0.68	0.27	0.24***	0.16***	0.20***	0.07***	0.08***	0.38***	0.36***	0.40***	1.00	
General health	0.67	0.26	0.06***	0.08***	0.12***	0.03	0.04*	0.13***	0.12***	0.17***	0.16***	1.00
Mental well-being	0.63	0.15	0.14***	0.07***	0.17***	0.02	0.05*	0.13***	0.11***	0.18***	0.15***	0.33***

Note: Minimum of all variables: 0, Maximum of all variables: 1, (Minimum auf aut.-sup. Parenting: 0.02, Min of involvement: 0.03, Max of involvement: 0.97).

Number of observations for all reported coefficients is 1,313 (listwise deletion);

*p < .05; **p < .01; ***p < .001 (two-tailed).

2.1 Study 1: BCS

For a more robust test of the association between need-satisfaction in a child's early years and the main outcome of interest, multivariate regression analyses on volitional political engagement were conducted (Table 2-2). Model I shows that autonomy-supportive ($b = .09$; $p < .001$) and involved parenting ($b = .47$; $p < .001$) remains significantly associated with political engagement when controlling for the other parenting dimensions. The coefficients of all parenting indicators point in the expected direction, and even though these indicators of parenting styles were measured very early in life, they explain 14.4% of the statistical variance in volitional political engagement decades later. To assess effect sizes, regression coefficients can be inspected which denote the change in political engagement when the explanatory variables change from the scale minimum to the maximum. Children who grow up among parents with highest levels of involvement will exhibit political engagement with levels half the entire scale (0.47 scale points on a 0-1 scale) above individuals whose need for relatedness is entirely thwarted. Potentially reflecting the more exhaustive list of involvement-measures, the statistical effect is much larger for involved parenting, but still substantial for autonomy-supportive parenting. Because unstandardized coefficients denote extreme changes at the endpoints of the scales, I conducted further analyses which take the variable distribution into account (see supplement 2 for standardized regression coefficients and visualizations): One standard deviation increase in involved parenting is associated with an increase of volitional political engagement by $\beta=0.33$ standard deviations (effect of autonomy support, $\beta=0.08$ SD).

2.1 Study 1: BCS

Table 2-2: Determinants of volitional engagement (BCS)

	Model I	Model II	Model III
<i>Non-political influences</i>			
Autonomy support	0.09*** (0.02)	0.10*** (0.02)	0.07** (0.02)
Involvement	0.47*** (0.02)	0.43*** (0.02)	0.37*** (0.03)
Str.-prov. rules	0.00 (0.01)	-0.01 (0.02)	-0.01 (0.02)
Str.-prov. explanations	0.01 (0.01)	0.00 (0.01)	0.00 (0.01)
<i>Political influences</i> Politics at home		0.07*** (0.01)	0.05*** (0.01)
<i>Control variable</i> Picture Vocabulary Test			0.13*** (0.02)
Human Draw Test			0.04 (0.03)
Copying Designs Test			0.03 (0.02)
Neighborhood			0.00 (0.01)
Father: occupation			0.02* (0.01)
Mother: education			0.01 (0.08)
Father: education			0.24** (0.08)
Constant	0.05*** (0.01)	0.06** (0.02)	-0.08* (0.04)
Adjusted R^2	0.144	0.137	0.155
Observations	5927	3615	3151

Notes: Reported are linear regression coefficients with standard errors in parentheses; *: $p < 0,05$, **: $p < 0,01$, ***: $p < 0,001$.

The statistical effect of need-supportive parenting is robust and remains present when parents' engagement with politics is included in the analysis (model II). The political climate in the parental home shapes participation in adulthood but accounting for social leaning only slightly attenuates the effect of need-supportive parenting styles on

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political engagement. The statistical association of non-political influences persists when controlling for other potentially confounding variables and competing explanations (status transmission and cognitive resources, model III). In line with hypothesis 1, growing up with parents who promote autonomous development and satisfy the child's need for relatedness is associated with curiosity towards and self-endorsed engagement with the political domain in adulthood.

2.2 Study 2: NLSY 79

Study 2 employs a representative cohort study from the United States which complements Study 1 by offering more comprehensive measures on political exposure and a more extensive list of corollary outcomes and control variables, at the expense of fewer indicators on need-supportive parenting. Efforts were made to harmonize variable operationalization for comparability across studies for ease of interpretation.

2.2.1 Procedures

Data from the National Longitudinal Survey of Youth 1979: Children and Adults was used. NLSY 79 is a longitudinal panel study that follows the lives of a representative sample of American youth born between 1957 and 1964 and their biological children. These children ('respondents' in the following) were the focus of a separate survey, which began in 1986. Data was collected using several sources (interview of the respondents and their mothers, teacher reports, interviewer observations, assessments). The data were collected in bi-annual waves.

2.2.2 Sample

The survey contains all children (N=11,152) of the mothers in the original NLSY79 sample. These children were born between 1970 and the most recent survey wave, but the analyses only include respondents who were eligible for the questionnaire on political attitudes in the 2006 or 2008 survey waves (over 18 years of age in 2008). Across survey

waves, respondents from ethnic minorities and from families with higher family income were more likely to attrite, but the rates were small and attrition was not correlated with several variables of interest (Aughinbaugh, 2004). I use survey weights that adjust for the initial over-sampling of blacks. Because the analyses require data from several survey waves, the sample size shrinks to 6,158 observations. As a consequence, respondents born in poor families are under-represented in the analyzed sample (see supplement 3 for analyses on panel attrition and supplement 4 for descriptive information on the sociodemographic distributions).

2.2.3 Measures

Volitional political engagement. Volitional political engagement was measured using three self-reports asked in 2006 and 2008 when respondents were between 18 and 36 years old: interest in politics (*"How interested are you in information about what's going on in government and politics?"*), attention to politics (*"How often do you follow what's going on in politics?"*) and frequency of political conversation (*"Do you ever talk with friends, family, co-workers, or other people about political events?"*, Yes: *"During a typical week, on how many days do you talk with anyone about political events?"*). The reliability coefficient H (McNeish, 2018) is 0.81.

Politics at home. Exposure to politics was measured in 2008 using three mother reports on her level of political involvement: attention to politics (*"How often do you follow what's going on in politics?"*), turnout at presidential election, and strength of party identification. Coefficient H: .85.

Need-supportive parenting styles. Indicators of parenting styles were surveyed at respondent's ages 3 to 14. Most indicators were collected in multiple waves. In these cases, counts of need-supportive parenting instances were averaged across all observed surveyed waves.

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Involvement. Eight indicators measure the degree to which parental behavior promotes the satisfaction of the need for relatedness. Two interviewer observations on mother-child interactions at ages 0 to 5 (e.g. *"Mother caressed, kissed, or hugged child at least once"*) and two reports from the mother on the frequency of reading to the child and on the frequency of joint cultural activities (at child ages 3 to 10). From the respondents' questionnaire administered 14 years of age, I use a summary index of joint activities with the parents, self-reported closeness to the parents, and perceptions of whether the parents spent enough time with their child or missed important events. Coefficient H: .61.

Autonomy-supportive parenting. NLSY does not provide item batteries reflecting a single dimension of autonomy-supportive parenting (Brauer, 2011, p. 37). Hence, I separately include three distinct constructs all of which tap into the satisfaction of the child's need for autonomy by promoting self-initiated decisions and volitional action. If not stated otherwise, the indicators were measured recurrently between ages 3 and 14. *Autonomy-supportive communication* is a summary index of child-reported indicators of whether parents are perceived as listening to the child's side of arguments and share important ideas with the child. *Autonomy-supportive rule setting* is a summary index of four child-reported indicators on how much say the child has in setting household rules (e.g. *"watching television"*). *Autonomy-supportive encouragement* combines two mother reports on whether the parents encourage and facilitate extracurricular activities of the child and two interviewer observations measured from child's ages 3 to 9 on whether the mother encourages the child to take part in the interview.

Provision of structure. Again, the degree to which parents facilitate the satisfaction of a child's need for competence cannot be measured in a single dimension and three separate constructs tapping into the provisions of structure were included. All indicators were measured recurrently between ages 6 and 14. *Structure-providing rule setting* entails child-reports on whether it is expected to help with different age-adequate tasks (e.g. *"wash dishes"*). *Structure-providing discussions* entails mother reports on whether

the parents discuss the TV program with the child and on the likelihood of reacting to a low grade by talking with the child. *Structure-providing feedback* is one item from the mother's questionnaire on the self-reported frequency of praising the child for doing something worthwhile.

Psychosocial functioning and social attainments. As separate indicators of psychosocial functioning, I employ a self-reported 1-item self-report on *general health*, a validated 7-item measure on *mental well-being* (CE depression scale), the 7-item Pearlin mastery scale on *internal locus of control*, 10-item Rosenberg self-esteem scale and *interest in others* using two items of the mini-IPIP agreeableness scale (sample item: "I am not really interested in others") and *interest in abstract thinking* using two items from the mini-IPIP intellect scale ("I am not interested in abstract ideas"). I include several measures assessed in adulthood on adaptability and attainments: income, education (high school degree), four cognitive assessments (reading comprehension, reading recognition, vocabulary test, memory for digit span test) and the level of social trust ("Generally speaking, how often can you trust other people?") and internal political efficacy ("How often is politics so complicated that you don't really understand what's going on?").

Control variables. Mirroring study 1, I account for the social learning approach by including the parents' involvement in politics and for the status transmission approach by controlling for the mother's education level, neighborhood, poverty status, family wealth, and total family income (all measured at birth of the child). To account for cognitive resources, I include cognitive tests assessed in early childhood (reading comprehension, reading recognition, vocabulary test, memory for digit span test). I also include perceived inter-parental conflict using two items ("*How often do you feel caught in the middle of your parents*", "*How often do your biological parents argue*") to control other aspects of parenting behavior, which do not directly tap into the target concept of need-supportive parenting, but affects various life outcomes (Zemp et al., 2016), including one's sense of political efficacy (Šerek et al., 2012).

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Further details. Supplement 3 contains a visualization of the measurement model. Supplement 5 lists question wordings.

2.2.4 Analytical strategy

Using structural equation modeling I estimated factor loadings for involved parenting, volitional political engagement, and political involvement in the parental home (see supplement 2, Figures S2-2-1 and S2-2-2 for factor loadings; $N=5,378$). The model resembles the data well, surpassing conventional goodness of fit thresholds ($\chi^2(70)=398.26$, $p < .000$, $RMSEA = 0.030$ [$0.027; 0.032$]; $SRMR = 0.041$, $TLI = 0.947$; $CFI = 0.959$).⁵ Because the analysis requires weighting and for the estimation of interaction effects, I use predicted variables from the measurement model and report structural models on political engagement using latent variables in supplement 4. In addition to replicating the analysis from study 1, the availability of comprehensive measures on parental political involvement enables testing the moderation between need-supportive parenting and exposure to politics, suggested in hypothesis 3.

⁵ The reported goodness of fit indices relate to models without weights (see supplement 3, Figure S2-3-1). To calculate manifest variables, models with adjustment weights were used for which fewer goodness of fit indices are available (see supplement 3, Figure S2-3-2). Results are similar.

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2.2.5 Results

Table 2- 3: Bivariate correlations between volitional political engagement and variables of interest (NLSY)

Variable	M	SD	1	2	3	4	5	6	7	8
Volitional pol. engagement	0.39	0.18								
Involvement	0.55	0.15	0.27***							
Aut.-sup. communication	0.54	0.29	0.05***	0.32***						
Aut.-sup. encouragement	0.71	0.20	0.14***	0.46***	0.11***					
Aut.-sup. rule setting	0.44	0.21	-0.00	-0.04**	0.04**	-0.04**				
Str.-prov. rules	0.63	0.23	-0.00	-0.09***	-0.03*	-0.11***	0.09***			
Str.-prov. discussions	0.87	0.17	0.10***	0.38***	0.16***	0.30***	-0.06***	-0.06***		
Str.-prov. feedback	0.27	0.19	0.11***	0.35***	0.09***	0.27***	-0.04**	-0.02	0.24***	
Politics at home	0.59	0.29	0.32***	0.47***	0.06***	0.24***	-0.04**	-0.02	0.23***	0.17***
Int. pol. efficacy	0.55	0.27	0.37***	0.14***	0.07***	0.09***	-0.04*	-0.03*	0.05**	0.03
Interest in others	0.69	0.26	0.09***	0.18***	0.04	0.13***	-0.03	0.01	0.06*	0.12***
Interest in abstraction	0.66	0.24	0.13***	0.13***	0.05	0.11***	0.01	0.01	0.09***	0.06*
Self-esteem	0.49	0.10	0.13***	0.10***	0.05***	0.06***	0.02	0.05***	0.05***	0.03
Mastery	0.48	0.10	0.12***	0.11***	0.06***	0.09***	0.00	0.02	0.07***	0.05**
General health	0.71	0.20	0.10***	0.21***	0.13***	0.11***	0.02	-0.05***	0.07***	0.04**
Social trust	0.47	0.24	0.09***	0.23***	0.06***	0.16***	-0.03*	-0.09***	0.12***	0.11***
Formal education	0.72	0.45	0.11***	0.14***	0.03*	0.11***	0.01	0.06***	0.07***	0.07***
Reading Comprehension	0.46	0.20	0.17***	0.29***	0.06***	0.29***	-0.07***	-0.10***	0.23***	0.19***
PPVT	0.53	0.15	0.17***	0.34***	0.06***	0.32***	-0.07***	-0.12***	0.26***	0.23***
Memory for Digit Span	0.49	0.18	0.12***	0.18***	0.03*	0.20***	-0.03*	-0.03*	0.13***	0.09***

Note: Minimum of all variables: 0, Maximum of all variables: 1.

Correlation which could not be shown due to limitations of space are reported in supplement 2. Numbers of observations for all reported coefficients is 6,158. Because mini-IPIP was only administered to a random subsample, correlations with interest in others/abstraction are based on 948/940 observations; *p < .05; **p < .01, ***p < .001 (two-tailed).

Table 2-3 shows that volitional political engagement is strongly aligned with factors close to the political domain (political exposure, $r = .32$; political efficacy, $r = .37$) but citizens' engagement with politics also correlates with non-political childhood experiences and with indicators of psychosocial functioning and social attainments measured in adulthood. Albeit not with all, political engagement is positively associated with most indicators of need-supportive parenting (H1).⁶ Moreover, children who grow up in need-supportive homes also achieve a higher level of formal education and cognitive skills. These attainments, in turn, correlate positively with political engagement. The pattern repeats with indicators of psychosocial adjustment. For instance, to 'feel in control of one's own life' correlates with political engagement and correlates with autonomy-supportive, structure-providing, and involved parenting. Likewise, the correlative pattern of "interest in others" and "interest in abstract thinking" conforms with the theoretical proposition that need-supportive environments foster inclinations towards intrinsic motivation and other-concerning empathy and that, in turn, these traits go along with volitional political engagement. Altogether, the data support hypothesis 2 as it demonstrates the expected correlative triangle between need-supportive environments, volitional political engagement, and various indicators of social adaption and psychosocial functioning.

⁶ Both indicators related to rule-setting do not promote political engagement but the fact that these items are not associated with other corollary outcomes suggests that they may be weak indicators of the target concept.

2.2 Study 2: NLSY 79

Table 2-4: Determinants of volitional political engagement (NLSY)

	Model I	Model II	Model III	Model IV
<i>Non-political influences</i>				
Involvement	0.38*** (0.02)	0.23*** (0.02)	0.27*** (0.03)	0.15** (0.05)
Aut.-sup. communication	-0.02* (0.01)	-0.00 (0.01)	0.01 (0.01)	0.01 (0.01)
Aut.-sup. encouragement	0.01 (0.01)	0.01 (0.01)	-0.01 (0.02)	-0.01 (0.02)
Aut.-sup. rule setting	0.01 (0.01)	0.01 (0.01)	0.00 (0.01)	0.00 (0.01)
Str.-prov. rules	0.01 (0.01)	0.01 (0.01)	-0.00 (0.01)	-0.00 (0.01)
Str.-prov. discussions	0.00 (0.02)	-0.01 (0.02)	-0.02 (0.02)	-0.01 (0.02)
Str.-prov. feedback	0.01 (0.01)	0.01 (0.01)	0.02 (0.02)	0.01 (0.02)
<i>Political influences</i>				
Politics at home		0.16*** (0.01)	0.14*** (0.01)	0.03 (0.04)
<i>Control variables</i>				
Parental Conflict 1			-0.00 (0.01)	-0.00 (0.01)
Parental Conflict 2			0.00 (0.01)	0.00 (0.01)
Peabody Picture Vocabulary Test			0.00 (0.00)	0.00 (0.00)
Memory for Digit Span			0.00 (0.00)	0.00 (0.00)
Reading Recognition			-0.00 (0.00)	-0.00 (0.00)
Reading Comprehension			0.00** (0.00)	0.00** (0.00)
Neighborhood			-0.02 (0.01)	-0.02 (0.01)
Education mother			0.00 (0.00)	0.00 (0.00)
Poverty			0.01 (0.01)	0.01 (0.01)
Family wealth			-0.00 (0.00)	-0.00 (0.00)
Family income			-0.00 (0.00)	-0.00 (0.00)
Politics at home # Involvement				0.20** (0.08)
Constant	0.16*** (0.02)	0.16*** (0.02)	0.05 (0.03)	0.11** (0.04)
Adjusted R^2	0.097	0.141	0.159	0.160
Observations	6158	6158	4146	4146

Notes: Reported are linear regression coefficients with standard errors in parentheses; *: p<0,05, **: p<0,01, ***: p<0,001.

Table 2-4 shows that need-supportive parenting predicts political engagement in adulthood even when controlling for an extensive list of potential confounders (model

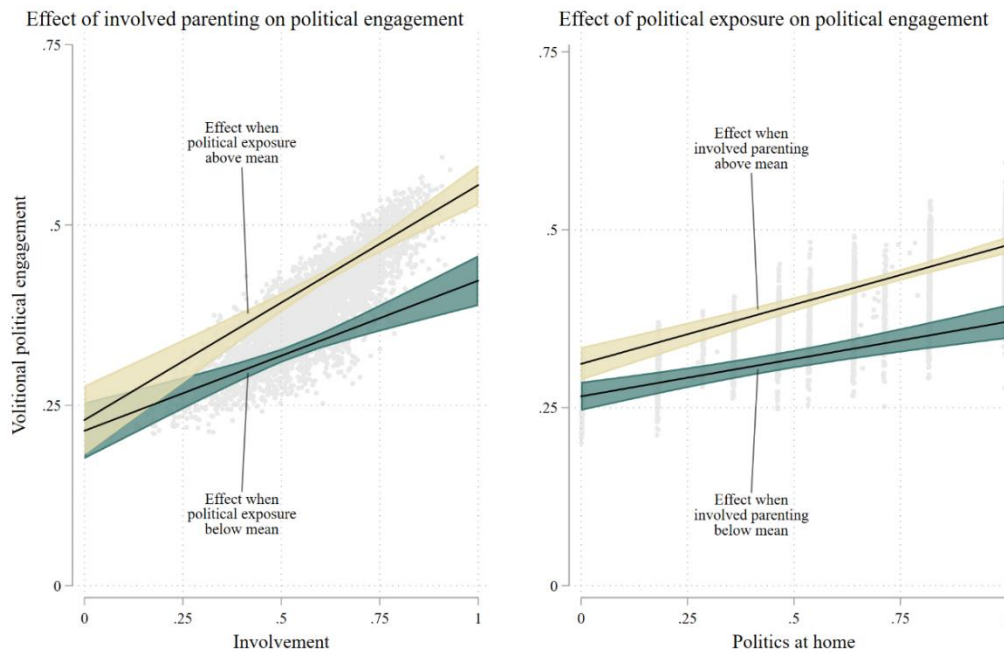
2 Political engagement's non-political roots: Examining the role of need-supportive parenting in the political domain

I & III). However, the effect is only robust for involved parenting, for which the dataset provides the most reliable measures. Underscoring the presence of social learning in the political domain, the explanatory power greatly improves when accounting for the parents' degree of political involvement (model II). Importantly and consistent with hypothesis 3, whether adult citizens value and find joy in engaging with politics results from the interactive influence of exposure to the political domain and need-supportive parenting. The left panel of Figure 2-2 visualizes the proclivity for political engagement among respondents with levels of parents' political participation one standard deviation above and one standard deviation below the sample mean and demonstrates that involved parenting stimulates political engagement much more strongly when the child was exposed to the political domain. Likewise, the inter-generational transmission of political engagement is more likely when the parental homes satisfied the offspring's basic need for relatedness.⁷

⁷ At much smaller effect sizes, interaction of need-satisfaction and social learning replicates with regards to the provision of structure (see supplement 3, Fig. S2-3-5). I also tested for interaction effect using BCS data. The interaction coefficient of involvement and political exposure is large and statistically significant. The results are shown in supplement 2, Table S2-2-1.

2.3 Discussion

Figure 2-2 Interactive effects of exposure to politics and parental involvement during childhood on volitional political engagement in adulthood



Note: Visualization of the interaction effect from model IV in table 2-4 on volitional political engagement. Left panel: the upper black line with yellow 95%-confidence interval shows political engagement at different levels of parental involvement for respondents whose level of political exposure is one standard deviation above the mean. The lower black line with green CI reports the association between engagement and involvement for respondents whose level of political exposure is 1 SD below the mean. Right panel: association between engagement and political exposure for respondents whose level of parental involvement is 1SD or 1SD below the mean. Scatterplot in background shows joint distribution of political engagement and involvement (background, left panel) and of political engagement and political exposure (background, right plot).

2.3 Discussion

Even though most scholars acknowledge the importance of early life phases in shaping a person's proclivity to engage with politics later in life, political socialization research has made limited headway in identifying the developmental factors that explain why some citizens value or enjoy engagement with politics whereas others do not. This study argues that early non-political experiences, namely a family environment that promotes the satisfaction of a child's basic psychological needs help explain volitional political engagement in the following decades of life. Data from two independent, representative cohort studies reveal a link between need-supportive parenting and various indicators of well-functioning and valued life achievements, all of which are also

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associated with political engagement. Empirical evidence in support of the theorized link between parenting styles and political outcomes is stronger for involved parenting than for the other dimensions of need-supportive parenting. Still, these findings provide initial evidence for political ramifications of need-thwarting or -supportive influences, which are seemingly remote to the political domain but deeply engrained in human processes of psychosocial functioning. Hence, individual differences in need-supportive influences during socialization may present a valuable addition to scholarly explanations of individual differences in political engagement.

To solidify the suggested relevance of need-supportive environments for political engagement, this study employs several strategies to isolate parenting effects from potential confounders. First, I explain outcomes in adulthood with measures collected during childhood. This approach safeguards against confounders that may have exerted unobserved influences throughout a persons' life span after childhood. Second, using childhood measures avoids biases in recall and rationalization. Third, to further minimize artifacts of specific instruments I relied on indicators from different measurement types. Moreover, controlling for various economic, social, personal, and political characteristics of the parents minimizes unobserved heterogeneity among the parents.

As the analysis relies on existing cohort surveys, limitations result from the use of measures which were not tailored specifically for the assessment of SDT-constructs. First, the available measures do not capture each need-related dimension of parenting equally well, leaving unclear, for instance, to which degree the weak effects of competence-satisfying parenting are substantively informative or merely represent measurement artifacts. Second, it is conceivable that other than the need-satisfying aspects of parenting underlie the demonstrated associations. Hence, while the presented findings are compatible with the advanced theory of need-supportive influences on political engagement, we should be aware that the measures' limited discriminant validity does not exhaustively preclude different interpretations suggested by other theoretical

2.3 Discussion

approaches (cf. Bougher, 2017; Miklikowska & Hurme, 2011). More generally, the usual limitations of observational research in detecting causal relationships also apply to this study. For instance, this study could not rule out biological heritage as confounding variable (Harris, 2014). Yet, analogous findings from different contexts such as education may alleviate worries of spurious relationships of parenting due to genetic heritability (Galais, 2018). Moreover, analyzing a large-scale schooling intervention, Holbein (2017) provides first field-experimental causal evidence for non-political influences on political engagement. In this vein, manipulating need-supportive environments and examining their effects on political outcomes is a promising avenue for further research.

The presented findings are subject to constraints on generality (Simons et al., 2017). Considering the centrality of parents as socializing agents for children, this study examined need-related influences in the parental home, even though in reality, children are subject to a myriad of different need-related influences. With recent findings suggesting deeper internalization of voting as a civic duty in autonomy-supportive schools (Galais, 2018), further research may extend the proposed nexus of political engagement and psychological needs to other socializing contexts. Context-dependence also needs to be considered with regards to the sampling strategy of this study. First, the analyzed survey data was confined to two selected birth cohorts and affected by panel attrition. Thus, the realized sample deviates from the target sample of this study: western, industrialized and liberal democracies (Henrich et al., 2010). The restricted sample consisting of two birth cohorts may impair representativeness because accepted notions of good parenting practices and political orientations may evolve across generations. Second, differences in the functional significance of parenting practices may constrain generalizability (Smetana, 2018). Even though basic psychological needs may have universal relevance for psychosocial functioning (Chen et al., 2015), the reported associations of need-supportive parenting cannot be expected to replicate universally without tailoring their operationalizing to the cultural context under investigation (Grolnick et al., 2018; Smetana, 2018). Generalizability is more complex

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regarding the outcome variable. On the one hand, several characteristics appear inherent in the nature of the political domain (e.g., its degree of abstraction). Importantly, however, the theorized mechanisms for the development of political engagement depends on the meaning that citizens attach to the political domain. These mechanisms would unfold differently if the explicated assumptions about the perceived nature of the political domain would not apply. For instance, politics plays a different role in non-democratic countries. In addition, what this study described as the essence of politics essence may not apply in societies which formally uphold popular rule but where exclusionism and hostility characterize the *res publica*. Similarly, the proposed mechanisms would also need refinement for societies or societal subgroups, in which democratic participation is not the descriptive norm or even considered deviant behavior. Hence, understanding the meaning of politics as perceived in a given context is crucial for understanding the origins of political engagement.

The finding that political engagement shares common origins with other social attainments raises questions about the causal order of political engagement and its various antecedents, including psycho-social functioning, which calls for mediation analyses. However, mediation analyses in the absence of experimental designs require strong assumptions on the data (D. P. Green et al., 2010), which become even more demanding when repeated observations of the explanatory and outcome variables are unavailable (Bullock et al., 2010). As the data did not allow for full-fledged mediation analyses, the demonstrated mutual associations between need-supportive environments, psychosocial functioning, political involvement, and other attainments should be understood as a first step towards understanding the complex pathways that foster political engagement. Future research may investigate processes such as the development of intrinsic values that potentially mediate the link between needs and political engagement (Miklikowska & Hurme, 2011). Moreover, the reported findings relate to current scholarly discussions disputing the causal status of classical predictors of political participation as they may be driven by unobserved common causes (Kam & Palmer, 2008; Sondheimer & Green, 2010). Hence, along with experimental evidence on the

2.3 Discussion

mediating role of psychosocial functioning (i.e. grit, see Holbein, 2017), this study suggests to consider in these discussions basic psychological needs as a potential common cause of political participation and its various correlates.

Another avenue for further research is examining more closely differential effects of need satisfaction. First, each psychological need and each aspect of need satisfaction may differ in relevance for political outcomes. For instance, relatedness may be particularly important in facilitating norm internalization (i.e., voting as a civic duty) and autonomy may have a particular role in promoting intrinsic motivation (i.e., participation for inherent pleasure). Second, socialization research on need-supportive parenting practices may contribute to the growing literatures in political (Inglehart, 2018) and psychological science (Kasser, 2016) which employ need concepts to explain the content of political views and often link need satisfaction to liberal value orientations. In particular, the distinction between a lack of need fulfillment on the frustration of needs (Vansteenkiste & Ryan, 2013) may prove fruitful to advance insights into the development of self-centered and self-defensive political orientations. Hence, the arguments presented in this paper may stimulate further research into the development of volitional political engagement but may also be generalized to understand curiosity and appreciation towards other social domains.

Beyond its theoretical import, the notion of political engagement's non-political origins involves practical implications for educational and political institutions. Practitioners and scholars long acknowledged the importance of parents in stimulating political engagement but saw their (and other socializing agents') primary role in domain-specific familiarization, i.e., explaining political processes and emphasizing their importance. In this vein, it seems straightforward to tackle a lack of political interest among young people by expanding civic education. However, this study suggests that politics-specific interventions need to be accompanied by holistic approaches to achieve their full potential. Such holistic approaches consider the various large and

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small need-supportive stimuli that equip children with the psychological nutrients they require to thrive in social life, including the political domain.

2.4 Conclusion

Developmental psychologists in the tradition of SDT have not paid much attention to the explanation of political engagement and political socialization researchers have largely neglected basic psychological needs. Connecting these lines of literature, this study examined why, and under which conditions the seemingly non-political aspect of need-supportive socialization environments may promote a person's inclination to endorse and enjoy political engagement. Evidence from two representative cohort studies aligns with the notion that factors seemingly remote to the political domain foster volitional political engagement. Growing up in need-supportive homes –in particular, growing up with involved and caring parents– is associated with a positive manifold of better psycho-social functioning which seems to facilitate attainments and adaption in various life domains, including politics. Identification with and curiosity towards politics is most likely to develop in contexts that expose the child to politics and that also provide the necessary psychological nutrients for developing predispositions conducive to political engagement. Hence, there is reason to believe that the roots of political engagement are deeply engrained in human processes of psychosocial functioning.

2.5 Compliance with ethical standards

Funding: There was no funding for this study.

Ethical approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

2.6 Supplementary files

Informed consent: Informed consent was obtained from all individual participants included in the study.

2.6 Supplementary files

2.6.1 Supplement 1: Descriptive statistics on sample composition (British Cohort Study 1970)

This supplement reports frequency tables of characteristics of respondents who are included in the main analysis.

Table S2-1-1: Sex of respondents

	freq	share	cumpct
Male	2807	47.36	47.36
Female	3120	52.64	100.00
Total	5927	100.00	

Table S2-1-2: Region

	freq	share	cumpct
England	5010	84.53	84.53
Wales	310	5.23	89.76
Scotland	573	9.67	99.43
Northern Ireland	5	0.08	99.51
Southern Ireland	1	0.02	99.53
Overseas	28	0.47	100.00
Total	5927	100.00	

Table S2-1-3: Socio Economic Group Father

	freq	share	cumpct
Employers Government	23	0.41	0.41
Employers in Industr	411	7.35	7.76
Prof Self Employed	28	0.50	8.26
Prof Employees	300	5.36	13.63
Middle NM Workers	575	10.28	23.91
Junior NM Workers	496	8.87	32.78
Personal Workers	28	0.50	33.28
Supervisors	477	8.53	41.81
Skilled M Workers	1873	33.49	75.30
Semi-Skilled	655	11.71	87.02

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Unskilled	253	4.52	91.54
Own Account Workers	155	2.77	94.31
Farmers	95	1.70	96.01
Farmers Own Account	8	0.14	96.16
Agricultural Workers	73	1.31	97.46
Armed Forces	108	1.93	99.39
Job Poorly Described	5	0.09	99.48
Student	24	0.43	99.91
Prison	2	0.04	99.95
Retired	2	0.04	99.98
Disabled	1	0.02	100.00

Table S2-1-4: Socio Economic Group Mother

	freq	share	cumpct
Employers Government	3	0.06	0.06
Employers in Industr	46	0.86	0.92
Prof Self Employed	2	0.04	0.96
Prof Employees	25	0.47	1.43
Middle NM Workers	627	11.78	13.20
Junior NM Workers	1684	31.63	44.83
Personal Workers	254	4.77	49.61
Supervisors	28	0.53	50.13
Skilled M Workers	111	2.08	52.22
Semi Skilled	713	13.39	65.61
Unskilled	59	1.11	66.72
Own Account Workers	9	0.17	66.89
Farmers	4	0.08	66.96
Agricultural Workers	21	0.39	67.36
Armed Forces	5	0.09	67.45
Job Poorly Described	4	0.08	67.52
Housewives	1710	32.12	99.64
Student	19	0.36	100.00
Total	5324	100.00	

2.6 Supplementary files

Table S2-1-5: Social Class of Father in 1970

	freq	share	cumpct
SC 1	328	5.71	5.71
SC 2	742	12.91	18.62
SC 3 NM	751	13.07	31.69
SC 3 M	2583	44.95	76.64
SC 4	783	13.63	90.27
SC 5	263	4.58	94.85
Other	132	2.30	97.15
Unsupported	164	2.85	100.00
Total	5746	100.00	

Table S2-1-6: Social Class of Mother in 1970

	freq	share	cumpct
SC 1 & 2	545	10.24	10.24
SC 3 NM	1750	32.89	43.14
SC 3 M	267	5.02	48.16
SC 4	964	18.12	66.28
SC 5	60	1.13	67.41
Other	24	0.45	67.86
Housewives	1710	32.14	100.00
Total	5320	100.00	

2.6.2 Supplement 2: British Cohort Study - additional analyses

Supplement 2 contains sensitivity analysis / robustness checks or further analysis regarding the British Cohort Study that were referenced in the main text.

2.6.2.1 Interaction

Table S2-2-1, Figure S2-2-1 report interactive effects between need-related parenting and parental involvement with politics on the of spring's level of volitional political engagement. Involved parenting exerts stronger effects in parental homes that expose the child to the political domain, but the effect does not surpass conventional levels of statistical significance. Readers should keep in mind the limitations of the political exposure variable when interpreting the results. Presumably, the variable carries substantial noise and may also tap into other concepts than target constructs. However, with this note of caution, I report the interaction results for the sake of transparency.

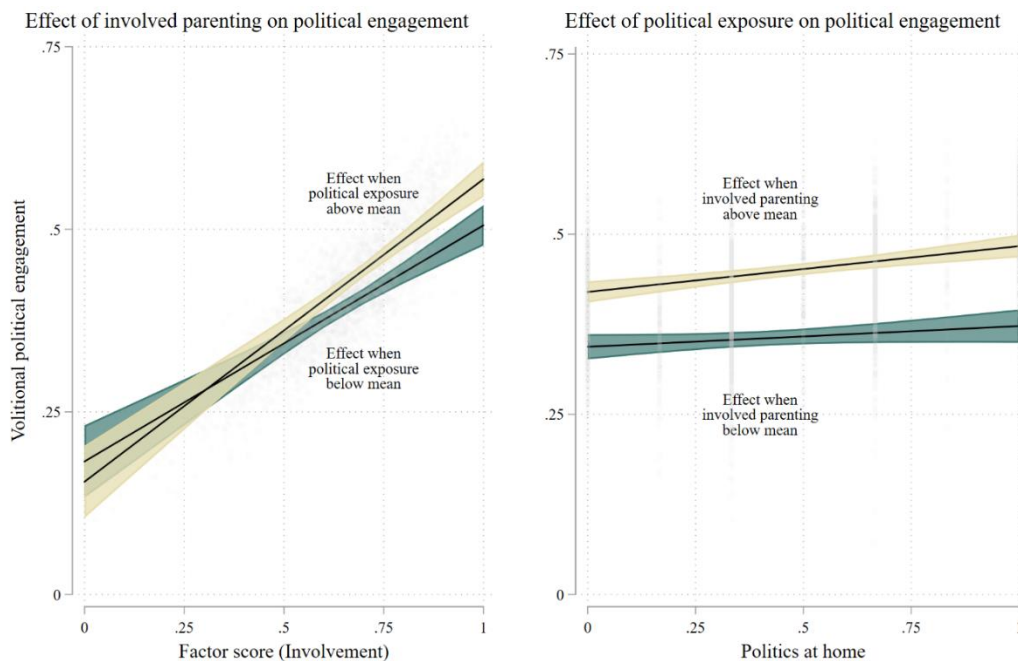
Table S2-2-1: Interactive effects of need-related parenting styles and exposure to politics on volitional political engagement

	Model I
Politics at home	-0.02 (0.05)
Autonomy support	0.09* (0.04)
Involvement	0.31*** (0.04)
Politics at home *	-0.04 (0.07)
Autonomy support	0.14 (0.08)
Politics at home *	-0.01 (0.02)
Involvement	0.00 (0.01)
Age-adequate rules	0.13*** (0.02)
Giving rationale	0.00 (0.01)
Picture Vocabulary	0.13*** (0.02)
Test	

2.6 Supplementary files

Human Draw Test	0.04 (0.03)
Copying Designs Test	0.03 (0.02)
Neighborhood	0.00 (0.01)
Father: occupation	0.02* (0.01)
Mother: education	0.01 (0.08)
Father: education	0.24** (0.08)
Constant	-0.05 (0.04)
Adjusted R^2	0.156
Observations	3151

Figure S2-2-1: Interactive effects of exposure to politics and parental involvement during childhood on volitional political engagement in adulthood



Note: Visualization of the interaction effect in table S2-2-1 (supplement 2). Left panel: the upper black line with yellow 95%-confidence interval shows political engagement at different levels of involved parenting for respondents whose level of political exposure is one standard deviation above the mean. The lower black line with green CI reports the association between engagement and involved parenting for respondents whose level of political exposure is 1 SD below the mean. Right panel: association between engagement and political exposure for respondents whose level of involved parenting is 1SD or 1SD below the mean. Scatterplot in background shows joint distribution of political engagement and involved parenting (background, left panel) and of political engagement and political exposure (background, right plot).

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2.6.2.2 Standardized effects

Table S2-2-2 provides standardized effect coefficients which are discussed in the main text. Standardized effect coefficients allow the comparison of effect sizes between the explanatory variables in one regression model.

Table S2-2-2: Determinants of volitional political engagement (standardized coefficients)

	Model I	Model II	Model III
Autonomy support	0.08*** (0.12)	0.08*** (0.16)	0.06** (0.17)
Involvement	0.33*** (0.03)	0.30*** (0.04)	0.26*** (0.05)
Str.-prov. rules	0.00 (0.01)	-0.01 (0.02)	-0.01 (0.02)
Str.-prov. explanations	0.01 (0.01)	0.01 (0.01)	0.00 (0.01)
Politics at home		0.11*** (0.01)	0.08*** (0.01)
Picture Vocabulary Test			0.10*** (0.02)
Human Draw Test			0.03 (0.02)
Copying Designs Test			0.03 (0.01)
Neighborhood			0.00 (0.01)
Father: occupation			0.04* (0.01)
Mother: education			0.00 (0.08)
Father: education			0.06** (0.07)
Adjusted R^2	0.144	0.137	0.155
Observations	5927	3615	3151

Notes: Reported are standardized linear regression coefficients with standard

errors in parentheses; *, $p < 0,05$, **, $p < 0,01$, ***, $p < 0,001$.

2.6 Supplementary files

2.6.2.3 Panel attrition

Table S2-2-3 analyzes which individual characteristics (measured early in life) determine panel attrition, that is inclusion in the analysis.

Table S2-2-3: Determinants of panel attrition (likelihood of inclusion in the analysis)

	OR
Female	1.69*** [1.55,1.86]
Father's Occupational Class 1	1.00 [1.00,1.00]
Father's Occupational Class 2	0.91 [0.73,1.13]
Father's Occupational Class 3	0.89 [0.72,1.11]
NonManual	0.68***
Father's Occupational Class 3	0.68***
Manual	[0.56,0.83]
Father's Occupational Class 4	0.57*** [0.45,0.72]
Father's Occupational Class 5	0.45*** [0.33,0.60]
Father's Occupational Class	0.54**
Other	[0.37,0.78]
Father's Occupational Class	0.45
Unsupported	[0.10,2.05]
Mother's Occupational Class	1.00
1 & 2	[1.00,1.00]
Mother's Occupational Class	0.83*
3 NonManual	[0.70,0.97]
Mother's Occupational Class	0.62***
3 Manual	[0.48,0.80]
Mother's Occupational Class	0.67***
4	[0.56,0.81]
Mother's Occupational Class	0.60
5	[0.36,1.00]
Mother's Occupational Class	0.94
Other	[0.44,2.03]
Mother's Occupational Class	0.71***
Housewives	[0.60,0.83]
Region of Residence: North	1.46*** [1.20,1.76]
Region of Residence: Yorks and Humberside	1.13 [0.95,1.35]
Region of Residence: East	1.50***
Midlands	[1.23,1.83]
Region of Residence: East An- glia	1.50** [1.17,1.91]
Region of Residence: South	1.00
East	[1.00,1.00]
Region of Residence: South	1.28*
West	[1.06,1.55]
Region of Residence: West	1.17
Midlands	[0.99,1.39]

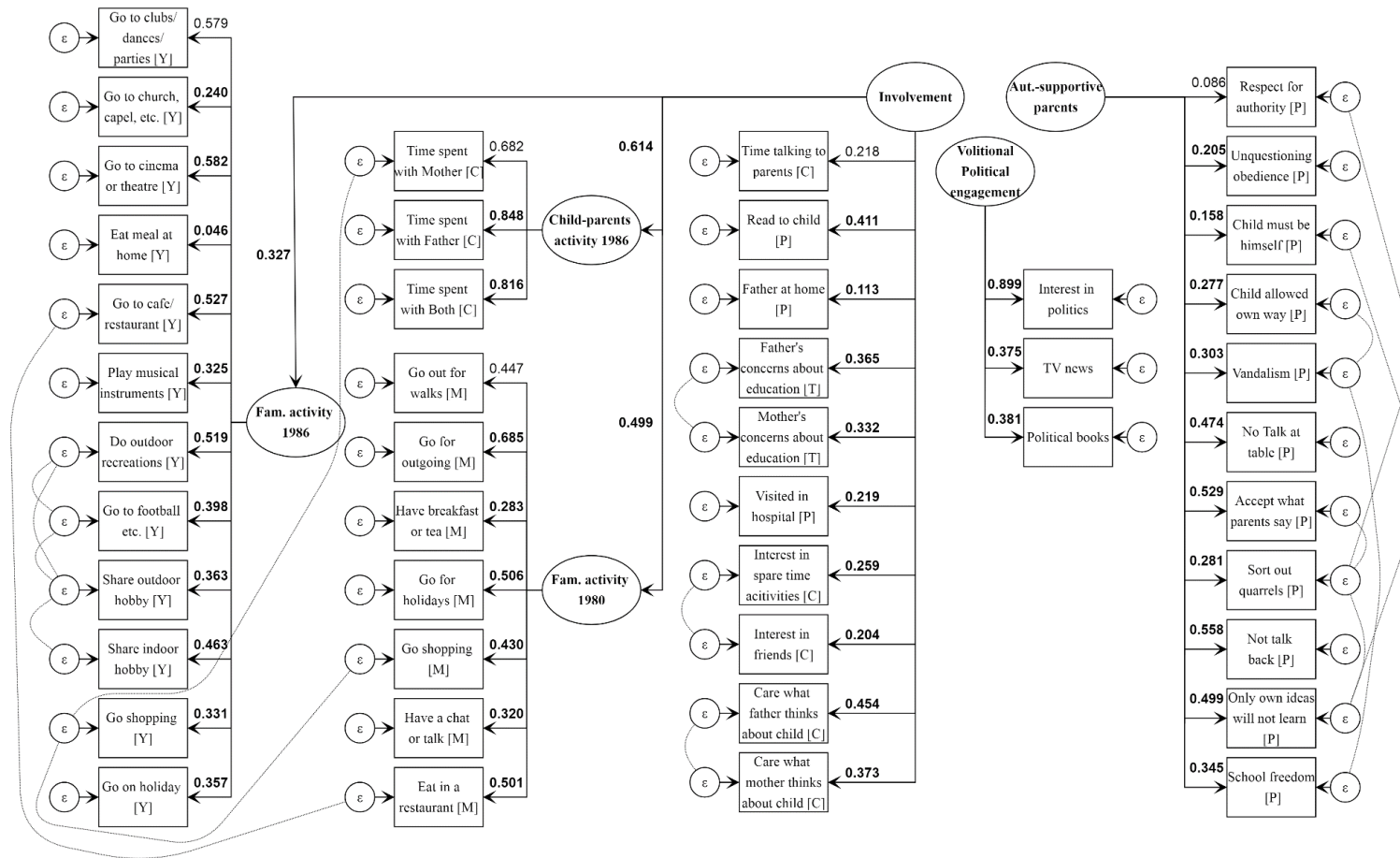
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Region of Residence: North	1.26**
West	[1.08,1.47]
Region of Residence: Wales	1.41**
	[1.14,1.74]
Region of Residence: Scotland	1.40***
	[1.18,1.67]
Age of mother at first birth	1.06***
	[1.04,1.08]
Age of mother at present marriage	0.98
	[0.96,1.00]
Age of father at present marriage	1.00
	[0.98,1.01]
Pseudo R^2	0.04
Observations	10,408

Notes: Dependent variable is whether an individual is included in the main analysis (table S2-2-1, model 1) among all individuals from the initial survey sample. Reported are odds ratios with 95% confidence intervals in parentheses; Reference category for occupational class: class 1; reference category for region of residence: South East;; *: $p < 0.05$, **: $p < 0.01$, ***: $p < 0.001$.

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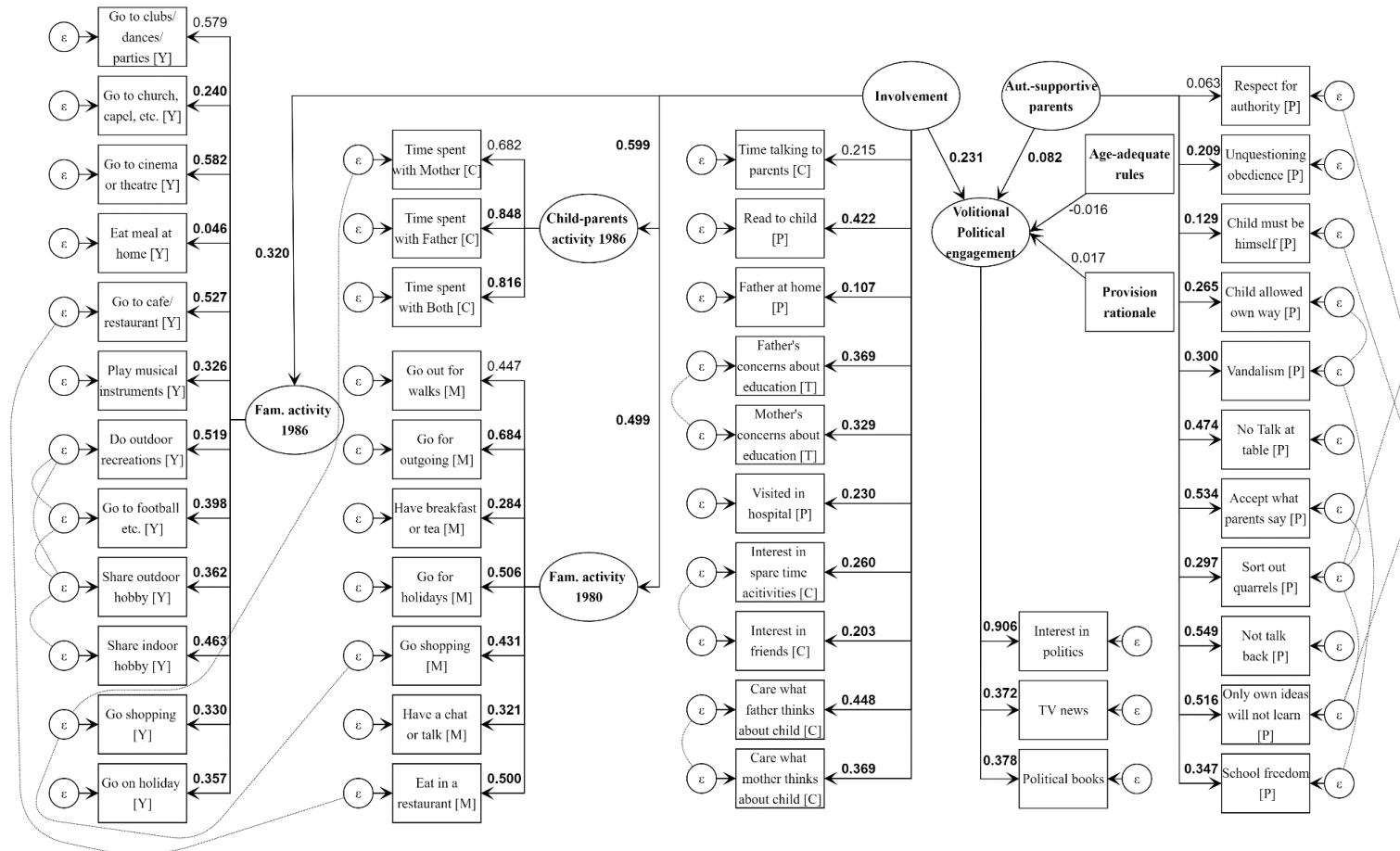
Figure S2-2-2: Structural equation measurement model



Note: Full-information maximum likelihood estimated with all respondents with non-missing variables on the dependent variables. Standardized coefficients. Analysis was conducted using Stata 15.1 N=12,640, $\chi^2(967)=6817.525$, $p < .000$; TLI = 0.857; CFI = 0.867; RMSEA = 0.022; Convergence after 23 iterations, log-likelihood: -176111. Covariances were introduced when theoretically warranted and empirically suggested by modification indices. Covariances were allowed for similar questions on visiting restaurants with parents, for related questions on outdoor / indoor hobbies, for questions on going shopping with parents asked separately to mother and to the child and for the two teacher reports on the perceived interest of the parents in their children. Fit indices when listwise deletion is used: N=12,640, $\chi^2(967)=2207.442$, $p < .000$; TLI = 0.849; CFI = 0.859; RMSEA = 0.030; SRMR = 0.041. The SRMR reported in the main text related to the list-wise deletion model.

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Figure S2-2-3: Structural equation structural model with latent variables



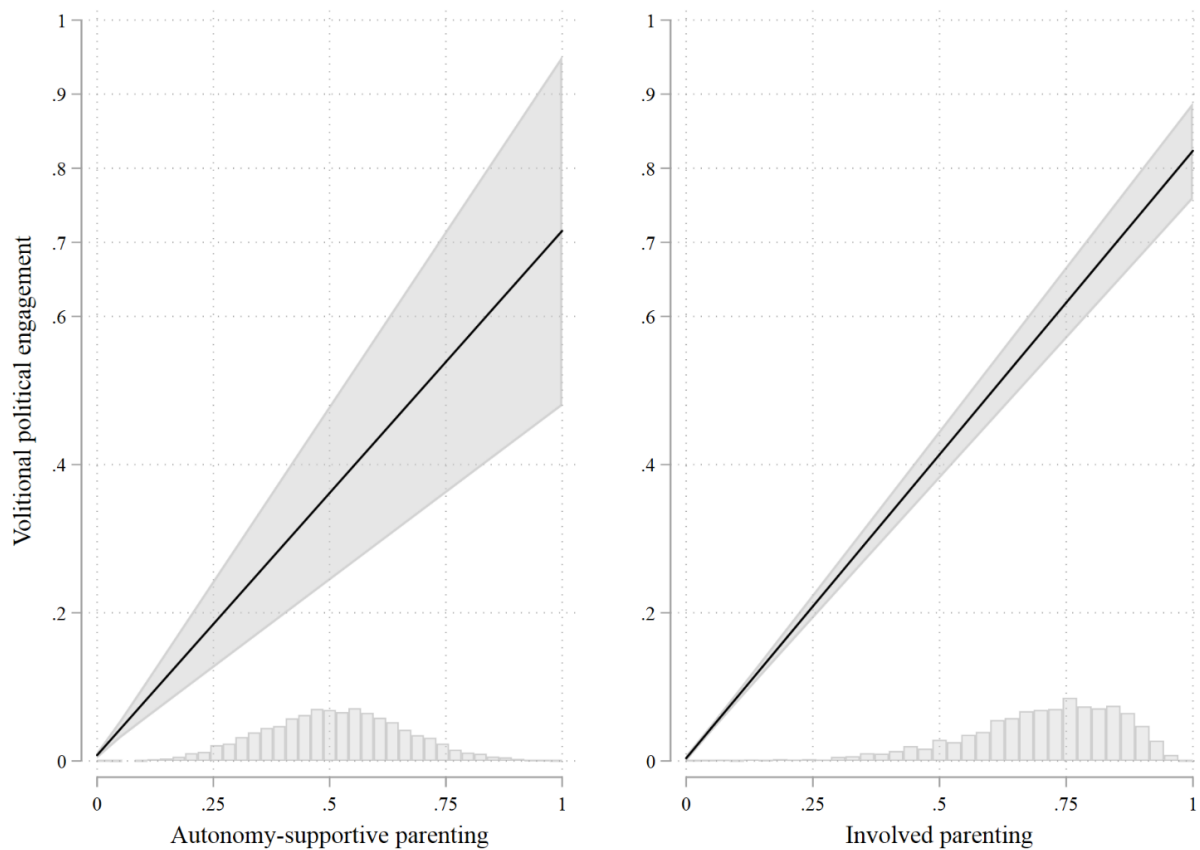
Note: Full-information maximum likelihood estimated with all respondents with non-missing variables on the dependent variables. Standardized coefficients. Factor loadings in bold are statistically significant. Analysis was conducted using Stata 15.1 N=12,640, $\chi^2(1053)=7415.522$, $p < .000$; TLI = 0.850; CFI = 0.860; RMSEA = 0.022. Covariances were introduced when theoretically warranted and empirically suggested by modification indices. Covariances were allowed for similar questions on visiting restaurants with parents, for related questions on outdoor / indoor hobbies, for questions on going shopping with parents asked separately to mother and to the child and for the two teacher reports on the perceived interest of the parents in their children.

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2.6.2.4 Visualization of Effect Size

Figure S2-2-4 gives a visual impression of the substantive meaning regarding the strength of the relationship between need-supportive parenting and volitional political engagement.

Figure S2-2-4: Visualization of effect size: Influence of autonomy-supportive and involved parenting on volitional political engagement



Note: Visualization of model I of table 2-2 (main text). Histogram shows distribution of autonomy-supportive/involved parenting.

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2.6.2.5 Removing indicators with low factor loadings

Several indicators in Figure S2-2-1 in Supplement 2 show weak factor loadings. Therefore, I rerun the structural equation model depicted in Figure 1 but without items with loadings below 0.2. Specifically, I removed the indicators "Eat meal at home", "Father at Home" from the Involvement Measure and "Respect for Authority" from the Autonomy-Support Measure from the measurement model. In parallel to the main text, I predicted manifest variables from these structural equation model. Using the predicted variables from this slightly reduced measurement models in a multivariate regression analysis leads to results that are hardly different from the original model. Comparing Table S2-2-4 below with Table S2-2-2 (Supplement 2) shows almost identical standardized regression coefficients.

Table S2-2-4: Determinants of volitional political engagement, measures without low loading indicators

	Model I	Model II	Model III
<i>Non-political influences</i>			
Autonomy support	0.08*** (0.12)	0.08*** (0.16)	0.06** (0.17)
Involvement	0.34*** (0.03)	0.30*** (0.04)	0.26*** (0.05)
Str.-prov. rules	0.00 (0.01)	-0.01 (0.02)	-0.01 (0.02)
Str.-prov. explanations	0.01 (0.01)	0.01 (0.01)	0.00 (0.01)
<i>Political influences</i> Politics at home		0.10*** (0.01)	0.08*** (0.01)
<i>Control variable</i> Picture Vocabulary Test			0.10*** (0.02)
Human Draw Test			0.02 (0.02)
Copying Designs Test			0.03 (0.01)
Neighborhood			-0.00 (0.01)

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Father: occupation			0.04* (0.01)
Mother: education			0.00 (0.08)
Father: education			0.06** (0.07)
Constant	0.05*** (0.01)	0.06** (0.02)	-0.08* (0.04)
Adjusted R^2	0.145	0.138	0.158
Observations	5955	3642	3177

Notes: Reported are standardized linear regression coefficients with standard errors in parentheses; *: $p < 0,05$, **: $p < 0,01$, ***: $p < 0,001$.

2.6.3 Supplement 3: NLSY79 - additional analyses

Supplement 3 contains sensitivity analysis / robustness checks or further analysis regarding the NLSY79 data set (Study 2) that were referenced in the main text.

2.6.3.1 Bivariate Correlations

Table S2-3-1 reports those bivariate correlations that could not be shown in the main text due to limitations of space. The table contains associations between variables, which do not resemble independent or dependent variables in the main analysis.

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Table S2-3-1: Bivariate correlations that were not shown in the main text (NLSY)

Variable	9	10	11	12	13	14	15	16	17	18	19
Aut. pol. engagement											
Involvement											
Aut.-sup. communication											
Aut.-sup. encouragement											
Aut.-sup. rule setting											
Str.-prov. rules											
Str.-prov. discussions											
Str.-prov. feedback											
Political exposure	1.00										
Int. pol. efficacy	0.11***	1.00									
Interest in others	0.09***	0.03	1.00								
Interest in abstraction	0.08**	0.12***	0.29***	1.00							
Self-esteem	0.05***	0.11***	0.13***	0.09**	1.00						
Mastery	0.05***	0.11***	0.10**	0.09**	0.66***	1.00					
General health	0.09***	0.09***	0.08*	0.13***	0.19***	0.15***	1.00				
Social trust	0.07***	0.06***	0.16***	0.06*	0.03*	0.08***	0.12***	1.00			
Formal education	0.10***	0.10***	0.11***	0.05*	0.11***	0.09***	0.14***	0.19***	1.00		
Reading Comprehension	0.16***	0.14***	0.18***	0.19***	0.08***	0.12***	0.10***	0.22***	0.16***	1.00	
PPVT	0.19***	0.15***	0.17***	0.18***	0.09***	0.12***	0.09***	0.26***	0.14***	0.63***	1.00
Memory for Digit Span	0.11***	0.08***	0.14***	0.14***	0.09***	0.10***	0.07***	0.09***	0.12***	0.40***	0.36***

Note: Numbers of observations for all reported coefficients is 6,158. Because mini-IPIP was only administered to a random subsample, correlations with interest in others/abstraction are based on 948/940 observations; *p < .05; **p < .01; ***p < .001 (two-tailed)

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2.6.3.2 Standardized Effects

Table S2-3-2 provides standardized effect coefficients which are discussed in the main text. Standardized effect coefficients allow the comparison of effect sizes between the explanatory variables in one regression model.

Table S2-3-2: Determinants of volitional political engagement, standardized effects (NLSY)

	Model I	Model II	Model III	Model IV
<i>Non-political influences</i>				
Involvement	0.32*** (0.02)	0.19*** (0.02)	0.23*** (0.03)	0.12** (0.05)
Aut.-sup. communication	-0.03* (0.01)	-0.01 (0.01)	0.02 (0.01)	0.02 (0.01)
Aut.-sup. encouragement	0.01 (0.01)	0.01 (0.01)	-0.01 (0.02)	-0.01 (0.02)
Aut.-sup. rule setting	0.01 (0.01)	0.02 (0.01)	0.00 (0.01)	0.00 (0.01)
Str.-prov. rules	0.02 (0.01)	0.01 (0.01)	-0.00 (0.01)	-0.00 (0.01)
Str.-prov. discussions	0.00 (0.02)	-0.01 (0.02)	-0.02 (0.02)	-0.01 (0.02)
Str.-prov. feedback	0.01 (0.01)	0.01 (0.01)	0.02 (0.02)	0.01 (0.02)
<i>Political influences</i> Politics at home		0.24*** (0.01)	0.22*** (0.01)	0.04 (0.04)
<i>Control variables</i>				
Parental Conflict 1			-0.00 (0.01)	-0.00 (0.01)
Parental Conflict 2			0.00 (0.01)	0.00 (0.01)
Peabody Picture Vocabulary Test			0.01 (0.00)	0.01 (0.00)
Memory for Digit Span			0.02 (0.00)	0.03 (0.00)
Reading Recognition			-0.00 (0.00)	-0.00 (0.00)
Reading Comprehension			0.06** (0.00)	0.06** (0.00)
Neighborhood			-0.03 (0.01)	-0.03 (0.01)
Education mother			0.02 (0.00)	0.02 (0.00)
Poverty			0.03 (0.01)	0.03 (0.01)
Family wealth			-0.01 (0.00)	-0.01 (0.00)
Family income			-0.01 (0.00)	-0.01 (0.00)
Politics at home # Involvement				0.20** (0.08)
Adjusted R^2	0.097	0.141	0.159	0.160

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Observations	6158	6158	4146	4146
--------------	------	------	------	------

Notes: Reported are linear regression coefficients with standard errors in parentheses; *: $p < 0,05$, **: $p < 0,01$, ***: $p < 0,001$.

2.6.3.3 Panel attrition

Table S2-3-3 analyzes which individual characteristics (measured early in life) determine panel attrition, that is inclusion in the analysis.

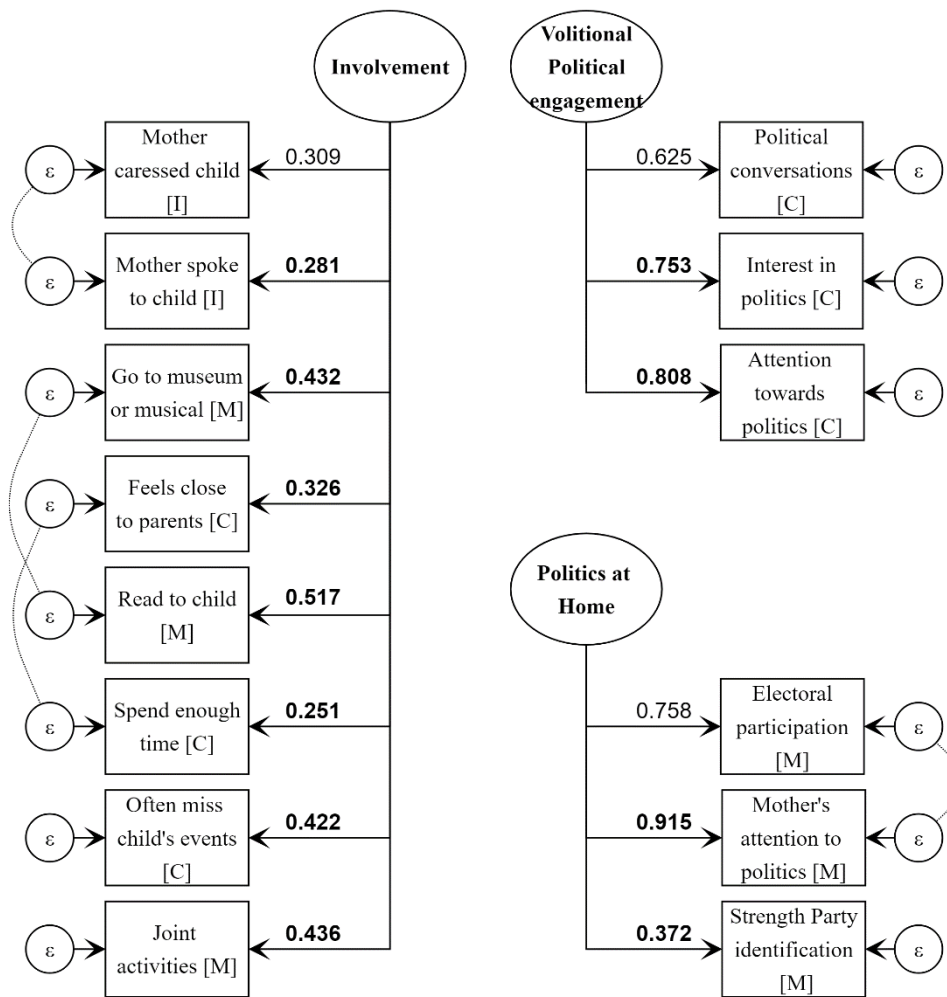
Table S2-3-3: Determinants of panel attrition (likelihood of inclusion in the analysis)

	OR
Education mother	1.06*** [1.03,1.08]
Hispanic	1.00 [1.00,1.00]
Black	1.06 [0.93,1.20]
Non-Black, Non-Hispanic	1.00 [0.88,1.13]
Family wealth	1.00 [1.00,1.00]
Family income	1.00 [1.00,1.00]
Poverty	0.68*** [0.60,0.77]
Pseudo R^2	0.035
Observations	10,503

Notes: Dependent variable is whether an individual is included in the main analysis among all individuals from the initial survey sample; *: $p < 0,05$, **: $p < 0,01$, ***: $p < 0,001$.

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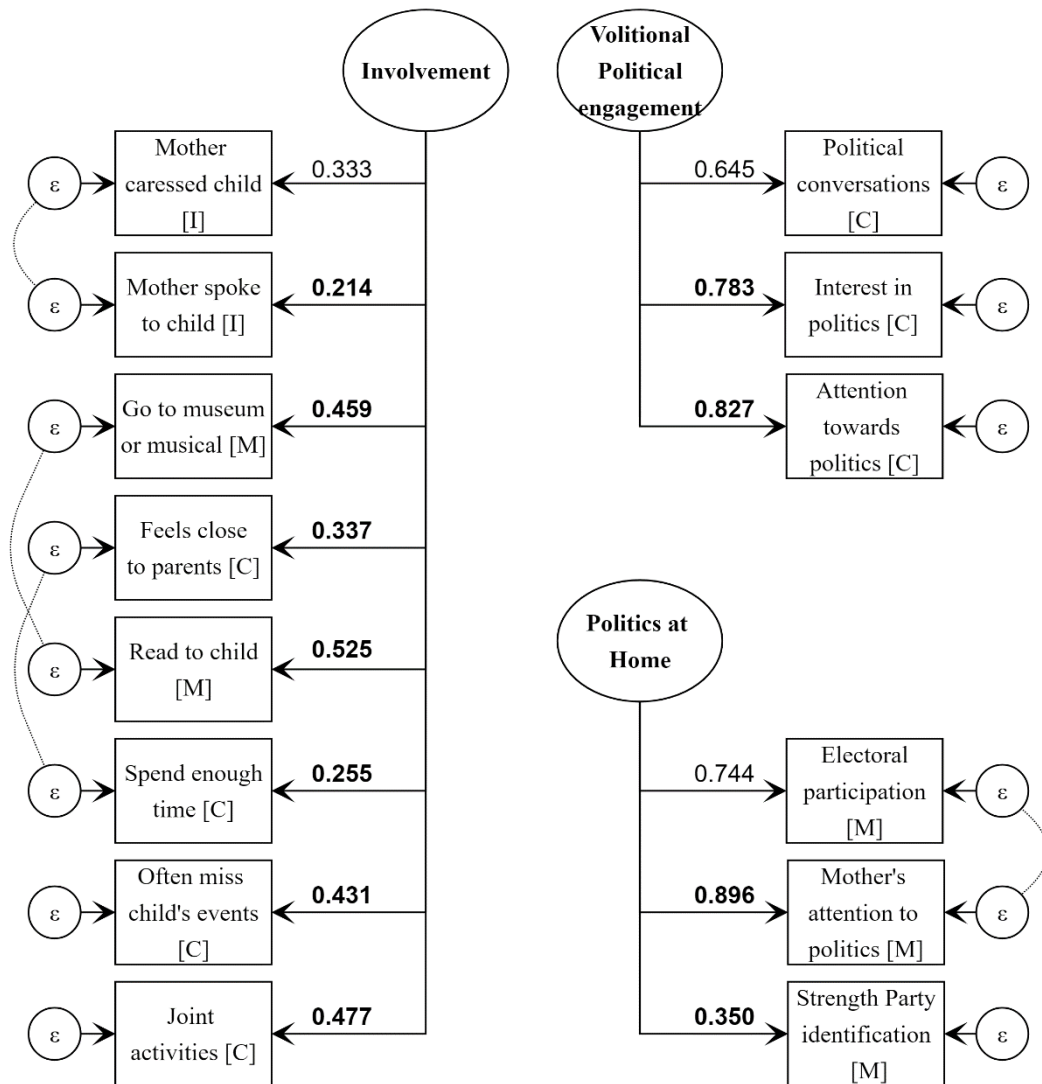
Figure S2-3-1: Structural equation measurement model without weights



Note: Full-information maximum likelihood was used on all cases who had non-missing variables on the dependent variables. Standardized coefficients. Statistically significant loadings in bold. Analysis was conducted using Stata 15.1 $N=5,378$, $\chi^2(70)=398.256$, $p < .000$; TLI = 0.947; CFI = 0.959; RMSEA = 0.030; Convergence after eight iterations, log-likelihood: -7174. Covariances were introduced if theoretically warranted and empirically suggested by modification indices. Joint cultural hobbies and parental reading to the child were correlated because both measure high-brow intellectual activities. Whether the mother talked to the child or caressed the child during the interview are both interviewer observation, hence share a common measurement bias.

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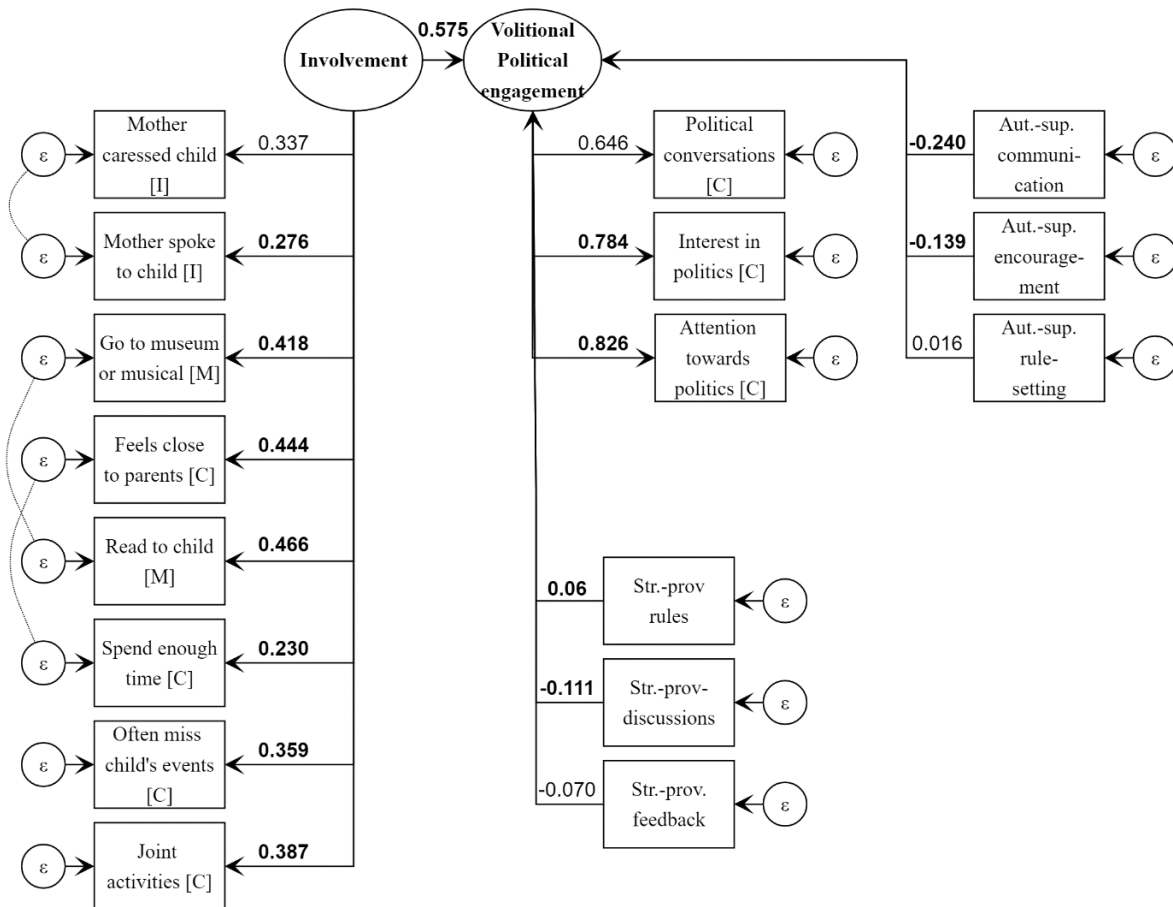
Figure S2-3-2: Structural equation measurement model used to predict variables used in the main text



Note: Full-information maximum likelihood was used on all cases who had non-missing variables on the dependent variables. Standardized coefficients. Statistically significant loadings in bold. Analysis was conducted using Stata 15.1 N=5,378. Adjustment weights that correct for the over-representation of blacks in the initial sample were applied. Therefore, goodness of fit indices could not be estimated. Covariances were introduced if theoretically warranted and empirically suggested by modification indices. Joint cultural hobbies and parental reading to the child were correlated because both measure high-brow intellectual activities. Whether the mother talked to the child or caressed the child during the interview are both interviewer observation, hence share a common measurement bias.

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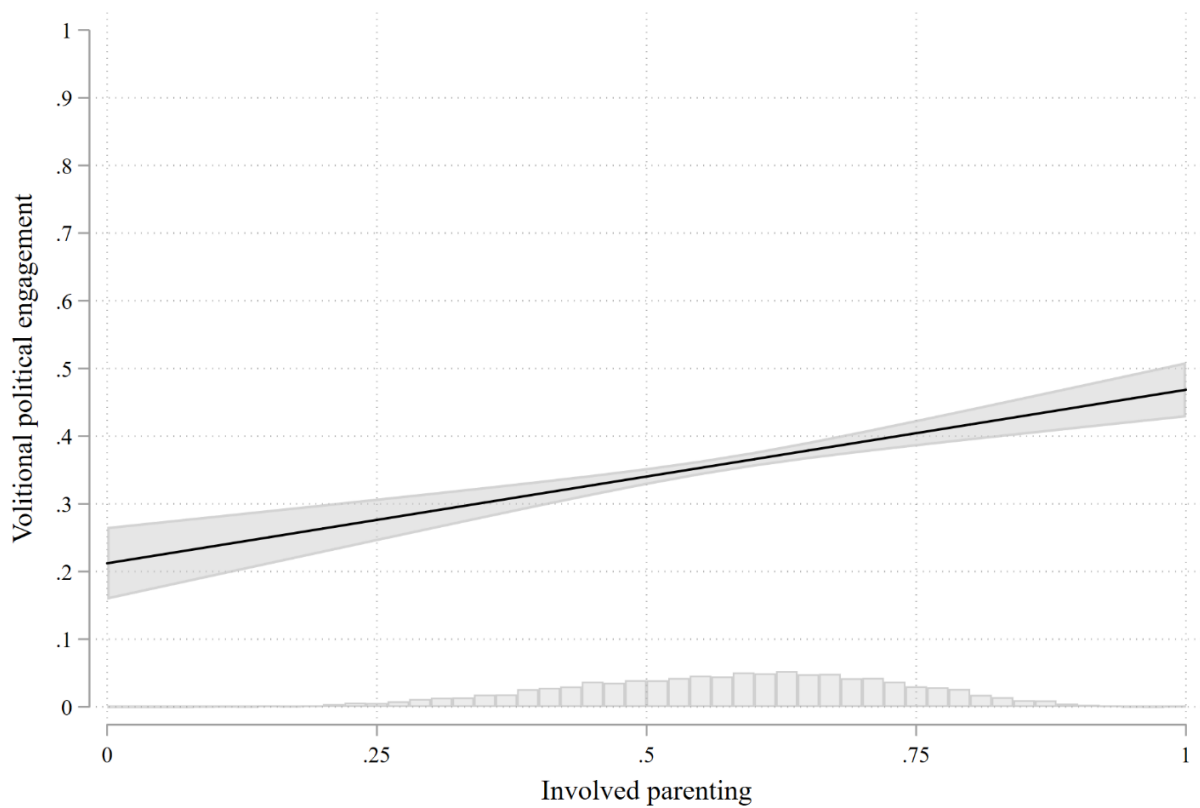
Figure S2-3-3: Structural equation structural model with latent variables



Note: Full-information maximum likelihood was used on all cases who had non-missing variables on the dependent variables. Standardized coefficients. Statistically significant loadings in bold. Analysis was conducted using Stata 15.1 N=5,378. Adjustment weights that correct for the over-representation of blacks in the initial sample were applied. Goodness of fit indices could not be estimated. Covariances were introduced if theoretically warranted and empirically suggested by modification indices. Joint cultural hobbies and parental reading to the child were correlated because both measure high-brow intellectual activities. Whether the mother talked to the child or caressed the child during the interview are both interviewer observation, hence share a common measurement bias.

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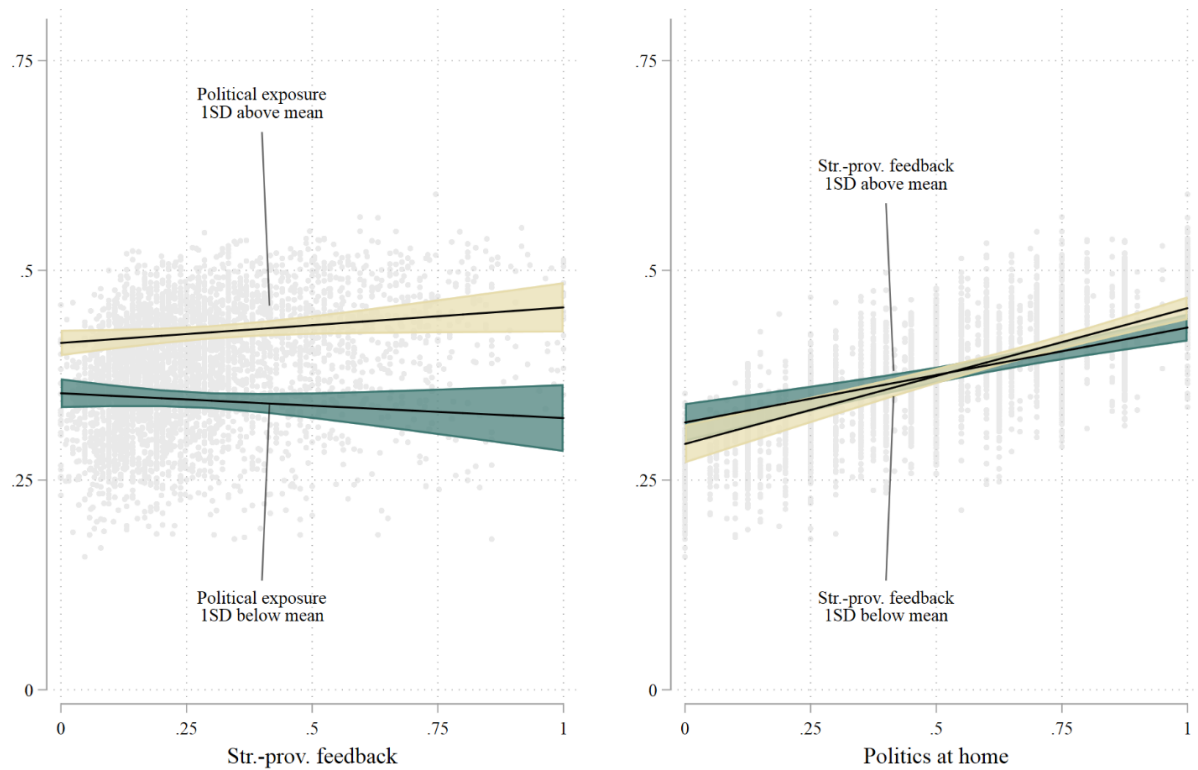
Figure S2-3-4: Visualization of effect size: Influence of autonomy-supportive and involved parenting on volitional political engagement



Note: Visualization of model I in table 2-4 (main text). Histogram shows distribution of involved parenting.

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Figure S2-3-5: Interactive effects of exposure to politics and provision of structure during childhood on volitional political engagement in adulthood



Note: Visualization of the interaction effect from model IV in table 2-4 on volitional political engagement. Left panel: the upper black line with yellow 95%-confidence interval shows political engagement at different levels of str.-prov. feedback for respondents whose level of political exposure is one standard deviation above the mean. The lower black line with green CI reports the association between engagement and str.-prov. feedback for respondents whose level of political exposure is 1 SD below the mean. Right panel: association between engagement and political exposure for respondents whose level of str.-prov. feedback is 1SD or 1SD below the mean. Scatterplot in background shows joint distribution of political engagement and str.-prov. feedback (background, left panel) and of political engagement and political exposure (background, right plot).

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2.6.4 Supplement 4: Descriptive statistics on sample composition (NLSY 79)

This supplement reports frequency tables of characteristics of respondents who are included in the main analysis.

Table S2-4-1: Race of respondent

	freq	share	cumpct
Hispanic	1313	21.32	21.32
Black	1890	30.69	52.01
Non-Black, Non-Hispanic	2955	47.99	100.00
Total	6158	100.00	

Table S2-4-2: Poverty status of mother at time of respondent's birth

	freq	share	cumpct
Not poor	4463	72.52	72.52
Poor	1691	27.48	100.00
Total	6154	100.00	

Table S2-4-3: Education of mother at time of respondent's birth

	freq	share	cumpct
0 None	1	0.02	0.02
3rd grade	25	0.44	0.46
4 th grade	9	0.16	0.62
5 th grade	26	0.46	1.09
6 th grade	60	1.07	2.15
7 th grade	145	2.58	4.73
8 th grade	488	8.68	13.41
9 th grade	743	13.22	26.63
10 th grade	816	14.52	41.15
11 th grade	660	11.74	52.89
12 th grade	1454	25.87	78.76
1 st year college	418	7.44	86.19
2 nd year college	332	5.91	92.10
3 rd year college	177	3.15	95.25
4 th year college	189	3.36	98.61
5 ^h year college	41	0.73	99.34
6 th year college	18	0.32	99.66
7 th year college	11	0.20	99.86

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8 th year college	8	0.14	100.00
Total	5621	100.00	

Table S2-4-4: Summary statistics of family's financial situation at time of respondent's birth

	Mean	SD
Family wealth	13456.5	42087.68
Family income	17650.75	24410.74

2.6.5 Supplement 5: Questionnaires

2.6.5.1 Questionnaire BSC 1970

Dimension		Indicator	Question	Answer options	Measurement type	age	Variable name
Political gagement	en-	TV news	Which of the following types of television programme do you usually watch?	(Cross (X) <u>all</u> boxes that apply) News and current affairs	Self-report	42	TV news
Political gagement	en-	interest in politics	How interested would you say you are in politics?	(Cross (X) <u>one</u> box) Very interested Fairly interested Not very interested Not at all interested	Self-report	42	
Political gagement	en-	Political books	Which of the following types of factual books do you usually read?	Politics / Economics / current	Self-report		
Exposure politics	to	Consumption of political newspapers	1. How often do you read newspapers (including online newspapers)? 2. Which of the following newspapers have you read in the last month?	1. (Cross (X) <u>one</u> box) Every day or almost every day Several times a week Once or twice a week At least once a month Every few months At least once a year Less often or never 2. (Cross (X) <u>all</u> boxes that apply) The Daily Telegraph / Sunday Telegraph Financial Times The Times / The Sunday Times The Guardian / The Observer The Independent / Independent on Sunday / Daily Express / Sunday Express Daily Mail / Mail on Sunday The Sun	Self-report	16	

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			<p>The Daily Mirror / Sunday Mirror</p> <p>The Daily Star / Daily Star Sunday</p> <p>The Daily Sport / Sunday Sport</p> <p>The People</p> <p>The Herald / Sunday Herald</p> <p>The Scotsman</p> <p>Daily Record</p> <p>Free local / regional newspaper</p> <p>Local / regional newspaper that you purchase</p> <p>Other</p> <p>NONE</p> <p>Coded as 3 if at least on of these high quality newspapers: Times, Guardian, Telegraph, Independent, Scotsman</p> <p>Coded as 2 if at least on of these high quality newspapers: Mail, Express, Scottish Daily Express, and Today</p> <p>Coded as 1 if at least on of these high quality newspapers: Star, Mirror, Sun, Scottish Daily Record.</p> <p>Political Exposure: (Quality of Newspaper)*Frequency</p>			
Autonomy support	Mother-report	Strictly disciplined children rarely grow up to be the best adults	Strongly agree, mildly agree, cannot say, mildly agree, strongly disagree	Parent-report	5	D072
		Parents should treat young children as equals		Parent-report	5	D085
		Teaching 5 year old children obedience and respect for authority is not as important as all that		Parent-report	5	D096
		Unquestioning obedience is not a good thing in a young child		Parent-report	5	D090

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		A young child must be allowed to be himself even if this means going against his parents' wishes	Parent-report	5	D101	
		If a child is often allowed to have his own way while he is young he will be a uncontrollable later	Parent-report	5	D076	
		Increases in vandalism and delinquency are largely due to the fact that children nowadays lack strict discipline	Parent-report	5	D079	
		Children should not be allowed to talk at the meal table	Parent-report	5	D080	
		Children under five should always accept what their parents say as being true	Parent-report	5	D081	
		One of the things parents must do is sort out their children's quarrels for them and decide who is right and wrong	Parent-report	5	D087	
		A child should not be allowed to talk back to his parents	Parent-report	5	D099	
		If pre-school children would pay more attention to what they are told instead of just having their own ideas they would learn more quickly	Parent-report	5	D097	
		It is not surprising if educational standards are falling when children have so much freedom in school nowadays	Parent-report	5	D103	
Involvement	Family Activity, Mothers report	As a family how often do you do any of the following with your child?	Go out for walks together	Mother-report	10	M107
			Go for outings together	Mother-report	10	M108
			Have breakfast or tea together	Mother-report	10	M109
			Go for holidays together	Mother-report	10	M110
			Go shopping together	Mother-report	10	M111
			Have a chat or talk with the child for at least five minutes	Mother-report	10	M112

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Family Activity, Youth Report		Go out to eat in a restaurant together	Mother-report	10	M113
		Go to clubs/dances/parties with parents	Youth-report	16	C5r10
		-2 Not stated			
		-1 No questionnaire			
		1 Rarely/Never			
		2 Less than once a week			
		3 Once a week			
		4 More than once a week			
		Go to church, chapel etc. with parents	Youth-report	16	C5r11
		Go to cinema or theatre with parents	Youth-report	16	C5r12
		Sit down & eat meal at home with parents	Youth-report	16	C5r13
		Go out to cafe/restaurant with parents	Youth-report	16	C5r14
		Play musical instruments with parents	Youth-report	16	C5r15
		Do outdoor recreations with parents	Youth-report	16	C5r4
		Go to football etc. with parents	Youth-report	16	C5r5
Further indicators	Child's report of how much time s/he spends talking to her/his parents	Share outdoor hobby with parents	Youth-report	16	C5r6
		Share indoor hobby with parents	Youth-report	16	C5r7
		Go shopping with parents	Youth-report	16	C5r8
		Go on holiday with parents	Youth-report	16	C5r9
		About how much time do you spend talking to your parents each day?	Child-report	10	K055
		None at all			
		Not very much			
		Quite a lot			
		Read to child			
		1. On how many days has N been read to at home in the past 7 days?	1. (open question) If not read to in past 7 days enter 0, if not known enter 9	Parent-report	5
		2. Is this the usual amount N is read to at home?	2. Yes No		E131
		3.	Not known		

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	If no, how many days a week is he/she usually read to?	3. (open question)			
Father at home	Do any of the following apply?	(Never or hardly ever = 1, sometimes = 2, often = 3, not known = 0) (a) Father away evening until after N has gone to bed (b) Father away most of Saturday and/or Sunday (c) Father works away for long periods (i.e. a month or more at a time) (d) Father works overnight	Parent-report	5	E198 E199 E200 E201
Concerned about education	With regard to the child's education, how concerned or interested do the parents appear to be:	(Mother, Father) Very interested Moderately interested Very little interested Uninterested Cannot say No parents/parent figures	Teacher-report	10	J097 J098
Visiting child in hospital	It's best not to visit children under five in hospital because it is too upsetting for the child	Strongly agree, mildly agree, cannot sway, mildly disagree, strongly disagree	Parent-report	5	D074
Parents interest in spare time activities	1. Do your parents approve/disapprove of your spare-time activities?	1. My parent(s) disapprove of... ...nearly everything I do ...many of my activities ...a few of my activities My parents generally approve of all my activities My parents are uninterested/don't care what I do	Child-report	16	Gb5a
Parents interest in friends	Do your parents approve/disapprove of your friends?	My parents disapprove of... ...nearly all of my friends ...many of my friends ...a few of my friends My parents generally approve of all my friends	Child-report	16	Gb6a

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		My parents are uninterested/don't know my friends			
Care what parents think about child	Do you care what your mother and father think about you?	(What my mother thinks of me, What my father thinks of me) I care a lot about I care a little about I don't care at all about	Child-report	16	Gb7a Gb7b
Time spent with parents	Living at home you are bound to come into contact with your parent(s), but how often do you spend time with your parent(s)? By this we mean talking together, doing things together, going out together etc., because you want to.	(Most days in week, Some days in week, once a week, occasionally, little or never) I do things together with my: (a) Mother alone (b) Father alone (c) Both parents	Child-report	16	Gb8_1 Gb8_2 Gb8_3
Description of parents	Which of the following descriptions would you say fits best with how you get on with your parent(s)?	Are loving/caring/look after me	Child-report	16	Gb1_6
Structure	Age-adequate rules	Parents expect me to go to school -2 Not stated -1 No questionnaire 1 True 2 False	Child-report	16	C5t1
		Parents expect me to do set home-work	Child-report	16	C5t2
		Parents expect me to do set chores	Child-report	16	C5t3
		Parents expect help in house when asked	Child-report	16	C5t4
		Parents expect me to keep my room tidy	Child-report	16	C5t5
		Parents expect-tell them if in trouble	Child-report	16	C5t15
		How often do you have help with the following tasks? Washing, Ironing, Cleaning the house, Cooking meals, washing up, shopping	Mother-reprt	10	m285-290
	Provision of rationale	There are many things a 5 year old child must do with no explanation from his parents Strongly agree Mildly agree Cannot say Mildly disagree Strongly disagree	Parent-report	5	D100

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COVARIATES	Health	In general, would you say your health is...	1 ...excellent 2 very good 3 good 4 fair 5 or poor?	Adult-report	42	healthgen
	Well-being	Warwick-Edinburgh Mental Well-Being Scale	I've been feeling optimistic about the future I've been feeling useful I've been feeling relaxed I've been feeling interested in other people I've had energy to spare I've been dealing with problems well I've been thinking clearly I've been feeling good about myself I've been feeling close to other people I've been feeling confident I've been able to make up my own mind about things I've been feeling loved I've been interested in new things I've been feeling cheerful			BD9WEMWB
	Income	CM's total take home income from all sources	Less than 1,000 1,000 less than 1,600 a year 1,600 less than 2,100 a year 2,100 less than 3,400 a year 3,400 less than 4,800 a year 4,800 less than 5,800 a year 5,800 less than 9,200 a year 9,200 less than 11,900 a			b9ttncnp

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		year 11,900 less than 14,000 a year 114,000 less than 16,200 a year 16,200 less than 18,500 a year 18,500 less than 21,300 a year 21,300 less than 25,600 a year 25,600 less than 28,400 a year 28,400 less than 32,400 a year 32,400 less than 41,400 a year 41,400 less than 59,800 a year 59,800 or more	
Education	(Derived) Highest NVQ Level from an Academic or Vocational Qual up to 2012	None Nvq1 level Nvq2 level Nvq3 level Nvq4 level Nvq5 level	bd9hmvq
Social class	NS-SEC Analytic Categories		b9cns8
Vocabulary		As part of the core CAPI interview, all cohort members were asked to undertake a vocabulary task. This was designed to test cohort member's understanding of the meaning of certain words. The vocabulary task included 20 words, each of which had another five words next to it. For each of the 20 words, cohort members were asked to select which of the five words next to it had a similar	b9vscore

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meaning to the original word. Cohort members were allowed four minutes to complete the task.

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2.6.5.2 Questionnaire NLSY 1979

Often, questions were tailored to the individual situation in the household and asked about the stepfather or the biological father. In each of these cases and for each child we discarded the variable with missing values.

Dimension	Component	Indicator	Question	Answer options	Measurement type	age
Autonomous political engagement		Political conversations	Do you ever talk with friends, family, co-workers, or other people about political events? During a typical week, on how many days do you talk with anyone about political events	Yes No 1 day ... 7 days	Child -report	Mid-20
		interest in politics	How interested are you in information about what's going on in government and politics?	[Extremely interested, very interested, moderately interested, slightly interested, or not interested at all? (or reversed)]	Child -report	Mid-20
		attention towards politics	How often do you follow what's going on in politics?	[Always, most of the time, about half the time, once in a while, or never? (or reversed)]	Child -report	Mid-20
Autonomy-supportive parenting	Aut.-sup. communication	Parents listen to child's arguments	How often does your mother listen to your side of an argument? / How often does your father listen to your side of an argument?	Often Sometimes Hardly ever	Child-report	All
		Parents share ideas and talk about important things	How well do you and your mother share ideas or talk about things that really matter? / How well do you and he share ideas or talk about things that really matter?	Extremely well Quite well Fairly well Not very well / Extremely well Quite well Fairly well	Child-report	All

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The provision of structure	Aut.-sup. rule setting	How much say child has in rules about different domains	How much say do you have in making up the rules about . . . (By this we mean, how much do you get to help decide these things.) (ANSWER EACH ITEM.)	Not very well No contact with my father Likert-Scale (no say at all; a little say; some say; a lot of say) for a. watching television? b. keeping your parent(s) informed about where you are? c. doing your homework? d. dating and going to parties with boys and girls?	Child-report	6-9
	Aut.-sup. encouragement	Family encourages hobbies	Does your family encourage your child to start and keep doing hobbies?	Yes No	Mother-report	10-14
		Attends extracurricular activities	Does your child get special lessons or belong to any organization that encourages activities such as sports, music, art, dance, drama, etc.?	Yes No	Mother-report	10-14
		Mother introduced interviewer to child	(Mother/Guardian) introduced interviewer to child by name.	Yes No	Observation of Interviewer	3-5, 6-9
		Mother encouraged child to talk	(Mother/Guardian) encouraged child to Contribute to the conversation.	Yes No	Observation of Interviewer	6-9
	Structure-providing discussions	parents discuss grades with child	If your child brought home a report card with grades lower than expected, how likely would you be to... (CIRCLE ONE NUMBER FOR EACH QUESTION)	Likert-Scale (5 very likely; somewhat likely; Not sure how likely; somewhat unlikely; 1 not at all likely) e. talk with the child?	Mother-report	6-9, 10-14
		parents discuss TV programs	When your family watches TV together, do you or your child's father (or step father or father-figure) discuss TV programs with him/her?	Yes No Do not have a TV	Mother-report	10-14
		and how often child was praised last week	Sometimes kid s mind pretty well and sometimes they don't. Sometimes they do things that make you feel good. (PLEASE ANSWER EACH QUESTION.) How many times in the past week have you...	WRITE IN # TIMES IN PAST WEEK	Mother-report	6-9

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Str.-prov. rules		d. praised child for doing something worthwhile? What tasks are you regularly expected to help out with in your home? Do you help with...	Clean room Clean house Dishes Cooking	Child	
Involvement	mother caressed child during interview	(Mother/Guardian) caressed, kissed, or hugged child at least once.	Yes No	Observation of Interviewer	
	Mother spoke to child	(Mother/Guardian) spontaneously spoke to child twice or more (excluding scolding).	Yes No	Observation of Interviewer	
	How often child was taken to a museum or a musical	How often has a family member taken or arranged to take your child to any type of museum (children's, scientific, art, historical, etc.) within the past year? /	Never Once or twice several times about once a month about once a week or more (often)	Mother-report	10-14
	Whether the parents read to the child	How often has a family member taken or arranged to take your child to any type of musical or theatrical performance within the past year? About how often do you read stories to your child? / About how often do you read aloud to your child?	Never Several times a year Several times a month Once a week At least 3 times a week Every day	Mother-report	0-2, 3-5, 6-9, 10-14
	How often child went to movies, dinner shopping, outing or church with parents	Within the last month, have you and your parent(s)... (ANSWER EACH ITEM.)	a. gone to the movies together? b. gone out to dinner? c. gone shopping to get something for you – such as clothes, books, records, or games? d. gone on an outing together, like to a museum or sporting event? e. gone to church or religious services together?	Child-report	10-older

2 Political engagement's non-political roots: Examining the role of need-supportive parenting in the political domain

Politics at home	Whether child feels close to parents	How close do you feel to your mother? / How close do you feel to him?	Extremely close Quite close Fairly close Not very close	Child-report	10-older
	Whether parents spend enough time with child	Please think about the time you spend with your mother (/father). Do you think she (/he) spends enough time with you, or do you wish she (/he) spent more time with you?	Spends enough time with me Wish she spent more time with me Spends too much time with me	Child-report	10-older
	Whether parents often miss child's events	How often does your mother (/he) miss the events or activities that are important to you? Is it a lot, sometimes, or almost never?	Misses events a lot Sometimes misses events Almost never misses events (Never see him at all)	Child-report	10-older
	Mother's attention towards politics	How often do you follow what's going on in politics?	Always Most of the time About half the time Once in a while Never	Mother	2008
	Electoral participation	In talking to people about elections, we often find that a lot of people were not able to vote because they were sick or they just didn't have time or for some other reason. Which of the following statements best describes you:	I did not vote in the 2004 presidential election (/national election held in November 2006) I thought about voting in 2004, but didn't (/national election held in November 2006) I usually vote, but didn't in 2004 (/national election held in November 2006) I am sure I voted	Mother	2008
	Strength Party identification	Generally speaking, do you usually think of yourself as [(a Democrat, a Republican/a Republican, a Democrat)], an Independent, or what? A strong [Democrat/Republican] or a not very strong [Democrat/Republican]?	1 STRONG 2 NOT VERY STRONG		

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Corollary	Internal Pol Efficacy		How often is politics so complicated that you don't really understand what's going on?	[Always, most of the time, about half the time, once in a while, or never? (or reversed)]	Adult	Mid-20
	Income		During 2005, how much did you receive from wages, salary, commissions, or tips from all (other) jobs [-military or civilian-] before deductions for taxes or anything else?		Adult	
	General health		How would you describe your present health? Is it...	Poor Fair Good Very Good Excellent	Adult	
	Mental well-being	CES-D depression scale	respondents are asked to indicate how often in the past week they felt particular ways	I did not feel like eating; my appetite was poor. I had trouble keeping my mind on what I was doing. I felt depressed. I felt that everything I did was an effort. My sleep was restless. I felt sad. I could not get "going."	Adult	
	Interest in others		The following statements describe people's behaviors. Please rate how accurately each statement describes you. Describe yourself as you generally are now, not as you wish to be in the future. Describe yourself as you honestly see yourself, in relation to other people you know of the same sex as you are, and roughly your same age. For each statement, tell me whether it is very inaccurate, moderately inaccurate, neither accurate nor inaccurate, moderately accurate or very accurate as a description of you.	I am not interested in other people's problems I am not really interested in others	Adult	2012, 2014

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Interest in abstraction			The following statements describe people's behaviors. Please rate how accurately each statement describes you. Describe yourself as you generally are now, not as you wish to be in the future. Describe yourself as you honestly see yourself, in relation to other people you know of the same sex as you are, and roughly your same age. For each statement, tell me whether it is very inaccurate, moderately inaccurate, neither accurate nor inaccurate, moderately accurate or very accurate as a description of you..	I have difficulty understanding abstract ideas I am not interested in abstract ideas	Adult	2012, 2014
Social trust			Generally speaking, how often can you trust other people?	Always, most of the time, about half the time, once in a while, or never?	Adult	2006, 2008
Locus of control	Pearlin Scale	Mastery	“The Pearlin Mastery Scale has been administered to at least some respondents in all survey years. It is a measure of self-concept and references the extent to which individuals perceive themselves in control of forces that significantly impact their lives. It consists of a 7-item scale developed by Pearlin et al. (1981). Each item is a statement regarding the respondent's perception of self, and respondents are asked how strongly they agree or disagree with each statement. Four response categories are allowed: (1) strongly disagree; (2) disagree; (3) agree; and (4) strongly agree.” See codebook		Adult	2002, 2004, 2006
Self-esteem	Rosenberg Self-Esteem Scale	Self-Esteem Scale	“The Rosenberg Self-Esteem Scale has been administered to at least some respondents every survey year. This 10-item scale, designed for adolescents and adults, measures the self-evaluation that an individual makes and		Adult	2002, 2004, 2006

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			customarily maintains. It describes a degree of approval or disapproval toward oneself (Rosenberg, 1965). The scale is short, widely used, and has accumulated evidence of validity and reliability. It contains 10 statements of self-approval and disapproval with which respondents are asked to strongly agree, agree, disagree, or strongly disagree.” See codebook		
Reading recog- nition		PIAT Reading	“The Peabody Individual Achievement Test (PIAT) Reading Recognition subtest, one of five in the PIAT series, measures word recognition and pronunciation ability, essential components of reading achievement. Children read a word silently, then say it aloud. PIAT Reading Recognition contains 84 items, each with four options, which increase in difficulty from preschool to high school levels. Skills assessed include matching letters, naming names, and reading single words aloud.” See Codebook	Adult	Latest measure
Reading com- prehension		PIAT Reading	“The Peabody Individual Achievement Test (PIAT) Reading Comprehension subtest measures a child's ability to derive meaning from sentences that are read silently. For each of 66 items of increasing difficulty, the child silently reads a sentence once and then selects one of four pictures that best portrays the meaning of the sentence.” See Codebook	Adult	Latest measure
Memory Digit Span	for	Wechsler Intelligence Scale for Children	“The Memory for Digit Span assessment, a component of the Wechsler Intelligence Scales for Children-Revised (WISC-R), is a measure of short-term memory for children aged seven and	Adult	2002, 2004, 2006

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			over (Wechsler 1974). The WISC-R is one of the best normed and most highly respected measures of child intelligence (although it should be noted that the Digit Span component is one of the two parts of the Wechsler scale not used in establishing IQ tables)." See code-book			
	Vocabulary Test	Peabody Picture Vocabulary Test - Revised	"The Peabody Picture Vocabulary Test, revised edition (PPVT-R) "measures an individual's receptive (hearing) vocabulary for Standard American English and provides, at the same time, a quick estimate of verbal ability or scholastic aptitude" (Dunn and Dunn, 1981). The PPVT was designed for use with individuals aged 2½ to 40 years. The English language version of the PPVT-R consists of 175 vocabulary items of generally increasing difficulty. The child listens to a word uttered by the interviewer and then selects one of four pictures that best describes the word's meaning. The PPVT-R has been administered, with some exceptions, to NLSY79 children between the ages of 3-18 years of age until 1994, when children 15 and older moved into the Young Adult survey. In the current survey round, the PPVT was administered to children aged 4-5 and 10-11 years of age, as well as to some children with no previous valid PPVT score." See code-book	Adult		2002, 2004, 2006
Control	Neighborhood	Perceived	How would you rate your neighborhood as a place to raise children? Would you say it is excellent, very good, good, fair, or poor?	Excellent Very Good Good Fair Poor	Mother	First measure

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Problems	Is this a big problem in your own neighborhood, somewhat of a problem or not a problem at all?	<p>PEOPLE DON'T RESPECT RULES AND LAWS ENOUGH</p> <p>CRIME AND VIOLENCE</p> <p>ABANDONED OR RUN-DOWN BUILDINGS</p> <p>NOT ENOUGH POLICE PROTECTION</p> <p>NOT ENOUGH PUBLIC TRANSPORTATION</p> <p>TOO MANY PARENTS WHO DON'T SUPERVISE THEIR CHILDREN</p> <p>PEOPLE KEEP TO THEMSELVES, DON'T CARE ABOUT NEIGHBORHOOD</p> <p>LOTS OF PEOPLE WHO CAN'T FIND JOBS</p> <p>Big problem</p> <p>Somewhat of a problem</p> <p>Not a problem</p>	Mother	First measure
Mother's education	WHAT IS THE HIGHEST GRADE OR YEAR OF REGULAR SCHOOL THAT YOU HAVE COMPLETED AND GOT CREDIT FOR?	<p>NONE</p> <p>1ST GRADE</p> <p>2ND GRADE</p> <p>3RD GRADE</p> <p>4TH GRADE</p> <p>5TH GRADE</p> <p>6TH GRADE</p> <p>7TH GRADE</p> <p>8TH GRADE</p> <p>9TH GRADE</p> <p>10TH GRADE</p> <p>11 11TH GRADE</p> <p>12TH GRADE</p> <p>1ST YR COL</p> <p>2ND YR COL</p> <p>3RD YR COL</p> <p>YR COL</p>	Mother	First measure

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			5TH YR COL 6TH YR COL 7TH YR COL 8TH YR COL OR MORE		
Family wealth			Derived variable, see codebook.	Mother	First measure
Family income			Derived variable, see codebook.	Mother	First measure
Reading recognition	PIAT Reading		“The Peabody Individual Achievement Test (PIAT) Reading Recognition subtest, one of five in the PIAT series, measures word recognition and pronunciation ability, essential components of reading achievement. Children read a word silently, then say it aloud. PIAT Reading Recognition contains 84 items, each with four options, which increase in difficulty from preschool to high school levels. Skills assessed include matching letters, naming names, and reading single words aloud.” See Codebook	Child	First measure
Reading comprehension	PIAT Reading		“The Peabody Individual Achievement Test (PIAT) Reading Comprehension subtest measures a child's ability to derive meaning from sentences that are read silently. For each of 66 items of increasing difficulty, the child silently reads a sentence once and then selects one of four pictures that best portrays the meaning of the sentence.” See Codebook	Child	First measure
Memory for Digit Span	Wechsler Intelligence Scale for Children		The Memory for Digit Span assessment, a component of the Wechsler Intelligence Scales for Children-Revised (WISC-R), is a measure of short-term memory for children aged seven and over (Wechsler 1974). The WISC-R is one of the best normed and most highly	Child	First measure

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			respected measures of child intelligence (although it should be noted that the Digit Span component is one of the two parts of the Wechsler scale not used in establishing IQ tables).” See code-book		
Vocabulary Test	Peabody Picture Vocabulary Test - Revised		“The Peabody Picture Vocabulary Test, revised edition (PPVT-R) “measures an individual's receptive (hearing) vocabulary for Standard American English and provides, at the same time, a quick estimate of verbal ability or scholastic aptitude” (Dunn and Dunn, 1981). The PPVT was designed for use with individuals aged 2½ to 40 years. The English language version of the PPVT-R consists of 175 vocabulary items of generally increasing difficulty. The child listens to a word uttered by the interviewer and then selects one of four pictures that best describes the word's meaning. The PPVT-R has been administered, with some exceptions, to NLSY79 children between the ages of 3-18 years of age until 1994, when children 15 and older moved into the Young Adult survey. In the current survey round, the PPVT was administered to children aged 4-5 and 10-11 years of age, as well as to some children with no previous valid PPVT score.” See code-book	Child	First measure
Inter-parental conflict	Feeling in the middle Parents argue		How often do you feel caught in the middle of your biological parents”, How often do your biological parents argue	never, once in a while, fairly often, very often Never, once in a while, fairly often, very often	Child 6-14 yrs

3 The Pleasure Principle: Why (Some) People Develop a Taste for Politics

Evidence from a pre-registered experiment

3.1 Introduction

Be it for a hobby or a cherished food, some people can trace the origins of their personal tastes. In most cases, however, tastes develop over time, progressively and rarely noticed. Akin to more profane preferences, some citizens have developed a taste for politics; they find pleasure in talking about or reading about political matters. Because valuing something for its inherently rewarding qualities foreshadows frequent and sustained enactment, it has profound societal implications whether members of a particular society find pleasure in engaging politics. If we consider engagement in politics as a quality of good citizenship and if we seek to promote such proclivities, then it is crucial to understand how to foster the taste for politics so that people fulfill their duties as a good citizen, not merely as a chore but as a source of joy.

Admittedly, political engagement out of joy and pleasure is not the only pathway to political action. For instance, a large body of literature highlights the role of social pressures (Panagopoulos, 2013), perceived civic duties (Blais & Daoust, 2020) and internalized identities (Klandermans et al., 2002) in fostering political engagement. Personality (Duncan & Stewart, 2007), prospective benefits (Finkel & Muller, 1998) and individual grievances (Basta, 2020) are other well-established motivators underlying citizen engagement as is mobilization (D. P. Green & Gerber, 2015) or the availability of personal resources (Brady et al., 1995). Political science has much to say about these and other motivational pathways to political engagement, most of which presume goals that are separable from the behavior itself.

In contrast, the taste for politics and, more specifically, political engagement as an inherently rewarding experience is not well understood. Although a powerful motivator (Prior, 2019), dedicated studies of political engagement as an end in itself are rare (Hamlin & Jennings, 2011; Opp, 2015; Prior, 2019). As a consequence, political science struggles to explain situational and individual variation in so motivated engagement. That is, we do not have a good understanding of why citizens uniformly experience political action in some environments as more satisfying than in others or why some

citizens experience a given encounter with politics as more enjoyable than other citizens.

The line of literature which is closest to systematically examine the role of joy and other self-sustained drivers in politics are studies on political interest. Political interest is attracting increasing attention as of late, contributing to an empirical and theoretical groundwork for the study of political engagement as its own reward (Bougher, 2017; Shani, 2009). For instance, recent studies showed that curiosity towards politics is rather stable and has nonpolitical roots (Shani, 2009; Wuttke, 2020). What is more, evidence suggests that proclivities towards politics may have resulted from initially fleeting but repeatedly confirmed situational experiences that made political encounters feel rewarding (Prior, 2019). While these studies help to understand the transition from situational to dispositional political interest, the concept of political interest is not a perfect fit to approach political activities that are enacted for their own sake. Political interest is too broad a concept as it also subsumes attention towards politics for instrumental material considerations (Prior, 2019). It is also too narrow a concept as interest is not the only conceivable motivator with inherently satisfying conditions that may drive self-sustained behaviors. Therefore, I suggest taking advantage of the conceptual toolkit of motivation science and to employ the concept of intrinsic motivation for understanding self-sustained engagement in the political domain.

Intrinsic motivation has long been used as a concept in motivation science to study action for its own sake (Kruglanski et al., 2018). In the tradition of self-determination theory, for instance, intrinsic motivation is used to describe behaviors that are conducted for their 'inherently satisfying conditions' (Ryan & Deci, 2017). Similarly, means-ends-fusion theory conceptualizes a behavior's degree of intrinsicity as the perceived fusion between the activity and its end (Kruglanski et al., 2018). Adopting this perspective may help to overcome conceptual problems inherent in previous attempts to get a grasp of self-sustained behaviors in the political domain.

3.1 Introduction

For instance, one conceptualization that was brought forward to approach inherently satisfying behaviors is to distinguish between instrumental and expressive behavior (Hamlin & Jennings, 2011). However, because any intentionality-based explanation ultimately presumes instrumental motives (Marx & Tiefensee, 2015), separating instrumental from non-instrumental motives inadvertently renders intrinsic action inaccessible to all inquiries that presuppose intentional actors. In contrast, the concept of intrinsic motivation acknowledges that intrinsic behaviors do provide instrumental value but merely considers these outcomes as inseparable from the behavior itself and as materializing during the behavior. From this perspective, intrinsically motivated behaviors no longer pose conceptual problems, also enabling the study of intentional actors with instrumental motives. Another prominent distinction is between internal and external motivators (Opp, 2015). Yet, this distinction entails unclear conceptual boundaries because all motivators must be processed internally for eliciting behavioral ramifications. Therefore, the concept of intrinsic motivation avoids theoretical pitfalls compared to other concepts that have previously been used.

What is more, the concept of intrinsic motivation provides distinct explanatory value as it helps to distinguish intrinsic motivation from other motivational pathways and thus to predict their specific behavioral outcomes. For instance, a large body of psychological literature has shown that additional extrinsic incentives such as the provision of monetary rewards often increases the propensity to conduct a behavior but at the expense of undermining the afforded efforts (Deci et al., 1999; Kruglanski et al., 2018; Kurzban et al., 2013). In contrast, a distinctive property of intrinsic motivation is to stipulate both the quantity and quality of behavior (Cerasoli et al., 2014). Therefore, understanding how to increase intrinsic political motivation may help to cultivate environments in which citizens not only superficially engage with politics, but in which they fully embrace engagement with politics.

The explanation of the origins of intrinsic political motivation proposed in this study departs from the simple idea—often referred to as the pleasure principle (Freud, 1961;

Higgins, 2012)—that human beings enact activities they previously experienced as satisfying. Yet, the pleasure principle poses the question of which conditions render an activity more or less pleasurable.

Building upon existing motivation theories that employ basic psychological needs for identifying the properties of inherently satisfying behaviors (Dweck, 2017; Maslow, 1970; Ryan & Deci, 2017), this study relies on basic psychological needs as the theoretical centerpiece to deduct conditions under which humans experience a behavior as pleasurable. Joining a growing political science literature that identifies nonpolitical origins of political engagement (Bougher, 2017; Galais, 2018; Holbein, 2017; Holbein et al., 2019; Prior, 2019; Shani, 2009), the proposed need-based theory of political motivation posits that seemingly apolitical processes of need satisfaction predict which political acts citizen experience as inherently satisfying. Specifically, political activities are expected to elicit sensations of joy or gratification when conducted in need-satisfying contexts. Individual differences in intrinsic motivation, then, derive from past need-related experiences with politics and reflect a person's expectations towards the anticipated need satisfaction that future encounters will provide. In this vein, a taste for politics echoes whether people experienced previous encounters with politics as satisfying their basic psychological needs.

In order to test the predictions of the need-based model of political motivation, a survey was employed to induce differences in need satisfaction before and during an encounter with politics to then assess consequences on political engagement. Against expectations, respondents in the need-supportive and need-thwarting experimental conditions did not differ substantially in the quality or quantity of political engagement. Although not all experimental conditions could be shown to meet the conditions for an informative hypothesis test, multiple follow-up analyses buttress that the reported findings decisively weaken the confidence in elements of the proposed theory. Showcasing how to engage with null-results in hypothesis-testing research, these posthoc analyses show that the absence of the expected findings cannot be explained by

imperfect measurement of outcomes, treatment heterogeneity, low power, or survey attrition. Overall, it thus is to be concluded that under the circumstances of the given study, the theory failed to predict individual differences in intrinsic motivation and related behavioral outcomes, suggesting theory refutation or revision. The closing section discusses how the presented findings can help future research to avoid dead-ends and how this study's propositions may serve as a steppingstone to inform further theorizing on political engagement as its own reward.

3.2 Political motivation and Basic Needs

We seek activities that made us feel good in the past (Higgins, 2012; Silvia, 2005). Different lines of psychological literature acknowledge the relevance of the pleasure principle both in classical (Freud, 1961; Skinner, 1976) and contemporary work (e.g., Milyavskaya, Inzlicht et al., 2018). While useful as a starting point, viewing behavior through the conceptual glasses of the pleasure principle pushes the explanatory burden one rung down the latter as it begs the question of why some activities are experienced as pleasurable, and others are not. Also, the crucial aspect of individual differences remains unresolved. I propose to overcome this explanatory deficit by combining the pleasure principle with additional insights from motivation science on core desires that drive human behavior.

What kind of behaviors do human beings find satisfying and are, therefore likely to be pursued again? Along with a burgeoning literature on human universals in other life domains (Bloom, 2011; Christakis, 2019; Mehr et al., 2019), there is a growing consensus that human beings share certain 'core motives' (Fiske, 2014) or 'psychological needs' (Ryan & Deci, 2017). While disagreement persists about essential concept characteristics and about the resulting list of supposedly universal motivational propensities (Dweck, 2017; Higgins, 2012; Kruglanski et al., 2018; Ryan & Deci, 2017; Sheldon et al., 2001), a functionalist definition of basic needs has proven useful for exploiting universal motivators in applied research. Understanding basic psychological needs as

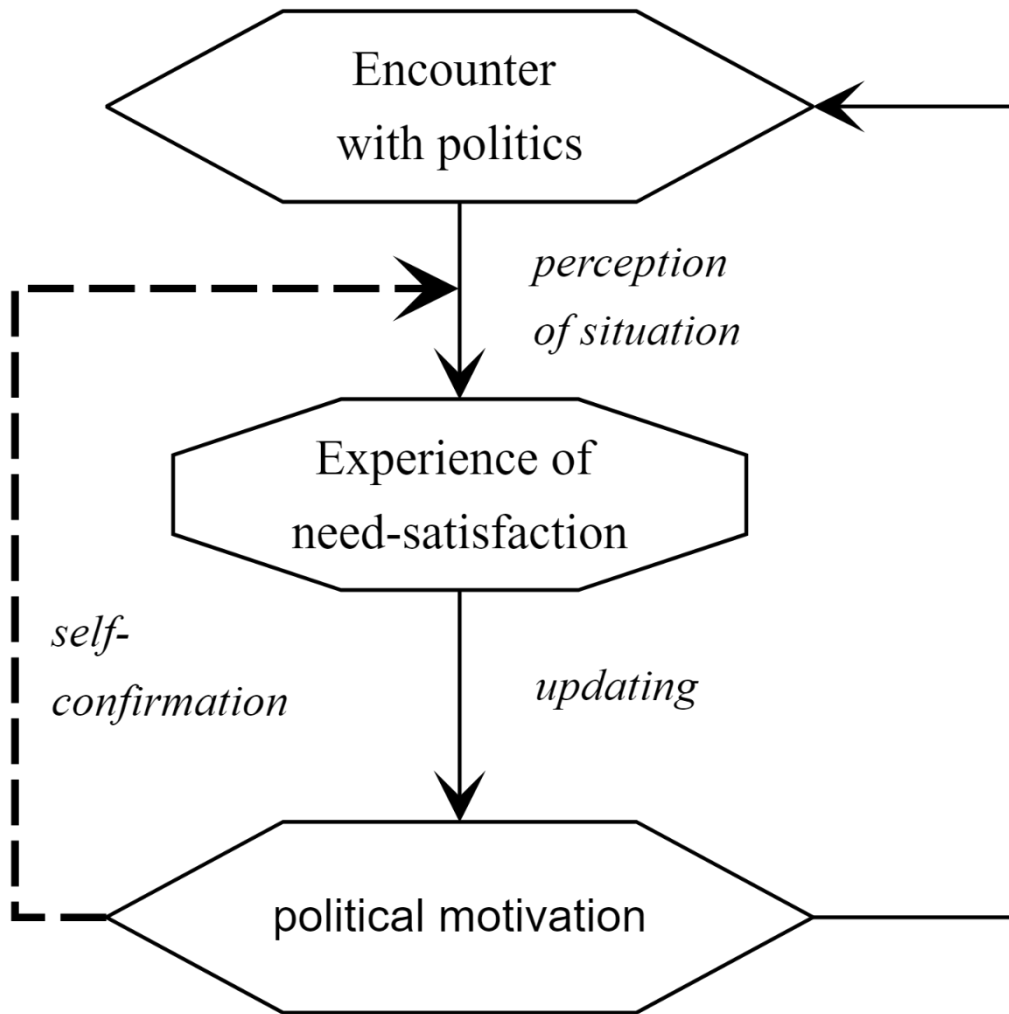
„areas of chronically high value that are critical to well-being and optimal development“ (Dweck, 2017) allows the abduction of a list of needs, based on observed empirical regularities. Human desires thus qualify as basic psychological needs if they are found irreducible to other needs and if they can be shown to be of high value for optimal functioning and well-being across cultures and life stages (Dweck, 2017; Ryan & Deci, 2017). One basic need that is acknowledged by most motivation theories (Bandura, 2010; Dweck, 2017; Higgins, 2012; Ryan & Deci, 2017) is the need for competence, which goes back to early work by White (1959) and Piaget (1952) who argued that from childhood onwards human beings express the desire to feel efficacious and impactful in the world. Another need that has roots in early writings on the human condition is the need for autonomy (Ryan & Deci, 2017). Particularly relevant for human action in political contexts (Blühdorn, 2019), the human “desire to self-organize experience and behavior and to have activity be concordant with one's integrated sense of self” (Deci & Ryan, 2000, p. 231) is argued to drive human behavior across cultures and life stages (Chen et al., 2014; Sheldon et al., 2001). Although no list of basic needs is definitive, a large pile of prior research suggests the existence of universal needs for competence and autonomy so that, all else equal, human being should experience activities that are coupled with need-satisfying elements more positively compared to activities that do not fulfill any psychological needs.

Based on the idea that need-satisfying activities are experienced as more pleasurable and are therefore more likely to be re-enacted in various life domains, it is conceivable that the degree to which activities fulfill basic psychological needs may also help to explain inherently gratifying behaviors in the political domain. In this vein, the origins of intrinsic political motivation, that is the propensity for embracing and enjoying an activity, is argued to lie in previous need-related political experiences (see Figure 3-1). More specifically, the expectations and beliefs derived from previous need-related encounters with politics feed into a person's level of political motivation and determine one's approach to politics in the future (Dweck, 2017). Previous political science findings support this notion and can be re-interpreted along the lines of a need-based

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model of political motivation. For instance, multiple political science findings have shown that respondents who were randomly induced to fail political knowledge questions subsequently report lower levels of political interest (Bishop, 1987; Prior, 2019; Schwarz & Schuman, 1997). From a need-based perspective, these findings can be understood as previous experiences with the political domain which thwarted or satisfied the need for competence (Dweck, 2017; Higgins, 2012; Ryan & Deci, 2017), thereby fostering or undermining a person's intrinsic motivation towards that domain. Consequently, when political engagement has previously contributed to satisfying our basic needs, such as the need for competence, then we will want more of it.

Figure 3-1: Need-based model of political motivation



How can we reconcile the proposition that universal basic needs determine the degree of pleasure provided by an activity with the observation that the motivation is not universal but varies remarkably between individuals? Notably, specific situational characteristics uniformly facilitate need satisfaction, reflecting that they are more or less conducive to need satisfaction. For instance, providing a rationale or giving a sense of choice generally contributes to the satisfaction of a persons' need for autonomy (Chatzisarantis et al., 2012; Deci et al., 1994; Nelson et al., 2015; Patall et al., 2008; Spray et al., 2006). Importantly, however, individuals make different experiences with politics. Some will experience politics in a more need-satisfying context than others. These

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prior experiences will then feed into the tally of politics-related beliefs and expectations which form a person's level of domain-specific motivation. Cohort studies suggest that these mechanisms are most forceful during the impressionable years of adolescence when individuals do not yet hold crystallized attitudes towards the political domain (Prior, 2019; Wuttke, 2020). Yet, there is no reason not to assume that, to a lower degree, these mechanisms will continue throughout the entire life course, changing one's level of political motivation in reaction to new need-supportive or need-thwarting experiences with politics.

What is more, once motivational proclivities towards politics have crystallized in a person, we may expect a self-confirmatory psychological tendency through which expectations create perceived reality (Murayama, 2019), thereby exacerbating already existing differences in political motivation (self-confirmation, see Figure 1). It is well known that individuals experience a glass of wine as more delightful when they were manipulated to believe tasting a high-quality wine (Bloom, 2011). Similarly, citizens who have developed favorable attitudes towards politics may be more likely than others to see their expectations of political engagement as an enjoyable activity confirmed even when engaging in the same political activity. This proposition is consistent with political science evidence that exogenously induced political encounters stimulate political interest more strongly among individuals with favorable predispositions towards politics (Prior, 2019). Hence, a self-reinforcing feedback loop may foster the polarization of individual differences of political motivation, seemingly confirming a person's expectations about whether it is valuable to engage with politics.

Because individual differences in political motivation are argued to be ultimately rooted in need-related experiences, need-satisfying experiences with politics help explain why individuals want to engage with politics for its own sake. As need-satisfying experiences give more reason to again experience the satisfaction associated with a particular behavior, need-related activities change a person's goals. In the wake of perceiving a behavior as serving need-fulfilling goals, fusion occurs between the general

goal of need-fulfillment and the specific reasons for conducting the behavior. Notably, the degree to which fusion occurs between goals and reasons for action is the definition of intrinsicity of action (Kruglanski et al., 2018). In other words, the more a person perceives political engagement as serving need-fulfilling goals, the more political engagement is enacted for no other reason than the behavior's inherent need-satisfying conditions. Hence, intrinsic political motivation is at its maximum when need-fulfilling goals and behavioral reasons fully align, for instance, when someone watches a political TV show solely for the activities' inherently need-satisfying properties.

Understanding the link between need satisfaction and intrinsic motivation paves the way not only to explain *whether* but also *how* behavior is enacted. According to the law of low effort, when facing otherwise identical behavioral choices, individuals usually opt for the more effortless route (Kurzban, 2016). However, as intrinsic motivation is characterized by the fusion between an activity and its end, the logic of effort minimization does not apply to intrinsically motivated individuals. Instead of minimizing the invested effort, individuals embrace the activity they enact for its inherently satisfying conditions. This is consistent with political science evidence that curiosity towards politics goes along with more effortful processing and a deeper understanding of political affairs (Prior, 2019). Consequently, intrinsic motivation does not only go along with a strong inclination to enact a behavior but enacting a behavior for its own sake entails doing it effortfully and attentively rather than superficially.

3.3 The present study

3.3.1 Procedures

The need-based theory of political motivation is tested in a survey-experiment in which participants' motivation to engage with politics is assessed in varying situational contexts that provide higher or lower degrees of need satisfaction. In the experiment, political engagement refers to the consumption of political media, more specifically, to an online video that respondents watch during survey participation. Quantity refers to the participants' choice of watching political media content over seemingly non-political alternatives. Quality refers to the level of cognitive involvement when processing political media content.

The experiment consists of a two-arm design, in which those two basic psychological needs are manipulated that studies have identified as crucial for fostering intrinsic motivation (Ryan & Deci, 2017): 1) the need for autonomy which seeks self-endorsed and volitional action and which is thwarted in the face of external coercion, 2) the need for competence which seeks the experience of effectance and mastery and which is thwarted in the face of pervasive overload.

At the beginning of the survey, respondents participated in a political knowledge quiz with manipulated difficulty and manipulated competence feedback (*need for competence manipulation*). Following the knowledge quiz, participants had the chance to watch a video during the survey, receiving four media options to choose from (two political, two seemingly apolitical). Each video option is described verbally, containing ostensibly different media content (e.g., political option: "Political Video on Social Policy"; seemingly apolitical option: "YouTube-Video: Funny Old Man"). Importantly, despite the four options, all individuals watched the identical video because the different choice descriptors merely refer to different facets of one video (a comedian delivering a 30-seconds stand-up set on a political topic: <https://youtu.be/mQHHb0l105Y>). Therefore, indicators measured after media consumption are not influenced by differences in media choices but only by differences in

how the content was individually processed, depending on the experimentally manipulated need-related situational characteristics. The questionnaire page to choose the media content also contained the *need for autonomy manipulation*, which frames the respondents' choice as either volitional or externally enforced. After choosing and watching the video, the outcome variables were measured, and the respondents were debriefed.

3.3.2 Experimental Conditions

Need for competence manipulation. Participants in the need-for-competence-supportive (thwarting) condition were induced to feel efficacious (inefficacious) with regards to the political domain, thereby facilitating (undermining) situational satisfaction of the need for competence (Milyavskaya, Galla et al., 2018). Following previous work (Bishop, 1987; Bowey et al., 2015; Preece, 2016; Schwarz & Schuman, 1997), a politics quiz and competence feedback was used to induce domain-related satisfaction of the need for competence. Specifically, participants in the need-for-competence-supportive (thwarting) condition received easier (more difficult) questions. In addition, they were given manipulated feedback that their level of domain-related knowledge is allegedly far above (below) average.

Need for autonomy manipulation. When offering the choice between media options, participants assigned to the *control group* received no further information other than the instruction to choose a video. Following previous work (Kadous & Zhou, 2019), on the preceding questionnaire page, participants in the *need-for-autonomy-supportive condition* were prompted to explain the importance of political awareness, which should raise the salience of self-endorsed reasons for political media consumption and thus facilitate volitional choices of political media content. Following previous work (Grant & Berry, 2011; Patall et al., 2008), participants in the *no-choice condition* read that they were assigned to a group of respondents that is not allowed to choose from all videos

3.3 The present study

freely but must watch a political video to receive the monetary incentive for survey participation.

3.3.3 Hypotheses

Importantly, all respondents watched the identical political video and received identical descriptions of the media content. Therefore, on the surface, the value of watching the political video should not differ across experimental conditions. From a rational choice perspective with narrow rationality (Hamlin & Jennings, 2011; Marx & Tiefensee, 2015; Opp, 2015), one might expect that participants make identical media choices independent of experimental conditions and process the video in the same way. One might even expect higher motivation to watch and process political content in need-thwarting conditions as individuals who are induced to perceive themselves as having below-average political knowledge should derive higher marginal utilities from information acquisition. In contrast, the need-based theory of political motivation predicts that political encounters in need-supportive contexts will stimulate a person's intrinsic motivation to re-engage with politics, thereby promoting whether and with how much effort they will engage with politics in the future.

Both the competence and autonomy manipulations are predicted to influence respondents' need-related expectations and beliefs about whether politics serves need-fulfilling goals, which will then materialize as individual differences in intrinsic motivation to opt for and effortfully process the political media content. Hence, depending on these previous need-related experiences with politics, participants in each experimental condition should experience the video differently, albeit watching identical content. Specifically, the competence-manipulation can be understood as changing prior need-related experiences with politics. The autonomy-manipulation can be understood as changing need-related perceptions of the current situation in which the political activity unfolds. Both experimental arms have in common that respondents in the respective need-satisfying conditions will perceive the political media content

as more in line with need-fulfilling goals than respondents in the need-thwarting conditions. As a consequence, by manipulating previous domain-related experiences or current situational perceptions, both manipulations should change the perceived intrinsicness of the political activity under observation.

H1: Need-supportive situational contexts increase intrinsic political motivation.

Because need-supportive experiences shape beliefs and expectations, need-supportive experiences also shape whether a future activity is anticipated to serve need-fulfilling goals. Reflecting motivation's self-confirmatory tendency, individuals who previously experienced their encounters with politics as need-satisfying should be more likely to seek encounters with politics than individuals with previous need-thwarting experiences.

H2a: Individuals who previously experienced the political domain as satisfying their need for competence, want to engage with politics more frequently than individuals with need-thwarting domain-related experiences.

Similarly, we should expect a positive effect of the autonomy-supportive priming on the frequency of political engagement compared to the control group.

H2b: Individuals in an autonomy-supportive context want to engage with politics more frequently than individuals in neutral situational contexts.

Resembling most everyday situations of political media consumption, the experiment's video does not convey information of immediate relevance or severe personal importance. As the personal stakes are not very high, outcome-oriented considerations might not carry much weight in the inclination to invest cognitive efforts into watching the experiment's political video (Green & Shapiro, 1994), giving more room for intrinsic motivation to play a role in determining how participants process the video's content. In particular, the degree of intrinsicness of the behavior is likely to matter for effortful processing because individuals who experience the activity as aligned with

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need-fulfilling goals will engage in the activity for its own sake. Therefore, they should be more likely to overcome the human inclination for effort minimization.

H3a: Individuals who previously experienced the political domain as satisfying their need for competence, are more inclined to effortfully process the political information conveyed in the video than individuals with need-thwarting domain-related experiences.

H3b: Individuals in autonomy-supportive contexts are more inclined to effortfully process the political information conveyed in the video than individuals in neutral situational contexts.

The no-choice condition plays a unique role as the manipulation serves to test the relevance of distinguishing quantity and quality of motivation. Here, we expect that coercion into political engagement will be effective in increasing the frequency of political engagement among respondents. Yet, compared to the control group, individuals in the no-choice experimental group are expected to invest fewer efforts into the political activity they feel coerced into. In other words, need-thwarting motivational stimuli should increase the quantity of political engagement but at the cost of undermining its quality.

H4: Forcing individuals into political engagement will increase the frequency of political engagement but will decrease the level of cognitive involvement.

3.4 Methods

3.4.1 Ethics Statement

This study was approved by the Ethics Board of the University of Mannheim. Participants were provided informed consent and were debriefed at the conclusion of the study (see Supplement 1 for study materials).

3.4.2 Measures

See Table 3-1 for an overview of descriptive statistics.

3.4.2.1 *Dependent variables*

To strengthen the robustness of the statistical tests, this study complements self-reported measures with cognitive and behavioral measures to assess the motivational processes that underlie the participant's choice for or against political engagement during the survey (see Supplement 1: Questionnaires). While these measures tap into different mental representations and cognitive processes, there is no reason to expect effects of varying strength across types of measurement.

Intrinsic Motivation. To assess intrinsic motivation, one behavioral and one self-reported measure is used. Four items, adopted from the Intrinsic Motivation Inventory (Sample item: *"I enjoyed watching this video very much"*), were aggregated into an unweighted summary index of self-reported intrinsic motivation. Following the free-choice paradigm (Cerasoli et al., 2014), the behavioral measurement queries whether respondents voluntarily opt to watch another similar video after the survey is concluded.

Quantity of Political Engagement. Measured as the respondent's choice to watch either a video with political content or a video seemingly without any political content.

Quality of Political Engagement. Quality of political engagement was assessed with a subjective measure, an objective measure, and a behavioral measure. The subjective measure is the unweighted summary index of two items assessing respondents' perception of the invested efforts while watching the video (sample item: *"I watched the video very attentively"*). As objective measurement on the quality of cognitive processing, the number of correct answers to three open-response questions about the video is used. Based on a detailed codebook (see Supplement 2), the open-ended responses were classified by a coder who was unaware of the respondents' treatment

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conditions. As behavioral measurement, whether respondents have prematurely skipped the video is used (time on questionnaire page).

3.4.2.2 Manipulation checks

Competence treatment. Unweighted summary index of two items measuring internal political efficacy (sample item: *“It is often difficult for me to understand political issues in detail”*). The manipulation check was successful, demonstrating clear differences between both experimental groups ($t(1558) = 3.03, p = .003$).

Autonomy treatment. On the no-choice treatment, one item assesses whether respondents felt pressured to watch the video. On the autonomy-supportive treatment, one item assesses whether respondents feel they can recall many reasons for engaging with politics. Notably, the manipulation checks for both autonomy-related manipulations were not successful, showing no significant differences when comparing participants in the control conditions to those in the autonomy-supportive ($t(1443) = 0.74, p = .46$) and autonomy-thwarting conditions ($t(1441) = -0.09, p = .93$). The implications of these findings are discussed in greater detail below.

Table 3-1: Descriptive statistics of main variables

Variable	Min	Max	Mean	SD
Intrinsic: Behavioral	0	1	0.44	0.49
Intrinsic: Subjective	1	5	3.39	0.97
Quantity of Engagement	0	1	0.57	0.50
Quality: Subjective	1	5	3.84	0.99
Quality: Objective	0	3	1.45	1.16
Quality: Behavioral	-0.34	22.83	0.00	1
Manipulation Check: Competence	1	5	3.14	0.95
Manipulation Check: Autonomy-supportive	1	5	3.05	1.07
Manipulation Check: Autonomy-thwarting	1	5	2.04	1.13

3.4.3 Power Analysis

Pre-registered power analyses suggest that with a total sample size of $N=1,500$, effects can be detected at power at or greater than .95 even when effects size are considerably smaller than suggested by previous studies. Detailed information is reported in Supplement 3.

3.4.4 Pre-registered analysis plan

To estimate treatment effects, linear regression analyses with robust standard errors and one-sided hypothesis tests were conducted. To reduce variance of the dependent variables and thus to increase the efficiency of the effect estimates (Lin, 2013), the following pre-treatment covariates are included in all analysis models along with multiplicative terms with the treatment indicator: Pre-treatment levels of self-reported political motivation, attitudes towards civic norms, device type, device operating system, rank of political knowledge within the experimental group. In the case of missing values on any covariate, sample means (continuous variables)/modes (categorical variables) were used for imputation.⁸ As linear regressions are unbiased experimental treatment effects for binary outcome variables and as their results are easier to interpret than coefficients from logistic regressions (Gomila, 2019), linear regressions were conducted for all outcome variables (results do not change substantively using logistic regression analyses, see Supplement 4).

Because multiple measurement instruments were employed to assess the concepts of interest and because multiple hypotheses will be tested, in total, 16 statistical tests are conducted. Supplement 5 documents which indicators and statistical tests are employed for testing each hypothesis. Whereas the expected positive effect of the no-choice conditions on the quantity political engagement does not entail a need-related

⁸ Share of imputed missing values on covariates: education: 1.5%, age: 0.2%, pre-treatment motivation battery: 4.3%, pre-treatment civic duty battery: 5.2%.

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test, all remaining 15 tests can be understood as testing the tenet that need-related experiences predict whether and how a person will engage with politics.

The survey questionnaire and the stimulus were programmed using the software Unipark (files attached as Supplementary Material). Based on simulated responses on the survey questionnaire, an analysis pipeline was pre-registered, see <https://osf.io/24xyq> and Supplement 6. The analysis pipeline contains all data processing steps and pre-specifies the data analysis, thereby largely eliminating researchers' degree of freedom (Wuttke, 2019). Deviations from the pre-registered analysis pipeline that became necessary after data collection due to errors in the original scripts are documented in Supplement 7.

3.4.5 Participants

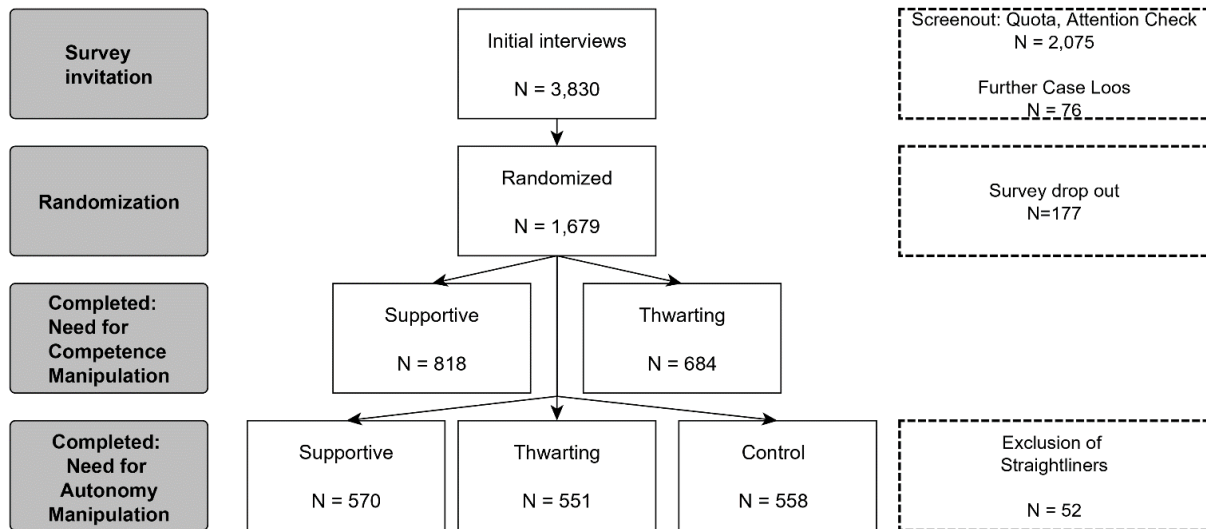
The target population is the German online population who is entitled to vote. Aiming at a sample size of 1,500 respondents, participants were drawn from the Respondi Panel, which is a heterogeneous online access panel with about 70.000 active participants who were recruited offline and online. Socio-demographic quotas (age, education, gender) were employed so that the sample more closely resemble the target population. Among participants with completed interviews, 50% were female. Concerning formal education, 25% of participants had university-entrance diploma, 33% no degree or only at the lowest formal level ('Hauptschule') and the remaining had intermediary formal levels of education. Age quotas ensured an equal distribution of participants in groups of 18–29, 30–39, 40–49, 50–59 and 60 or more years of age. While the obtained sample cannot be considered a random draw of the German population, these quotas ensure variance on basic socio-demographic variables.

3.4.5.1 Exclusion criteria

All respondents with completed interviews were included except straightliners who, on all matrix batteries, select all responses from the same row. The survey included an

attention check that filter out respondents who did not select the instructed response option in one of the survey questions (see Figure 3-2).

Figure 3-2: Consort Diagram of Experimental Design



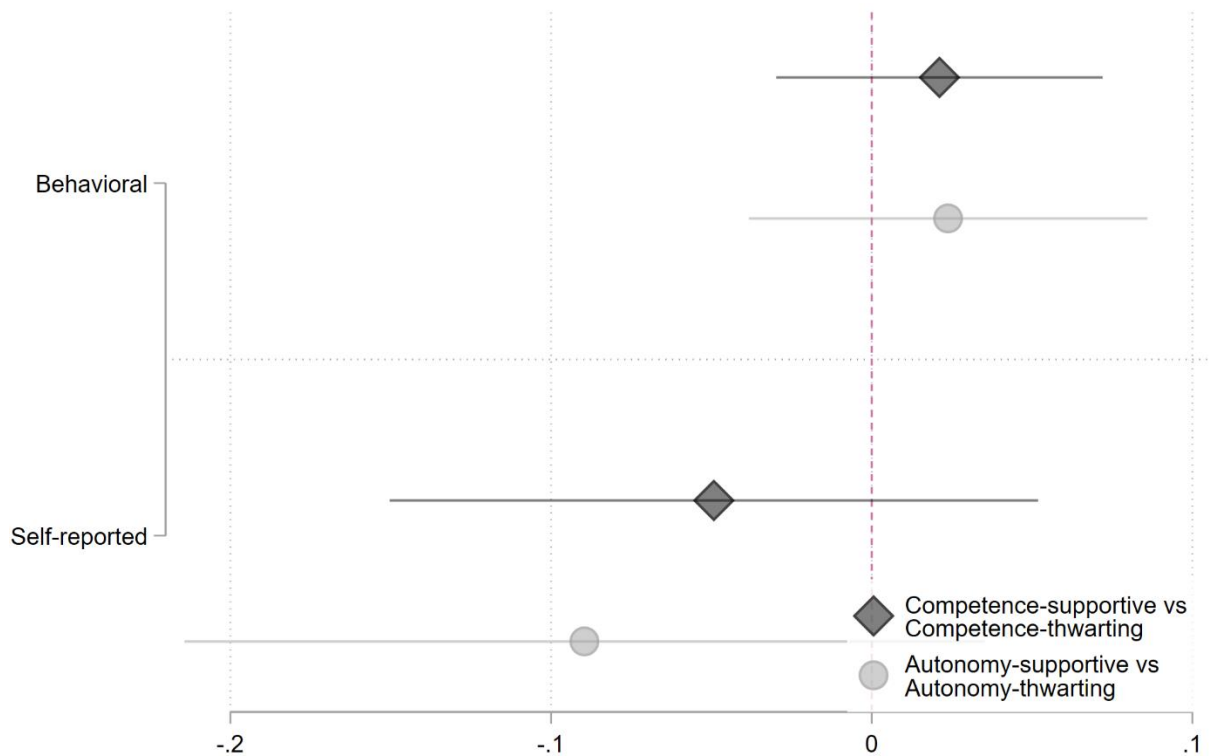
3.5 Results

To examine whether need-supportive or need-thwarting experiences with politics affect whether and how citizens engage with politics, treatment effects are examined separately for the various outcome variables. Starting with intrinsic motivation, Figure 3-3 shows how experimentally induced satisfaction of the needs for competence and autonomy affects self-reported and behavioral measures of intrinsic motivation for political engagement. Based on linear regression models, Figure 3-3 shows predicted mean differences between the need-supportive and need-thwarting treatment groups in each experimental arm. Against expectations, no statistically significant differences between the treatment conditions emerge. The consistent lack of treatment effects across conditions and outcome measures on intrinsic motivation refutes hypothesis 1, according to which need-supportive situational contexts would increase intrinsic political motivation. Apparently, whether individuals recently had a positive experience with the political domain had no ramifications on the intrinsic motivation for subsequent encounters with politics. Because increased intrinsic motivation was anticipated

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to function as the psychological precursor to hypothesized downstream effects on the quality and quantity of engagement, these null effects may foreshadow absent effects of need-satisfaction also on the remaining outcome variables.

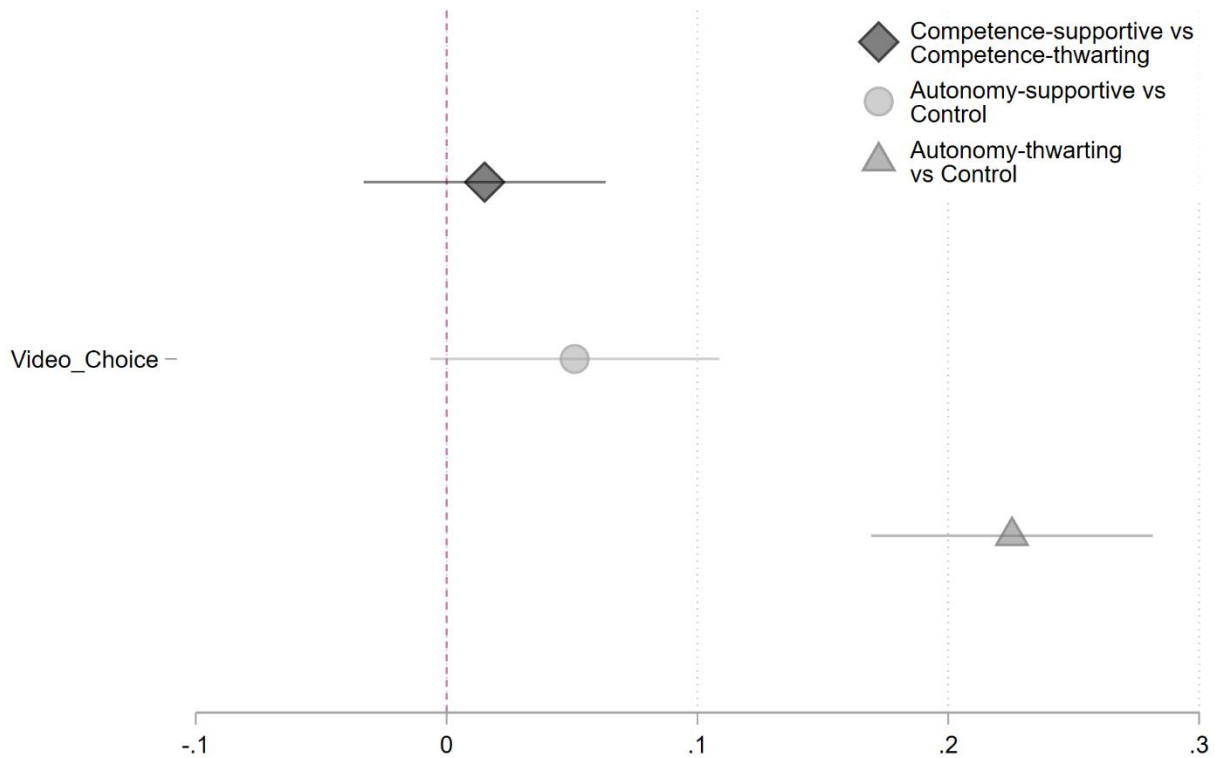
Figure 3-3: Need-related treatment effects on intrinsic motivation



Note: Predicted mean differences from linear regression analyses. Behavioral measure: dummy variable; self-reported measure: z-score standardized.

Figure 3-4 shows whether previous domain-related need satisfaction affected the quantity of political engagement, that is, the decision for or against watching a video with political content. Whether respondents were induced to receive political knowledge feedback that did or did not satisfy their need for competence apparently made no discernible difference in their inclination to choose political over non-political media content. Similarly, the confidence interval of the autonomy-supportive treatment effect's estimate also includes zero.

Figure 3-4: Need-related treatment effects on the quantity of political engagement



Note: Predicted mean differences from linear regression analyses. Outcome variable is dichotomous.

However, for the autonomy-supportive treatment, a one-tailed significance test yields a statistically significant difference compared to the control group ($p=.041$). 53.9% (95% CIs [49.6, 58.2]) of respondents in the autonomy-supportive condition who were prompted to rehearse intrinsic reasons for political engagement chose the political media option. In comparison, a slightly lower share of control respondents (47.0% [39.6–58.2]) chose the non-political options. These mean differences correspond to Cohen's $d = 0.14$; a small effect size by conventional standards which corresponds to having to treat 24 individuals in order to stipulate one additional person in the autonomy-supportive condition to choose a political video compared to the control group (Gruijters & Peters, 2019). There is thus partial evidence for behavior-eliciting effects of the autonomy-supportive stimulus, but these effects are not robust and smaller than

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expected. In combination with the expected but absent effect of the competence-related manipulation, overall, these results thus do not yield consistent evidence for the notion that individuals with previous need-supportive experiences with politics are more likely to seek political encounters than individuals who experienced politics as undermining their basic psychological needs.

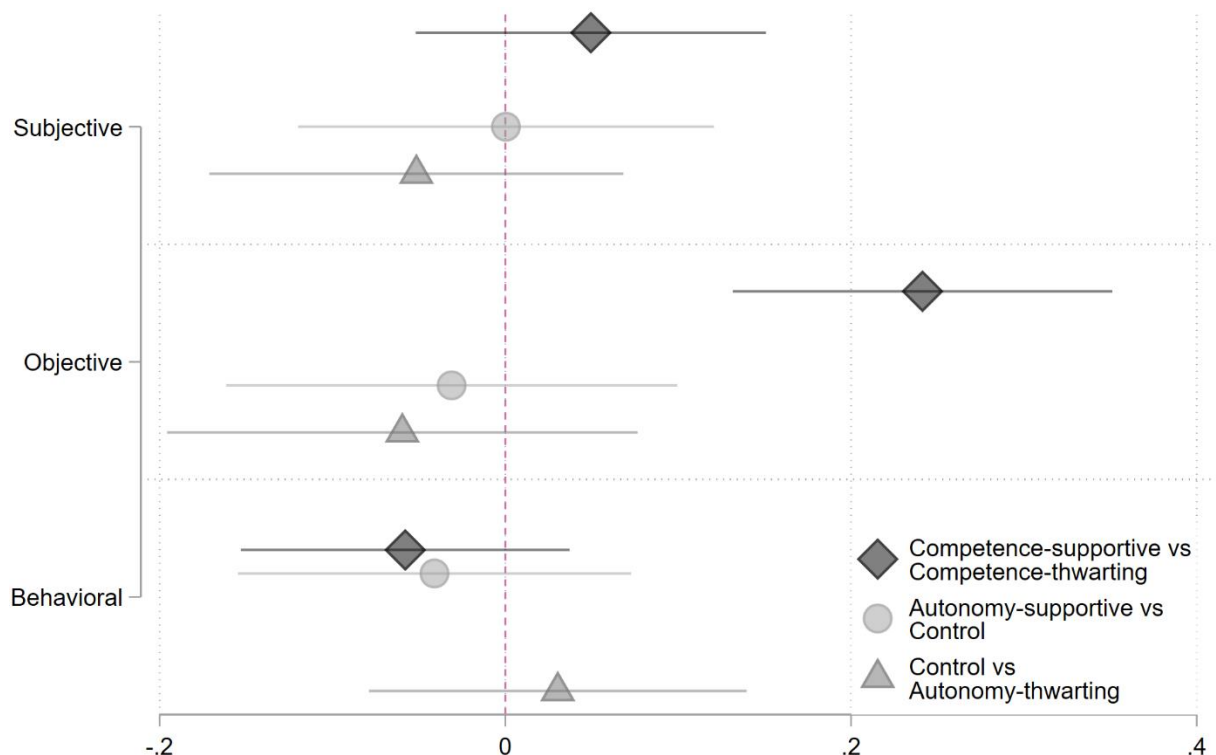
Effect sizes are considerably larger and clearly distinguishable from zero for the third treatment condition, in which respondents were told that other media options existed but which they were not allowed to choose for reasons outside their control. Respondents in the forced-choice (need-thwarting) condition opted for a political video much more frequently than the control group (70.2%, 95% CIs [66.2, 74.3] vs. 47.0% [42.7, 51.2], $p \leq .001$). Note that this analysis does not serve as a test of the need-based model of political motivation. Our main interest in the effects of the autonomy-thwarting condition was on potential downstream consequences on *how* a behavior is conducted when it is enacted against the person's authentic will. Figure 4 reports on these downstream effects on the quality of behavior.

Figure 3-5 shows effects on the depth of respondents' engagement with the video using three different outcome measures. Eight out of nine experimental tests do not show the expected effects of need-related experiences on the quality of a person's engagement with politics. No statistically significant effects emerge on self-reported levels of effortful engagement (subjective measure). Similarly, there is no evidence that prior need-related experiences with politics had any discernable consequences for whether respondents skipped the political video or watched it at full length (behavioral), again suggesting that need-related experiences had no ramifications for how the video was processed cognitively. The exception from the array of null effects is that respondents in the competence-supportive condition could more accurately recall political arguments from the video compared to respondents who were induced to feel politically incompetent. Out of three knowledge questions, respondents in the need-supportive condition accurately respond to 1.6 [1.5–1.7] questions about the video compared to

3 The Pleasure Principle: Why (Some) People Develop a Taste for Politics

1.4 (95% CIs [1.3–1.5]) in the need-thwarting condition ($p < 0.001$, one-sided). This corresponds to an effect size of Cohen's $d = 0.17$ which indicates a small treatment effect. The rather small effect size is also apparent when considering that differences of this size imply that the distribution of the number of correct responses overlaps for 93 % of respondents in both treatment conditions. Another way to get a grasp of the effect size is to consider that there is a 55 % probability that a person picked at random from the treatment group will have a higher score than a person picked at random from the control group; hence, only slightly larger than chance. Notwithstanding this one significant, small effect, the bigger picture emerging from these findings does not show much evidence for the hypothesis that previous need-supportive experiences with politics foster the inclination for deeper cognitive involvement when processing political information.

Figure 3-5: Need-related treatment effects on quality of political engagement



Note: Predicted mean differences from linear regression analyses. Scale of subjective measure: 1-5, objective measure: 0-3, behavioral measure: z-score standardized.

What are we to make out of the two significant findings against the broader pattern of null results? Considering that multiple tests were conducted for each hypothesis, it is

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thus the question whether the two successful tests are to be acknowledged as meaningful signals or disregarded as statistical flukes. With the pre-registered alpha of 0.05,⁹ the probability of incorrectly rejecting one true null hypothesis with 15 tests is $1 - (1 - 0.05)^{15} = 53.7\%$. Hence, without accounting for multiple comparisons, it is more likely than not to observe a statistically significant effect estimate even when all hypothesized effects are truly absent. When employing the conservative Holm-Bonferroni strategy to adjust for multiple comparisons, the previously significant p-value of autonomy-supportive treatment on video choice increases to $p=.57$. Yet, the effect of the competence-supportive treatment on the objective measure of behavioral quality remains highly significant at $p=.001$. Altogether, in 14 out of 15 decisive tests the null hypothesis of no effects of need-related treatments on political motivation could not be refuted. Only one test yields findings that are in line with the proposed theory. What does this large array of null results imply for the credibility of the proposed theory?

Interestingly, posthoc analyses show strong correlations between intrinsic motivation and the quantity and quality of engagement (e.g., Pearson's R of self-reported intrinsic motivation and subjective quality of engagement $=.67$), suggesting that intrinsic motivation indeed elicits the expected downstream effect on whether and how political behavior is conducted. Yet, the theory's central tenet that need-satisfying previous encounters stimulated intrinsic political motivation, and the respective behavioral outcomes received little empirical support. Considering that only one small, theory-congruent effect was found while one test after the other failed to provide the hypothesized evidence for the need-based model of political motivation, the most straightforward conclusion is to consider the derived theory as refuted. However, as no empirical test can prove a hypothesis correct, no pattern of null results necessarily commands the refutation of a hypothesis as long as explanations other than the absence of real

⁹ In total, 16 statistical tests were conducted but we exclude the significant no-choice effect on behavioral frequency here because this test does not concern the main theoretical argument.

effects can also explain a failure to observe such effects (Oreskes, 2019). In the remainder, I therefore systematically test measurement problems, design deficiencies, lack of statistical power and treatment heterogeneity as potential sources of type II errors. The more certain we can be that none of these issues prematurely lead to falsely reject the theorized hypotheses, the more confident we can be that, indeed, the presented null findings warrant the conclusion that the proposed theory does not adequately describe how intrinsic motivation comes about.

Measurement considerations concern the notion that the experiment might have elicited real theory-consistent effects, yet the measurement instruments failed to capture these effects, rendering the experiment unhelpful in disentangling whether the hypothesized effects exist or not.

One plausible scenario is that treatment effects were present, and even so consequential that they caused some individuals to prematurely terminate the survey before the outcome variable was measured. As these attrition biases are well-documented in the field-experimental literature (Gerber & Green, 2012), the pre-registration plan contained the presumption that the no-choice condition might lead some participants to cancel survey participation. However, there is no evidence for differences in survey completion between respondents in the no-choice or the control group ($p=.91$). Yet, differences in survey completion become apparent when comparing the need-for-competence manipulations ($p<.001$). Among respondents who received encouraging feedback, 92.7% (95% CIs [91.0, 95.0]) completed the survey. When respondents were told that their political knowledge is far below-average, only 85.1% [82.6–87.6] made it to the end of the survey. To the extent that attrition is correlated with the respondent's potential outcomes, the excludability assumption is violated, and the experimental estimates are biased (Gerber & Green, 2012). Potentially, the treatment could have driven those respondents to terminate the survey early, who would also have been most susceptible to treatment effects on substantive outcome variables. Whereas attrition may thus have biased treatment estimates, it is unlikely that these survey dropouts explain

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most of the null effects because the difference in attrition rates by competence conditions is so low. Therefore, average treatment effects would remain insignificant or small even if we impute extreme treatment effects on the outcome variables instead of missing values, as can be shown with simulation analysis. For instance, simulating that all respondents in the need-thwarting conditions with outcome missing values would have decided against watching political content ($N=37$), the competence manipulation would have yielded a small, barely significant effect on engagement frequency (Cohen's $d=0.06$, imputed $p\text{-value}=.04$; original $p\text{-value}=.26$; both one-sided). The effect on the behavioral measure of intrinsic motivation remains just above the significance threshold after replacing missing values among need-thwarted respondents by low motivation scores of 0 (imputed $p\text{-value}=.06$; original $p\text{-value}=.21$). Value imputation on continuous outcome variables shows that in extreme scenarios, treatment-induced attrition could have hidden highly significant treatment effects, but these scenarios with extreme value imputation are unlikely and the effect sizes would remain small (see Supplement 8 for analysis on continuous variables). Altogether, there is the possibility that attrition bias may have caused false negatives as systematic survey drop-out could have rendered some truly statistically significant treatment effects as non-significant but attrition bias seems unlikely to have overshadowed substantive treatment effects with meaningful effect sizes.

A second measurement problem that might overshadow true treatment effects is an unreliable measurement of the relevant outcomes. Although the study relied on established and validated measurement approaches to assess intrinsic motivation (self-reported intrinsic motivation: Ryan et al., 1991, behavioral intrinsic motivation: Ryan & Deci, 2017), it is possible that these measures were less reliable in the present survey context. Low reliability rates would be problematic because they add noise to the observed values, which impair the capacity to find traces of treatment effects in the outcome measures. Specifically, multi-item measures could suffer from low internal consistency but analyses show high reliability scores of the self-reported intrinsic motivation measures (Omega total: .87 [.85, .88], Cronbach's alpha: .86 [.85, .87], see

McNeish, 2018). The objective measure of behavioral quality is particularly vulnerable to reliability problems as it required manual coding of the participants' open-ended responses. To assess coding reliability, 270 randomly selected responses were classified by a second coder. A comparison of both coders' classification yields very high reliability rates (agreement rates for each response item: 93%, 93%, 98%; kappa: 0.86, 0.86, 0.96). Altogether, these results foster our confidence that low reliability of the outcome measures appears not to a major problem for capturing potential treatment effects. Up to now, therefore, the analysis demonstrated the possibility that measurement issues may have slightly biased the experimental findings in one way or another but neither survey attrition nor instrument reliability is likely to have introduced major biases.

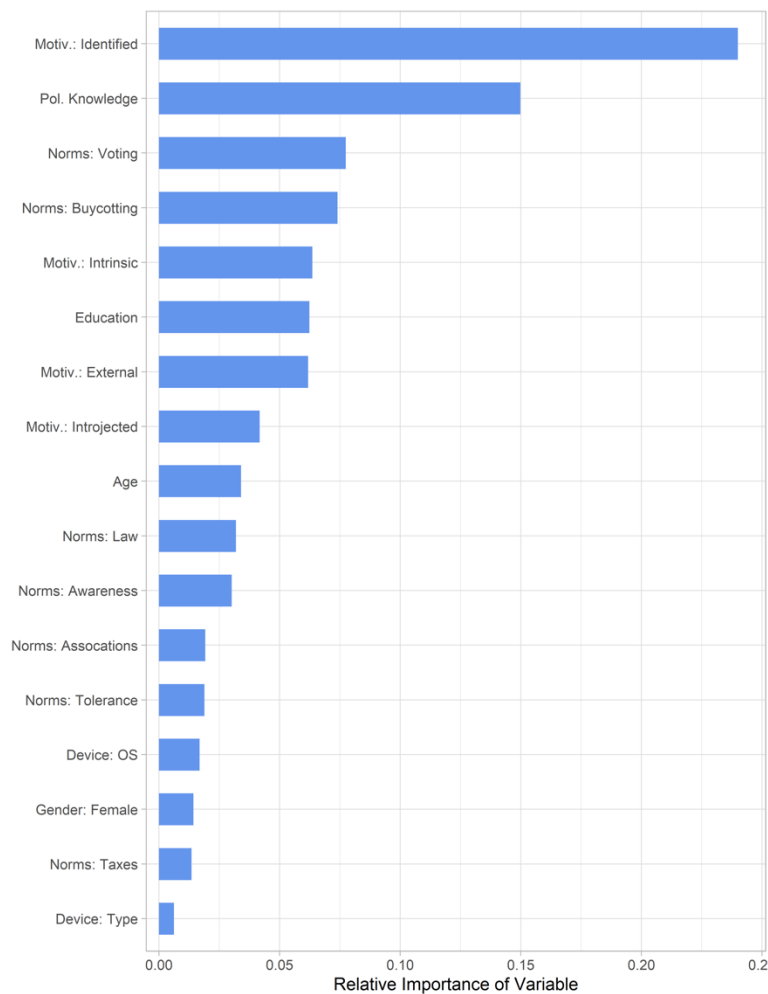
All preceding analyses focused on average treatment effects, yet it is conceivable that treatment effects materialized only in some subgroups. At the extreme, the experiment could have yielded opposite effects depending on a background variable that offset each other when analyzing the sample as a whole. For instance, the susceptibility to situational influences on political motivation might depend on a person's dispositional motivational propensities. To examine potential treatment heterogeneity depending on these and other potential moderators, one option is running a vast number of regression analyses with various model specifications that account for the numerous possible interacting influences of the variables of interest. However, such an approach runs into problems of overfitting and statistical power, and exacerbates the problem of multiple comparisons mentioned above (van Klaveren et al., 2019). Data-driven strategies make more efficient use of the data and are thus better suited for this kind of exploratory analysis. Therefore, I employ a machine learning technique –causal forests (Athey et al., 2019; Wager & Athey, 2018)– that was specifically developed for the purpose of discovering treatment heterogeneity in experimental settings. As an ensemble model, causal forests consist of decision trees that partition the data on relevant covariates by their ability to explain heterogeneity in a quantity of interest such as the treatment effect. Like other random forests model, causal forest split the data into

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training and test datasets. In addition, the causal forest model entails another split of the training dataset called the honesty approach that enables the calculation of asymptotically normal estimates and thus to report 95% confidence intervals. Due to the sample splits, causal forests thus work best with large sample sizes, yet it is the best available option to explore potential treatment effects also in medium-sized samples as it does not overfit the data and yields interpretable and reliable estimates.

To implement causal forest models, I assigned 60% of respondents to a training dataset with twelve attitudinal variables (four dimensions of political motivation, seven indicators of citizenship norms, political knowledge), three socio-demographic variables (age, sex, education) and two technical variables (device type, operating system), all of which were measured before a treatment was administered. The learned model is then applied on the test dataset to predict heterogeneous treatment effects on unused data (for more information on model specification, see Supplement 9; I follow the implementations by Reimer & Chelton, 2019; M. H. White, 2018).

Figure 3-6: Relative variable importance for treatment heterogeneity



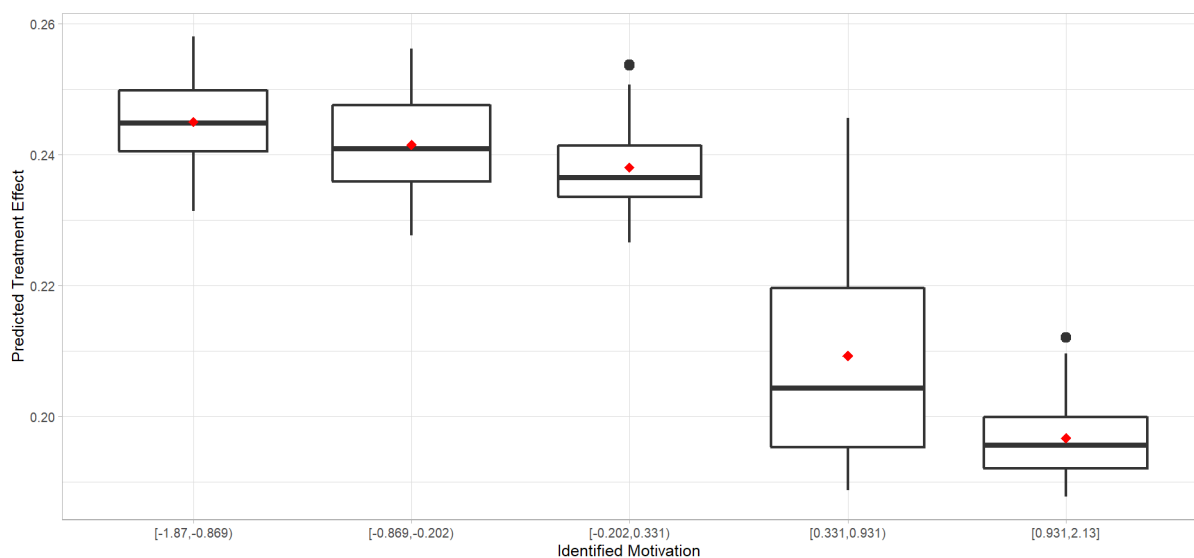
To demonstrate how the method reveals treatment heterogeneity, I first examine treatment effects of the no-choice condition on the frequency of political engagement in the experiment. Figure 3-6 shows the relative importance of each variable to explain variation in treatment effects. Political motivation variables are among the variables with most explanatory power, a finding that replicates with other outcome variables.

However, Figure 3-6 does not inform about the magnitude of treatment heterogeneity as a whole, and it is thus unclear whether the heterogeneity is substantively meaningful. When conducting an omnibus test on the presence of treatment heterogeneity, an omnibus test fails to reject the null hypothesis of no treatment heterogeneity ($p=.80$). The lack of significant heterogeneity becomes also apparent in Figure 3-7 which

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displays the substantive magnitude of subgroup differences.¹⁰ For the strongest predictor of treatment heterogeneity, Figure 3-7 shows how predicted treatment effects differ at selected values of identified political motivation, indicating no substantial heterogeneity. Meaningful heterogeneity cannot be detected for other outcome variables either (see Supplement 9).¹¹ Altogether, therefore, even an exploratory method to recover any potential treatment heterogeneity that makes efficient use of the available data reveals no evidence of meaningful treatment effects that were hidden in the data. Therefore, treatment heterogeneity seems not to have overshadowed true effects, strengthening the confidence that the experiment simply did not elicit theory-consistent effects in any portion of the sample.

Figure 3-7: Heterogeneous treatment effects by identified political motivation



Note: Predicted treatment effects for five equally sized subgroups by pre-treatment levels of identified political motivation, using grf package for R

¹⁰ The omnibus test also fails to reject the null hypothesis of no treatment heterogeneity when only motivational variables are included as model features which has more power to detect potential heterogeneity on these variables.

¹¹ Causal forests were run only on the competence manipulation for which heterogeneous effects were most likely because neither autonomy-related treatment led succeeded in the subsequent manipulation checks.

A final test is conducted to assess whether the reported null results warrant to refute the formulated hypothesis or whether an alternative theory-consistent explanation could account for the absence of effects. The possibility remains that the expected effects did occur but were too small to detect statistically. By calculating whether an estimate achieves a practically meaningful effect size, equivalence tests allow distinguishing whether a null effect is either inconclusive or too small to make a substantial difference (Lakens et al., 2018). Even though it is impossible to prove the absence of an effect, we can establish whether an effect is practically absent and thus statistically equivalent with zero using equivalence tests.

Distinguishing whether a null effect is either inconclusive or practically insignificant requires specifying the smallest effect size of interest (SESOI) for a given test. Consider the effect on the behavioral measure of intrinsic motivation, that is whether respondents chose to watch yet another political video after the survey questionnaire is completed. We might categorize treatment effects as negligible when the shares of respondents choosing to watch another political video do not differ by more than 10 percentage points between experimental conditions. An equivalence test of the need for competence manipulation on the behavioral measure of intrinsic motivation shows that the reported effect estimate of -2.4%p. with confidence 95% intervals from -7.2%p. through +2.4%p. is statistically equivalent to zero because with great certainty we can rule out that the true population estimate entails effect sizes above SESOI (see S10 for graphs). As documented in Supplement 10, we reach the same conclusion of statistical equivalence for all conducted tests using reasonable thresholds. Therefore, even though some theory-consistent effects might have occurred we can thus confidently reject that the need-related treatment elicited practically meaningful effects on the relevant outcome measures.

What does the absence of meaningful theory-consistent effects imply for the proposed need-based model of political motivation? The informational value of the presented findings for judging the tested theory depends on the experiment's internal and

3.5 Results

external validity. In this study, each experimental condition was intended to induce a certain psychological state among respondents which then was expected to elicit motivational downstream effects in line with the theory. Internal validity is thus impaired when the stimuli failed to elicit the intended psychological state. In the following, I, therefore, test for each experimental condition whether these requirements for an informative hypothesis test were met.

The autonomy-supportive condition was intended to remind respondents of good reasons to engage with politics and thus more closely align political engagement with the respondents' sense of selves so that a decision for political engagement seems concordant with the respondents' need for autonomy (similar: Kadous and Zhou, 2019). However, the manipulation check indicates that the experimental manipulation did not succeed in making respondents more aware of reasons for political engagement.¹² Respondents in the autonomy-supportive condition did not report at higher rates that they could name many reasons for why politics is enjoyable compared to the control group ($t(1443) = 0.74, p = .46$). The failed manipulation check thus casts doubt that the autonomy-supportive manipulation worked as intended.¹³ Importantly, if the priming paradigm was ineffective in stimulating autonomous reasons for political engagement, then the insignificant test result cannot be considered informative tests on the hypotheses under investigation because one would not have expected the hypotheses to hold if respondents do not differ in how autonomous they experience their own behavior.

The autonomy-thwarting manipulation was intended to make respondents feel that political engagement is not a matter of choice but was required even against their will so that the enforced political engagement is experienced as undermining respondents' need for autonomy. However, the evidence suggests that this manipulation did not

¹² Note that this survey item contained a wording mistake which impaired the item's intelligibility and may thus have introduced unintended measurement error.

¹³ The implemented priming manipulation was selected due to its demonstrated efficacy in previous motivation studies (Kadous and Zhou, 2019). However, recent meta-scientific research shows that many priming studies exhibit low replicability rates (e.g., Cesario, 2014), suggesting that the effectiveness of such manipulations is more precarious and context-dependent than suggested in previous literature.

have the intended effect either. First, even though respondents in the autonomy-thwarting conditions were 2.3 times more likely to choose a political video than other respondents, 29.7 percent of respondents still resisted the instructions and chose a non-political video. Apparently, a substantial segment of the respondents did not consider the survey instructions binding. Second, respondents in the autonomy-thwarting conditions did not report more often that they felt under pressure to watch the video compared to the control condition ($t(1441) = -0.09$, $p = .93$). To conclude, the experimental manipulation apparently failed to elicit the perception of autonomy-undermining pressure.

Considering that both autonomy-related conditions failed to facilitate or undermine need satisfaction, it is thus little wonder that no downstream effect on political engagement occurred. With the available data, we cannot know whether an effect would be haven observed if the treatment succeeded in manipulating situational need satisfaction. Hence, whether satisfaction of the need for autonomy affects political motivation remains unanswered and the autonomy-related experiments thus do not qualify as informative tests of the hypotheses under observation.

Things stand differently for the competence manipulation. As intended, the difficulty of the knowledge quiz varied between treatment conditions. Respondents in the need-for-competence supportive conditions accurately responded more frequently to questions in the easier knowledge quiz than respondents in the need-thwarting condition with more difficult questions ($t(1626) = 9.84$, $p < .001$). More importantly—after having received the manipulated quiz feedback—respondents in the need-supportive condition reported higher levels of internal political efficacy ($t(1558) = 3.03$, $p = .003$). So, respondents were successfully induced to feel more or less competent with regard to the political domain and thus the experiment succeeded in manipulating the theorized need-based precursor to political engagement. On average, respondents in both need-for-competence conditions differ in whether they recently experienced the political domain as either satisfying or undermining their need for competence so that the

expected downstream effects on political engagement should have occurred. Hence, the experiment's competence-related manipulation meets the condition of an informational theory test as the experimentally induced differences between respondents in need satisfaction have not led to the motivational and behavioral outcomes that were predicted by the need-based model of political motivation.

3.6 Discussion

To understand why some people develop a taste for politics while others find it boring or burdensome, this study has laid out a theoretical framework for understanding the motivational processes driving political engagement as its own reward. This synthesis of existing motivation theories enhances the conceptual political science toolkit, sheds new light on previous findings and contributes novel ideas for the explanation of a poorly understood political phenomenon, based on insights that have proven useful in other domains of life. Starting from the pleasure principle's notion that individuals will re-engage with activities they have previously experienced as positive and rewarding, the proposed theory builds on the concept of basic psychological needs to predict which situational features people find satisfying. In this vein, the taste for politics is argued to reflect universal desires and experiences that are deeply ingrained in the human psyche. Specifically, the need-based theory of political motivation posits that citizens will be intrinsically motivated to engage with politics when they previously experienced political activities as satisfying basic psychological needs.

The theory's prediction was put to an empirical test in a preregistered, high-powered survey-experiment with two experimental arms that were intended to induce experiential differences in domain-related need satisfaction. The autonomy-related conditions apparently failed to induce need-thwarting or need-satisfying experiences. Therefore, the requirements for an informational hypothesis test are not met in this experimental arm and it remains unclear whether previous autonomy-related experiences with politics affect subsequent political behavior. However, considering that the

experimental design was carefully crafted and built on previous literature with similar manipulations, the failed induction attempts still teach about the difficulty to deliberately induce need-related psychological states. As argued in the manuscript, the effect of an objectively given situation on a person's need satisfaction depends on the subjective perception and experience of the particular situation. Hence, if need satisfaction is difficult to manipulate systematically even in a controlled survey-experimental environment, then need satisfaction may be considered even less predictable in the real world (e.g. Loon et al., 2019), suggesting that need-based theories and applications of it may be more precarious and context-dependent than previous literature suggests.

The need-for-competence manipulation succeeded as an informative theory test but casted further doubt on the usefulness of basic needs to explain political motivation. In five out of six analytical tests, the need manipulation did not bring about the expected motivational or behavioral outcomes. Notably, the negative findings hold across different measurement strategies and after conducting extensive exploratory analyses to minimize the likelihood of false-negative conclusions. While it remains possible that treatment-induced attrition may have hidden small treatment effects, overall the exploratory analyses suggest that treatment heterogeneity, measurement reliability, and statistical power are not likely to have caused type II errors, thus strengthening the confidence that the expected effects of the need-related manipulation simply did not reliably materialize. Altogether, the available data thus suggests refuting the hypotheses that need-for-competence supportive experiences will lead to higher levels of intrinsic motivation, which, in turn, will stimulate political engagement among respondents. Similarly, there is only limited and less than expected evidence that need-related experiences have ramifications for the quality by which political behavior is conducted.

What does the fact that most hypotheses were refuted when put to an empirical test imply for the credibility of the need-based theory of political motivation? The epistemological principle of under-determination implies that single experiments cannot

3.6 Discussion

verify nor refute any particular theory (Oreskes, 2019). Yet, failed experiments provide signals for the need to abandon or revise elements of a theory. Most clearly, the proposed theory does not yield accurate predictions concerning the need for competence which is particularly surprising when considering the previous literature on political efficacy (e.g., Bandura, 2010; Preece, 2016; Prior, 2019; Schwarz & Schuman, 1997), which rendered need for competence a likely candidate for theory-consistent effects in the political domain. Nonetheless, it remains possible that the theory would receive empirical support when tested with other need candidates. For instance, Han (2016) reports evidence from multiple field-experiments that can be interpreted as suggesting that organizations are more successful in stimulating political engagement among their members when organizational contexts help satisfy the need for belonging which is the most widely accepted basic need in psychological science. Next to testing the proposed theory with other basic needs, another strategy for theory revision could entail to maintain the basic tenets of the pleasure principle but to abandon need-based concepts and, instead, build on other concepts such as core motives (Fiske, 2014) or insights from Gestalt psychology (Kruglanski et al., 2018) to explain the conditions under which people perceive politics as pleasurable. Finally, future theory revisions could combine the idea of the pleasure principle with other insights from motivation science. For instance, regulatory focus theory (Higgins, 2012) distinguishes different systems of goal pursuit that could help to refine predictions about whether positive or negative experiences with politics shape future motivation, depending on one's initial approach to politics. Altogether, the demonstrated results undermine confidence in the proposed need-based theory of political motivation, suggesting either narrower boundary conditions or to revise some of its elements.

One final aspect worth mentioning concerns the experiment's external validity. Survey- and laboratory experiments often face the criticism that the psychological processes elicited in an artificial environment might not resemble those in the real world. As a case in point, the failed autonomy manipulation indicates that many respondents perceived the video and the following instructions as yet another survey task,

3 The Pleasure Principle: Why (Some) People Develop a Taste for Politics

suggesting that respondents might not have perceived the situation as resembling real-world scenarios. Still, only survey- and laboratory experiments allow the manipulation of distinct psychological states in a controlled environment, rendering the inquiry and manipulating of such psychological processes in the field even more difficult. Altogether, these difficulties show why the study of political engagement as an end in itself has still received relatively scant attention compared to the relevance of intrinsic motivation for an active citizenry. In this vein, by having shown what works and what does not work, the empirical strategy and the theoretical discussions presented in this study may have demonstrated dead ends and fruitful avenues for further research on political engagement for its own reward.

3.7 Supplement

3.7.1 Supplement 1: Questionnaires

This supplement contains the questionnaires. See Supplementary Material for further material, including an Unipark project file that allows re-running the survey using the Questback Survey Software.

3.7.1.1 German Questionnaire

Themenk: Willkommen und Datenschutz	Intro
--	--------------

Vermutete Dauer: 20 Sekunden [Konservativ, da es meist überlesen wird]

Fragetext:

Wissenschaftliche Studie

Die folgende Befragung ist Teil einer **wissenschaftlichen Studie** der **Universität Mannheim** zu Medien und politischem Verhalten in modernen Demokratien. **Ihre Antworten sind Grundlage für unsere Forschung.** Je sorgfältiger und aufmerksamer Sie teilnehmen, desto zuverlässiger werden die gewonnenen Forschungsergebnisse sein.

Ton einschalten

Im Zuge der Befragung haben Sie die Gelegenheit, ein **Video** zu sehen. Bitte sehen Sie es sich aufmerksam an. Schalten Sie daher jetzt bereits den **Ton Ihres Computers** an. **Es ist wichtig, dass Sie das Video sehen und hören können.**

Datenschutz

Im Zuge der technischen Abwicklung der Befragung (z.B. während des Beantwortens der Umfrage) aus technischen Gründen auch personenbezogene Daten (z.B. IP-Adresse) erhoben werden. Zudem wird im Zuge dieser Befragung ein YouTube Video eingeblendet. Sollten Sie dieses Video abspielen und den entsprechenden Datenschutzbestimmungen zustimmen, können auch hier personenbezogene Daten technischer Art (z.B. IP-Adresse) gespeichert werden. Die wissenschaftliche Auswertung Ihrer Antworten in dieser Befragung erfolgt ausschließlich **anonym**.

Weitere Informationen zum Studienzweck erhalten Sie nach Beendigung des Fragebogens.

Themenk: Soziodemographie	Item: Geschlecht
----------------------------------	-------------------------

Vermutete Dauer: 10

Filter:

Varnames:

Sex

Darstellung:

3 The Pleasure Principle: Why (Some) People Develop a Taste for Politics

must answer; Einfachauswahl untereinander; Plausitext, wenn keine Angabe: Bitte beachten Sie, dass eine Antwort für die Fortsetzung der Umfrage notwendig ist. Sollten Sie ihren Schulabschluss im Ausland erworben haben, geben Sie bitte einen entsprechenden deutschen Abschluss an.

Ursprung:

GLES

Textintro:

Geben Sie bitte Ihr Geschlecht an.

- männlich

- weiblich

Themenk: Soziodemographie	Item: Alter
---------------------------	-------------

Vermutete Dauer: 10

Filter:

Varnames:

Age

Darstellung:

must answer; Einfachauswahl untereinander; Plausitext, wenn keine Angabe: Bitte beachten Sie, dass eine Antwort für die Fortsetzung der Umfrage notwendig ist. Sollten Sie ihren Schulabschluss im Ausland erworben haben, geben Sie bitte einen entsprechenden deutschen Abschluss an.

Ursprung:

GLES

Textintro:

Bitte geben Sie Ihr Alter in Jahren an.

- 18-29

- 30-39

- 40-49

- 50-59

- 60 und älter

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Themenk: Soziodemographie

Item: Schulabschluss

Filter:

Darstellung:

must answer: Einfachauswahl untereinander; Plausitext, wenn keine Angabe: Bitte beachten Sie, dass eine Antwort für die Fortsetzung der Umfrage notwendig ist. Sollten Sie ihren Schulabschluss im Ausland erworben haben, geben Sie bitte einen entsprechenden deutschen Abschluss an.

Ursprung:

GLES

Varnames:

edu

Fragetext:

Welchen höchsten allgemeinbildenden Schulabschluss haben Sie?

- Schule beendet ohne Abschluss
- Hauptschulabschluss, Volksschulabschluss, Abschluss der polytechnischen Oberschule 8. oder 9. Klasse
- Realschulabschluss, Mittlere Reife, Fachschulreife oder Abschluss der polytechnischen Oberschule 10. Klasse
- Fachhochschulreife (Abschluss einer Fachoberschule etc.)
- Abitur bzw. erweiterte Oberschule mit Abschluss 12. Klasse (Hochschulreife)

- bin noch Schüler

Codierung:

- (1) Schule beendet ohne Abschluss
- (2) Hauptschulabschluss
- (3) Realschulabschluss
- (4) Fachhochschulreife
- (5) Abitur

- (9) bin noch Schüler

➔ **Check for Quota and Filtering**

3 The Pleasure Principle: Why (Some) People Develop a Taste for Politics

Themenk: Erklärende Variable	Item: Politische Motivation 1
------------------------------	-------------------------------

Vermutete Dauer: 30 Sekunden

Filter:

Varnames:

pre_mot_*

Darstellung:

Standard-Matrix

Textintro:

Menschen können sich auf unterschiedliche Weise politisch beteiligen oder sich mit Politik auseinandersetzen. Sie können zum Beispiel über Politik diskutieren, in einer Bürgerinitiative mitarbeiten, politische Nachrichten hören, sehen oder lesen, an Demonstrationen teilnehmen.

Bitte geben Sie an, inwieweit die folgenden Aussagen auf Sie persönlich zutreffen oder nicht zutreffen.

Fragetext:

Wenn ich mich politisch beteilige oder mit Politik auseinandersetze, tue ich das, weil...

- ich es interessant finde zu verfolgen, was in der Politik passiert
[intrinsisch, pre_mot_intrinsic1]
- ich mir selbst Druck mache, politisch auf dem Laufenden zu sein.
[introjeziert, pre_mot_introjected1]
- andere Menschen mir sagen, dass ich es tun sollte.
[external, pre_mot_external1]
- ich mich selbst als politischen Menschen begreife.
[identifiziert, pre_mot_identified1]
- ich stolz bin, wenn ich etwas über Politik verstehe.
[introjeziert, pre_mot_introjected2]
- Politik für mich ein Herzensanliegen ist
[identifiziert, pre_mot_identified2]
- Um sicherzugehen, dass diese Befragung von einem Menschen ausgefüllt wird, klicken Sie hier bitte auf 'teils/teils'.
[attentioncheck]

Codierung:

- (1) trifft überhaupt nicht auf mich zu
- (2) trifft eher nicht auf mich zu
- (3) teils/teils
- (4) trifft eher auf mich zu

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(5) trifft voll und ganz auf mich zu

→ Screenout if attention check was failed

Themenk: Einstellungen zu Politik allgemein	Item: Politisches Interesse, allgemein
--	---

Ursprung:

GLES

Darstellung:

Einfachauswahl untereinander

Varnames:

polint

Fragetext:

Wie stark interessieren Sie sich im Allgemeinen für Politik?

- sehr stark
- stark
- mittelmäßig
- weniger stark
- überhaupt nicht

Codierung:

- (1) sehr stark
- (2) stark
- (3) mittelmäßig
- (4) weniger stark
- (5) überhaupt nicht

Themenk: Erklärende Variable	Item: Politische Motivation 2
-------------------------------------	--------------------------------------

Vermutete Dauer: 30 Sekunden

Filter:

3 The Pleasure Principle: Why (Some) People Develop a Taste for Politics

Varnames:

pre_mot_intrinsic

Darstellung:

Standard-Matrix

Textintro:

Hier sehen sie noch einmal einige Gründe deretwegen sich Menschen politisch beteiligen oder mit Politik auseinandersetzen.

Bitte geben Sie an, inwieweit die folgenden Aussagen auf Sie persönlich zutreffen oder nicht zutreffen.

Fragetext:

Wenn ich mich politisch beteilige oder mit Politik auseinandersetze, tue ich das, weil...

- es meinen Prinzipien entspricht, mich mit Politik auseinanderzusetzen.
[identifiziert, pre_mot_identified3]
- Menschen respektiert werden, wenn sie viel über Politik wissen.
[external, pre_mot_external2]
- ich Politik spannend finde.
[intrinsisch, pre_mot_intrinsic2]
- ich so Kritik von Freunden und Verwandten vermeiden kann.
[external, pre_mot_external3]
- man Politik verfolgen sollte, selbst wenn man gerade keine Lust darauf hat.
[introjeziert, pre_mot_introjected3]
- es mir Freude bereitet, mich mit Politik auseinanderzusetzen.
[intrinsisch, pre_mot_intrinsic3]

Codierung:

- (1) trifft überhaupt nicht auf mich zu
- (2) trifft eher nicht auf mich zu
- (3) teils/teils
- (4) trifft eher auf mich zu
- (5) trifft voll und ganz auf mich zu

Themenk: Einstellungen zu Politik allgemein	Item: Bürgerschaftsnormen
--	----------------------------------

Ursprung: ISSP 2016

Darstellung:

3.7 Supplement

Einfachauswahl untereinander

Frage**text:**

Es gibt verschiedene Ansichten darüber, was einen guten Bürger ausmacht. Was meinen Sie: Inwieweit sind folgende Dinge wichtig, um ein guter Bürger zu sein?

Dass jemand...

- immer wählen geht.
- niemals versucht, Steuern zu hinterziehen.
- Gesetze und Bestimmungen immer befolgt.
- sehr aufmerksam verfolgt, was die Regierung macht.
- in sozialen oder politischen Vereinigungen aktiv ist.
- versucht, den Standpunkt Andersdenkender zu verstehen.
- sich aus politischen, ethischen oder Umweltgründen für Produkte entscheidet, selbst wenn sie etwas mehr kosten.

Skala

1 Überhaupt nicht wichtig

2

3

4

5

6

7 Sehr wichtig

Themenk: Erklärende Variable	Item: Politische Motivation 3
------------------------------	-------------------------------

Vermutete Dauer: 30 Sekunden

Filter:

Varnames:

pre_mot_intrinsic

Darstellung:

Standard-Matrix

Textintro:

Ein letztes Mal sehen sie hier Gründe deretwegen sich Menschen politisch beteiligen oder mit Politik auseinandersetzen.

Bitte geben Sie an, inwieweit die folgenden Aussagen auf Sie persönlich zutreffen oder nicht zutreffen.

3 The Pleasure Principle: Why (Some) People Develop a Taste for Politics

Fragetext:

Wenn ich mich politisch beteilige oder mit Politik auseinandersetze, tue ich das, weil...

- ich Politik oft aufregend finde.
[intrinsisch, pre_mot_intrinsic4]
- ich mich schämen würde, wenn ich über Politik nicht informiert bin.
[introjeziert, pre_mot_introjected4]
- Politik zu meiner Persönlichkeit gehört.
[identifiziert, pre_mot_identified4]
- Andere sonst auf mich herabblicken würden.
[external, pre_mot_external4]
- ich mir selbst beweisen will, dass ich mich auch mit Dingen wie Politik auseinandersetze.
[introjeziert, pre_mot_introjected5]
- mir Politik einfach wichtig ist.
[identifiziert, pre_mot_identified5]
- ich den Eindruck habe, dass es von mir erwartet wird.
[external, pre_mot_external5]

Codierung:

- (1) trifft überhaupt nicht auf mich zu
- (2) trifft eher nicht auf mich zu
- (3) teils/teils
- (4) trifft eher auf mich zu
- (5) trifft voll und ganz auf mich zu

Themenk: Experiment	Item: Political knowledge quiz 1 [need-supportive, Comp+]
----------------------------	--

Vermutete Dauer: 30 Sekunden

Filter:

Respondents need-for-competence-supportive condition

Varnames:

comp_sup_quiz_politician

Darstellung:**Textintro:****Fragetext:**

3.7 Supplement

Wir möchten gerne wissen, ob Sie mehr oder weniger als andere Menschen über Politik wissen. Ein kurzes Quiz.
Bitte markieren Sie alle Politikerinnen und Politiker, die Mitglied der SPD sind.

Bilder in need-for-competence-supportive condition:

[Bekannte PolitikerInnen der SPD]

Themenk: Experiment	Item: Political knowledge quiz 1 [need-supportive, Comp-]
----------------------------	--

Vermutete Dauer: 30 Sekunden

Filter:

Respondents need-for-competence-thwarting condition

Varnames:

comp_thwart_quiz_politician

Darstellung:

Textintro:

Fragetext:

Wir möchten gerne wissen, ob Sie mehr oder weniger als andere Menschen über Politik wissen. Ein kurzes Quiz.
Bitte markieren Sie alle Politikerinnen und Politiker, die Mitglied der SPD sind.

Bilder in need-for-competence-thwarting condition:

[Weniger bekannte PolitikerInnen der SPD]

Themenk: Experiment	Item: Political knowledge quiz 2 [need-supportive, Comp+]
----------------------------	--

Vermutete Dauer: 10 Sekunden

Filter:

Respondents need-for-competence-supportive condition

Varnames:

comp_sup_quiz_estimate

3 The Pleasure Principle: Why (Some) People Develop a Taste for Politics

Darstellung:

Schieberegler

Textintro:

Ursprung:

GLES

Ausfüllhinweis:

Wenn Sie es nicht wissen, geben Sie Ihre beste Schätzung ab.

Fragetext:

Bei Wahlen zum Deutschen Bundestag gilt eine Prozhürde, die Parteien überschreiten müssen um im Bundestag vertreten zu sein. Ab wie viel Prozent der Zweitstimmen kann eine Partei auf jeden Fall Abgeordnete in den Bundestag entsenden?

Themenk: Experiment	Item: Political knowledge quiz 2 [need-thwarting, Comp-]
----------------------------	---

Vermutete Dauer: 10 Sekunden

Filter:

Respondents need-for-competence-thwarting condition

Varnames:

comp_thwart_quiz_estimate

Darstellung:

Schieberegler

0 bis 1000

Textintro:

Ausfüllhinweis:

Beziehen Sie sich auf die Anzahl der Mitglieder im gegenwärtigen 19. Deutschen Bundestag.

Fragetext:

Der Deutsche Bundestag ist ein wichtiges gesetzgebendes Gremium.

3.7 Supplement

Wie viele Abgeordnete entscheiden im gegenwärtigen Bundestag über unsere Gesetze? Wenn Sie die Anzahl der Bundestagsmitglieder nicht kennen, geben Sie Ihre beste Schätzung ab.

Themenk: Experiment	Item: Feedback Stimuli + Efficacy [need-supportive, Comp+]
----------------------------	---

Vermutete Dauer: 20 Sekunden

Filter:

Respondents need-for-competence-supportive condition

Varnames:

comp_sup_quiz_efficacy

Ursprung:

GLÉS / Gesis-Kurzskalen / Eigen

Darstellung:

Matrix

Textintro:

Fragetext:

Ihr persönliches Quizresultat: Überdurchschnittliches Wissen über Politik.

Unser Algorithmus hat Ihre Antworten mit den bisherigen Antworten anderer Teilnehmer verglichen. *Herzlichen Glückwunsch!* Offenbar kennen Sie sich mit Politik besser aus als andere Befragte. Toll.

In den bisher gesammelten Wissensquiz-Daten schneiden Sie besser ab als 72% der bisherigen Befragten. Politik gehört offenbar zu Ihren Stärken.

Soweit die Daten. Wir wollen aber wissen, was Sie selbst über sich denken!

Bitte geben Sie an, inwieweit folgende Aussagen auf Sie zutreffen.

- Wichtige politische Fragen kann ich gut verstehen und einschätzen.
[reverse, comp_sup_quiz_efficacy1]
- Über politische Angelegenheiten bin ich in der Regel umfassend informiert.
[comp_sup_quiz_efficacy2]

Codierung:

3 The Pleasure Principle: Why (Some) People Develop a Taste for Politics

- (1) trifft überhaupt nicht auf mich zu
- (2) trifft eher nicht auf mich zu
- (3) teils/teils
- (4) trifft eher auf mich zu
- (5) trifft voll und ganz auf mich zu

Themenk: Experiment	Item: Feedback Stimuli + Efficacy [need-thwarting, Comp-]
----------------------------	--

Vermutete Dauer: 20 Sekunden

Varnames:

comp_thwart_quiz_efficacy

Filter:

Respondents need-for-competence-thwarting condition

Darstellung:

Matrix

Textintro:

Ursprung:

GLES / Gesis-Kurzskalen / Eigen

Fragetext:

Ihr persönliches Quizresultat: Unterdurchschnittliches Wissen über Politik.

Unser Algorithmus hat ihre Antworten mit den bisherigen Antworten anderer Teilnehmer verglichen. Leider hat sich dabei ergeben, *dass Sie deutlich weniger über Politik wissen als andere Befragungsteilnehmer.*

Mit Blick auf die bisher gesammelten Daten schneiden Sie im politischen Wissensquiz schlechter ab als 72% der bisherigen Befragten. Politik gehört offenbar nicht zu Ihren Stärken.

Soweit die Daten. Wir wollen aber wissen, was Sie selbst über sich denken!

Bitte geben Sie an, inwieweit folgende Aussagen auf Sie zutreffen.

- Wichtige politische Fragen kann ich gut verstehen und einschätzen.
[comp_thwart_quiz_efficacy1]
- Über politische Angelegenheiten bin ich in der Regel umfassend informiert .
[comp_thwart_quiz_efficacy2]

Codierung:

3.7 Supplement

- (1) trifft überhaupt nicht auf mich zu
- (2) trifft eher nicht auf mich zu
- (3) teils/teils
- (4) trifft eher auf mich zu
- (5) trifft voll und ganz auf mich zu

Themenk: Experiment	Item: IntrMot Stimulus [need-supportive, Aut+]
----------------------------	---

Vermutete Dauer: 30 Sekunden

Filter:

Varnames:

Darstellung:

Multiple Choice

Textintro:

Viele Menschen berichten, dass die Auseinandersetzung mit Politik mitunter Freude und Befriedigung bereitet. Hier sehen Sie einige Gründe, aus denen Menschen sich gerne mit Politik befassen.

Bitte überlegen Sie, ob auch Sie schon einmal Spaß oder Interesse an der Auseinandersetzung mit Politik hatten.

Markieren Sie alle Aussagen, denen Sie zustimmen können.

- Es bereitet Freude, über Politik zu lernen und zu verstehen, wie die Dinge zusammenhängen.
[aut_sup_agree1]
- Das Spektakel in der Politik zu verfolgen ist oft unterhaltsam, denn letztlich ist Politik wie ein großer Zirkus.
[aut_sup_agree2]
- Politik ist interessant, weil von politischen Entscheidungen so viel abhängt.
[aut_sup_agree3]

Themenk: Experiment	Item: Stimulus + DV: Neigung zu politischem Medienkonsum
----------------------------	---

Vermutete Dauer: 20 Sekunden

Filter:

Varnames:

exp_aut_cont_sup_choice_video, exp_aut_thwart_choice_video

Darstellung:

Einfachauswahl untereinander

Textintro:

Fragetext:

3 The Pleasure Principle: Why (Some) People Develop a Taste for Politics

Zufallsauswahl eines Frames: [Kontrollgruppe / Treatmentgruppe 1 / Treatmentgruppe 2 / Treatmentgruppe 3]

Antwortoptionen:

- (A) YouTube-Video: Lustiger alter Mann
- (B) WDR-Mitschnitt: Populäre Abendsendung
- (C) Politisches Video: Sozialgesetzgebung
- (D) Politisches Video: Appell für mehr Gerechtigkeit

Kontrollgruppe + Wir möchten verstehen, wie Menschen im Internet Videos konsumieren. Daher werden wir Ihnen

Need-supportive: auf der nächsten Fragebogenseite ein Video zeigen. Es ist wichtig, dass Sie dafür bitte **jetzt** den Ton ihres Computers anschalten.

Wir haben mehrere Videos vorbereitet, aus denen die Teilnehmer dieser Befragung auswählen können. **Entscheiden Sie sich, welchen Film Sie sehen möchten.** Dieses Video wird dann auf der nächsten Seite des Fragebogens abgespielt.

Need-thwarting: **No Choice**

Wir möchten verstehen, wie Menschen im Internet Videos konsumieren. Daher werden wir Ihnen auf der nächsten Fragebogenseite ein Video zeigen. Es ist wichtig, dass Sie dafür bitte *jetzt den Ton ihres Computers anschalten*.

Für diese Studie haben wir vier Videos vorbereitet, aus denen Studienteilnehmer auswählen dürfen.
Einige Teilnehmern dürfen aus allen Videos wählen, andere Teilnehmer müssen eines der politischen Videos sehen.

Ein Zufallsgenerator hat bestimmt, dass Sie zur Gruppe gehören, die ein politischen Video wählen muss.

Auch wenn alle Auswahloptionen eingeblendet sind, müssen sie aus Studienzwecken ein "Politisches Video" auswählen und ansehen. Unsere Software erfasst, ob Sie einen Film aus der Gruppe „Politische Videos“ wählen.

Entscheiden Sie sich, welches Video sie sehen möchten. Dieses Video wird dann auf der nächsten Seite des Fragebogens abgespielt.

Topic: meta data, dependent variable Item: Experimental stimulus
--

Vermutete Dauer: 60 Sekunden

Filter:

Darstellung:

Einfachauswahl untereinander

Textintro:

3.7 Supplement

Fragetext:

Bitte schalten Sie den Ton an. Starten Sie dann das Video und schauen Sie es, so lange Sie wollen.

Einbetten: <https://www.youtube.com/watch?v=mQHHb0l105Y>

Zu speichernde Variable: Dauer des Verbleibs auf dieser Seite

Topic: meta data, dependent variable, behavioral measure	Item: intrinsic motivation, free choice activity
---	---

Vermutete Dauer: 10 Sekunden

Filter:

Varnames:

exp_intr_behavioral

Comment:

Presentation: Radio-Button

Fragetext:

Haben Sie Lust, am Ende dieser Befragung noch ein weiteres Video dieser Art zu sehen, oder wollen Sie lieber die Befragung schnell beenden? Sie erhalten keine zusätzlichen Vergütung, können aber ein weiteres Video dieser Art anschauen, falls Sie Lust dazu haben.

- Ja, ich möchte später freiwillig noch ein ähnliches Video sehen.
- Nein, ich möchte kein solches Video mehr sehen.

Topic: cognitive processing, dependent variable	Item: Depth of processing
--	----------------------------------

Vermutete Dauer: 60 Sekunden

Varnames:

exp_quality_obj_pos, exp_quality_obj_con

Kommentar:

Darstellung: three small text boxes

Fragetext:

Wir möchten erfahren, wie Sie die Ausführungen des Herrn im Video zu Lohnnebenkosten einschätzen.

Erklären Sie kurz in einem oder in wenigen Stichworten.

- Laut Video, wie wirkt eine Senkung der Lohnnebenkosten aus Sicht des Arbeitnehmers?
[exp_quality_obj1]

3 The Pleasure Principle: Why (Some) People Develop a Taste for Politics

- Laut Video, was sind Lohnnebenkosten aus Sicht des Arbeitgebers?
[exp_quality_obj2]
- Laut Video, wer muss die Deckungslücke in den Sozialausgaben nach einer Lohnnebenkostensenkung bezahlen?
[exp_quality_obj3]

Topic: dependent variable, self-report	Item: task-related intrinsic motivation & manipul. check (perception of choice)
---	--

Vermutete Dauer: 60 Sekunden

Filter:

Varnames:

Comment: adopted from ([Deci et al., 1994](#))

Presentation: Matrix

Fragetext:

Wir haben noch einige Frage zu dem Video, das sie gesehen haben. Bitte geben Sie an, inwieweit folgende Aussagen auf Sie zutreffen.

- (A) Ich hatte wirklich Lust, das Video anzusehen.
[Intrinsic Motivation; exp_intr_subj1]
- (B) Ich habe das Video aufmerksam angeschaut.
[DV: Quality of Engagement exp_qual_subj1]
- (C) Mir fallen viele gute Gründe ein, warum man sich mit Politik Freude interessant kann. [sic]
[Manipulation Check: autonomy-supportive group; exp_aut_manip_autsup]
- (D) Ich würde das Video als sehr interessant beschreiben.
[Intrinsic Motivation; exp_intr_subj1]
- (E) Ich habe mich unter Druck gesetzt gefühlt, das Video anzuschauen.
[Manipulation Check: no choice group; exp_aut_manip_nochoice]
- (F) Ich war froh, als das Video zu Ende war.
[Reverse Coded, Intrinsic Motivation; exp_intr_subj3]
- (G) Durch das Video konnte ich etwas Interessantes lernen.
[Intrinsic Motivation; exp_intr_subj4]
- (H) Den Inhalt des Videos habe ich nur oberflächlich wahrgenommen.
[Reverse Coded, DV: Quality of Engagement; exp_qual_subj2]

Coding:

- (1) trifft überhaupt nicht auf mich zu
- (2) trifft eher nicht auf mich zu
- (3) teils/teils
- (4) trifft eher auf mich zu
- (5) trifft voll und ganz auf mich zu

Topic: Debriefing	Item:
-------------------	-------

Vermutete Dauer: 30 Sekunden

Filter:

Kommentar:

Darstellung: Text

Fragetext:

Wichtige Information: Aufklärung über Experiment in der Befragung

Danke für Ihre Teilnahme! Sie haben soeben an einer sozialwissenschaftlichen Befragung teilgenommen. Teil dieser Befragung waren zwei Experimente:

Erstens wurde zufällig ausgelost, welche Begleitinformationen Sie zum Video angezeigt bekamen, das Sie während der Befragung gesehen haben. Mit diesem Experiment möchten wir untersuchen, wie diese situativen Unterschiede die Neigung beeinflussen, sich mit Politik auseinanderzusetzen.

Zweitens wurden der Inhalt des Wissensquiz und das folgende Feedback zufällig gestaltet **Das Feedback zum Quiz war unabhängig von Ihren tatsächlichen Antworten und reflektiert nicht zwangsläufig das tatsächliche Niveau Ihres Wissens über Politik!** Mit diesem Experiment möchten wir untersuchen, wie persönliche Selbstwahrnehmung politisches Verhalten beeinflusst.

Bitte haben Sie Verständnis, dass wir aus praktischen Gründen unabhängig von Ihren Angaben kein zweites Video zeigen können. Diese Frage diente lediglich zur Messung ihrer Bereitschaft, ähnliche Medieninhalte zu konsumieren.

Bei Fragen können Sie sich gerne an den Studienverantwortlichen wenden: [email adress]

3 The Pleasure Principle: Why (Some) People Develop a Taste for Politics

3.7.1.2 English Questionnaire (translation)

Themenk: welcome and data privacy	Intro
--	--------------

Duration: 20 seconds[conservative, because mostly skipped]

Scientific Study

The following survey is part of a **scientific study** at the **University of Mannheim** on media and political behavior in modern democracies. **Your answers are the basis for our research.** The more careful and attentive you participate, the more reliable will the won research results be.

Unmute

In the course of the survey, you will have the opportunity to watch a video. Please watch it carefully. Therefore, turn on the **volume of your computer** now. **It is important that you are able to watch and listen to the video.**

Protection of Data Privacy

In the course of technical processing of the survey (e.g. while answering the survey) on technical reasons also personal data (e.g. IP-address) will be compiled. In the course of this survey, additionally, a YouTube video will be showed. When you play the video and agree with the corresponding data privacy terms, also personal data of technical character (e.g. IP-address) could be saved. The scientific evaluation of your answers on this survey will be carried out exclusively **anonymous**.

You will receive more information on the study at the end of the questionnaire.

Themenk: Sozio-demographics	Item: Sex
------------------------------------	------------------

Duration: 10 seconds

Filter:

Varnames:

Sex

Presentation:

Source:

GLES

Text introduction:

Please specify your sex.

3.7 Supplement

- male

-female

Themenk: Sozio-demographics	Item: Age
------------------------------------	------------------

Duration: 10 seconds

Filter:

Varnames:

Age

Presentation:

must answer; single response list (vertical); plausibility check: Please note that an answer to this question is mandatory for continuing the survey. If you have acquired your school leaving certificate outside of Germany, please state the respective German certificate.

source:

GLÉS

Text introduction:

Please indicate your age.

- 18-29

- 30-39

- 40-49

- 50-59

- 60 and older

Themenk: Sozio-demographics	Item: Graduation
------------------------------------	-------------------------

Filter:

Presentation

must answer; single response list (vertical); plausibility check: Please note that an answer to this question is mandatory for continuing the survey. If you have acquired your school leaving certificate outside of Germany, please state the respective German certificate.

3 The Pleasure Principle: Why (Some) People Develop a Taste for Politics

Source:

GLES

Varnames:

edu

Question text:

What's your highest level of general education?

- Finished school without school leaving certificate
- Lowest formal qualification of Germany's tripartite secondary school system, after 8 or 9 years of schooling ("Hauptschulabschluss, Volksschulabschluss")
- Intermediary secondary qualification, after 10 years of schooling ("Mittlere Reife, Realschulabschluss, or Polytechnische Oberschule mit Abschluss 10. Klasse")
- Certificate fulfilling entrance requirements to study at a polytechnical college ("Fachhochschulreife (Abschluss einer Fachoberschule etc.)")
- Higher qualification, entitling holders to study at a university ("Abitur or Erweiterte Oberschule mit Abschluss 12. Klasse (Hochschulreife)")
- still at school

Code:

- (1) Finished school without school leaving certificate
- (2) Lowest formal qualification of Germany's tripartite secondary school system, after 8 or 9 years of schooling ("Hauptschulabschluss, Volksschulabschluss")
- (3) Intermediary secondary qualification, after 10 years of schooling ("Mittlere Reife, Realschulabschluss or Polytechnische Oberschule mit Abschluss 10. Klasse")
- (4) Certificate fulfilling entrance requirements to study at a polytechnical college/university of applied sciences ("Fachhochschulreife (Abschluss einer Fachoberschule etc.)")
- (5) Higher qualification, entitling holders to study at a university ("Abitur or Erweiterte Oberschule mit Abschluss 12. Klasse (Hochschulreife)")
- (9) Still at school

➔ **Check for Quota and Filtering**

3.7 Supplement

Themenk: explaining variable

Item: political motivation 1

Duration: 30 seconds

Filter:

Varnames:

pre_mot_*

Presentation:

Standard-Matrix

Text introduction:

People could participate differently politically or deal with politics. They could, for example, argue about politics, work in a citizens' initiative, listen to, watch or read political news, or participate in a demonstration.

Please report in how far the following statements apply, or not apply to you personally.

When I engage in politics, I do that, because...

- I find it interesting to follow what happens in the politics
[intrinsisch, pre_mot_intrinsic1]
- I put myself under pressure to be politically up to date
[introjeziert, pre_mot_introjected1]
- other people tell me to do that
[external, pre_mot_external1]
- I identify myself as a political person
[identifiziert, pre_mot_identified1]
- I am proud, when I understand something in politics
[introjeziert, pre_mot_introjected2]
- Politics is a for me
[identifiziert, pre_mot_identified2]
- To make sure, this survey is filled out by a human, please click here on 'neither apply nor does not apply'
[attentioncheck]

Code:

- (1) does not apply at all to me
- (2) does not apply to me
- (3) neither applies nor does not apply
- (4) applies to me
- (5) strongly applies to me

➔ **Screenout if attention check was failed**

3 The Pleasure Principle: Why (Some) People Develop a Taste for Politics

Themenk: attitudes towards democracy in general Item: political interest in general

Source:

GLES

Presentation:

Radio box

Varnames:

polint

Question text:

How strongly are you interested in politics in general?

- Very strongly
- Strongly
- Moderately
- Less strongly
- Not at all

Code:

(1) very strongly

(2) strongly

(3) moderately

(4) less strongly

(5) not at all

Themenk: explaining variable

Item: political motivation 2

Duration: 30 seconds

Filter:

Varnames:

pre_mot_intrinsic

Presentation:

Standard-Matrix

Text introduction:

Here you again see various reasons people engage in politics.

3.7 Supplement

Please report in how far the following statements apply, or not apply to you personally.

Question text:

When I engage in politics, I do that, because...

- it fits my principals, to engage in politics.
[identifiziert, pre_mot_identified3]
- people are respected when they know lots about politics.
[external, pre_mot_external2]
- I find politics interesting.
[intrinsisch, pre_mot_intrinsic2]
- I can avoid criticism by friends and family this way.
[external, pre_mot_external3]
- One should stay informed about politics, even if one is not interested in it at the moment.
[introjeziert, pre_mot_introjected3]
- I feel joy, engaging in politics.
[intrinsisch, pre_mot_intrinsic3]

Code:

- (1) does not apply at all to me
- (2) does not apply to me
- (3) neither applies nor does not apply
- (4) applies to me
- (5) strongly applies to me

Themenk: attitudes towards democracy in general Item: Norms of citizenship
--

Source: ISSP 2016

Presentation:

Radio box

Question text:

There are different views on what makes a good citizen. What do you think: In how far are the following things important to be a good citizen?

That someone...

- always votes.
- never tries, to make fiscal fraud.
- Always obeys laws and regulations.
- Pays attention to what the government does.
- Participates actively n social or political associations.
- Tries to understand the opinion of people with different opinions.

3 The Pleasure Principle: Why (Some) People Develop a Taste for Politics

- Decides for products because of political, ethical or environmental reasons, even if they are a bit more expensive.

Skale

1 not important at all

2

3

4

5

6

7 very important

Themenk: explaining variable	Item: political motivation 3
-------------------------------------	-------------------------------------

Duration: 30 seconds

Filter:

Varnames:

pre_mot_intrinsic

Presentation:

Standard-Matrix

Text introduction:

For a last time, you see here reasons why people engage in politics.

Please report in how far following statements apply, or not apply to you personally.

Question text:

When I engage politically, I do it because....

- I find politics thrilling.
[intrinsisch, pre_mot_intrinsic4]
- I would be ashamed if I was not informed about politics.
[introjeziert, pre_mot_introjected4]
- Politics belongs to my personality.
[identifiziert, pre_mot_identified4]
- Otherwise, other people would look down on me.
[external, pre_mot_external4]
- I want to proof to myself, that I engage also in things like politics.

3.7 Supplement

- [introjeziert, pre_mot_introjected5]
- Politics is simply important to me.
[identifiziert, pre_mot_identified5]
- I got the impression, that people expect that from me.
[external, pre_mot_external5]

Code:

- (1) does not apply at all to me
- (2) does not apply to me
- (3) neither applies nor does not apply
- (4) applies to me
- (5) strongly applies to me

Themenk: experiment	Item: Political knowledge quiz 1 [need-supportive, Comp+]
----------------------------	--

Duration: 30 seconds

Filter:

Respondents need-for-competence-supportive condition

Varnames:

comp_sup_quiz_politician

Presentation:

Text introduction:

Question text:

We would like to know whether you know more or less about politics than other people. A short quiz. Please mark all politicians who are a member of the SPD.

Pictures in need-for-competence-supportive condition:

[famous SPD politicians]

Themenk: experiment	Item: Political knowledge quiz 1 [need-supportive, Comp-]
----------------------------	--

Duration: 30 seconds

3 The Pleasure Principle: Why (Some) People Develop a Taste for Politics

Filter:

Respondents need-for-competence-thwarting condition

Varnames:

comp_thwart_quiz_politician

Presentation:**Text introduction:****Question text:**

We would like to know whether you know more or less about politics than other people. A short quiz. Please mark all politicians that are a member of the SPD.

Pictures in need-for-competence-thwarting condition:

[not very famous SPD politicians]

Themenk: experiment	Item: Political knowledge quiz 2 [need-supportive, Comp+]
----------------------------	--

Duration: 10 seconds

Filter:

Respondents need-for-competence-supportive condition

Varnames:

comp_sup_quiz_estimate

Presentation:

Slider

Text introduction:**Source:**

GLES

3.7 Supplement

Hint:

If you do not know, please give your best estimate.

Question text:

In elections for the Bundestag there is a threshold parties have to pass in order to enter the Bundestag. Do you know what percentage of the second votes a party needs to get in order to enter the Bundestag?

Themenk: experiment	Item: Political knowledge quiz 2 [need-thwarting, Comp-]
----------------------------	---

Duration: 10 seconds

Filter:

Respondents need-for-competence-thwarting condition

Varnames:

comp_thwart_quiz_estimate

Presentation:

Slider

0 through 1000

Text introduction:**Hint:**

Refer to the number of members in the current 19th German Bundestag.

Question text:

The Bundestag is an important legislative committee.

How many deputies in the current Bundestag make laws? If you don't know, please give your best estimate.

Themenk: experiment	Item: Feedback Stimuli + Efficacy [need-supportive, Comp+]
----------------------------	---

Duration: 20 seconds

Filter:

Respondents need-for-competence-supportive condition

Varnames:

comp_sup_quiz_efficacy

Source:

3 The Pleasure Principle: Why (Some) People Develop a Taste for Politics

GLES / Gesis-Kurzskalen / Eigen

Presentation:

Matrix

Text introduction:

Question text:

Your personal quiz result: knowledge about politics above average.

Our algorithm has compared your responses to the responses of other participants.

Congratulations! Apparently, you know more about politics than other respondents. Great.

Considering all the data we have collected so far, you fare better on the political knowledge quiz than 72% of participants.

Obviously, politics is one of your strengths.

But this is only what our data says. We want to know what you think about yourself!

In your own perception, how well do the following statements apply to you?

- I can understand and evaluate political issues easily.
[reverse, comp_sup_quiz_efficacy1]

- I am usually well informed about political affairs.
[comp_sup_quiz_efficacy2]

Scale:

- (1) does not apply at all to me
- (2) does not apply to me
- (3) neither applies nor does not apply
- (4) applies to me
- (5) strongly applies to me

Themenk: experiment	Item: Feedback Stimuli + Efficacy [need-thwarting, Comp-]
----------------------------	--

Duration: 20 seconds

Varnames:

comp_thwart_quiz_efficacy

3.7 Supplement

Filter:

Respondents need-for-competence-thwarting condition

Presentation:

Matrix

Text introduction:

Source:

GLÉS / Gesis-Short scales

Question text:

Your personal quiz result: knowledge about politics below average.

Our algorithm has compared your responses to the responses of other participants.

Unfortunately, it shows that you know *far less about politics than other respondents.*

Considering all data we have collected so far, you fare worse on the political knowledge quiz than 72% of participants.

Obviously, politics is not one of your strengths.

Yet, this is only what our data says. We want to know what you think about yourself!

In your own perception, how well do the following statements apply to you?

- I can understand and evaluate political issues easily.
[reverse, comp_sup_quiz_efficacy1]
- I am usually well informed about political affairs.
[comp_sup_quiz_efficacy2]

Scale:

- (1) does not apply at all to me
- (2) does not apply to me
- (3) neither applies nor does not apply
- (4) applies to me
- (5) strongly applies to me

3 The Pleasure Principle: Why (Some) People Develop a Taste for Politics

Duration: 30 seconds

Filter:

Varnames:

Presentation:

Multiple Choice

Text introduction:

Many people report that engagement with politics can provide joy and satisfaction. Here you see various reasons why some people like engaging with politics.

Please consider whether you have also found joy in political engagement before. Tick all statements that apply to you.

- It provides pleasure to learn about politics and to understand how things go together.
[aut_sup_agree1]
- Following the spectacle in politics is often entertaining because, in the end, politics is like a grand circus.
[aut_sup_agree2]
- Being informed about politics is satisfying because so much depends on political decisions.
[aut_sup_agree3]

Themenk: experiment

Item: Stimulus + DV: Neigung zu politischem Medienkonsum

Duration 20 seconds

Filter:

Varnames:

exp_aut_cont_sup_choice_video, exp_aut_thwart_choice_video

Presentation:

Radio box

Text introduction:

Question text:

Random selection of a frame: [control group / treatment group 1 / treatment group 2 / treatment group 3]

Question choices:

- (A) YouTube-video: funny old man
- (B) WDR-recording: popular evening show
- (C) Political video: social legislation
- (D) Political video: call for more social justice

3.7 Supplement

Control group +

Need-supportive:

We would like to understand how people consume video content on the internet. Accordingly, we will present you a video on the next page of this questionnaire. Therefore, it is important that you **now** turn on your volume of your computer.

We have prepared multiple videos from which participants of this survey can choose. **Please decide, which movie you would like to watch.** This video will then be presented on the next page of the questionnaire.

Need-thwarting:

No Choice

We would like to understand how people consume video content on the internet. Accordingly, we will present you with a video on the next page of this questionnaire. Therefore, it is important that *you now turn on the volume of your computer.*

We have prepared four videos from which participants of this survey can choose. Some participants can freely choose, other participants have to watch one of the political videos.

A random generator has determined that you are part of the group of respondents that has to choose a political video.

For research purposes, you have to select a movie with political content and watch it even though there are other options. Our software records, whether you select a movie from the group "political videos".

Please decide, which video you want to watch. This video will then be presented to you on the next page of this questionnaire.

Topic: meta data, dependent variable Item: Experimental stimulus
--

Duration: 60 seconds

Filter:

Presentation:

Radio box

Text introduction:

Question text:

Please turn on the volume and watch this video as long as you want.

Embedding: <https://www.youtube.com/watch?v=mQHHb0l105Y>

3 The Pleasure Principle: Why (Some) People Develop a Taste for Politics

Variable to save: time on this site

Topic: meta data, dependent variable, behavioral measure	Item: intrinsic motivation, free choice activity
---	---

Duration: 10 seconds

Filter:

Varnames:

exp_intr_behavioral

Comment:

Presentation: Radio-Button

Question text:

Would you like to watch another video of this kind at the end of this survey or would you prefer to quickly finish this survey? You will not be granted any extra compensation but you can watch another video of this kind if you want to.

- Yes, voluntarily I would like to watch another video of this kind later.
- No, I do not want to watch more videos of this kind.

Topic: cognitive processing, dependent variable	Item: Depth of processing
--	----------------------------------

Duration: 60 seconds

Varnames:

exp_quality_obj_pos, exp_quality_obj_con

Comment:

Presentation: three small text boxes

Question text:

We would like to know, how you evaluate the remarks of the man in the video on incidental wage costs.

Explain shortly in one or a few bullet points.

- Concerning to the video, how seems a reduction of the incidental wage costs for employees?
[exp_quality_obj1]
- Concerning to the video, what are incidental wage costs in the view of the employer?
[exp_quality_obj2]
- Concerning to the video, who has to pay for the funding gap in the social spending after a reduction in incidental wage costs?
[exp_quality_obj3]

3.7 Supplement

Topic: dependent variable, self-report	Item: task-related intrinsic motivation & manipul. check (perception of choice)
---	--

Duration: 60 Sekunden

Filter:

Varnames:

Comment: adopted from ([Deci et al., 1994](#))

Presentation: Matrix

Question text:

We have some questions on the video you have watched. Please state how well the following statements apply to you.

- (A) I really wanted to watch this video.
[Intrinsic Motivation; exp_intr_subj1]
- (B) I watched the video attentively.
[DV: Quality of Engagement exp_qual_subj1]
- (C) I can think of many good reasons why one should engage in politics.
[Manipulation Check: autonomy-supportive group; exp_aut_manip_autsup]
- (D) I would describe the video as very interesting
[Intrinsic Motivation; exp_intr_subj1]
- (E) I felt under pressure to watch the video.
[Manipulation Check: no choice group; exp_aut_manip_nochoice]
- (F) I was glad when the video was over.
[Reverse Coded, Intrinsic Motivation; exp_intr_subj3]
- (G) The video helped me to learn interesting things.
[Intrinsic Motivation; exp_intr_subj4]
- (H) I only processed the content of the video superficially.
[Reverse Coded, DV: Quality of Engagement; exp_qual_subj2]

Scale:

- (1) does not apply at all to me
- (2) does not apply to me
- (3) neither applies nor does not apply
- (4) applies to me
- (5) strongly applies to me

Topic: Debriefing	Item:
--------------------------	--------------

Duration: 30 Sekunden

Filter:

Comment:

3 The Pleasure Principle: Why (Some) People Develop a Taste for Politics

Presentation: Text

Question text:

Important Information: Declaration about Experiment in Survey

Thank you for your participation. You have participated in a social-scientific survey. Two experiments were part of this survey:

First, it was randomly allocated who received which accompanying information on the video that you have watched during the survey. With this experiment, we want to investigate how situational differences influence the proclivity to engage with politics.

Second, the content and the feedback to the political knowledge quiz was randomly generated. **The feedback to the quiz was independent of your actual responses and does not necessarily reflect your actual level of knowledge about politics.** With this experiment, we investigate how self-image affects political behavior.

Please understand that, independently of your specifications, we cannot show you a second video due to practical reasons. This question was merely employed to measure your willingness to consume similar media content.

If you have any question, please feel free to contact the principal investigator: [email address]

3.7.2 Supplement 2: Coding Instructions

The objective measure of behavioral quality relies on an open-ended question gauging whether respondents can accurately respond to the question about the video content. Manual coding was employed to categorize whether a response was accurate or not. Because the survey responses are German, the coding instructions below which were given to the coder are also in German.

Codierungsanweisungen: Offene Fragen zu Lohnnebenkosten

Originalvideo:

<https://www.youtube.com/watch?v=mQHHb0l105Y>

Frage 1: Laut Video, wie wirkt eine Lohnnebenkostensenkung aus Sicht des Arbeitnehmers?

„Eine Senkung der Lohnnebenkosten ist eine Lohnsenkung. Sonst gar nichts. [...] Freuen Sie sich nie wieder über eine Senkung der Lohnnebenkosten. Es ist eine Lohnsenkung. Sie zahlen hinterher drauf.“ (sek 52)

Auch zulässige Antworten

kostenerhöhend, nicht sehr positiv, nicht optimal, Höhere Ausgaben, weniger Gehalt, Unfair, Blöd, Schlecht, er muss mehr bezahlen, hat weniger Geld

Nicht zulässig

gut für den Arbeitgeber, Kostensenkend für AG, Minderung der Lohnkosten, Teil des Lohns, Lohn

Frage 2: Laut Video, was sind Lohnnebenkosten aus Sicht des Arbeitgebers?

„Für einen Arbeitgeber sind Lohnnebenkosten einfach ein Teil des Lohns. Welcher Teil des Lohns gesenkt wird ist dem Arbeitgeber ziemlich egal. Hauptsache ist, der muss weniger Geld bezahlen, damit Sie für ihn arbeiten.“ (sek 12)

Auch zulässige Antworten

Eine Zahlung die weh tut, Betriebskosten, Kosten, Kosten für Sozialversicherungsverträge, nervig,

Nicht zulässig

Steuern

Frage 3: Laut Video, wer muss die Deckungslücke in den Sozialausgaben nach einer Lohnnebenkostensenkung bezahlen?

„Jetzt raten Sie mal wer das ist [der die Lücke bezahlt]. Kleiner Tipp: Es ist nicht Ihr Arbeitgeber. [...] Sie zahlen hinterher drauf“ (sek 52).

Auch zulässige Antworten

Ich, nicht der Arbeitgeber, Steuerzahler

Nicht zulässig

der Staat

Notiz

Bis zu Nr. „1703“ (lfdn 13) gab es einen Codierungsfehler in Frage 1. Statt , Laut Video, wie wirkt eine Lohnnebenkostensenkung aus Sicht des Arbeitnehmers?’ hieß es , Laut Video, wie wirkt eine Lohnnebenkostensenkung aus Sicht des Arbeitnehmers?’. Alle diese 13 ersten Personen auf dieser Frage 1 mit Missing Value (.) versehen.

Missing Values

-66 wird als Missing Value (.) codiert.

-99 wird als 0 kodiert (keine richtige Angabe).

3.7.3 Supplement 3: Power Analysis

This supplement entails multiple steps to describes the strategy for determining the adequate sample size of the proposed study. In the first step, a review of existing studies provides information on the sizes of experimental effects as reported in previous studies whose treatments share certain features with the treatments of the proposed study. In a second step, sample size calculations are conducted at different levels of detectable effect sizes at a pre-specified level of statistical power. The sample size estimates that were derived from the power analysis are then compared with the estimates collected in the review of existing studies to ensure that the intended sample size enables the detection of treatment effects equal to or smaller than the effect sizes reported in previous studies.

When basing sample size calculations on effect sizes in published literature, one needs to take systematic publication biases in the body of scholarly literature into account.(Camerer et al., 2018) In particular, meta-scientific research shows that effect sizes reported in original social science studies are usually larger than effect sizes obtained in subsequent replication attempts.(Camerer et al., 2018) Moreover, reported effect sizes in published studies are usually lower when the analytical strategy was pre-registered compared to studies without pre-registered analysis protocol.(Allen & Mehler, 2018) Hence, meta-scientific research suggests that effect sizes are even more likely to be inflated in non-pre-registered studies, which is the case for all the studies reviewed below. Considering these uncertainties in extrapolating future effect sizes from previously reported effect sizes, in a third step, this Supplement documents power calculations which report the likelihood that the proposed study can detect effect sizes that are considerably lower than those reported in the existing literature. Hence, this calculation helps to assess the probability of detecting effect sizes that are small but substantially meaningful, irrespective of previously reported effect sizes.

The following sample size calculations employ a conservative approach. For one, the strategy behind the conducted power analysis targets at detecting effect sizes that are smaller than those in the published literature the power analysis. Moreover, the design can also be considered as conservative due to the statistical techniques that are employed. The statistical tests underlying the power analysis are simple tests of means and proportions (e.g. t-test) which yield unbiased estimates but do not make efficient use of the data. In contrast, in line with the pre-registered analysis pipeline the analyses conducted in the proposed study will include pre-treatment covariates in the model according to the Lin method which also yields unbiased but more precise estimates.(Lin, 2013) Hence, the power in the proposed study will be even higher than suggested in the following power analysis.

Overview of effect sizes in previously published studies

3.7.3.1 Hypothesis 1: Need-supportive situational contexts increase intrinsic political motivation

Study by Bowed et al. (need for competence manipulation)

The experimental manipulation of the perceived situational satisfaction of the need for competence that is employed in the proposed study is inspired by a study by Bowed et al. who manipulated rankings in the leaderboard of an online game to induce varying levels of perceived competence and perceived enjoyment. Bowey et al. Specifically, players engaged in various rounds of an online game. After each of these rounds, the

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players were shown their relative success on a visual leaderboard. The participant's position on the leaderboard was randomly assigned, indicating either relative success or failure in the game. The study reports an effect size of $\eta^2=.15$ ($F_{1,135}=23.8$, $p<.001$) on perceived competence, which translates into **Cohen's $d = 0.84$** . The authors report an effect size of $\eta^2=.09$ ($F_{1,135}=11.9$, $p=.001$) on enjoyment (an indicator of intrinsic motivation) which translates into **Cohen's $d = 0.63$** . Hence, for the domain of computer games, the study by Bowed et al. provides effect estimates on two variables: perceived competence and intrinsic motivation. Both of these variables are also measured in the proposed study. In the proposed study, perceived efficacy functions as a manipulation check of the need for competence manipulation. Intrinsic motivation functions as the dependent variable.

It remains uncertain whether the effect sizes will be larger or smaller as a result of the proposed study's different context. On the one hand, one might expect smaller sizes relative to the study by Bowed et al. as the participants in their study might have undergone a more immersive experience (playing several rounds of an online game) compared to the short knowledge quiz conducted in the proposed study. On the other hand, one might expect larger effect sizes than in the Bowed et al. study as the competence-related feedback regarding political knowledge might elicit stronger psychological responses than competence-related feedback on a generic computer game for two reasons. First, knowledge of political matters is widely regarded as socially desirable, therefore potentially triggering a sense of pride or shame. Second, assessing low levels of knowledge on political issues has greater environmental relevance compared to low skills on a generic computer game, thereby potentially having greater implications for the self-image of participants. Altogether, the study by Bowed et al. is one indicator of the effect sizes to expect regarding the need for competence manipulation. Nonetheless, it remains somewhat uncertain how the different study context may affect the effect sizes.

Need for competence and political interest

In the proposed study, the need for competence manipulation consists of two elements: both the difficulty of political knowledge questions and the feedback to political knowledge questions is manipulated. Prior research has established that each of these manipulations is capable of influencing a person's perceived competence and interest in politics. However, prior research has not employed both elements in combination. We may expect that combining both elements yield additive and potentially multiplicative effects on intrinsic motivation.

Bishop 1987(Bishop, 1987) reports three studies, in which participants receive easy or hard political knowledge questions before responding to a political interest question. Bishop reports statistically significant differences in each of the studies at an effect size of **Cohen's $d = 0.39$, Cohen's $d = 0.14$ and Cohen's $d = 0.22$** respectively. Similarly, Lasorsa has shown in two studies(Lasorsa, 2003, 2009) that reported levels of political interest are markedly higher when preceded by fairly difficult political knowledge questions compared to no preceding political knowledge questions. In the first study,(Lasorsa, 2003) 206 out of 295 respondents (70%) reported high levels of political interest in the control condition whereas only 136 of 272 respondents (50%) reported high levels of political interest when the interest question was proceeded by fairly difficult political knowledge questions. In a second study, "86.1% of those who did not first encounter the political knowledge questions ($n=353$) reported high political interest, whereas only 74.1% of those who encountered the knowledge questions ($n=320$) reported high interest ($X^2 = 18.96$, $df = 1$, Fisher's Exact Test, $p < .001$)".(Lasorsa, 2009) Altogether, these studies suggest sizable effects on reported levels of political interest when the interest item was preceded by political knowledge questions that many respondents may have experienced as undermining their perceived levels of political competence. Note, however, that the stimuli in the reviewed studies were arguably weaker than the one intended in the proposed study. The Bishop et al. study only employs one of the experimental stimuli (varying difficulty of knowledge questions)

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intended to use in the proposed study. (The Bishop et al. study did not provide manipulated competence feedback). What is more, the studies by Larosorsa did not manipulate competence feedback and only compared an experimental group who either received knowledge questions with a control group who did not receive knowledge questions. In contrast, the proposed study will administer hard vs. easy knowledge questions to both experimental groups, thereby amplifying differences between the experimental groups.

A study by Preece (Preece, 2016) provided manipulated competence feedback without manipulating item difficulty. Because the study does not report standard deviations of the experimental groups, it is not possible to estimate standardized effect sizes. However, it is apparent that the effect of manipulated competence feedback ('Great job! You did very well on this difficult quiz. Very few people do well on it.' vs no feedback) on political interest is sizeable. On a 5-point scale, the level of political interest increases from **1.92 to 2.31** (two-side p-value = 0.022). Note that, again, the experimental stimulus in the study by Preece is arguably weaker than in the proposed study. First, in the study by Preece, the praise-receiving group is compared to a control group who received no feedback whereas in the proposed study the second experimental group receives negative feedback, potentially undermining perceived competence. Second, the study by Preece only manipulated competence feedback but did not vary item difficulty in the knowledge quiz. With these caveats in minds, altogether the studies by Preece and Bishop show that the manipulation of what I interpret as one's situational satisfaction of need for competence has sizeable effects on a person's self-reported level of political interest.

Study by Grant/Berry (Need-for-autonomy manipulation, Aut-)

The no-choice condition intended to manipulate situational satisfaction of the need for autonomy is inspired by a study by Grant/Berry (Study 3) who offered participants to choose from two tasks (Grant & Berry, 2011). Whereas participants in both conditions

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of that study, in fact, solved the identical task, participants in the no-choice condition were told that the chosen task was not available anymore and that they would have to solve the less appealing task. Compared to participants who seemingly solved the task of their choice (mirroring the control group in the proposed study), participants in the no-choice condition reported lower levels of intrinsic motivation after they concluded the task. The estimated effect size of the autonomy-thwarting manipulation on intrinsic motivation was **Cohen's $d=0.56$** .

Study by Gillet et al. (Need-for-autonomy manipulation, Aut+)

The autonomy-supportive condition is modeled after examples in previous research which reported detectable effects of rehearsing intrinsic reasons for engagement on various outcomes such as well-being (Amabile; Burton et al., 2006; Gillet et al., 2013). Most closely related to the outcome variable of the proposed study is a study by Gillet et al. who examined the effects of rehearsing intrinsic reasons for solving an anagram task on the levels of intrinsic motivation reported by the participants after engaging in that task (Gillet et al., 2013). Mean levels of autonomous motivation increased from $M=3.38$ in the control condition to $M=4.07$ among respondents who experienced the autonomy-supportive manipulation, corresponding to an effect size of **Cohen's $d=0.50$** .

Meta-analysis on choice and intrinsic motivation (Need-for-autonomy manipulation, Aut-)

Meta-analyzing 41 studies on the role of choice in stimulating intrinsic motivation, Patall et al (Patall et al., 2008) found an average effect size of **Cohen's $d=0.36$** . Using trim-and-fill analyses to account for publication bias, the meta-analysis suggests an overall effect size of **Cohen's $d=0.24$** . However, whereas various of the studies included in the meta-analysis compare conditions in which choices or no choices were present the proposed study emphasizes controlling situational constraints by explicitly pointing participants in the no-choice conditions to the absence of choice, thereby

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potentially increasing the external locus of control and further increasing differences in need satisfaction between participants in the autonomy-undermining condition compared to the autonomy-supporting condition. Hence, while the meta-analysis provides an indication of the relationship between choice and intrinsic motivation there is reason to expect that, mediated by need satisfaction, the provision of choice vs the absence of choice may exert stronger effects on intrinsic motivation in the proposed study compared to the meta-analysis.

3.7.3.2 Hypothesis 2: Need-supportive environment and frequency of political behavior

Various studies compare the proclivity to engage with a specific behavior in need-supportive vs. need-thwarting environments. A meta-analysis by Patall (Patall et al., 2008) on the relationship between autonomy-supportive contexts and the participants' willingness to continue an activity even when it is not required by the experimenter any more exhibits an effect size of **Cohen's $d=0.29$** .

3.7.3.3 Hypothesis 3/Hypothesis 4: Need-supportive context and quality of behavior

The tenet that need-supportive contexts facilitate behavioral performance is well established in the psychological literature albeit not yet applied to the political domain. A recent meta-analysis finds medium-sized effects of autonomy- and competence-supportive experimental manipulations on behavioral performance: "perceived autonomy emerged as a moderate predictor of performance ($k = 46$, $N = 11,937$, $q = .28$), and the absence of zero in the 95 % confidence interval indicates the population relationship between the two is positive (95 % CI = .23–.33). [...] Perceived competence emerged as the strongest need satisfaction predictor of performance ($k = 70$, $N = 20,924$, $q = .37$), and the absence of overlapping confidence intervals with both autonomy and

relatedness needs indicates the effect is significantly larger than both (95 % CI = .34–.40).”(Cerasoli et al., 2016) In the following, we review those studies that resemble the experimental design of the proposed study most closely.

Autonomy-supportive condition and its influence on the quality of behavior (Aut+, H3b)

The autonomy-supportive condition is modeled after examples in previous research which showed detectable effects of rehearsing intrinsic reasons for engagement on various outcomes such as well-being. Amabile; Burton et al., 2006; Gillet et al., 2013 Most closely related to the outcome variable of the proposed study is a study by Kadous/Zhou (Kadous & Zhou, 2019) who prompted participants to rehearse reasons for auditing before the participants conducted said behavior. Kadous/Zhou show that participants engage in deeper information processing when conducting an audit task in the autonomy-supportive condition at effects sizes of **Cohen's d = 0.61** (DV: deep issues) and **Cohen's d = 0.55** (DV: total valid issues). Whereas the experimental stimulus of the proposed study and the study by Kadous/Zhou is similar, it should be noted that differences exist with regards to outcome variable and with regards to the experimental context. However, it is not self-evident whether these differences will impede or reinforce experimental effects.

Meta-analysis on choice and effort (Need-for-autonomy manipulation, Aut-)

Meta-analyzing twelve effect sizes on the role of choice in stimulating effort, Patall et al. (Patall et al., 2008) found an average effect size of **Cohen's d=0.22**. However, whereas various of the studies included in the meta-analysis compare condition in which the participants were given choices vs. were not given choices the proposed study emphasizes the controlling constraints of the situation more strongly by explicitly pointing participants in the no-choice conditions to the absence of choice, thereby potentially increasing the external locus of control and further increasing differences

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in need satisfaction between participants in the autonomy-undermining condition compared to the autonomy-supporting condition. Hence, there is reason to expect that, mediated by need satisfaction, the provision of choice vs the absence of choice may exert stronger effects on effort in the proposed study compared to the meta-analysis.

Study by Grant/Berry (Need-for-autonomy manipulation, Aut-)

The study by Grant/Berry (Grant & Berry, 2011) (Study 3) on creativity yielded an average effect size of autonomy-thwarting contexts (withdrawn vs. granted choice) of **Cohen's $d = 0.41$** on the quality of the behavioral task where quality (creativity) was as measured as the novelty and usefulness of business idea, rated by independent coders.

3.7.3.4 Overview of effect sizes

Table S3-3-1 provides an overview of the reported effect sizes in studies with experimental conditions that share certain features with the experimental stimuli administered in the proposed study. With the exception of the study by Bishop which reported small-sized effects, most of the studies report medium-sized effects. Note that several of the reported effect sizes relate to experimental treatments that are arguably weaker compared to the stimuli in the proposed study because, e.g., these studies only administered one element of the experimental stimuli to the participant whereas the proposed study combines multiple elements to enhance the experimental effects.

Table S3-3-1: Overview of Effect Sizes in Existing Literature

Similar to hypothesis...	Similar to test...	Experimental Manipulation	DV	Study	Effect size (Cohen's d)	Effect size (other metric)	Note
H1	2	Need for Competence	Intrinsic Motivation	Bishop	.39/.22	.14/	Weaker stimulus

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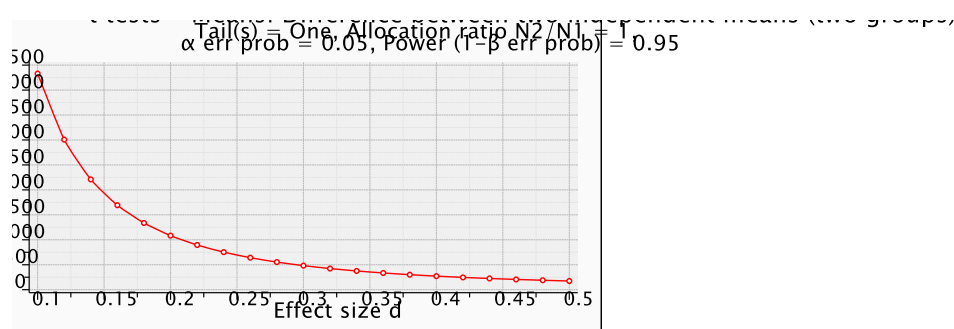
H1	2	Need for Competence	Intrinsic Motivation	Lasorsa		70% vs 50% of exp. group report interest in politics	Weaker stimulus
H1	2	Need for Competence	Intrinsic Motivation	Lasorsa		86% vs 74% of exp. group report interest in politics	Weaker stimulus
H1	2	Need for Competence	Intrinsic Motivation	Preece		1.92 vs 2.31 (p= 0.021) on a 5-point scale	Weaker stimulus
H1	4	Need for Competence	Intrinsic Motivation	Gillet et al.	.50		
H1	4	Need for Autonomy (No Choice)	Intrinsic Motivation	Grant/Berry	.56		
H1	4	Need for Autonomy	Intrinsic Motivation	Patall	.24		Weaker stimulus
H2	6	Need for Autonomy	Frequency of Behavior	Patall	.29		
H3a	7 / 8	Need for Autonomy	Quality of behavior	Cerasoli		k = 70, N = 20,924, q = .37	Meta-analysis
H3b	9 / 10	Need for Competence	Quality of behavior	Cerasoli		k = 46, N = 11,937, q = .28	Meta-analysis
H3b	9	Need for Autonomy (Aut-supportive)	Quality of Behavior	Kadous/Zhou	.61/ .55		
H4	13	Need for Autonomy (No Choice)	Quality of behavior	Patall	.22		DV: effort
H4	13	Need for Autonomy (No Choice)	Quality of behavior	Grant/Berry	.41		

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3.7.3.5 Sample size estimation

Figure S3-3-1 shows the results of a power analysis conducted with G* Power 3.1. Figure S3-3-1 reports for various effect sizes the required sample sizes to detect an effect with a power of .95. Many of the effect sizes reported in previous studies are around or larger than Cohen's $d=0.4$ which would correspond to a required $N=136$ per experimental condition (total $N=272$ with two experimental arms).

Figure S3-3-1: Detectable effect sizes at different sample sizes

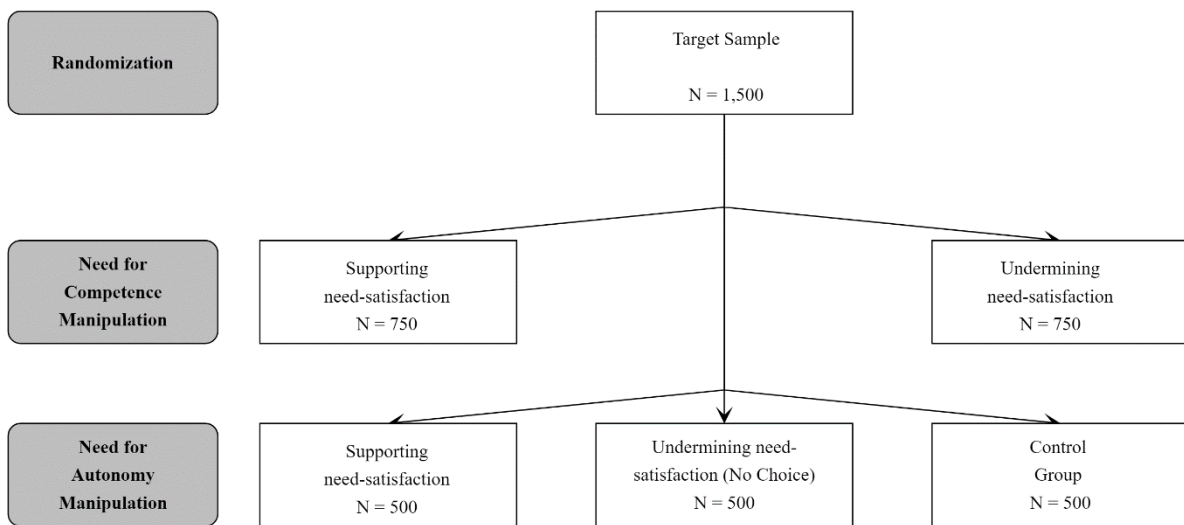


However, because meta-scientific evidence suggests that the effect sizes reported in published studies are usually inflated compared to the true population parameter there is reason to plan with sample sizes that enable to detect effect sizes smaller than those reported in the existing literature. Considering financial and practical constraints, we are able to run the size a sample size of up to 1,500 participants. The following analyses will examine the lowest detectable effect sizes with a sample size of 1,500 participants at power=.95.

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In these analyses, we need to consider that the experimental design of the proposed study consists of a three-arm design in the manipulation of the need for autonomy and of a two-arm design in the manipulation of the need for competence (see consort diagram in Figure S3-3-2).

Figure S3-3-2: Consort diagram showing the distribution of respondents across experimental groups



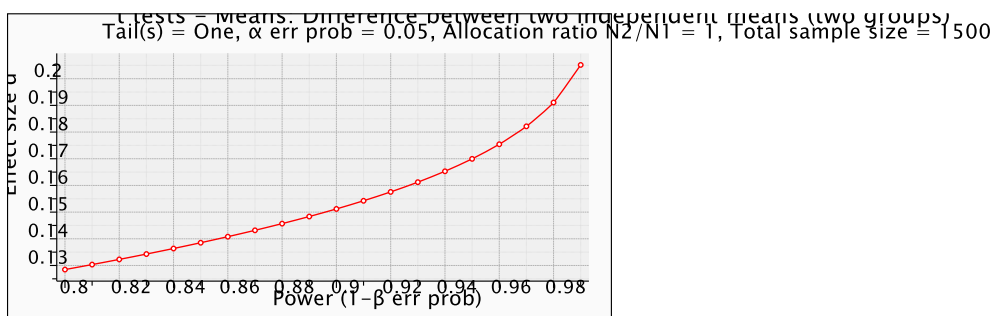
Because the need for autonomy manipulation consists of three experimental conditions, a total sample size of 1,5000 corresponds to a size of N=500 of each experimental group in that experimental stage. Because the need for competence manipulation consists of two experimental conditions, a total sample size of 1,5000 corresponds to a size of N=750 of each experimental group in that experimental stage. The fact that the experimental groups in the need for autonomy manipulation and in the need for competence manipulation have different sample sizes implies that the power to detect experimental effects differs between the need for competence manipulation and the need for autonomy manipulation.

Figures S3-3-3 and S3-3-4 depict power analyses for the need for competence manipulation. Specifically, Figure S3-3-3 and S3-3-4 show which effect sizes will be detectable

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with 750 respondents in each experimental group. Note that one-tailed tests are employed because the proposed study pre-specifies the direction of the expected experimental effects. The power analysis Figure S3-3-3 shows that an effect size as large as **Cohen's $d=0.17$** will be detectable at a power of .95. Hence, with great likelihood, the proposed study will be able to detect experimental effects that are much lower than the effect sizes reported in previously published literature. In the same vein, if the effect sizes will be larger, then the experimental power to detect these effects will be above the .95. For instance, effect sizes as large as **Cohen's $d=0.19$** will be detectable at a power of .98.

Figure S3-3-3: Power to detect a significant difference in means for need-for competence manipulation with 750 respondents in each experimental group

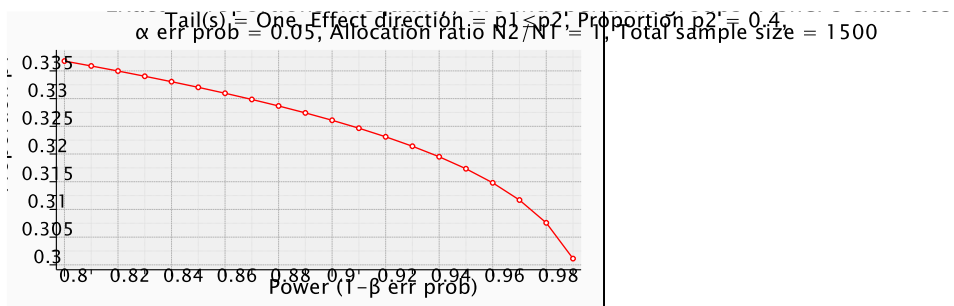


Various tests in the proposed study are conducted on binary dependent variables (see S5: Overview of statistical tests). Therefore, power analyses are required that take the dichotomous scale of the dependent variable into account. For instance, tests 5 and 6 assess whether individuals choose to watch political media vs. ostensibly non-political media content, captured in a binary variable. Hence, Figure S3-3-4 depicts a power analysis to detect differences in proportions. Assuming that a proportion of 40% in one experimental group, the analysis will be able to detect differences between the groups

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at a power of .95 when the proportion in the other treatment group is at 31.7% or lower. Unfortunately, there is no prior literature available with a sufficiently similar research design that could inform about likely effect sizes. However, the power analysis shows that the analysis will be able to detect differences in proportions between experimental groups that are substantially meaningful and reasonably close.

Figure S3-3-4: Power to detect a significant difference in proportions for need-for competence manipulation with 750 respondents in each experimental group



Figures S3-3-5 and S3-3-6 show power analysis for the need for autonomy manipulation in which each experimental group consists of 500 participants. Hence, the detectable effect sizes at a power of .95 slightly larger compared to the need for competence manipulation. For instance, at a power of .95 the analysis will be able to detect mean differences that correspond to effect sizes as large Cohen's $d = .208$. Hence, the detectable effect sizes in the need for autonomy manipulation are still smaller than the effect sizes reported in previous literature, particularly when taking into account that previous studies often administered arguably weaker experimental stimuli. Figure S3-3-6 shows that the analysis will be able to detect differences in proportion when the proportion in one experimental group is at 40%, and the proportion in the other experimental group is at 29.9% or smaller.

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Figure S3-3-5: Power to detect a significant difference in means for need for autonomy manipulation with 500 respondents in each experimental group

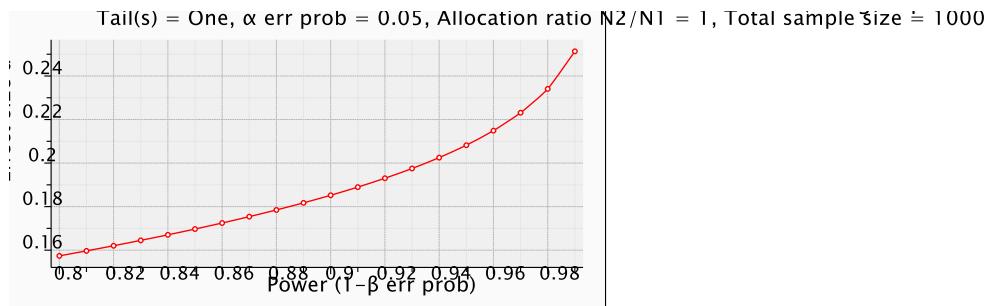
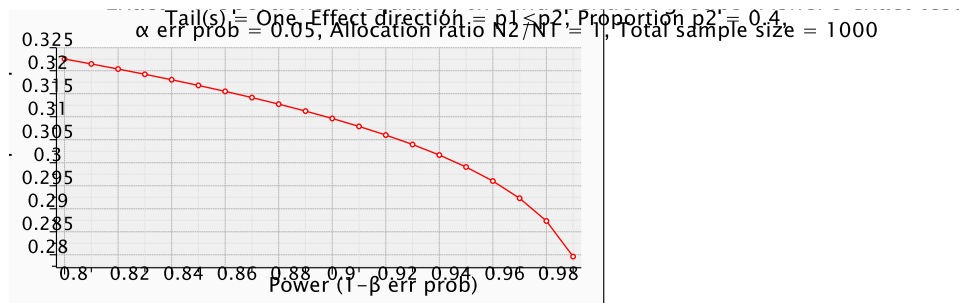


Figure S3-3-6: Power to detect a significant difference in proportions for need for autonomy manipulation with 500 respondents in each experimental group



3.7.4 Supplement 4: Main effect estimation using logit

In the main text, linear regression analysis was used to estimate treatment effects on all types of outcomes variables, regardless of whether the outcome variable was dichotomous or continuous. With experimental designs, linear regression is recommended to estimate treatment effects on both binary outcomes and continuous outcomes (Gomila, 2019). This is the case because, in the context of experimental designs, linear regression analyses do not yield biased estimates even for binary outcomes but retains the advantages of linear regressions (e.g., regarding interpretability) over logistic regressions. However, for the sake of transparency and completeness, this Supplement reports the results of the main analyses of treatment effects using logistic regressions. The Supplement reports results from both results from linear and logistic regressions, using a simplified model with two-sided significance tests that includes the pre-registered list of covariates (omitted in output) without interaction terms or robust standard errors. The test number reported in Table S3-4-1 corresponds to the numbering of all pre-registered tests as outlined in Supplement 5.

Table S3-4-1: Estimates on main treatment effects

Test #	Outcome	Treatment	Linear (b)	Logit (OR)
1	Intrinsic Motivation: Behavioral	Competence	.021 [-.029; .0721]	1.097 [.879; 1.368]
3	Intrinsic Motivation: Behavioral	Autonomy-supportive	.023 [-.039; .085]	1.108 [.845; 1.452]
5	Frequency	Competence	.015 [-.032; .064]	1.080 [.860; 1.358]
6	Frequency	Autonomy-supportive	.052 [-.005; .109]	1.275 [.964; 1.686]
13	Frequency	Autonomy-thwarting	.224 [.167; .280]	3.033 [2.265; 4.060]

Note: Shown a b-coefficients for linear regression analysis and odds ratios for logistic regression analysis with 95%-confidence intervals.

3.7.5 Supplement 5: Overview of statistical tests

Because multiple measurement instruments will be employed to assess the concepts of interest and because multiple hypotheses will be tested, in total 16 statistical tests will be conducted. Table S3-5-1 lists all statistical tests that will be conducted. Table S3-5-1 is used as a reference in the pre-registered analysis pipeline (Stata syntax).

Table S3-5-1: Power to detect a significant difference in proportions for need for autonomy manipulation with 500 respondents in each experimental group

Test Name	Test #	Hypothesis	DV	Compared Groups
Int-Mot-Behav-Comp	1	H1: Need-supportive situational contexts increase intrinsic political motivation.	Intrinsic Motivation: Behavioral Indicator	Comp+ vs Comp-
Int-Mot-SelfRep-Comp	2	H1: Need-supportive situational contexts increase intrinsic political motivation.	Intrinsic Motivation: Self-reported	Comp+ vs Comp-
Int-Mot-Behav-Aut	3	H1: Need-supportive situational contexts increase intrinsic political motivation.	Intrinsic Motivation: Behavioral Indicator	Aut+ vs. Aut-
Int-Mot-SelfRep-Comp	4	H1: Need-supportive situational contexts increase intrinsic political motivation.	Intrinsic Motivation: Self-reported	Aut+ vs. Aut-
Quant-Comp	5	H2a: Individuals who previously experienced the political domain as satisfying their need for competence, want to engage with politics more frequently than individuals with need-thwarting domain-related experiences.	Quantity of Engagement: Choice of Political Media Content (yes/no)	Comp+ vs Comp-
Quant-Aut	6	H2b: Individuals in an autonomy-supportive	Quantity of Engagement: Choice of	Aut+ vs. Control

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		<p>context want to engage with politics more frequently than individuals in neutral situational contexts.</p> <p>H3a: Individuals who previously experienced the political domain as satisfying their need for competence, are more inclined to invest cognitive efforts in processing the political information conveyed in the video than individuals with need-thwarting domain-related experiences.</p> <p>H3a: Individuals who previously experienced the political domain as satisfying their need for competence, are more inclined to invest cognitive efforts in processing the political information conveyed in the video than individuals with need-thwarting domain-related experiences.</p>	<p>Political Media Content (yes/no)</p>	
Qual-Subj-Comp	7		Quality of Engagement: Subj. Measure of Effort	Comp+ vs Comp-
Qual-Obj-Comp	8		Quality of Engagement: Objective Measure of Effort	Comp+ vs Comp-
Qual-Obj-Comp	9		Quality of Engagement: Behavioral Measure of Effort	Comp+ vs Comp-

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Qual-Subj-Aut	10	<p>need-thwarting domain-related experiences.</p> <p>H3b: Individuals in autonomy-supportive contexts are more inclined to invest cognitive efforts in processing the political information conveyed in the video than individuals in neutral situational contexts.</p> <p>H3b: Individuals in autonomy-supportive contexts are more inclined to invest cognitive efforts in processing the political information conveyed in the video than individuals in neutral situational contexts.</p>	Quality of Engagement: Behavioral Measure of Effort	Aut+ vs. Control
Qual-Subj-Aut	11	<p>need-thwarting domain-related experiences.</p> <p>H3b: Individuals in autonomy-supportive contexts are more inclined to invest cognitive efforts in processing the political information conveyed in the video than individuals in neutral situational contexts.</p> <p>H3b: Individuals in autonomy-supportive contexts are more inclined to invest cognitive efforts in processing the political information conveyed in the video than individuals in neutral situational contexts.</p>	Quality of Engagement: Subj. Measure of Effort	Aut+ vs. Control
Qual-Obj-Aut	12	<p>need-thwarting domain-related experiences.</p> <p>H3b: Individuals in autonomy-supportive contexts are more inclined to invest cognitive efforts in processing the political information conveyed in the video than individuals in neutral situational contexts.</p> <p>H4: Forcing individuals into political engagement will increase the frequency of political engagement but will decrease the level of cognitive involvement.</p>	Quality of Engagement: Objective Measure of Effort	Aut+ vs. Control
Quant-No-Choice	13	<p>need-thwarting domain-related experiences.</p> <p>H3b: Individuals in autonomy-supportive contexts are more inclined to invest cognitive efforts in processing the political information conveyed in the video than individuals in neutral situational contexts.</p> <p>H4: Forcing individuals into political engagement will increase the frequency of political engagement but will decrease the level of cognitive involvement.</p>	Quantity of Engagement: Choice of Political Media Content (yes/no)	Aut- vs. Control
Qual-No-Choice	14	<p>need-thwarting domain-related experiences.</p> <p>H3b: Individuals in autonomy-supportive contexts are more inclined to invest cognitive efforts in processing the political information conveyed in the video than individuals in neutral situational contexts.</p> <p>H4: Forcing individuals into political engagement will increase the frequency of political engagement but will decrease the level of cognitive involvement.</p>	Quality of Engagement: Subj. Measure of Effort	Aut- vs. Control

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Qual-No-Choice	15	engagement but will decrease the level of cognitive involvement. H4: Forcing individuals into political engagement will increase the frequency of political engagement but will decrease the level of cognitive involvement. H4: Forcing individuals into political engagement will increase the frequency of political engagement but will decrease the level of cognitive involvement.	Quality of Engagement: Objective Measure of Effort	Aut- vs. Control
Qual-No-Choice	16	engagement but will decrease the level of cognitive involvement.	Quality of Engagement: Behav Measure of Effort	Aut- vs. Control

Notes: Abbreviations for experimental conditions: Aut+ = autonomy-supportive condition; Aut- = No Choice Condition; Control = Control Group (Autonomy Condition); Comp+ = need-for-competence-supportive condition; Comp - = need-for-competence-thwarting condition

3.7.6 Supplement 6: Transparency report

To improve and document the transparency of research reports in social and behavioral research, various authors (Aczel et al., 2019) have developed a [consensus-based transparency check list](#). The responses below document the study's degree of transparency according to v1 of the transparency check list.

PREREGISTRATION SECTION

- (1) Prior to analyzing the complete data set, a time-stamped preregistration was posted in an independent, third-party registry for the data analysis plan. **Yes**
- (2) The manuscript includes a URL to all preregistrations that concern the present study. **Yes**

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(3) The study was preregistered... **before any data were collected**

The preregistration fully describes...

(4) all inclusion and exclusion criteria for participation (e.g., English speakers who achieved a certain cutoff score in a language test). **Yes**

(5) all procedures for assigning participants to conditions. **Yes**

(6) all procedures for randomizing stimulus materials. **Yes**

(7) any procedures for ensuring that participants, experimenters, and data-analysts were kept naive (blinded) to potentially biasing information. **Yes**

(8) a rationale for the sample size used (e.g., an a priori power analysis). **Yes**

(9) the measures of interest (e.g., friendliness). **Yes**

(10) all operationalizations for the measures of interest (e.g., a questionnaire measuring friendliness). **Yes**

(11) the data preprocessing plans (e.g., transformed, cleaned, normalized, smoothed). **Yes**

(12) how missing data (e.g., dropouts) were planned to be handled. **Yes**

(13) the intended statistical analysis for each research question (this may require, for example, information about the sidedness of the tests, inference criteria, corrections for multiple testing, model selection criteria, prior distributions etc.). **Yes**

METHODS SECTION

The manuscript fully describes...

(14) the rationale for the sample size used (e.g., an a priori power analysis). **Yes**

(15) how participants were recruited. **Yes**

(16) how participants were selected (e.g., eligibility criteria). **Yes**

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- (17) what compensation was offered for participation. **No**
- (18) how participant dropout was handled (e.g., replaced, omitted, etc.). **Yes**
- (19) how participants were assigned to conditions. **Yes**
- (20) how stimulus materials were randomized. **Yes**
- (21) whether (and, if so, how) participants, experimenters, and data-analysts were kept naive to potentially biasing information. **Yes**
- (22) the study design, procedures, and materials to allow independent replication. **Yes**
- (23) the measures of interest (e.g., friendliness). **Yes**
- (24) all operationalizations for the measures of interest (e.g., a questionnaire measuring friendliness). **Yes**
- (25) any changes to the preregistration (such as changes in eligibility criteria, group membership cutoffs, or experimental procedures)? **Yes**

RESULTS AND DISCUSSION SECTION

The manuscript...

- (26) distinguishes explicitly between “confirmatory” (i.e., prespecified) and “exploratory” (i.e., not prespecified) analyses. **Yes**
- (27) describes how violations of statistical assumptions were handled. **No**
- (28) justifies all statistical choices (e.g., including or excluding covariates; applying or not applying transformations; use of multi-level models vs. ANOVA). **Yes**
- (29) reports the sample size for each cell of the design. **Yes**
- (30) reports how incomplete or missing data were handled. **No**

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(31) presents protocols for data preprocessing (e.g., cleaning, discarding of cases and items, normalizing, smoothing, artifact correction). **Yes**

DATA, CODE, AND MATERIALS AVAILABILITY SECTION

The following have been made publicly available...

(32) the (processed) data, on which the analyses of the manuscript were based. **Yes**

(33) all code and software (that is not copyright protected). **Yes**

(34) all instructions, stimuli, and test materials (that are not copyright protected). **Yes**

(35) Are the data properly archived (i.e., would a graduate student with relevant background knowledge be able to identify each variable and reproduce the analysis)?
Yes

(36) The manuscript includes a statement concerning the availability and location of all research items, including data, materials, and code relevant to the study. **Yes**

3.7.7 Supplement 7: Deviations from pre-registration plan

The pre-registered analysis plan was based on the expectation of theory-consistent treatment effects. Because these effects mostly did not materialize, a variety of posthoc exploratory analyses were conducted to make sense of the unexpected absence of treatment effects. These exploratory analyses are the most notable extension to the pre-registered analyses.

All of the pre-registered analyses are reported in the main text. However, some modifications to the pre-registered analysis pipeline were necessary. Because the pre-registered analysis syntax was only tested on simulated survey responses, several coding mistakes went unnoticed and only became apparent after data collection. Because in each case a clearly superior coding strategy was apparent, I deviated from the pre-registered analysis plan and fixed the mistakes:

3.7.7.1 Recoding

- Survey Software *Unipark* saves variables as '0' when a participant did not respond to a survey item. These responses need to be coded as missing values, which was not accounted for in the pre-registered analysis syntax.
- Initially, the survey questionnaire contained one non-reverse-coded and one reverse-coded item on internal political efficacy. In the course of questionnaire development, the items were modified so that in the final version, none of the items were reverse-coded. This change before data collection was not accounted for in the pre-registered analysis syntax.
- To avoid cells with very low numbers on the pre-registered pre-treatment covariates, I recoded the variables on participant para data (operating system, participant device type) after data collection had shown the actual distribution of participants across cells. Note that these observational covariates were only

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included to reduce variability in the outcome measure, and they do not bias the estimated treatment effects.

- In the pre-registered analysis syntax, not all pre-treatment covariates were standardized as was intended to adopt the method suggested by Lin (2013).
- The behavioral measure of intrinsic motivation had the values 1 and 2 in the pre-registered analysis syntax and was recoded to the values of 0 and 1.
- Due to an oversight, the pre-registered analysis syntax contained an error when recoding the treatment indicator for the need-thwarting condition.

3.7.7.2 Analysis

- The 'post' option of the -margins- command was missing in the pre-registered analysis syntax so that the calculation of the one-sided significance tests was erroneous.
- In several cases, the one-sided significance tests were coded in the wrong direction. (Due to the absence of the expected treatment effects the substantive conclusion does not change.)

3.7.8 Supplement 8: Treatment-induced attrition and imputation

The main text reported evidence that suggested that the competence manipulation might have affected the probability to complete the survey. As a result, missing values on the outcome variables might be affected by treatment status, which may induce bias in the estimation of the experimental treatment effects. The main text reports analyses that show what happens when we impute missing values. In all analyses, values were imputed for as many respondents necessary so that in both treatment conditions, there would be an equal share of respondents with non-missing values. Respondents for imputation were drawn randomly from all respondents in the need-thwarting group with missing value on the respective outcome variable. Table S3-8-1 shows, for each outcome variables, details of the imputation process and the estimated effect size of the need for competence manipulation on the imputed outcome variable.

Table S3-8-1: Imputation of Outcome Variables and Experimental Tests

Outcome	Number of Respondents with Imputations	Imputed Value	p-value of effect on imputed outcome	p-value of effect on imputed outcome	Cohen's d
Quality (Behavioral)	37	30 (seconds)	.83	.88	-
Quality (Subjective)	59	1 (Lowest possible value)	.00001	.17	0.24
Intrinsic Motivation (Self-reported)	59	1 (Lowest possible value)	.002	.73	0.15

3.7.9 Supplement 9: Heterogeneous treatment effects using random forests

To detect treatment heterogeneity, I conducted causal forest analyses using grf package version 0.10.4. The number of trees to be calculated was set to 4,000, using automated tune-parameters and leaving the remaining model options on default values. Because the manipulation checks for the autonomy-related conditions failed, analyses of treatment heterogeneity were only conducted for the competence manipulation. Table S3-9-1 shows the p-value of an omnibus test of whether the null hypothesis of no treatment heterogeneity can be rejected, suggested no evidence for treatment heterogeneity in any of the tests.

Table S3-9-1: Imputation of Outcome Variables and Experimental Tests

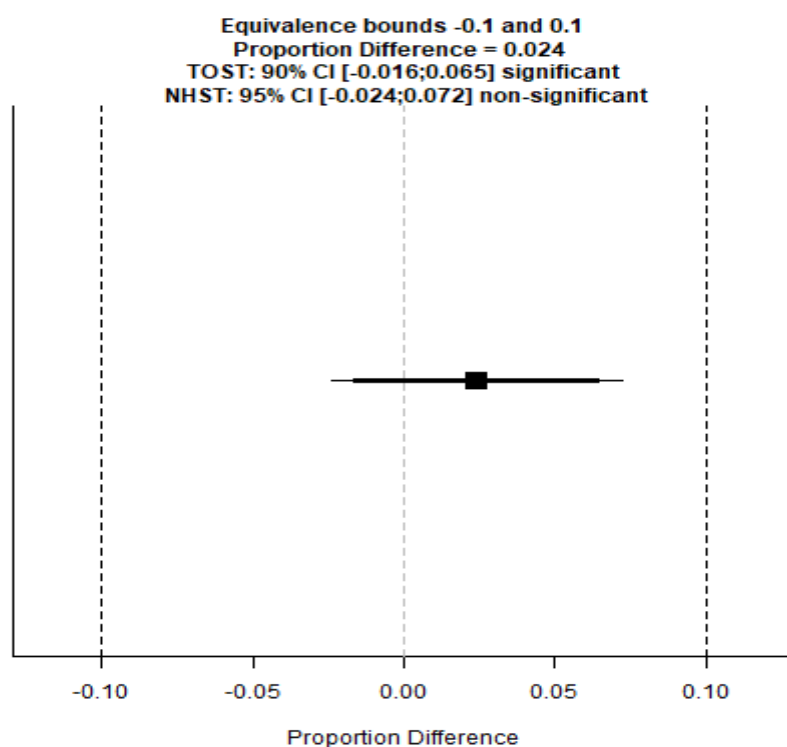
Outcome	p-value
Frequency	0.86
Intrinsic Motivation (Behavioral)	1.00
Intrinsic Motivation (Subjective)	0.64
Quality (Objective)	0.99
Quality (Subjective)	0.98

3.7.10 Supplement 10: Equivalence tests

To conduct equivalence tests, it is necessary to specify the 'smallest effect size of interest' (SESOI) that needs to be reasoned for each test of interest. The following plots show the results of equivalence for each test with the respective SESOI. Because the manipulation checks for the autonomy-related conditions failed, equivalence tests were only conducted for the competence manipulation

Test	I
DV	Intrinsic Motivation: Behavioral Indicator
SESOI	10%
Justification	Even lower than suggested in previous experiment
Result	Statistical equivalence

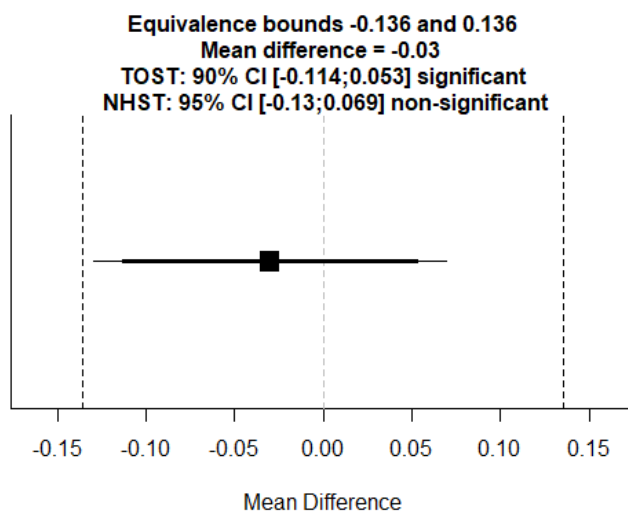
Table S3-10-1: Equivalence test



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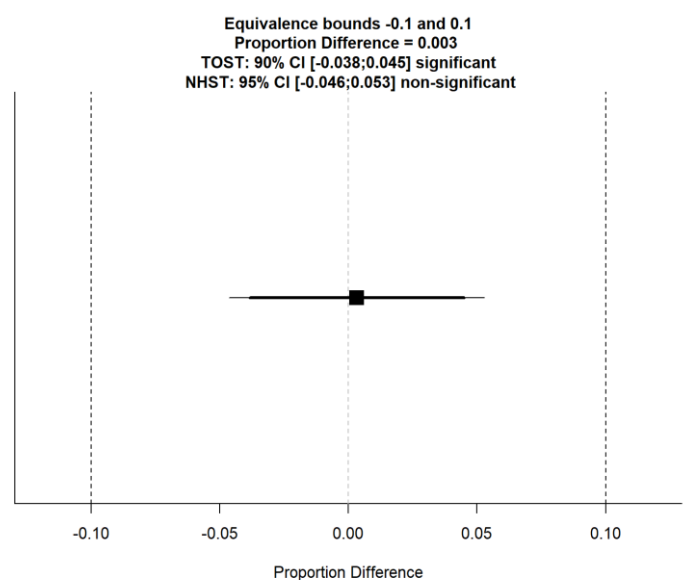
Test	2
DV	Intrinsic Motivation: Self-reported
SESOI	0.14
Justification	Lowest effect estimate retrieved in previous studies
Result	Statistical equivalence

Table S3-10-2: Equivalence Test



Test	5
DV	Quantity of Engagement
SESOI	10%
Result	Statistical equivalence

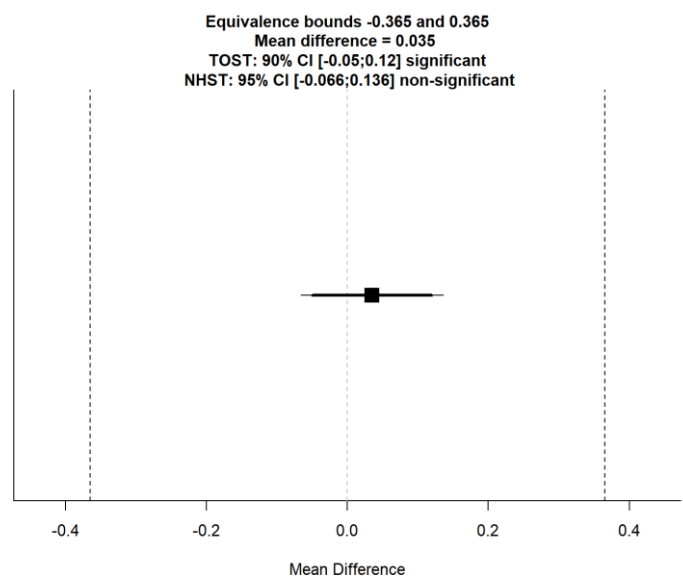
Table S3-10-3: Equivalence test



Test	7
DV	Quality of Engagement: Subj. Measure of Effort
SESOI	half a scale point
Result	Statistical equivalence

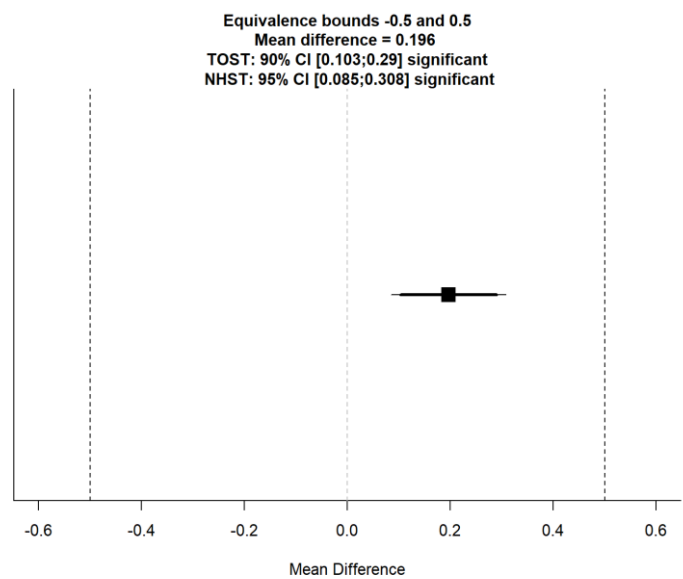
Table S3-10 4: Equivalence test

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Test	8
DV	Quality of Engagement: Objective Measure of Effort
SESOI	difference of 0.5 more /fewer correct responses
Result	Statistical equivalence

Table S3-10-5: Equivalence test



**4 Conceptualizing motivational pathways to political engagement:
A test of self-determination theory in
the political domain**

4.1 Introduction

We all look alike when casting a ballot at the voting booth. We take up a pen, tick a cross, post the ballot and leave. Yet, despite the seeming similarity when conducting this and other forms of political engagement citizens differ considerably in the motives that led them to political action. Because the reasons for why we engage in politics differ, how we do so also differs. When someone considers voting a sacred act of great importance, then she might take her time in the voting booth and consider closely where to tick the cross. When, in contrast, another person perceives voting as an unpleasant chore she might cast the vote within seconds to quickly revert to what she actually values doing with her spare time. Hence, this paper develops the proposition that discernable reasons for political action exist and that these distinct motivations determine whether and how individuals engage with politics.

The motivational typology of political engagement developed in this study aims to shed new light on the various predictors that previous research has identified as conducive to political engagement: Among other motivators, identity, social pressures, utility calculations, habits and mobilization efforts were shown to energize citizens into political engagement (Blais & Daoust, 2020; Smets & van Ham, 2013). Yet, despite the vast number of proposed pathways that lead citizens to political action, a systemizing framework of political engagement's motivational underpinnings is missing, and we thus do not have a good understanding of how the factors go together, how they differ and how they resemble each other. Instead of adding yet another piece to the puzzle, this study thus tries to take stock, to zoom out, and to bring order into the various motivational pathways to political engagement.

One reason for the lack of such a framework is that no self-evident criterion is apparent to discern different types of behavioral regulations. Here, political science could benefit from the field of motivation science which studies the reasons that move people into action. Self-determination theory, one of the most influential psychological theories about the motivational underpinnings of human behavior (Ryan & Deci, 2017),

4 Conceptualizing motivational pathways to political engagement: A test of self-determination theory in the political domain

considers the degree to which actors subjectively experience their behavior as self-determined as the central determinant of whether and how people act. Based on that premise, a vast literature has repeatedly shown that in various domains of life perceived self-determination structures how individuals engage in a behavior and whether they will re-engage with it in the future (Gagné et al., 2014; Guay et al., 2015; Litalien et al., 2015; Pelletier et al., 2013). By importing a theoretically meaningful criterion that has proven useful for discerning motivators in other life domains, the principle of perceived self-determination may help to help structure the myriad of predictors of political engagement that the political science literature has identified. Moreover, the criterion of perceived self-determination and its associated theoretical edifice provides a unique explanatory lever as it helps predict how each behavioral regulation fuels distinct modes of carrying out an activity. In particular, self-determination theory posits that more autonomous reasons for action lead to more self-sustained types of engagement that are conducted more effortfully while more controlled forms of engagement are conducted more superficially and are more context-dependent.

Even though SDT has been applied extensively across scientific disciplines (Gagné et al., 2014; Guay et al., 2015; Litalien et al., 2015; Pelletier et al., 2013), the theory and its conceptual toolbox are hardly acknowledged in political science (but see Welzel, 2013). Early attempts by psychologists to develop SDT measures for the political domain (Koestner et al., 1996; Losier et al., 2001; Losier & Koestner, 1999) did not gain traction and no efforts were undertaken to systematically assess the value of self-determination theory for the study of political engagement. That political science has neglected SDT is surprising considering the importance of self-determination as a central concept in classical (Kant, 1785) and contemporary (Blühdorn, 2019) theorizing of politics. Paying tribute to the concept's relevance in political theorizing and the demonstrated utility of the criterion of self-determination to differentiate motivations in other sciences, this study will rely on SDT to devise a typology of political motivation and to test its usefulness to systemize and predict whether and how political behaviors are conducted.

4.1 Introduction

In devising the typology of political motivation, this article will proceed in several steps. First, based on a review of attempts to classify motivational pathways to political action, I will argue that self-determination theory may provide theoretical import to the study of political participation by providing a typology that systemizes existing motivational pathways. Moreover, applying the theory on the political domain enables to derive novel hypotheses to explain whether and how citizens will engage with politics based on their level and type of motivation towards the political domain. To test whether SDT's account of human motivation can account for citizens' reasons for political engagement, in three studies I develop, test, and revise a novel measure of political motivation as a multi-dimensional construct. This scale of political motivation was embedded in multiple longitudinal and cross-sectional surveys with observational and experimental elements and tested with self-reported and behavioral measures of political engagement.

The results indicate that the SDT-inspired motivational typology of human motivation captures some of the motivational pathways to political action but, altogether, the original and a revised measure of political motivation failed to delineate distinct types of motivation as suggested by self-determination theory. In terms of predictive validity, there is some evidence for a role of perceived self-determination in determining whether and how citizens engage with politics. Yet, the findings are mixed and do not replicate with the revised motivation battery. Also, further analyses suggest that measurement confounding due to the reliance on self-reports for both outcome and explanatory variables may have induced spurious correlations that do not reflect meaningful properties of motivation. Altogether, while providing tentative evidence for a functional significance of self-determination in political engagement, envisaging of motivation along the long the lines of self-determination theory does not systemize or explain behavior in the political domain as well as in other areas of life.

4.2 Pathways to political engagement

Typologies are useful for their complexity-reducing functions as they “carve up the universe into comprehensive, mutually exclusive, and hierarchical categories” (Gerring, 1999, p. 381). Systemization attempts are particularly useful when scientific literatures entail vast numbers of similar concepts. The literature on political engagement is such a case where 176 distinct concepts were identified to explain but one form of political engagement, voter turnout (Neundorff et al., 2013).¹⁴

Moreover, when typologies are based on theoretical principles, delineating entities in a systematic way can provide unique theoretical import because such categorizations enable theory-driven predictions about how entities in particular categories behave differently than others. Such systemization attempts exist with regard to the antecedents of political engagement and while they provide value for grouping predictors of political engagement, each of them comes with particular conceptual shortcomings.

In the following, I will briefly discuss existing systematizations to then demonstrate how each of them can be mapped on a new, more comprehensive typology of political motivation. To simplify the discussion, I will focus on the political participation subliterature that considers the role of norms in fostering political engagement which serves as an illustrative case for the multiplicity and ambiguity of motivational pathways to political engagement as norms feature prominently in electoral studies’ seminal studies (Campbell et al., 1980, pp. 166–167; Downs, 1957, pp. 260–267; Lazarsfeld et al., 1969, pp. 153–157) and have taken center stage ever since (Blais & Daoust, 2020; Smets & van Ham, 2013).

One attempt to bring order into the predictors of norm-abiding behavior in the political domain is to distinguish between external and internal motivators (Opp, 2013). This systemization seeks to account for the fact that one line of research describes norms as externally imposed and then mediated through social mechanisms such as the

¹⁴ Political engagement entails all kinds of attention and activities that are directed towards the polity Berger (2009).

4.2 Pathways to political engagement

expectation of social sanctions for not joining friends in a protest march (Bicchieri, 2006; Cialdini et al., 2006; Cialdini, 2007; Hardin, 1998). Another line of research describes norm-abiding behaviors as originating from pressures within oneself mediated through systems of emotional sanctioning (Fershtman & Weiss, 1998; Sugden, 1998) such as feelings of guilt or shame (Elster, 2003; Gerber et al., 2010) that arise when a person realizes that she has not lived up to her duties as a good citizen (Blais and Daoust, 2020). What we can take away from this systemization attempt is the idea to differentiate norm-abiding behaviors in the political domain that either have origins outside or within the actor. Still, the typology's conceptual clarity is limited because any motivating influence must be processed internally to elicit behavioral outcomes. Ultimately, all behavior therefore has internal antecedents which questions the explanatory value of separating internal from external influences.

Another systemization attempt distinguishes between instrumental and expressive motivators (Hamlin & Jennings, 2011). This systemization seeks to account for the fact that some scholars consider norm-abiding behavior as merely the result of weighing the costs and benefits associated with norm transgressions such as abstaining from voting (Hardin, 1998). Other research focuses on norm-abiding behavior such as entertainment-driven political hobbyism (Hersh, 2020) for which no instrumental outcomes materialize beyond the rewards that are inherent to the behavior itself (Blais & Daoust, 2020; Gerber & Rogers, 2009, p. 181). What we can take away from this systemization attempt is the idea to differentiate behaviors that are inherently valuable from other forms of motivators. Still, contrasting instrumental with, by implication, non-instrumental behaviors is a blurry distinction because all behaviors have some subjective value to the actor if the action is the result of a conscious choice (Green & Shapiro, 1994; Marx & Tiefensee, 2015).

A final attempt to systemize norm-abiding behaviors is to distinguish between norms that we want to comply with and norms that we have to comply with (Werner & Milyavskaya, 2018). Wanting-to-motivation subsumes norm-abiding behavior like

4 Conceptualizing motivational pathways to political engagement: A test of self-determination theory in the political domain

participation in a protest movement for the psychological rewards such as pride (Gerber & Rogers, 2009) or those that arise when engaging in civil disobedience out of moral conviction (Muhlberger, 2000), voting as a moral imperative (Blais & Galais, 2016) or any form of identity expression for political purposes (Teske, 1997). Having-to-motivation, on the other hand, subsumes those motivational pathways that describe norm-abiding behavior as reluctantly carrying out undesired chores, such as political participation out of fear of social sanctions by friends (Elster, 2003). What we can take away from this systemization attempt is the importance of self-endorsement as opposed to external enforcement of one's action. Yet, the distinction between wanting-to- and having-to-motivation lacks specificity in the definition of these concepts. Wanting-to-behaviors may be understood as reflecting the actors' internal preferences while having-to-activities contradict personal preferences and are enacted for reasons that are outside one's control. In this vein, wanting-to and having-to motivation mirrors the distinction between internal and external motivations, entailing similar issues of unclear concept boundaries.

One problem of these classification attempts is the reliance on seemingly objective properties, such as whether particular behavioral regulations have internal/external (Opp & Kittel, 2010) or instrumental/expressive (Hamlin & Jennings, 2011) properties. In contrast, most motivation theories (Bloom, 2011; Higgins, 2012) including self-determination theory (Ryan & Deci, 2017) adopt a phenomenological perspective on motivation, positing that human beings may experience identical situations in a different way. Trying to understand human behavior as it is subjectively experienced by the respective agents avoids having to make assumptions about the individuals' perceptions of a given situation, thereby circumventing classification problems that arise when it is not self-evident how individuals perceive a certain situation with certain objective properties.

Systemizing motivation from a phenomenological perspective entails identifying the dimension on which experiential differences determine the quality and frequency of

4.2 Pathways to political engagement

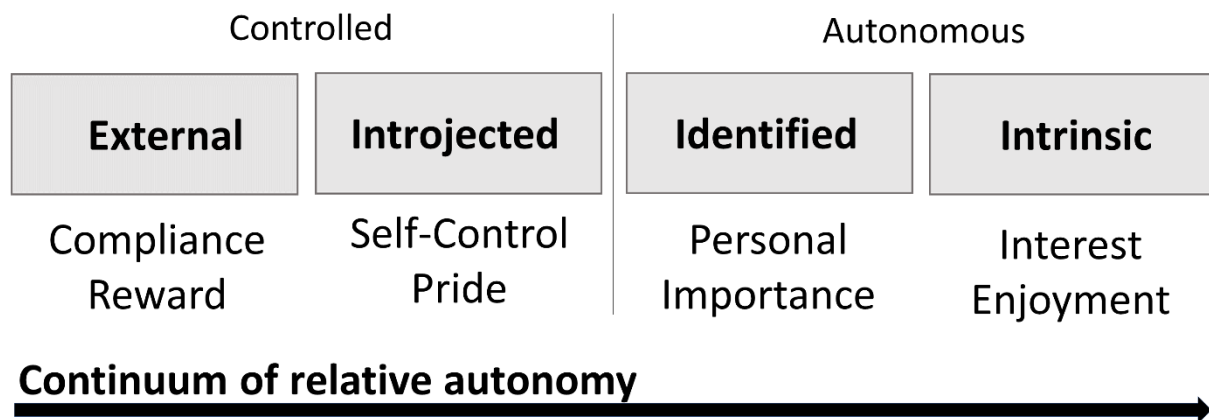
behavior. According to self-determination theory (Ryan & Deci, 2017), the degree of perceived self-determination (or autonomy) is the central dimension of human motivation. SDT's main thrust is that human beings do not like feeling controlled and helpless but rather want to act volitionally, that is in line with their inner sense of selves. Self-determination theory thus posits that human motivation is structured by the degree of self-determination a person experiences when carrying out an activity or the expectation of it (Ryan & Deci, 2017). Specifically, self-determination is described as experiencing "an action [as fitting] with interests and integrated values that one is wholeheartedly behind" (Ryan & Deci, 2017, p. 79). Consequently, the relevant criterion to systemize behavioral regulations according to SDT is the actors' perception of the motivational dynamics on a continuum that ranges between reasons for actions perceived as highly self-determined and reasons for actions perceived as highly controlled. On the continuum's endpoints, high self-determination entails experiences of self-endorsement and self-initiation whereas highly controlled behavior entails feelings of pressure that are beyond one's control.

Along the continuum of perceived self-determination, SDT distinguishes four types of behavioral regulations (Figure 4-1). On the lower end of the self-determination continuum is external motivation which denotes classical incentivizing in the forms of sticks and carrots. While these motivating stimuli may come in a friendly (rewards) or unfriendly (sanctions) fashion and may be exerted by a diverse list of driving forces such as friends or parents or institutional arrangements, the common characteristic of external motivation is the perception of acting in reaction to influences outside one's control. Introjected motivation also drives through motivational systems of sticks and carrots. But these pressures have internal origins through feelings of shame or pride, thus resembling the 'tyranny of the shoulds'. As it reflects partial internalization of previously external demands introjected motivation is experienced as slightly more autonomous. However, because introjected motivation results from incomplete internalization it has been described as swallowing regulations without digesting (Deci & Flaste, 1996, p. 94). Ordered even higher on the continuum of self-determination, identified

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motivation reflects deeper internalization, entailing norms and values that were previously alien to oneself and which are now consciously self-endorsed and integrated into one's sense of self. Intrinsic motivation – the highest level of self-determination – does not require internalization. Instead of abiding by norms or pressures, intrinsically motivated behaviors are enacted for their inherently satisfying conditions. While for practical purposes SDT scholars often group the behavioral regulations at the lower (controlled motivation) and the upper end of the continuum of perceived self-determination (autonomous motivation), all in all this motivational typology thus allows to distinguish four conceptually distinct reasons for actions.

Figure 4-1: Types of Motivation on the Continuum of Relative Autonomy



Note: Overview of the four types of motivations with illustrative examples in the political domain. Controlled and Autonomous Motivation refer to frequently employed groupings of motivation.

Even though the SDT-typology of human motivation has proven useful in other domains of life, should we expect it to also apply to politics? According to self-determination theory, motivation is rooted in basic psychological needs and deeply engrained in processes of social-psychological functioning (Ryan & Deci, 2017). Because these psychological needs are considered universal across time and culture (Chen et al., 2015), one might expect a broad scope of the typology of motivation. Notably, tentative evidence suggests that basic need satisfaction also matters in the political domain as need satisfaction have been shown to correlate with citizen's political orientations (Welzel, 2013; Wuttke, 2020; but see Wuttke, 2021). These findings may indicate that

4.2 Pathways to political engagement

the foundational processes that were theorized to underlie the SDT-inspired typology may also be at play in the political domain.

Nonetheless, even if the psychosocial underpinnings proposed by self-determination theory also apply to the political domain, acting in the political domain may be so distinct from behavior in other life domains that the motivational processes towards political engagement are unique and pose an exception to the theory's general scope. While plausible, this argument would go against a line of reasoning in the political participation literature that explicitly does not consider political engagement a behavior of its own type but tries to understand political engagement by building upon better-understood phenomena from other life domains (Hersh, 2020).

Some characteristics of the political domain suggest that the SDT-typology of motivation may even be particularly well suited to map onto political engagement. As discussed above, norms are pervasive in the political domain and play a central role in energizing people into political action. Fittingly, the SDT-typology of human motivation provides a framework to account for the motivation impact of formal and informal norms as it distinguishes three distinct pathways through which norms may fuel action. Considering the voting norm as an example that can energize political engagement through different motivational pathways. In one instance, some voters may perceive the civic duty of voting in terms of a "moral imperative" (Blais & Galais, 2016). Applying the SDT-typology, these voters can be seen as driven by identified motivation who engage in self-endorsed behavior that accords with their integrated values. The voting norm may also be at play when canvassers threaten to inform neighbors about one's abstention from voting (Gerber et al., 2010). In this case, the voting norm would likely activate external motivation. In yet another instance, the voting norm may have been partially internalized and thus lead to voter turnout through introjected motivation by feelings of shame or pride. Hence, the SDT-inspired typology provides a conceptual framework to delineate the various pathways to norm-abiding

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political behavior and seems thus well equipped to accounts for a central determinant of political engagement.

Another piece of evidence for the applicability on politics arises when attempting to map the previously discussed systemization attempts of political motivation onto this new typology. Offering a more fine-grained distinction of “external” or “internal” motivators, the SDT typology considers different degrees to which a previously external demand has been taken in by the actor, ranging from external over introjected to identified motivation. Superseding the distinction of “expressive” and “instrumental” behaviors, under the label of intrinsic motivation the new typology retains the class of expressive behaviors that are enacted for their own sake. Notably, in this conception intrinsic motivation differs from “instrumental” motivators such as monetary rewards or social sanctions not by the absence of any tangential value (because experiencing pleasure also has psychological value). Instead, intrinsic motivation is characterized by experiencing a higher degree of self-determination when engaging in intrinsically motivated behaviors compared to the influences of rewards or social sanctions that are often experienced as more controlling. Finally, the distinction of having-to- and wanting-to-motivation is reflected in the continuum of self-determination which embodies the degree to which individuals perceive themselves as being in control of their actions. Overall, the fact that previous attempts to order antecedents of political action map onto the new motivational typology while overcoming some of their conceptual problems, attests to typology’s applicability on the political domain.

There is therefore reason to believe that the SDT typology may help to grasp motivation in the political domain. To validate this claim empirically, it can be tested whether the theory’s core propositions on the structure of human motivation adequately reflect empirical patterns in citizen’s proclivity to engage with politics. One core proposition of self-determination theory is the continuum structure of motivation (Ryan & Connell, 1989). Based on the tenet that the four types of motivation can be ordered meaningfully on a continuum of self-determination, SDT posits that conceptually close

4.2 Pathways to political engagement

behavioral regulations correlate more strongly with each other than types of motivations that are conceptually more remote on the continuum of self-determination.

***Continuum hypothesis:** The correlation between the levels of political motivation is stronger between conceptually close than between remote types of motivation.*

Importantly, the introduction of the new typology is not merely a conceptual exercise but enables to derive testable predictions of whether and how a person engages with politics, depending on their motivational propensities. The law of low effort (Kurzban, 2016) suggests as a general principle that individuals will choose the more effortless route from multiple behavioral options to achieve a particular goal. When citizens are driven by introjected or external motivation, individuals will invest no more efforts than they consider necessary to comply with the internal or external pressures that animated the action in the first place. Things stand differently when identified or intrinsic motivation is the driving force because the principle of effort minimization does not apply when the behavior itself is the goal. Hence, the less self-determined one's motivation the more a person is inclined to minimize efforts when conducting a particular behavior.

In the political domain, one dimension that illustrates the role of differences in effort is cognitive involvement. For example, it is not hard to imagine a news junkie who enjoys following politics (intrinsic motivation); glued to the television when a presidential debate is aired and closely following every single sentence the contenders speak. On the other hand, consider students in civic education class who watch the same debate but for no other reason than the teacher's instruction (external motivation); while mainly waiting for the class to end, they are less likely to pay close attention to the specific arguments of the contenders. In this vein, individuals who engage with politics predominantly for controlled reasons (external and introjected motivation) should exhibit more superficial processing of political information whereas

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autonomous reasons for engagement (intrinsic and identified motivation) should stimulate deeper cognitive involvement with politics.

Deep engagement hypothesis: Higher vs. lower levels of controlled types of motivation are associated with more shallow processing of political information while higher vs. lower levels of autonomous motivation is associated with deeper processing of political information.

Besides predicting the quality of political behavior, the SDT typology enables to derive predictions about the quantity of political behavior. The more self-determined a person's motivation to engage with politics the more self-sustained it is. Because intrinsically motivated behaviors are enacted for their own rewards, no additional (e.g., external) motivational stimulus is required for energizing citizens with high levels of intrinsic political motivation into political engagement so that they will seek political encounters more frequently than those citizens who do not find joy in politics. External motivation has less direct ramifications for the frequency of political engagement. Because external motivation reflects one's susceptibility to external stimuli for political engagement, high levels of external motivation will only elicit behavioral responses when an external stimulus is present. Because the behavior will fade away once the external incentive is no longer active, political behavior based on external motivation is less self-sustained and more context-dependent compared to behavior fueled by intrinsic political motivation.

External motivation hypothesis: *External motivation has no independent effect on engagement but moderates the influence of situational stimuli on political engagement.*

Autonomous motivation hypothesis: *Higher levels of autonomous types of political motivation compared to low levels of motivation are associated with higher frequencies of political engagement.*

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4.3.1 Measures

Political Motivation. The development of a political motivation scale drew from extensive evidence on the measurement of motivation in the tradition of self-determination theory. Instruments to assess motivation usually rely on respondents' self-reported introspections regarding the motives for engaging in specific behaviors (Gagné et al., 2014; Guay et al., 2015; Litalien et al., 2015; Pelletier et al., 2013; Vallerand et al., 1992). Although self-reports are subject to biases (Paulhus & Vazire, 2007), they remain the standard paradigm for assessing motivation for its distinct capacity to tap into the respondents' subjective experience which is essential to the phenomenological perspective on motivation.

In terms of question structure and question-wording, the political motivation scale was modeled after previous attempts to measure political motivation (Koestner et al., 1996; Losier et al., 2001; Losier & Koestner, 1999) and validated SDT-scales in other life domains (Gagné et al., 2014; Guay et al., 2015; Litalien et al., 2015; Pelletier et al., 2013; Vallerand et al., 1992). All of these scales ask respondents to rate the degree to which different reasons for enacting particular behaviors apply to them. Based on the idea that political engagement can take different forms but is driven by an underlying latent concept of motivation towards the political domain, respondents were asked about the applicability of reasons to engage in three specific forms of political engagement: electoral participation, unconventional participation, political news consumption. These specific behaviors were selected to cover both active and passive as well as more and less prevalent forms of engagement (Berger, 2009).

To assess political motivation as a multi-dimensional concept, each of the reasons that the respondents rated reflects one of the four dimensions of political motivation (sample item for intrinsic motivation: *"it always provides a good feeling when I do it"*, introjected: *"you are supposed to do it, even if you are not in the mood for it"* identified: *"it is part of what defines me as a person"*, External: *"otherwise, others would look down on me"*). With

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four dimensions of political motivation and three specific forms of behavior for which motivation was queried, we arrive at a 12-item-scale (see Appendix 1 for full scale). For example, to query identified motivation towards electoral participation, respondents indicated the degree to which the following statement applied to them on a 5-point scale: *“If I decided to go to vote and to cast a ballot at the next elections, I would do so because... thereby I act according to my principles”*.

Hypothetical Participation in an Election. The survey included a vignette experiment which was designed to assess the proclivity to participate in hypothetical elections. One vignette that manipulated the presence of social influences is well suited to test the *external motivation hypothesis*. In this vignette, respondents in the treatment group were informed that friends invited them for a spontaneous dinner shortly before the closing of the polls. These friends suggested to rather skip voting this time around. Respondents in the control group received no social cues about voting.¹⁵ Self-reported probability to participate in the hypothetical election was measured on a scale from 1-11 (see Appendix 2 for details).

Cognitive Processing of Political Information. To test the *deep engagement hypothesis*, an unweighted summary index was created that reflects cognitive styles regarding the processing political content. It consists of five items: one item on the need to evaluate, one item on the need for cognition, and three items on inclinations for deep cognitive involvement with political issues (see Appendix 3).

4.3.2 Participants

The political motivation scale was included in Survey 33 of the Long-Term Online-Tracking of the German Longitudinal Election Study. The Online-Tracking study draws respondents from forsa omninet, a heterogeneous online panel whose

¹⁵ The factorial survey experiment contained additional vignettes (see appendix 2). The remaining vignette failed to induce main effects on the dependent variable. Analyses on the moderating role of motivation are, therefore, not reported in the main text for those vignettes.

participants were recruited through telephone interviews. The realized sample of 1,023 completed interviews resembles the German online population on socio-demographic variables (for details, see Roßteutscher et al., 2016).

4.3.3 Results

Before testing the behavioral hypotheses on the consequences of political motivation, in a first step, it is necessary to establish the validity of the political motivation measure in order to assess whether the structure of political motivation matches the tenets of self-determination theory. To test for the theorized patterns of motivation among the respondents, exploratory structural equation modeling was applied (ESEM, Asparouhov & Muthén, 2009). ESEM resembles the theory-driven approach of confirmatory factor analysis while relaxing the often-unrealistic assumption that indicators load on only one but not the other model factors. ESEM has become particularly popular in motivation science where it is widely acknowledged that motivational types can be cleanly distinguished conceptually but that, empirically, self-reported motivation items are not as clear-cut (Guay et al., 2015; Howard et al., 2018).¹⁶ One would therefore not expect the absence of cross-loadings but rather expect theory-consistent loadings patterns that reflect the continuum of self-determination. For instance, indicators of intrinsic motivation may load onto the adjacent category of identified motivation but should be clearly distinguishable from external motivation which lies at the other end of the self-determination continuum.

Table 4-1 reports ESEM findings on the dimensionality of citizen's motivation to engage in politics. For each item, the grey cell indicates the target dimension the item was intended to measure. Bold font indicates statistically significant factor loadings at the 0.05 level.

¹⁶ ESEM is rotationally interdeterminant, i.e. the patterns of cross-loadings may vary between rotational methods. Here, Geomin rotation was applied. The results are substantially identical when quartimin-rotation is used.

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Table 4-1: ESEM factor loadings, full model

	Intrinsic	Identified	Intro- jected	External
Intrinsic				
<i>Unconv.</i>	0.91	0.09	-0.01	0.04
<i>Electoral</i>	0.07	0.84	0.06	0.7
<i>News</i>	0.08	0.09	0.77	-0.14
Identified				
<i>Unconv.</i>	0.94	-0.03	0.10	-0.04
<i>Electoral</i>	0.07	0.82	0.03	-0.20
<i>News</i>	-0.01	-0.06	1.04	0.06
Introjected				
<i>Unconv.</i>	0.32	0.12	0.03	0.38
<i>Electoral</i>	-0.12	0.98	-0.07	0.02
<i>News</i>	0.01	0.12	0.21	0.54
External				
<i>Unconv.</i>	0.11	-0.05	-0.04	0.43
<i>Electoral</i>	0.02	-0.06	-0.08	0.42
<i>News</i>	-0.12	0.04	0.12	0.62
<i>Goodness of Fit</i>				
<i>CFI</i>	0.967			
<i>TLI</i>	0.909			
<i>SRMR</i>	0.022			
<i>RMSEA</i>	0.060			

Note: Standardized factor loadings of an exploratory structural equation model in MPLUS 6.11; Geomin-rotation; N=1.019; A priori target loadings designed to measure each factor are shown on grey background; Loadings with $p < 0.05$ are shown in bold face. Correlation between intrinsic: 0.32, intr-intro: 0.41; intr-ext: 0.05; ident-intro: 0.47, ident-ext: -0.04; intro-extr: -0.04.

We first turn to goodness of fit indices which report about the match between the theoretically informed specification of a 4-dimensional factor structure and the empirically observed correlations between the twelve indicators. Rules of thumb (Marsh et al., 2004) suggest that Tucker-Lewis Index (TLI) and Comparative Fit Index (CFI) values greater than .9 and .95 indicate acceptable and excellent fits to the data. For

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Standardized Root Mean Square Residual (SRMR) and Root Mean Square Error of Approximation (RMSEA) values smaller than 0.08 and 0.06 indicate acceptable and good model fits. Against these benchmarks, the goodness of fit indices for this model (CFI: 0.967, TLI: 0.909, RMSEA: 0.022, SRMR: 0.060) are encouraging, often indicating an excellent fit of the specified model to the data. Yet, closer inspection of the loading patterns suggests deeper problems as these favorable results partly represent loadings in unexpected directions.

If self-determination structures how citizens engage with politics, that is if some citizens are driven by autonomous reasons for political engagement while controlled motives determine political behavior for other citizens, then we would expect indicators to load strongly and significantly on their respective target factors, to load more weakly on theoretically adjacent factors and to exhibit barely any or negative loadings on factors at the other end of the continuum of relative autonomy.

Table 4-1 shows that minimal requirements of a proper loading structure are violated in several cases; many items show no strong loading on their target factors. For instance, only one of the three indicators that were intended to reflect intrinsic motivation for political engagement loads on the specified intrinsic factor whereas the remaining indicators load more strongly on other factors. Only for external motivation we observe consistent positive loadings from the factor's specified indicators. The loading patterns are most problematic with regards to introjected motivation where all target loading are below 0.32 which is considered the minimal loading (Osborne et al., 2008). Hence, using the current model specification the four dimensions of political motivation are not reflected very well by the available indicators.

Although cross-loadings were more pervasive than expected, the substantive patterns of these cross-loadings exhibit some resemblance with the hypothesized continuum structure of motivation. In several cases the cross-loadings point to conceptually adjacent factors which lends some credence to the notion that the principle of self-determination plays some role in structuring political motivation.

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Summarizing the psychometric evidence, there is only a partial match between the observed data on citizens' motives for political engagement with the theorized typology of political motivation. These deficiencies could indicate substantive issues with the theory or issues with the chosen model specification. Unfortunately, because each factor is represented by only three indicators there is not much room for scale optimization by removing improper items which is a standard strategy in scale development (Boateng et al., 2018). As one indicator ('Identified – news') was entirely off expectations (statistically significant negative loading on its target factor and strong cross-loading), it was removed in a revised measurement model to see whether that item conflated the loading structure of the remaining indicators.

ESEM results reported in Table 4-2 show that removing that item led to a noticeable improvement of goodness of fit indices and clearer patterns of the loading structure. Still, the overall evidence on the psychometric quality of the measure remains mixed.

Table 4-2: ESEM factor loadings, reduced model

	Intrinsic	Identified	Introjected	External
Intrinsic				
<i>Unconv.</i>	0.89	0.07	-0.03	0.07
<i>Electoral</i>	0.04	0.89	-0.01	0.10
<i>News</i>	0.31	0.34	0.07	-0.21
Identified				
<i>Unconv.</i>	1.02	-0.05	-0.00	-0.04
<i>Electoral</i>	0.05	0.84	-0.04	-0.17
Introjected				
<i>Unconv.</i>	0.32	0.12	0.15	0.32
<i>Electoral</i>	-0.17	0.95	0.02	0.02
<i>News</i>	0.02	-0.03	1.20	-0.01
External				
<i>Unconv.</i>	0.10	-0.02	-0.01	0.49
<i>Electoral</i>	-0.00	-0.05	0.01	0.46
<i>News</i>	-0.07	0.06	0.28	0.43
Goodness of Fit				

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<i>CFI</i>	0.989
<i>TLI</i>	0.963
<i>SRMR</i>	0.013
<i>RMSEA</i>	0.038

Note: Standardized factor loadings of an exploratory structural equation model in MPLUS 6.11; Geomin-rotation; N=1.019; A priori target loadings designed to measure each factor are shown on grey background; Loadings with $p < 0.05$ are shown in bold face. Correlation between intr-ident: 0.38, intr-intro: 0.14; intr-ext: -0.02; ident-intro: 0.17, ident-ext: -0.13; intro-extr: 0.26.

Several pieces of evidence are in line with theoretical predictions. Goodness of fit indices show that with this model specification respondents' self-reported motivation to engage in politics can be represented well in a 4-dimensional structure. The excellent fit is also remarkable when considering that the survey items were not crafted to increase inter-item correlations through highly similar question wordings but instead to capture different aspects of each behavioral regulation which usually attenuates fit indices. Also, two results suggest that in the refined model specification indicators better tap into the dimensions of political motivation they were pre-specified to measure: no indicator loads negatively on its respective target dimension and the highest loading for each factor is from its prespecified indicators.

Further support for the SDT-inspired typology of political motivation emerges when examining the cross-loadings. While external motivation is largely free of cross-loadings, the other behavioral regulations exhibit significant cross-loadings. Importantly, these cross-loadings mostly conform with the expected meaningful structure of motivation as encapsulated in the *continuum hypothesis*. Specifically, most items show weak loadings on theoretically remote factors whereas items show often stronger loadings on the target factor or on conceptually close factors. In this vein, when comparing the broader categories of autonomous (intrinsic, identified) and controlled (introjected, external) forms of motivation, the strongest loadings are from indicators within the respective category while indicators from the opposite category in most cases do not

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exhibit strong loadings.¹⁷ Hence, these clusters of autonomous and controlled motivations are in line with the idea of a structuring role of self-determination in citizens' reasons for political engagement.

However, the observed data are far from fully consistent with theoretical expectations. Various factor loadings are unexpectedly weak (e.g. the electoral participation item on intrinsic motivation). Also, several factors are driven by a single item or they receive disproportionate amounts of cross-loadings. For instance, identified motivation receives substantial cross-loading from the intrinsic and introjected indicators. Notably, the identified factor is mostly determined by items that assess electoral participation, suggesting that that factor may capture a cluster of electoral participation items rather than the latent concept of identified motivation. To conclude, not all four theorized dimensions of political motivation are equally well represented in the data so that, empirically, the boundaries between the types of motivation not as clear as they are in theory.

Notwithstanding the deficiencies in discriminant validity, when the factor structure is used to estimate a correlation matrix between the predicted motivation scores, we observe the hypothesized continuum structure (Table 4-3). In particular, intrinsic motivation is moderately correlated with the other autonomous type of motivation (identified) but exhibits barely any correlation with external motivation. Likewise, external motivation correlates with its adjacent controlled type of motivation (introjected). Hence, citizens who find joy in politics will often find politics important but intrinsic motivation does not predict levels of controlled motivation. Altogether, the accumulated findings can be read as evidence for the presence of a systemic order of behavioral regulations in political motivation, providing initial evidence that akin to motivation in other life domains perceived self-determination serves as a structuring principle of motivation to engage with politics.

¹⁷ The electoral items of introjected motivation is the exception here as it strongly loads on identified motivation as part of the category of autonomous motivation.

Table 4-3: Correlation matrix

	[1]	[2]	[3]	[4]
<i>Intrinsic</i>	1			
<i>Identified</i>	0.46***	1		
<i>Introjected</i>	0.21***	0.20***	1	
<i>External</i>	0.02***	-	0.31***	1
<i>Pol. Interest</i>	0.26***	0.37***	0.07*	-0.20***
<i>Civic Duty</i>	0.19***	0.58***	0.16**	-0.10

Note: ***: $p < 0.001$; **: $p < 0.01$; *: $p < 0.05$

For additional tests on the discriminant and convergent validity of the individual dimensions of the political motivation scale, Table 4-3 shows associations of each behavioral regulation with political interest and voting as a civic duty. Given that psychological gratifications such as joy and pleasure are central components of political interest (Wuttke, 2021), political interest should correlate with intrinsic political motivation. Since perceived importance of the political domain is another component of political interest (Prior, 2019), political interest should also correlate with identified motivation – and presumably less strongly – with introjected motivation. Yet, there is no theoretical reason to expect that higher levels of political interest should go along with higher levels of external motivation.

The correlation matrix supports the measures' convergent validity in that the expected correlations between political interest and autonomous forms of motivation are present. Also, the observed correlations support the measure's discriminant validity in that correlations between political interest and controlled forms of motivation are absent or negative.

With regards to civic duty, theoretical reasoning would predict correlations with all dimensions of political motivation except external motivation because each of the

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other types of motivation entail valuing and endorsing political participation to some degree. Above all, accepting the voting norm should go along with high levels of identified political motivation because identified motivation reflects the full internalization of political norms. In contrast, introjected motivation is a form of superficial internalization, therefore suggesting weaker correlations; intrinsic motivation should also exhibit weaker correlation than identified motivation because, conceptually, this type of motivation does not entail previously foreign contingencies that have been taken in. Empirically, the correlation matrix reported in Table 3 shows the expected patterns between endorsing voting as a civic duty and the four types of political motivation, providing additional evidence for the measure's validity and for the proposition that SDT's motivations typology maps onto the political domain.

Summing up the available findings so far, some evidence suggests that reasons for political engagement are structured along a continuum of self-determination but the data also reveals significant problems in attempting to measure political motivation as a multi-dimensional construct with four clearly delineated subdimensions. That the boundaries between types of motivation are so blurry may either attest to the theory's limited applicability to the political domain or it may reflect a lack of discriminant validity of the employed measure. This question can only be reconciled with new data and a revised political motivation scale.

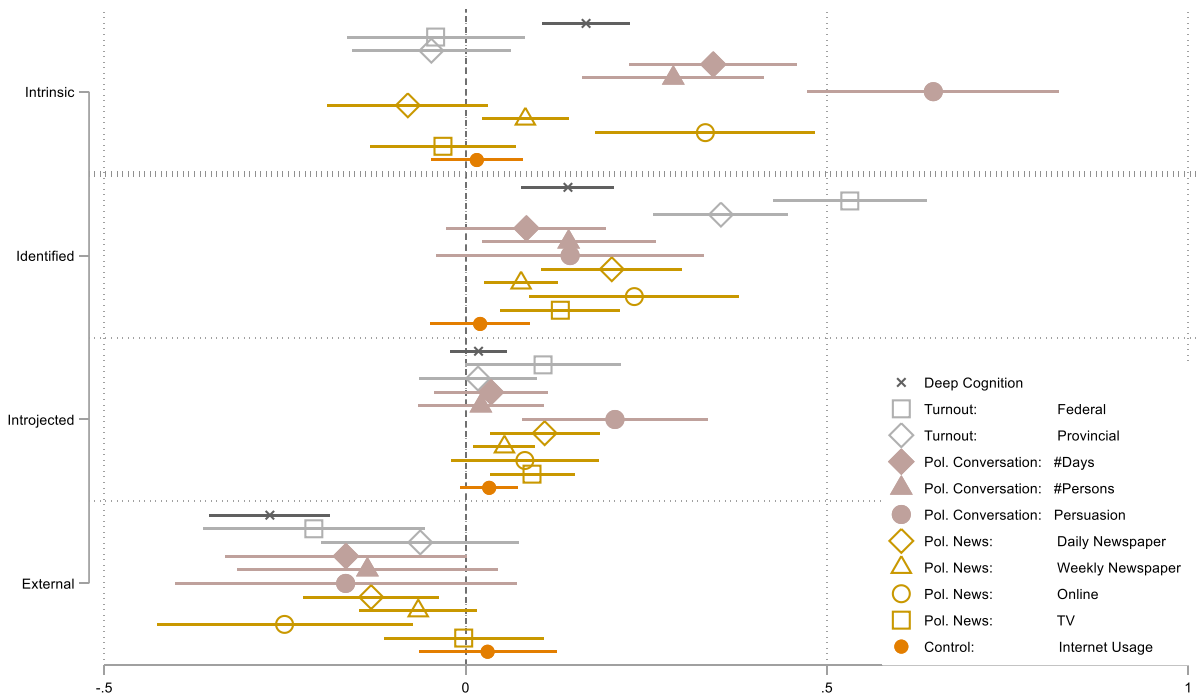
However, before turning to the results on a revised measure of political motivation (Study 3), the available data is used to conduct additional tests on the substantive hypotheses regarding the functional consequences of political motivation. When interpreting these results, the measure's imperfections must be kept in mind. For instance, due to the measure's deficiencies in clearly delineating adjacent types of political motivation, correlations with a criterion variable that were expected to arise for a particular type of motivation might also materialize for adjacent dimensions. Still, because external motivation is well represented in the data and due to the accumulated evidence for a continuum structure of political motivation, we should at the very least

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observe the hypothesized results at the end points of the continuum of self-determination (external and intrinsic motivation).

With these caveats in mind, Figure 4-2 reports findings on testing the proposition that only the more autonomous types of motivation lead to self-sustained political engagement whereas external motivation was predicted to not have any independent effects on the frequency of political action. Specifically, Figure 4-2 reports motivation's average marginal effects on different behavioral outcomes obtained from eleven separate logistic and linear regressions with the four motivation variables as explanatory variables.

Figure 4-2: Association between types of motivation and political engagement



Note: Results from eleven separate logistic or linear regressions with motivation as independent variables. Reported are average marginal effects using the observed values approach with 95% confidence intervals. The frequency of non-political internet usage works as a validation to test whether the reported associations between political motivation and political engagement does not reflect confounding with non-political dispositional differences: individuals with higher levels of autonomous motivation do not show generally show higher levels of media consumption.

The reported associations between political motivation and the proclivity for various types of political engagement (turning out to vote, engaging in political conversations or watching political news) underscores the distinctiveness of the four types of political motivation. All in all, the findings reported in Figure 4-1 are in line with the

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autonomous and *external motivation hypothesis*: Higher levels of external motivation to engage with politics do not go along with more frequent electoral participation, political conversations or political media consumption.¹⁸ This pattern is strikingly different with for the autonomous types of political engagement: Higher vs. levels of intrinsic and, to a lower extent, identified motivation goes along with higher frequencies of various forms of engagement with the political domain.¹⁹

Having established that political motivation predicts *whether* a person engages in a behavior, I turn to examining whether different types of motivations have different implications for *how* citizens engage with the political domain. To test the *deep cognition hypothesis*, Figure 4-2 reports associations between political motivation and a summary index of five self-reported items on cognitive involvements with politics. Overall, the results square nicely with the idea that only autonomous political motivation goes along with deeper processing of political content. In particular, the graph shows that correlations are strongest for the most self-determined type of motivation (intrinsic) and weakest for the least self-determined type of motivation (external). Respondents who engage with politics for the pleasure they derive from political engagement show deeper processing of political information whereas external motivation is even negatively associated with deep processing. Note that the self-reported items of the cognitive depths index only indirectly assess cognitive processes and are potentially subject to biases such as the desire to maintain self-esteem. Nonetheless, the results can be interpreted as suggestive evidence that the typology of motivation predicts *how* a person will engage with politics: Citizens seem to engage with politics no more deeply than necessary when their political involvement is driven by external pressures but

¹⁸ No clear predictions were made for introjected motivation. Introjected motivation is a controlled type of motivation but as it entails having partly internalized political norms it may lead to self-sustained behavior on a small scale. Empirically, independent effects of introjected motivation are weak.

¹⁹ The frequency of non-political internet usage works as a validation to underline that the reported associations between political motivation and political engagement does not reflect unobserved non-political association: individuals with higher levels of autonomous motivation do not show generally show higher levels of media consumption.

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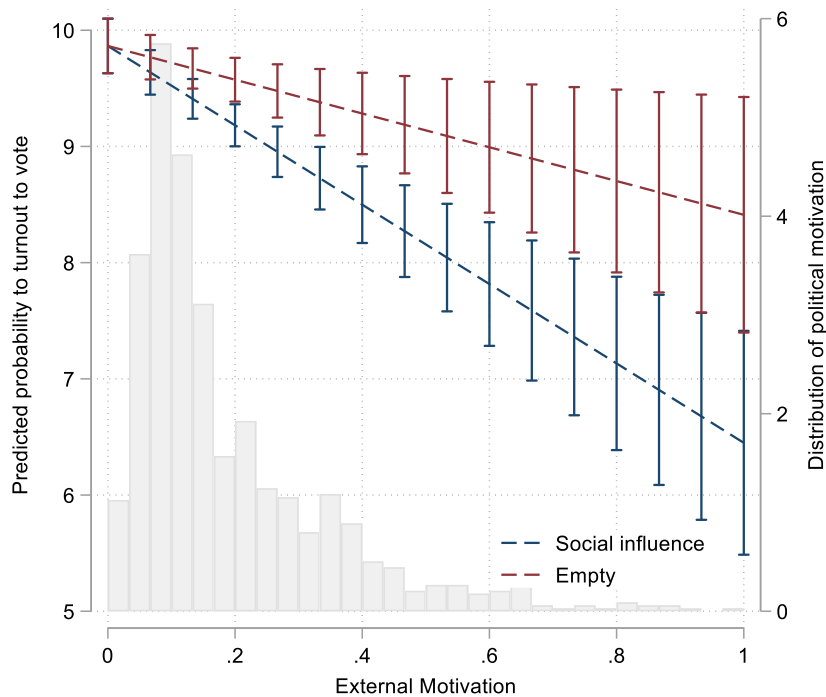
cognitive depth will be deeper the higher a person's level of autonomous political motivation.

So far, the analysis has not provided any indication of direct effects of external motivation on political engagement so that one might question whether external political motivation has any role to play in shaping political behavior. However, external motivation's distinct role was theorized as moderating how citizens react to external stimuli with regards to political engagement. To therefore test the moderating role of external political motivation, we can make use of the vignette experiment that was included in the GLES Tracking survey. The experiment assessed subjects' inclination to participate in a hypothetical election under the experimentally induced condition to abstain due to social pressure by friends compared to a control group that was not exposed to social cues. Figure 4-3 shows that external motivation conditions effects of social pressure on the likelihood of electoral participation:²⁰ the higher one's level of external motivation the more important were social considerations in the decision whether to turn out to vote. Therefore, the vignette experiment suggests that external political motivation does have a role in determining the proclivity for political engagement albeit it is not a direct one.

²⁰ Further analyses on the moderating of social influences by political motivation show mixed results. Exploratory analyses using the GLES tracking data show that, against expectations, autonomous motivation also moderates social influence (see appendix 2), questioning whether the moderating role is distinct to external motivation.

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Figure 4-3: External Motivation Moderates Social Influence



Note: Outcome is the intention to participate in a hypothetical election. Histogram in grey shows the distribution of external political motivation.

To sum up, the collected evidence from Study 1 reveals partial support for the SDT-inspired typology which considers political motivation as a multi-dimensional concept where each type of motivation is ordered on a continuum of perceived autonomy and has distinct ramifications for political behavior. Exploratory structural equation modelling on the respondents' reasons for political engagement partly supported the four-dimensionality of political motivation and the theorized role of perceived self-determination in structuring the relationship between these dimensions. Yet, the measure fell short of clearly delineated the four types of political motivation, indicating major deficiencies in the employed indicators to capture the theorized concepts.

Notably, despite these shortcomings the substantive hypothesis tests supported the idea that each dimension of political motivation distinctively predicts whether and how citizens engage in politics. If the measure's shortcomings introduced random noise, then one might expect future hypotheses tests with a better measure of motivation to yield even stronger results. However, another interpretation is conceivable for

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the discrepancies between the weak measurement model and the stronger results of the substantive hypothesis tests: The hypotheses-congruent findings could reflect spurious correlations that are driven by methodological artefacts and that overshadow deeper theoretical problems which surfaced partly in the imperfect measurement model.

Against this backdrop, it is worth recalling that Study 1 relied heavily on self-reported measures both to assess outcomes and explanatory variables which is problematic given individuals' varying inclination to biases such as the drive for self-enhancement which could render some individuals systematically more prone to misrepresent their own behavior in survey responses compared to other respondents (Dunning et al., 2004). Relying on self-reports to measure both outcomes and explanatory variables might then introduce measurement-based confounding because the reported correlations on the influence of motivation on behavior might simply reflect individual differences in the tendency to incorrectly describe themselves as both highly motivated and strongly involved with politics.

Two additional study therefore seeks to address two limitations of the present study. First, Studies 2 and 3 will make use of other data types and measurement paradigms to alleviate problems of measurement confounding. Second, Study 3 employs a revised political motivation measure that consists of longer survey battery and that queries motivation for political engagement generally instead of for three different forms of specific behavior.

4.4 Study II

4.4.1 Measures

Political Motivation. An abbreviated short scale based on the original political motivation scale was used to measure political motivation. One item for each dimension of political motivation was used. Items were selected from the original battery based on factor loadings in Study 1.

Turnout behavior, federal. In each survey wave, respondents were asked about the intention to participate in the 2017 German federal elections. In later survey waves, respondents were asked about their actual participation.

Turnout behavior, second-order. Respondents who live in states in which subnational elections were held during the duration of the campaign panel, respondents were asked about participation in the provincial elections. All respondents of wave 11 were asked about participation in the European Parliament election. A second-order election variable was created that is 1 for respondents who reported participation in all eligible second-order elections and 0 if they abstained from at least one second-order election.

Perceived turnout behavior among social contacts. In each survey wave, respondents were asked about the perceived political behavior of their political conversation partner. For up to three social contacts respondents reported whether the respective person would turn out to vote at the federal election or not upcoming election or not. Additional information about the respective conversation partners were used link their perceived turnout behavior over time. To disentangle selection effects from persuasion effects (Gärtner et al., 2020), the following analysis focuses on intra-individual changes in perceived turnout intentions of those uniquely identified social contacts that the respondents mentioned in the first survey wave.

4.4.2 Participants

The short scale was included in the Campaign Panel of the German Longitudinal Election Study (Roßteutscher et al., 2017). The Campaign panel draws respondents from Respondi, a heterogeneous online panel whose participants were recruited online. With the primary goal of observing attitudes in the run-off to the German federal elections in September 2017, survey data was collected in eleven waves beginning in fall 2016. The last survey data was collected after the European Parliament elections 2019.

4.4.3 Results

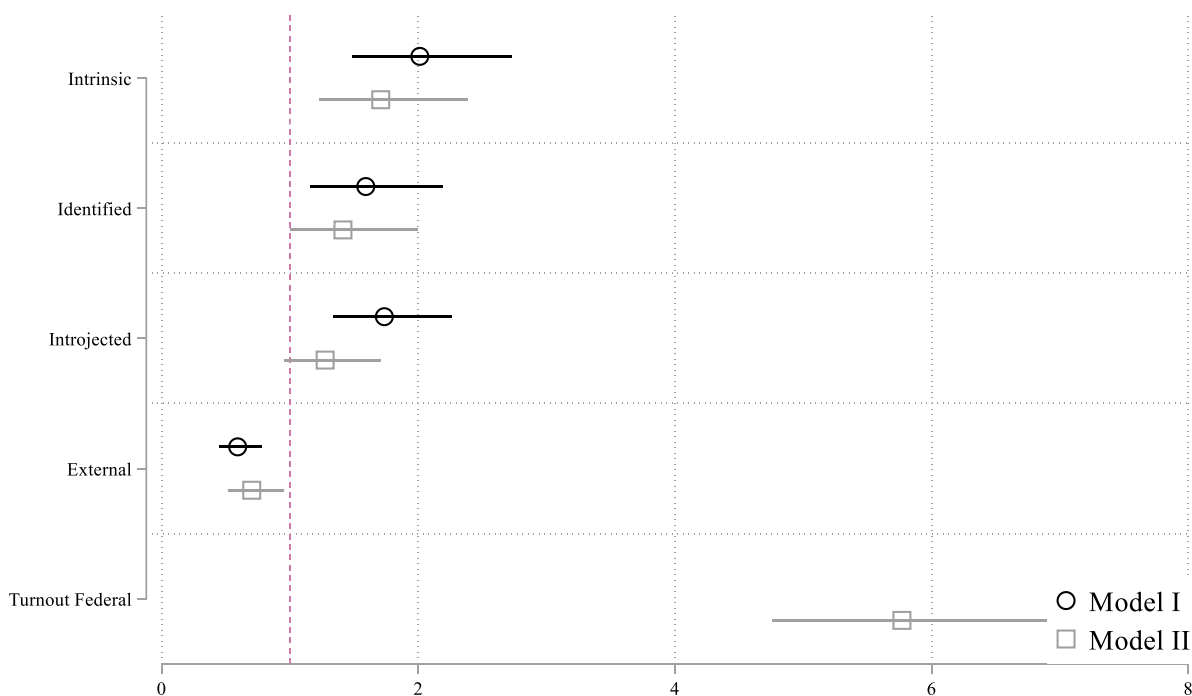
Study 2 enables the investigation of political motivation's potential guiding role in the evolvement of political orientations over the course of a political campaign. In particular, it allows for a more environmentally valid test of the *external motivation hypothesis* regarding the susceptibility to social influences. Without relying on self-reported hypothetical behavior in an artificial setting, the longitudinal panel data allows to examine whether citizens' inclinations towards political engagement changes when the perceived social environment changes. Because the campaign panel has been surveyed over a long period of time and covers multiple elections at different political levels, it also allows to examine the *autonomous motivation hypothesis* regarding the inclination for self-sustained political behaviors.

First-order elections evoke greater spectacle, excitement, media coverage and mobilization efforts by political parties compared to second-order elections (Reif & Schmitt, 1980). In other words, first-order election come with a larger array of motivation stimuli that may energize citizens to cast a ballot. Participation at second-order elections, on the other hand, requires greater motivational predispositions on the side of the voters. Therefore, one would expect all types of motivation to stimulate voters' inclination to cast a ballot in first-order elections but only autonomous types of motivation should provide the self-sustained motivational nutrients that fuel participation in second-order election when social and public pressures have receded.

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Displaying the results from eight bivariate logistic regressions of participation in second-order elections with the motivation variables as explanatory concepts, Figure 4-4 shows that all types of motivation except external motivation are associated with both kinds of electoral participation. Replicating findings from Study 1, only the more self-determined types of autonomous predict electoral participations. However, the stimulating role of the different types of motivation does not differ across electoral types. The sizes of the coefficients vary, but, against expectations, the direction of the association of each type of motivation is the same for participation in high and low salience elections. Hence, there is no empirical support for the tenet that the multi-dimensional conception of political motivation is particularly suited to explain electoral participation in varying political contexts.

Figure 4-4: Motivation and Electoral Participation in Second Order Elections



Note: Shown are odds ratios with 95% confidence intervals.

For another test of political motivation's role in determining individual reactions to a changing environment, Table 4-4 reports the results of a fixed effects regression analysis that leverages intra-individual variation in the perception of voting intentions among one's social contacts. The first column ("Basic") shows a positive effects for two

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out of three discussion partners: When the person that the respondents most frequently or second most frequently discusses politics with decides to turnout to vote after having previously been undecided or reluctant, then the respondent is also likely to change their intention to turn out to vote.

Table 4-4: Effects of changes in turnout intention among discussants on changes on turnout intention of the respondents

	Basic	Interaction
Discussant1	0.04 ^{***} (0.01)	0.10 [*] (0.04)
Discussant2	0.03 [*] (0.01)	-0.03 (0.04)
Discussant3	0.01 (0.01)	-0.01 (0.04)
Disc1*Intrinsic		0.09 (0.06)
Disc1*Identified		-0.32 ^{***} (0.06)
Disc1*Introjected		0.15 ^{**} (0.05)
Disc1*External		-0.24 ^{***} (0.07)
Disc2*Intrinsic		-0.01 (0.07)
Disc2*Identified		0.01 (0.07)
Disc2*Introjected		0.10 (0.06)
Disc2*External		-0.08 (0.05)
Disc3*Intrinsic		-0.08 (0.06)
Disc3*Identified		0.02 (0.07)
Disc3*Introjected		0.08 (0.06)
Disc3*External		-0.04 (0.06)
Constant	0.87 ^{***} (0.02)	0.90 ^{***} (0.02)
Wave controls	Yes	Yes

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N	9,718	7,461
Groups	7485	5299

Notes: Results from a linear fixed effects regression analysis. Discussant variables denote the effect of intra-individual dynamics in perceived turnout intentions among discussions partners on changes in the respondent's turnout intentions; Reported are b coefficients from fixed effects linear regressions; Discussant 1-3 is the person who the respondents talks most, second-most or third-most frequently with. *: $p < 0,05$, **: $p < 0,01$, ***: $p < 0,001$.

The *external motivation hypothesis* posits a higher susceptibility to these kinds of social influences among citizens with higher levels of external political motivation compared to citizens with lower external political motivation. However, against expectations, highly externally motivated citizens are less and not more likely to adjust to the turnout intention of their discussion partners.

These results are not consistent with the findings on the susceptibility to social influences from the more artificial setting of a vignette experiment in Study 1. These findings could be due to the lower psychometric quality of the abbreviated short scale. Yet, a correlation matrix on associations between the motivation variables and with criterion variables do not hint at lower discriminant or convergent validity compared to the original scale (see Appendix 4). Moreover, collapsing both indicators of controlled motivation (introjected, external) into a summary index also does not lead to a positive statistically significant moderation effect of controlled motivation (not reported).

Altogether, using longitudinal data that captures reactions to changing political and social environments reveal the findings presented in Study 2 suggest that the SDT-inspired typology of political motivation did not help to predict political behavior in the phenomena under observation. The role of autonomous motivation did not vary across high and low salience election and external motivation did not moderate the susceptibility to social influence. These findings cast doubt on the predictive validity of political motivation and can be interpreted as tentative evidence that the effects of political motivation become more fragile when tested with more suitable data that is less prone to measurement biases.

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4.5.1 Measures

Political Motivation. The political motivation scale was revised in several ways (see Appendix 1 for question wordings). First, a larger pool of 19 items was used to assess the four dimensions of political motivation. The increased number of items allows for the potential removal of items that do not exhibit the expected psychometric properties while still maintaining multiple indicators for each dimension of political motivation. Second, instead of querying reasons for different manifest forms of political motivation on each page of the questionnaire, the target object of motivation is political engagement generally. Specifically, after reading an introductory statement that illustrates various forms of political engagement respondents were asked to rate different reasons for “engaging with or engaging in politics”. Third, question wordings were revised.

Criterion Variables. The revised measure of political motivation was part of a larger survey which also examined how respondents process the content of a political video that was embedded in the survey (<https://youtu.be/mQHHb0l105Y>). The survey also contained an experimental stimulus that was administered after the political motivation battery. Findings on the experiment are reported elsewhere (Wuttke, 2021) and are not of substantive interest for the research question of this study. Because most experimental conditions yielded null effects and because no interactive effects with political motivation was found (Wuttke, 2021), I analyze the survey cross-sectionally, averaging across experimental conditions (Appendix 5 shows that results do not differ across experimental groups).

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Three indicators capture how respondents engaged with the political video that was embedded in the survey.

Political Engagement, Behavioral Choice 1. Dummy variable indicating whether the respondent opted to watch a political video over seemingly nonpolitical options. (Note that all respondents watched the same political video irrespective of video choice.)

Political Engagement, Behavioral Choice 2. Dummy variable indicating whether the respondent opted to watch yet another political video after the survey was officially completed without receiving additional monetary incentives.

Political Engagement, Subjective Experience. Unweighted summary index of four Likert-scale variables on self-reported enjoyment of watching the political video during the survey (Sample item: “*I enjoyed watching this video very much*”).

The indicators *Political Engagement, Behavioral Choice 1, 2* reflect an inclination towards political engagement and should correlate with intrinsic and identified political motivation but not with external motivation (*autonomous motivation hypothesis, external motivation hypothesis*). *Political Engagement, Behavioral Choice 2* and *Political Engagement, Subjective Experience* assess perceived and anticipated inherent gratification of watching the political video and should therefore strongly correlate with intrinsic political motivation.

Three indicators assess how the respondents processed the political video they watched, all of which should correlate positively with intrinsic and identified motivation and negatively with introjected and external motivation (*deep engagement hypothesis*).

Depth of Processing, Subjective Self-Report. The subjective measure on the depth of processing the political video is an unweighted summary index of two Likert-scale items

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assessing respondents' perception of the invested efforts while watching the video (sample item: "*I watched the video very attentively*").

Depth of Processing, Objective. Count of correct answers to three open-response questions about the video's content. Based on a detailed codebook (see Supplement 2), the open-ended responses were classified by a coder who was unaware of the respondents' treatment conditions.

Depth of Processing, Behavioral. Dummy variable indicating whether respondents have prematurely skipped the video is used (time on questionnaire page).

4.5.2 Participants

1,500 respondents were drawn from the Respondi Panel, which is a heterogeneous online access panel with about 70.000 active participants who were recruited offline and online. Socio-demographic quotas (age, education, gender) were employed to ensure that the sample more closely resembles the German population. Among participants with completed interviews, 50% were female. Concerning formal education, 25% of participants had university-entrance diploma, 33% no degree or only at the lowest formal level ('Hauptschule') and the remaining had intermediary formal levels of education. Age quotas were set to an equal distribution of participants in groups of 18–29, 30–39, 40–49, 50–59 and 60 or more years of age. While the obtained sample cannot be considered a random draw of the German population, the employed quotas ensure variance on basic socio-demographic variables.

4.5.3 Results

Following the procedures from Study 1, I employ Exploratory Structural Equation Modelling to reveal the patterns that underlying citizens' motives for political engagement (Table 4-5). With regards to goodness fit indices, the four-dimensional model

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specification closely matches the new data (CFI: 0.962, TLI: 0.935, RMSEA: 0.017, SRMR: 0.062). Mirroring results from Study 1, however, a closer inspection of the loading structure again reveals that not all dimensions are represented equally well in the data.

Table 4-5: ESEM factor loadings, full model

	Intrinsic	Identified	Introjected	External
Intrinsic				
<i>Intr1</i>	1.02	0.10	-0.05	-0.03
<i>Intr2</i>	1.14	-0.18	-0.04	0.01
<i>Intr3</i>	1.35	-0.10	-0.03	0.00
<i>Intr4</i>	1.04	-0.27	0.06	0.03
Identified				
<i>Ident1</i>	0.91	0.34	0.01	-0.04
<i>Ident2</i>	0.91	0.20	-0.01	0.09
<i>Ident3</i>	0.67	0.15	0.37	0.05
<i>Ident4</i>	0.84	0.01	0.20	0.08
<i>Ident5</i>	0.83	-0.03	0.33	-0.05
Introjected				
<i>Intro1</i>	0.20	0.31	0.16	0.44
<i>Intro2</i>	0.46	0.11	0.21	0.20
<i>Intro3</i>	0.19	0.10	0.52	0.10
<i>Intro4</i>	0.03	0.03	0.63	0.44
<i>Intro5</i>	0.06	-0.07	0.41	0.62
External				
<i>Ext1</i>	-0.00	0.15	-0.38	0.67
<i>Ext2</i>	0.29	0.01	0.14	0.51
<i>Ext3</i>	0.06	-0.02	-0.13	0.79
<i>Ext4</i>	-0.06	-0.11	-0.04	0.82
<i>Ext5</i>	-0.12	-0.02	0.08	0.85
Goodness of Fit				
CFI	0.962			
TLI	0.935			
SRMR	0.017			
RMSEA	0.062			

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Note: Standardized factor loadings of an exploratory structural equation model in MPLUS 8; Geomin-rotation; N=1.629; A priori target loadings designed to measure each factor are shown on grey background; Loadings with $p < 0.05$ are shown in bold face. Correlation between intr-ident: 0.09, intr-intro: 0.68; intr-ext: 0.30; ident-intro: 0.02, ident-ext: -0.13; intro-ext: 0.29.

Intrinsic and external motivation and, to a lesser degree, introjected motivation exhibit the expected loading patterns: First, the specified indicators load strongly on the respective dimensions. Second, the data supports the instrument's discriminant validity in that the indicators' cross-loadings on other dimensions are lower than the loadings on the target dimension. Third, the cross-loadings are theory-consistent as significant cross-loadings usually point to a conceptually adjacent dimension. In these regards, the revised instrument represents a considerable improvement over the initial version.

However, replicating problems from the initial scale, the dimension of identified political motivation is again not well represented in the data. Only one of its specified indicators loads significantly on the respective dimension. As opposed to establishing a distinct component of political motivation, the indicators of identified motivation instead load on the intrinsic and, to a lesser degree, the introjected dimensions. Hence, the available indicators of political motivation do not cleanly correspond to the theorized four dimensions of political motivation.

It is possible that respondents' interpretation of particular indicators differs from the meaning that was originally intended so that invalid items could disturb the factor structure even when the remaining items serve their function well. Given the leeway for scale optimization that is afforded by the longer battery of motivation indicators, it is possible to remove indicators with unexpected properties. Based on recommendations by Osborne et al. (2008), items with loadings lower than 0.32 on the target factor or with exceeding cross-loading were removed.

In a first step, one item per factor was removed (Introjected: Item 2, Identified: Item 1), which led to a modest but notable improvement of model fit (CFI: 0.977, TLI: 0.958, RMSEA: 0.052, SRMR: 0.016). Further reiterating this process, I removed another weakly loading item from the introjected and the identified dimensions which again

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led to a modest increase in model fit, now achieving excellent goodness of fit indices (CFI: 0.987, TLI: 0.974, RMSEA: 0.012, SRMR: 0.042, see Table 4-6).

Table 4-6: ESEM factor loadings, optimized model

	Intrinsic	Identi- fied	Introjected	External
Intrinsic				
<i>Intr1</i>	1.02	0.04	0.00	-0.03
<i>Intr2</i>	1.09	-0.22	-0.02	0.01
<i>Intr3</i>	1.09	-0.15	0.01	-0.00
<i>Intr4</i>	0.98	0.25	0.03	0.04
Identified				
<i>Ident1</i>	0.96	0.34	0.02	-0.00
<i>Ident2</i>	0.94	0.15	0.01	0.10
<i>Ident3</i>	0.65	0.12	0.44	-0.06
Introjected				
<i>Intro3</i>	0.16	0.03	0.62	0.05
<i>Intro4</i>	0.02	0.01	0.68	0.40
<i>Intro5</i>	0.06	-0.07	0.41	0.59
External				
<i>Ext1</i>	0.03	0.12	-0.30	0.66
<i>Ext2</i>	0.26	-0.01	0.23	0.48
<i>Ext3</i>	0.04	-0.01	-0.05	0.77
<i>Ext4</i>	-0.08	-0.05	-0.01	0.82
<i>Ext5</i>	-0.11	0.01	0.12	0.83
Goodness of Fit				
<i>CFI</i>	0.987			
<i>TLI</i>	0.974			
<i>SRMR</i>	0.012			
<i>RMSEA</i>	0.042			

Note: Standardized factor loadings of an exploratory structural equation model in MPLUS 8.1; Geomin-rotation; N=1.629; A priori target loadings designed to measure each factor are shown on grey background; Loadings with $p < 0.05$ are shown in bold face. Correlation between intr-ident: 0.09, intr-intro: 0.68; intr-ext: 0.30; ident-intro: 0.02, ident-ext: -0.13; intro-extr: 0.29.

With the exception of identified motivation, the optimized measurement model in Table 4-6 suggests that the revised scale succeeds to capture the intrinsic, introjected, and

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external dimensions of political motivation. Compared to Study 1, cross-loadings are minimized and mostly in line with the theorized ordering on the continuum of self-determination. Altogether, the revised measure seems to represent a major improvement over the original instrument.

Nonetheless, the identified dimension of political motivation is still poorly represented with barely any substantial loading. Because the items that were specified to capture identified motivation load strongly on the intrinsic factor, the results do not necessarily imply that that identified motives have no relevance in the political domain. Rather, the strong loadings on adjacent factors suggest that empirically identified motivation cannot be cleanly delineated from conceptually close concepts, intrinsic motivation in particular.

The failure to identify identified motivation in respondents' self-reports could have different reasons. Either the conceptual distinction between engaging in politics for deeply internalized reasons, for the inherent pleasure or for grudgingly accepted norms does not adequately reflect the motivational pathways that lead citizens to political action. Alternatively, the typology could have conceptual value but the failure to empirically capture identified motivation as a distinct factor could reflect the limitations of introspection as a method to gauge motivation. In any case, the problems to identify this factor of political motivation in two data sets and different model specifications indicates that identified motivation cannot be represented as well in the political domain as in other domains of life.

Nonetheless, the revised measure appears decently equipped to measure political motivation along the lines of the SDT-inspired typology of motivation. Yet, we must keep in mind that the intrinsic factor represents a mix of indicators from both autonomous types of motivation and that the validity of the identified factor is low. With these caveats in mind, the ESEM results suggest that the revised measure of political motivation improved considerably and can serve to test whether the better-represented dimensions predict political engagement in line with the derived hypotheses.

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Table 4-7 shows the correlation matrix of political motivation using predicted factor scores. In contrast to the results obtained with the instrument from Study 1, the revised measure does not exhibit a consistent continuum structure. The consistently low correlations of the identified dimension are unsurprising given the previous results, but other findings are unexpected. For instance, the correlation between intrinsic and introjected motivation is much stronger than one could predict based on self-determination theory for conceptually remote types of motivation. Strikingly, the correlation between the two controlled types of motivation (external, introjected) is not markedly stronger than the correlation between types of motivation at the end points of the continuum of self-determination (intrinsic, external). These results therefore suggest that the problems of the revised instrument of political motivation exceed beyond identified motivation, casting more fundamental doubts on the validity of the proposition of self-determination theory in the political domain.

Table 4-7: Correlation between types of motivation

	[1]	[2]	[3]	[4]
<i>Intrinsic</i>	1			
<i>Identified</i>	0.11***	1		
<i>Introjected</i>	0.80***	0.06***	1	
<i>External</i>	0.34***	-	0.31***	1
		0.19***		
<i>Pol. Interest</i>	0.76***	0.15***	0.65***	0.21***
<i>Civic Duty</i>	0.36***	0.00	0.42***	-0.28***

Note: ***: $p < 0.001$; **: $p < 0.01$; *: $p < 0.05$

Additional theory-inconsistent evidence emerges when examining the associations of political motivation with criterion variables (Table 4-7). The strong correlations of intrinsic and the weak or negative correlations of external motivation square with theoretical predictions but the remaining evidence is not as expected. Identified motivation shows barely any expected properties such as close overlap with voting as a civic duty. Also, it is unexpected that the correlations of civic duty with each of the other types of motivation is of similar strength, casting doubt on the dimensions' discriminant

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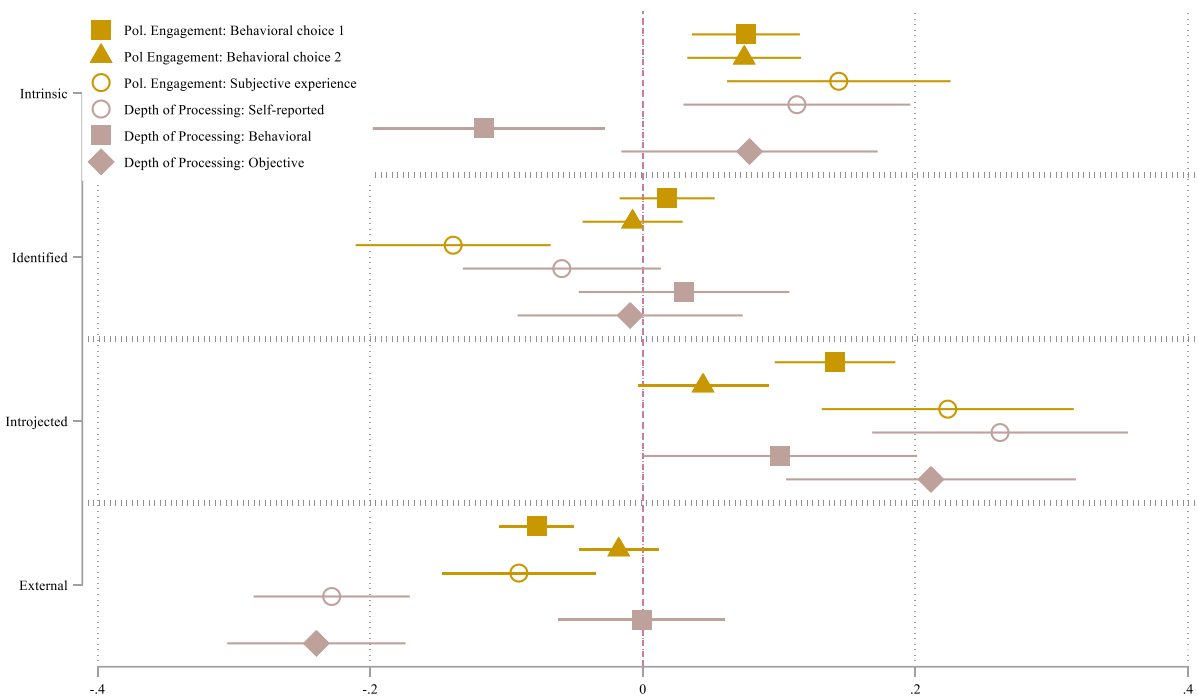
validity. Moreover, whereas political interest should correlate much more strongly with intrinsic motivation than with introjected motivation, there is only a small difference between the two correlation coefficients. Altogether, the revised measure of political motivation does not fare well on basic tests of convergent and discriminant validity. Although (or because) the measurement model has improved for the revised political motivation measure over the original instrument, the derived motivation scores are not in line with the theoretical propositions of political motivation as inherently structured by the degree of perceived self-determination.

The failure to meet basic validity tests and to recover the expected continuum structure makes it seem unlikely that political motivation derived from the new scale can predict political behavior based on self-determination theory. The *deep engagement hypothesis* posits that higher levels of autonomous political motivation will go along with deeper processing of the video because respondents with strong intrinsic or identified motives should value or enjoy engaging with the video for its political content. In contrast, respondents who are driven by controlled motivation have no reason to think deeply about a video they do not enjoy or care about and should therefore be inclined to prematurely skip it or to process it superficially. In addition to predicting how subjects process political content, political motivation should also predict *whether* respondents seek to engage with political media in the first place. According to the *autonomous motivation hypothesis*, higher levels of intrinsic and identified motivation stimulate the inclination to choose politics over other alternatives whereas no correlation was expected for external motivation. (No prediction was made for introjected motivation).

Figure 4-5 shows the results of linear or logistic regressions analyses (depending on the scale of the outcome variable) with the four political motivation variables as sole independent variables. In contrast to Study 1, these analyses include behavioral outcome measures which –if only in the artificial setting of online survey– reflect respondents' observed preferences for political over seemingly unpolitical content (choice 1) and for more vs. less political content (choice 2).

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Figure 4-5: Political Motivation and Political Engagement



Leaving the ill-measured dimension of identified motivation aside, the data supports the idea that each of the dimensions of political motivation have distinctive ramifications for citizen behavior in the political domain. Consistent with theoretical expectations, Figure 4-5 shows that higher levels of intrinsic political motivation consistently predict the frequency of behavioral choices for politics whereas external motivation exhibits no or negative associations with political engagement.

One reason for the inclination of intrinsically motivated citizens to seek political engagement even in the absence of external incentives was theorized to lie in the anticipated or perceived experience of inherent gratification from political engagement. Indeed, citizens with higher levels of intrinsic political motivation subjectively experienced watching the videos as more enjoyable compared to citizens with low levels of intrinsic motivation. Unexpectedly, however, the association with self-reported enjoyment is even stronger for introjected motivation than for intrinsic motivation. Given that perceiving inherent pleasure is a perennial conceptual property of intrinsic

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motivation this is yet another finding that questions the discriminant validity of the revised measure of political motivation.

Building on the law of low effort, the deep engagement hypotheses posited that citizens should deeply process political content when they are driven by autonomous motivation whereas citizen with higher levels of controlled motivation should invest no more cognitive resources than necessary to satisfy the internal or external pressures that made them engage with politics. Study 1 found evidence for this proposition but only employed self-reported measures for which reporting biases could confound the correlations with political motivation which is also reported.

Examining the correlations between intrinsic political motivation and self-reported (hollow circles) and behavioral and objective measures of depth of processing (filled circles) shows that, measurement error may indeed confound substantive conclusions: citizens who report intrinsic motives for political engagement also report having thought more deeply about the political video but alternative and arguably more valid measures of cognitive involvement do not show a significant, positive correlation with intrinsic motivation; based on the manual coding of the respondents' open-ended responses, higher vs lower levels of intrinsic motivation does not go along with more accurate statements about the content of the video. Moreover, individuals who report higher levels of intrinsic motivation even skip the political video earlier than subjects with low levels of intrinsic motivation. In other words, correlations of self-reported motivation with self-reported criterion variables do not necessarily replicate with measures of actual behavior.

The strong correlations of self-reported depth of processing with external and introjected motivations remain distinguishable from zero for the objective but not for the behavioral measure of deep processing. That higher vs lower levels of introjected motivation goes along with a more accurate recall of the video's content does not square with the SDT-typology of motivation as respondents should minimize cognitive efforts when they are driven by internal pressure to engage with politics. Hence, only external

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but not introjected motivation shows evidence in line with the *deep engagement hypothesis*.

Altogether, analyzing how the revised measure of political motivation relates to political outcomes shows evidence in line with theoretical predictions mainly for intrinsic and external motivation whereas the expected properties do not materialize for the behavioral regulations at the center of the continuum of self-determination. Notably, motivation is less predictive of objective and behavioral measures of political engagement than of self-reported measures of motivation.

4.6 Discussion

A prominent line of psychological research suggests that human behavior is structured by perceived self-determination. Applying this theory to the political domain, this study tested if the experience of self-determination also makes a difference for political engagement. If feeling autonomous vs. feeling controlled structures the motivational pathways to political engagement, previous accounts on participation and established strategies to foster engagement would be cast in a different light. From the perspective of self-determination theory, citizens can be triggered into action by autonomous reasons such stimulating a sense of importance (identified motivation) or enhancing the pleasure people derive from political engagement (intrinsic) as well as by controlling stimuli such as priming internal (introjected) or external pressures (external). Taking self-determination as a structuring principle of human motivation seriously implies that only autonomous motivation will lead to deep and self-sustained behaviors whereas controlled interactions with politics will remain short-lived and superficial. From this perspective, promoting political engagement through social or institutional enforcement appears like a straw fire that may effectively push citizens towards political engagement (Gerber et al., 2010), but will likely fail to elicit meaningful and durable behavioral changes. Hence, the SDT-inspired typology of political

motivation that was presented in this study promised not only to advance political science conceptualization but also to provide practical import.

Analyzing survey data from three studies indeed shows some evidence that engaging with politics for its perceived inherent value and engaging with politics for external pressures constitute distinct types of political motivation that can be empirically separated and that elicit specific behavioral responses in line with theoretical propositions: Citizens who are intrinsically motivated engage with politics more frequently and also report deeper forms of engagement. Citizens with high levels of external motivation only engage with politics when additional stimuli are present and try to minimize their involvement as much as possible. These findings can be read as support for the functional significance of feeling autonomous vs feeling controlled in one's political engagement, which constitutes a conceptual distinction that has not received much attention in existing research on political participation.

However, when considering the SDT-inspired typology of political motivation as a whole, empirical support for political motivation as a multi-dimensional concept that is ordered on a continuum of self-determination is rather weak. Employing various model specifications on two iteratively revised measures of political motivation revealed that the four theorized dimensions of political motivation could not be clearly distinguished from each other. Intrinsic and external motivation exhibited satisfactory discriminant and convergent validity but the types of motivation at the center of the continuum did not exhibit the expected properties, both in the measurement model and in substantive tests. The available data does not provide convincing evidence that political motivation can be represented in four dimensions that is internally organized by the principle of self-determination as only the types of motivation at the endpoints of the continuum of self-determination consistently provided meaningful results. Importing SDT as a prominent psychological framework into political science for systemizing political motivation therefore fails to provide the expected conceptual value because the multi-dimensional typology reverts to one of those dichotomous contrasts

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that already exist in the political science literature and that the typology was supposed to supersede.

It is worth noting that the theory-based measures and the theory-based predictions were tested as one package when examining the applicability of self-determination theory to the political domain. Although previous studies had established that SDT-based measures and hypotheses serve well to represent and explain motivation in various domains of life, the empirical findings reported in this study point to errors in one of the tested components when applied to politics. As a consequence of the principle of underdetermination (Oreskes, 2019), it is impossible to disentangle which element or which group of elements in the interdependent web of main and auxiliary assumptions is violated. It is conceivable, for instance, that future revisions of the political motivation scale might achieve to better represent political motivation as a four-dimensional concept and that a better measure also reveals more empirical support for the substantive hypotheses. In the present case with three rounds of data collection, however, a revised measure that fared better than the original instrument in retrieving motivation's theorized distinct dimensions even diminished the measure's predictive validity. Hence, despite its demonstrated wide-spread applicability we can conclude that self-determination theory does not fit to motivation to the political domain as well as it is reported to fit to motivation in other domains of life. What explains the disparity between the applicability of SDT to politics to the political domain compared to other domains of life?

At lot of meta-scientific research in recent years has established the presence of pervasive publication biases that strongly distorts the published literature in the direction of clean, hypothesis-consistent findings (Fanelli, 2012; Franco et al., 2014). More recent evidence has indicated that these distortions also exist among studies on scale validation (Flake & Fried, 2020). Because instruments to mitigate publication biases such as registered reports or large-scale replication projects are rare in the study of self-determination theory, the degree to which previous failed studies are underrepresented in

the published body of literature is unknown, rendering unclear whether the failure to apply self-determination theory to politics constitutes an atypical outlier. Further complicating the comparison between politics and other domains is that previous SDT studies often relied on self-reports for both outcome and explanatory variables whereas the present study found tentative evidence that this type of measurement confounding may over-estimate the distinct effects of motivation on actual behavior. Altogether, it is thus an open question whether the reported problems differ substantially from previous (unpublished) attempts to apply self-determination theory to other domains. Against this backdrop, it is at least possible that the problems this study has documented when applying self-determination theory to the political domain do not indicate distinct incongruences between politics and self-determination theory but lingering problems in the previous literature on self-determination theory.

However, taking the published literature which shows overwhelming evidence for the validity of SDT in other life domains at face value suggests the conclusion that there is something distinct about the political domain that makes the motivation to engage with politics less susceptible to SDT. Here, multiple reasons are conceivable each of which hints at options for further theorizing. For one, the political domain as a norm-laden domain might make it difficult to keep motivational processes apart when reflecting about them because respondents always perceive political engagement behind the lenses of political engagement as socially desirable. Against this backdrop, external motivation might not undermine perceived autonomy as much as it does in other life domains because people might interpret external pressure to engage with politics merely as hints at one's civic duties which is associated with more autonomous types of motivation. Also, "politics" is a particularly ambiguous term that has different meanings for different people (Thorson, 2012), which might further introduce difficulties to measure motivation through self-reports. In a similar vein, due to the vastness of the political domain, reasons for political engagement might be more multi-faceted compared to motivation in other life domains. As a result of all these considerations, motivational introspection could be more difficult so that citizens have a harder time

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clearly disentangling conceptually distinct but similar types of motivation that are located at the center of the continuum of self-determination. For instance, engaging with politics because you conceive yourself as a political person (identified motivation) or because you would feel guilty otherwise (introjected) may not represent different types of motivation in the minds of citizen. In fact, those who identify as political animals might be those who would punish themselves the most when they fail to live up to their ideals. These dynamics may play out differently in areas such as health or dieting where SDT has been successfully applied (Georgiadis et al., 2006; Pelletier et al., 2013) where dieting out of bad consciousness and inner pressure may indeed feel entirely different to people compared to dieting as an expression of one's lifestyle. Altogether, it is conceivable that the typology of motivation might have some conceptual value also in the political domain by presenting ideal type pathways to political engagement but that in empirical practice it is particularly hard to disentangle these types of motivation, particularly when relying on respondents' introspection.

4.7 Conclusion

This study has tested the applicability of self-determination theory on the political domain and found some, limited evidence that can be interpreted as supporting a functional role of perceived self-determination in whether and how citizens engage with politics. Yet, multiple attempts to measure political motivation based on the conceptualization of motivation as a multi-dimensional construct along a continuum of perceived autonomy has failed. Moreover, the distinct types of motivation were not consistently associated with the predicted political outcomes.

This study is helpful in two regards. For political science, it demonstrates dead-ends to avoid. Also, by presenting ideas from motivation science that could prove useful for the study of political participation in a revised, more domain-specific theory or when combined with novel measures that do not rely on self-reports to gauge motivation, the presented concepts may stimulate theorizing of the motivational pathways to

4.8 Acknowledgements

political engagement. For students of self-determination theory, the results presented here may have demonstrated the boundaries of the theory as the existing literature has reported many successes in applying SDT while less is known about where self-determination theory does not work.

4.8 Acknowledgements

This work was supported by the German Research Foundation [SCHO 1358/4-3].

4.9 Appendix

4.9.1 Appendix 1: Political Motivation Scale

The political motivation scale was included in two iterative studies. This appendix reports question wordings for both studies.

4.9.1.1 Political Motivation Scale – Study I

Table A4-1-1 and Table A4-1-2 report the question wordings in German and in English (translation).

Table A4-1-1: Question Wordings – Study 1, English Translation

ACTION	MOTIVATION	QUESTION TEXT
Unconventional	Q: Introduction	Please indicate to which degree each of these statements apply to you.
Unconventional	Intrinsic	If I decided to participate in a collection of signatures or in a protest march, I might do it, because... ... it's a joy for me to be part of it.
Unconventional	Identified	... it is part of what defines me as a person.
Unconventional	Introjected	... I would feel guilty otherwise if I didn't take the time to do it.
Unconventional	External	...otherwise others would look down on me.
Electoral	Q: Introduction	If I decided, to go to vote and to cast a ballot at the next elections, I do so because...
Electoral	Intrinsic	... it always provides a good feeling when I do it.
Electoral	Identified	... thereby I act according to my principles.
Electoral	Introjected	... this is just what a citizen is supposed to do.
Wählen	External	... thereby I can avoid criticism from friends and family.
Pol News	Q: Introduction	If I decided to watch a political show on TV or read an article about politics, I might do it because...
Pol News	Intrinsic	... I find it interesting to see what is happening in politics.
Pol News*	Identified	... thereby I can develop as a person.

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Pol News	Introjected	... you are supposed to do it, even if you are not in the mood for it.
Pol News	External	... it seems this is what is expected from me.

Table A4-1- 2: Question Wordings – Study 1, German question wording

ACTION	MOTIVATION	QUESTION TEXT
Unkonv.	Intro	Bitte geben Sie an, ob und inwieweit die folgenden Aussagen auf Sie zutreffen oder nicht zutreffen. Wenn ich mich entschließen würde, an einer Unterschriftensammlung oder an einer Demonstration teilzunehmen, täte ich dies, weil...
Unkonv.	Intrins.	...es mir Freude bereitet, dabei zu sein.
Unkonv.	Identif.	...dies ein Teil von dem ist, was mich als Person ausmacht.
Unkonv.	Introj.	...ich mich schuldig fühlen würde, wenn ich mir nicht die Zeit nähme.
Unkonv.	Extern.	...Andere sonst auf mich herabblicken würden.
Wählen	Intro	Und wenn ich mich entschließen würde, bei der nächsten Bundestagswahl teilzunehmen und eine Stimme abzugeben, täte ich dies, weil...
Wählen	Intrins.	... es mir immer ein gutes Gefühl gibt, wenn ich es tue.
Wählen	Identif.	... ich so meinen Prinzipien entsprechend handle.
Wählen	Introj.	... es sich für einen Staatsbürger einfach so gehört.
Wählen	Extern.	... ich so Kritik von Freunden und Verwandten vermeiden kann.
Pol News	Intro	Und wenn ich mich entschließen würde, eine politische TV-Sendung zu schauen oder einen Artikel über Politik zu lesen, täte ich das, weil...
Pol News	Intrins.	... ich es interessant finde zu verfolgen, was in der Politik passiert
Pol News*	Identif.	... ich mich dadurch auch selbst weiterentwickeln kann.
Pol News	Introj.	... man es tun sollte, selbst wenn man gerade keine Lust darauf hat.
Pol News	Extern.	... ich den Eindruck habe, dass es von mir erwartet wird.

*Item not used in analyses

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4.9.1.2 *Political Motivation Scale – Study II*

The following sections report original and translated questions wording of the revised political motivation scale.

Study 2: Question Wording, German

Textintro:

Menschen haben unterschiedliche Gründe dafür, welche Inhalte Sie im Fernsehen, Internet oder in der Zeitung konsumieren.

Bitte geben Sie an, ob und inwieweit die folgenden Aussagen auf Sie zutreffen oder nicht zutreffen.

Fragetext:

Wenn ich eine politische TV-Sendung ansehe oder einen Artikel über Politik lese, tue ich das, weil...

ich Politik spannend finde.

[intrinsisch]

andere sonst auf mich herabblicken würden.

[external]

politische Ereignisse zu verfolgen ein Teil von dem ist, was mich als Person ausmacht.

[identifiziert]

ich nach Informationen suche, um eine Wahlentscheidung zu treffen.

[instrumentell]

man Politik verfolgen sollte, selbst wenn man gerade keine Lust darauf hat.

[introjeziert]

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Codierung:

- (1) trifft überhaupt nicht auf mich zu
- (2) trifft eher nicht auf mich zu
- (3) teils/teils
- (4) trifft eher auf mich zu
- (5) trifft voll und ganz auf mich zu

Study 2: Question Wording, English

Textintro:

People have different reasons for the content that they consume on television, the Internet or in newspapers.

Please state whether and to what extent the following statements apply to you or not.

Question:

When I watch a political TV programme or read an article about politics, I do so because...

I find politics exciting.

[intrinsic]

others would look down on me otherwise.

[external]

following political events is part of what defines me as a person.

[identified]

I'm looking for information to make a voting decision.

[instrumental]

one should follow politics even when one doesn't feel like it.

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[introjected]

Codierung:

- (1) does not apply at all
- (2) rather does not apply
- (3) neither applies nor does not apply
- (4) rather applies
- (5) applies completely

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4.9.1.3 Political Motivation Scale – Study III

The following sections report original and translated questions wording of the revised political motivation scale.

Study 3: Question Wording, German

Textintro:

Menschen können sich auf unterschiedliche Weise politisch beteiligen oder sich mit Politik auseinandersetzen. Sie können zum Beispiel über Politik diskutieren, in einer Bürgerinitiative mitarbeiten, politische Nachrichten hören, sehen oder lesen, an Demonstrationen teilnehmen.

Bitte geben Sie an, inwieweit die folgenden Aussagen auf Sie persönlich zutreffen oder nicht zutreffen.

Fragetext:

Wenn ich mich politisch beteilige oder mit Politik auseinandersetze, tue ich das, weil...

ich es interessant finde zu verfolgen, was in der Politik passiert

[intrinsisch, pre_mot_intrinsic1]

ich mir selbst Druck mache, politisch auf dem Laufenden zu sein.

[introjeziert, pre_mot_introjected1]

andere Menschen mir sagen, dass ich es tun sollte.

[external, pre_mot_external1]

ich mich selbst als politischen Menschen begreife.

[identifiziert, pre_mot_identified1]

ich stolz bin, wenn ich etwas über Politik verstehe.

[introjeziert, pre_mot_introjected2]

Politik für mich ein Herzensanliegen ist

[identifiziert, pre_mot_identified2]

Um sicherzugehen, dass diese Befragung von einem Menschen ausgefüllt wird, klicken Sie hier bitte auf 'teils/teils'.

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[attentioncheck]

Codierung:

- (1) trifft überhaupt nicht auf mich zu
- (2) trifft eher nicht auf mich zu
- (3) teils/teils
- (4) trifft eher auf mich zu
- (5) trifft voll und ganz auf mich zu

Textintro:

Hier sehen sie noch einmal einige Gründe deretwegen sich Menschen politisch beteiligen oder mit Politik auseinandersetzen.

Bitte geben Sie an, inwieweit die folgenden Aussagen auf Sie persönlich zutreffen oder nicht zutreffen.

Fragetext:

Wenn ich mich politisch beteilige oder mit Politik auseinandersetze, tue ich das, weil...

es meinen Prinzipien entspricht, mich mit Politik auseinanderzusetzen.

[identifiziert, pre_mot_identified3]

Menschen respektiert werden, wenn sie viel über Politik wissen.

[external, pre_mot_external2]

ich Politik spannend finde.

[intrinsisch, pre_mot_intrinsic2]

ich so Kritik von Freunden und Verwandten vermeiden kann.

[external, pre_mot_external3]

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man Politik verfolgen sollte, selbst wenn man gerade keine Lust darauf hat.

[introjeziert, pre_mot_introjected3]

es mir Freude bereitet, mich mit Politik auseinanderzusetzen.

[intrinsisch, pre_mot_intrinsic3]

Codierung:

(1) trifft überhaupt nicht auf mich zu

(2) trifft eher nicht auf mich zu

(3) teils/teils

(4) trifft eher auf mich zu

(5) trifft voll und ganz auf mich zu

Textintro:

Ein letztes Mal sehen sie hier Gründe deretwegen sich Menschen politisch beteiligen oder mit Politik auseinander-setzen.

Bitte geben Sie an, inwieweit die folgenden Aussagen auf Sie persönlich zutreffen oder nicht zutreffen.

Fragetext:

Wenn ich mich politisch beteilige oder mit Politik auseinandersetze, tue ich das, weil...

ich Politik oft aufregend finde.

[intrinsisch, pre_mot_intrinsic4]

ich mich schämen würde, wenn ich über Politik nicht informiert bin.

[introjeziert, pre_mot_introjected4]

Politik zu meiner Persönlichkeit gehört.

[identifiziert, pre_mot_identified4]

Andere sonst auf mich herabblicken würden.

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[external, pre_mot_external4]

ich mir selbst beweisen will, dass ich mich auch mit Dingen wie Politik auseinandersetze.

[introjeziert, pre_mot_introjected5]

mir Politik einfach wichtig ist.

[identifiziert, pre_mot_identified5]

ich den Eindruck habe, dass es von mir erwartet wird.

[external, pre_mot_external5]

Codierung:

(1) trifft überhaupt nicht auf mich zu

(2) trifft eher nicht auf mich zu

(3) teils/teils

(4) trifft eher auf mich zu

(5) trifft voll und ganz auf mich zu

Study 3: Question Wording, English

Text introduction:

People could participate differently politically or deal with politics. They could for example argue about politics, work in a citizens' initiative, listen to, watch or read political news, or participate in a demonstration.

Please report in how far following statements apply, or not apply to you personally.

When I engage in politics, I do that, because...

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I find it interesting to follow what happens in the politics

[intrinsisch, pre_mot_intrinsic1]

I put myself under pressure to be politically up to date

[introjeziert, pre_mot_introjected1]

other people tell me to do that

[external, pre_mot_external1]

I identify myself as a political person

[identifiziert, pre_mot_identified1]

I am proud, when I understand something in politics

[introjeziert, pre_mot_introjected2]

Politics is a for me

[identifiziert, pre_mot_identified2]

To make sure, this survey is filled out by a human, please click here on 'neither apply nor does not apply'

[attentioncheck]

Code:

(1) does not apply at all to me

(2) does not apply to me

(3) neither applies nor does not apply

(4) applies to me

(5) strongly applies to me

Text introduction:

Here you again see various reasons people engage in politics.

Please report in how far following statements apply, or not apply to you personally.

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Question text:

When I engage in politics, I do that, because...

it fits my principals, to engage in politics.

[identifiziert, pre_mot_identified3]

people get respect, when they know lots about politics.

[external, pre_mot_external2]

I find politics interesting.

[intrinsisch, pre_mot_intrinsic2]

I can avoid critic by friends and family this way.

[external, pre_mot_external3]

One should stay informed about politics, even if one is not interested in it at the moment.

[introjeziert, pre_mot_introjected3]

I feel joy, engaging in politics.

[intrinsisch, pre_mot_intrinsic3]

Code:

(1) does not apply at all to me

(2) does not apply to me

(3) neither applies nor does not apply

(4) applies to me

(5) strongly applies to me

Text introduction:

For a last time, you see here reasons why people engage in politics.

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Please report in how far following statements apply, or not apply to you personally.

Question text:

When I engage politically, I do it because....

I find politics thrilling.

[intrinsisch, pre_mot_intrinsic4]

I would be ashamed, if I was not informed about politics.

[introjeziert, pre_mot_introjected4]

Politics belongs to my personality.

[identifiziert, pre_mot_identified4]

Otherwise other people would look down on me.

[external, pre_mot_external4]

I want to proof to myself, that I engage also in things like politics.

[introjeziert, pre_mot_introjected5]

Politics is simply important to me.

[identifiziert, pre_mot_identified5]

I got the impression, that people expect that from me.

[external, pre_mot_external5]

Code:

(1) does not apply at all to me

(2) does not apply to me

(3) neither applies nor does not apply

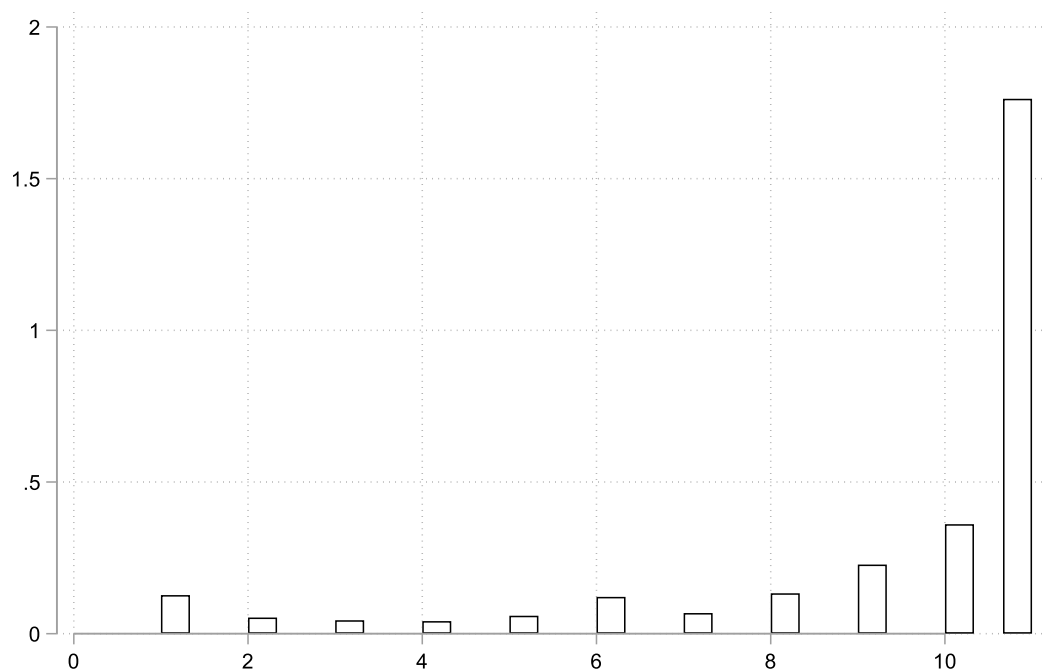
(4) applies to me

(5) strongly applies to me

4.9.2 Appendix 2: Vignette experiment

The vignette experiment included five arms with two levels each. Combinations of these vignettes resulted in 32 different vignettes that were presented to the respondents. The vignettes and the question wordings are presented below. Potentially due to the highly artificial setting of the vignette experiment or due to the strong right-skew of the dependent variable (ceiling effect), all vignettes except the vignette on social influence failed to move turnout intention. Due to the lacking main effects of the other vignettes, only the vignette on social influence was used for the moderation analysis that is reported in the main text.

Figure A4-2-1: Distribution of dependent variable



Question Wording, English

Question text:

Please read the following text carefully and indicate how you will act in this situation.

Assume that next weekend there would be %Election at Electoral Level%. %Injunctive norms% In the course of the election campaign, you realized that the positions of the parties in this election

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%Distinctness%. From your friends and relatives, you learn that %Descriptive Norms% will take part in the election. %Opportunity costs%

Please recall the circumstances of the choice described above and consider:

How likely are you to participate in this election?

Coding:

(1) rather unlikely

(2)

(3)

(4)

(5)

(6)

(7)

(8)

(9)

(10)

(11) rather likely

Vignettes:

A: Electoral Level

A1: {state elections}

A2: {federal elections}

B: Injunctive Norms

B1: {Empty}

B2: At information stands political parties and organizations remind you of your personal {responsibility} to participate in elections as a {good citizen}.

C: Distinctness

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C1: {are fundamentally distinct}

C2: {are not fundamentally distinct}

D: Descriptive Norms

D1: {most of them}

D2: they do not consider this election to be very important and {only a few} of them

E: Opportunity costs

E1: {empty}

E2: One hour before the polling stations close, a suggestion is made within your family circle to refrain from voting this time and use the evening to finally have dinner together again.

Question Wording, German

Fragetext:

Bitte lesen Sie aufmerksam folgenden Text und geben Sie an, wie Sie sich in dieser Situation verhalten werden.

Nehmen Sie an, am kommenden Wochenende wäre %Wahlebene%. %Injunktive Normen% Im Zuge des Wahlkampfes wurde Ihnen klar, dass sich die Positionen der Parteien bei dieser Wahl %Unterscheidbarkeit%. Von Ihren Freunden und Verwandten erfahren Sie, dass %Deskriptive Normen% an der Wahl teilnehmen werden. %Opportunitätskosten%

Bitte vergegenwärtigen Sie sich noch einmal die Umstände der oben geschilderten Wahl und denken Sie kurz nach:

Wie wahrscheinlich ist es, dass Sie an dieser Wahl teilnehmen werden?

Codierung:

(1) ziemlich unwahrscheinlich

(2)

(3)

(4)

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(5)

(6)

(7)

(8)

(9)

(10)

(11) ziemlich wahrscheinlich

Vignetten:

A: Wahlebene:

A1: {Landtagswahl}

A2: {Bundestagswahl}

B: Injunktive Normen

B1: [Leer]

B2: An Infoständen erinnern politische Parteien und Organisationen Sie an Ihre persönliche {Verantwortung} zur Wahlteilnahme als {guter Bürger}.

C: Unterscheidbarkeit

C1: {fundamental unterscheiden}

C2: {nicht deutlich unterscheiden}

D: Deskriptive Normen:

D1: {die Meisten}

D2: sie diese Wahl als nicht besonders wichtig erachten und {nur Wenige} von ihnen

E: Opportunitätskosten

E1: [leer]

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E2: Eine Stunde vor Schließung der Wahllokale wird im Kreis Ihrer Familie vorgeschlagen, dieses Mal auf das Wählen zu verzichten und den Abend zu nutzen, um endlich mal wieder gemeinsam essen zu gehen.

4.9.3 Appendix 3: Measurement of deep cognition

Study 1 makes use of a multi-item index to capture the depth of cognitive processing in the political domain. The battery on deep cognition was not developed for the purpose of this study. Instead, the instruments were included in the survey for other purposes as part of a larger battery on cognitive needs. Therefore, the items are not perfect measurements to test the deep cognition hypothesis. Preferably, the items would cover individual differences in cognitive styles regarding political affairs. In fact, some of the available items tap into cognitive styles but do not specifically refer to the domain. Other items tap into behavioral inclinations in the political domain but not specifically into cognitive styles. With these caveats in mind, the combination of multiple, topical items is thought to cancel out measurement error and to achieve a rough approximation of the depth of a person's cognitive processing of political content.

T1 is one-item-measure of need to evaluate which reflects a respondent's proclivity to create and hold attitudes and was shown to be predictive of the density of political belief systems and the inclination to look out for political information in the news (Bizer et al., 2004). T2 is a one-item-measure of need for cognition which reflects an "individual's tendency to engage in and enjoy effortful cognitive endeavors". People high in NFC tend to think more about all kinds of information than people low in NFC, including those from the political domain (Petty et al., 2009). The remaining items do not reflect established psychological items and were taken at face value.

Table A4-3-1 shows a correlation matrix of the indicators which demonstrates that each indicator taps into distinct constructs that only weakly to moderately correlate with each other. Table A4-3-2 reports question wordings.

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Table A4-3-1: Correlation matrix of indicators

	[1]	[2]	[3]	[4]
T1	1			
T2	-0.13***	1		
T3	-0.20***	0.30***	1	
T4	-0.11***	0.16***	0.42***	1
T5	0.20	-0.09***	-0.19***	-0.09**

Note: ***, p<0.001; **, p<0.01; *, p<0.05

Table A4-3-2: Question wordings

Abbreviation	Question text German	Question text english
T1	Ich bilde mir zu allem eine Meinung.	I make up my mind about everything.
T2*	Ich finde wenig Befriedigung darin, angestrengt und stundenlang nachzudenken.	I find little satisfaction in thinking effortfully for a long time.
T3*	Ich fühle mich nicht wohl dabei, wenn ich in politische Streitgespräche verwickelt werde.	I do not feel comfortable to become entangled in political debates.
T4*	Ich behalte meine politische Meinung meistens für mich, weil ich ansonsten Nachteile befürchte.	I usually keep my political opinion to myself because I do not want to suffer any repercussion.
T5	Über die Parteien und ihre Programme möchte ich so genau wie möglich Bescheid wissen.	I want to as much as possible about the political parties and their programmes.

Notes: Items with asterisk load negatively on the target concept.

4.9.4 Appendix 4: Correlation matrix for Study 2

Table A4-4-1 shows a correlation matrix between the types of motivation and two criterion variables: political interest and voting as a civic duty. In line with the continuum hypothesis, intrinsic motivated is most strongly correlated with identified motivation and least strongly correlated with external motivation. Identified motivation is also most closely correlated with its two conceptually close types of motivation. Only the weak correlation between introjected and external motivation is not in line with the continuum hypothesis.

Inspecting the correlations with criterion variables also supports the validity of the measures as intrinsic motivation shows the strongest correlation with political interest but identified and introjected motivation also show moderate correlations. The correlations with civic duty also do not exhibit unexpected outliers although the correlation with identified motivation is slightly weaker than expected. Altogether, the results presented in Table A4-4-1 do not provide much evidence that the abbreviated short scale that is used in Study 2 is of lower psychometric quality than the original scale that was used in Study 1.

Table A4-4-1: Correlation matrix

	[1]	[2]	[3]	[4]
<i>Intrinsic</i>	1			
<i>Identified</i>	0.73***	1		
<i>Introjected</i>	0.53***	0.55***	1	
<i>External</i>	0.10***	0.15***	0.10***	1
<i>Pol. Interest</i>	0.73***	0.67***	0.51*	0.02*
<i>Civic Duty</i>	0.28***	0.25***	0.33**	-0.12

Note: ***, p<0.001; **, p<0.01; *, p<0.05

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4.9.5 Appendix 5: Confounding influence of survey-experiment

Study 2 uses survey data that also included two experimental conditions which are not of substantive interest for this study. Political motivation, political interest and civic duty were measured before respondents received any treatment but variables on how the video was processed were measured after treatment administration, potentially introducing post-treatment biases. However, Tables A4-5-1 and A4-5-2 show that the correlations between political motivations and the criterion variables do not differ substantially across experimental groups.

Table A4-5-1: Correlation matrixes across competence manipulations

	Intrinsic	Identified	Introjected	External
<i>Low Competence Manipulation</i>				
Intrinsic	1.00			
Identified	0.14 ^{***}	1.00		
Introjected	0.79 ^{***}	0.06	1.00	
External	0.33 ^{***}	-0.20 ^{***}	0.41 ^{***}	1.00
Pol. Int.	-0.76 ^{***}	-0.16 ^{***}	-0.63 ^{***}	-0.20 ^{***}
Civic Duty	0.37 ^{***}	0.01	0.42 ^{***}	0.12 ^{**}
Experience	0.31 ^{***}	0.00	0.29 ^{***}	0.08 [*]
Depth: Subj.	0.23 ^{***}	0.10 [*]	0.22 ^{***}	-0.08 [*]
Depth: Obj.	0.12 ^{**}	0.07 [*]	0.13 ^{***}	-0.08 [*]
<i>High Competence Manipulation</i>				
Intrinsic	1.00			
Identified	0.09 ^{**}	1.00		
Introjected	0.82 ^{***}	0.06	1.00	
External	0.34 ^{***}	-0.18 ^{***}	0.35 ^{***}	1.00
Pol. Int.	-0.76 ^{***}	-0.14 ^{***}	-0.66 ^{***}	-0.21 ^{***}
Civic Duty	0.37 ^{***}	-0.01	0.43 ^{***}	0.07
Experience	0.23 ^{***}	-0.10 ^{**}	0.27 ^{***}	0.04
Depth: Subj.	0.22 ^{***}	-0.03	0.26 ^{***}	-0.09 [*]
Depth: Obj.	0.15 ^{***}	0.03	0.16 ^{***}	-0.14 ^{***}

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

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Table A4-5-2: Correlation matrixes across autonomy manipulations

	Intrinsic	Identified	Introjected	External
<i>Control Group</i>				
Intrinsic	1.00			
Identified	0.10 [*]	1.00		
Introjected	0.82 ^{***}	0.03	1.00	
External	0.33 ^{***}	-0.20 ^{***}	0.38 ^{***}	1.00
Pol. Int.	-0.78 ^{***}	-0.13 ^{**}	-0.69 ^{***}	-0.21 ^{***}
Civic Duty	0.37 ^{***}	0.01	0.43 ^{***}	0.07
Experience	0.26 ^{***}	-0.07	0.30 ^{***}	0.01
Depth: Subj.	0.25 ^{***}	0.01	0.27 ^{***}	-0.08
Depth: Obj.	0.12 ^{**}	0.00	0.14 ^{**}	-0.14 ^{***}
<i>Autonomy-Thwarting</i>				
Intrinsic	1.00			
Identified	0.13 ^{**}	1.00		
Introjected	0.80 ^{***}	0.05	1.00	
External	0.37 ^{***}	-0.19 ^{***}	0.43 ^{***}	1.00
Pol. Int.	-0.78 ^{***}	-0.16 ^{***}	-0.67 ^{***}	-0.25 ^{***}
Civic Duty	0.34 ^{***}	-0.05	0.38 ^{***}	0.11 [*]
Experience	0.30 ^{***}	-0.07	0.26 ^{***}	0.09
Depth: Subj.	0.20 ^{***}	0.07	0.21 ^{***}	-0.11 [*]
Depth: Obj.	0.13 ^{**}	0.10 [*]	0.13 ^{**}	-0.09 [*]
<i>Autonomy-Supportive</i>				
Intrinsic	1.00			
Identified	0.12 ^{**}	1.00		
Introjected	0.79 ^{***}	0.11 [*]	1.00	
External	0.30 ^{***}	-0.18 ^{***}	0.34 ^{***}	1.00
Pol. Int.	-0.72 ^{***}	-0.16 ^{***}	-0.59 ^{***}	-0.15 ^{***}
Civic Duty	0.38 ^{***}	0.02	0.46 ^{***}	0.09 [*]
Experience	0.24 ^{***}	-0.02	0.27 ^{***}	0.08
Depth: Subj.	0.21 ^{**}	0.01	0.24 ^{***}	-0.07
Depth: Obj.	0.14 ^{**}	0.05	0.16 ^{***}	-0.09 [*]

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

5 Afterthought

As each of the research chapters has its own summary sections the objective of this final chapter is not to summarize the findings from the preceding chapters. Instead, I want to address one particular question: Having conducted numerous tests of the motivational framework on political engagement with different foci, data sources and research designs and having observed the mixed and often times weak empirical support for the hypotheses derived from the framework, how are we to judge the status of the motivational approach to political engagement that was developed in this thesis?

In a Popperian approach to science, an empirical analysis is indicative of a successful research program when it has built a theoretical framework that provided specific point predictions which were then falsifiable in empirical tests (McElreath, 2020). In this vein, a strictly falsificationist perspective would attribute little informational value to the hypotheses-consistent findings in chapters 2 and 4. To the contrary, each hypothesis-inconsistent finding would amount to scientific progress as falsified hypotheses give reason to refute a theory and to move on with the knowledge of what has not worked.

However, as discussed in some of the research chapters, the principle of underdetermination stands in the way of sweeping conclusions about the motivational framework that was developed and tested in this thesis (Oreskes, 2019). In particular, we cannot know for sure which element or elements from the set of propositions were inconsistent with the data. Nonetheless, what we can conclude from a Bayesian perspective, is that the empirical analyses have not strengthened but rather diminished confidence in some of the propositions that were put to an empirical test (Howson, 2013; McElreath, 2020), pointing at the need for theory revision.

In this vein, a contribution of this thesis remains to have introduced to the study of political engagement a synthesis of insights from motivation science that provides

novel perspectives on why citizens want or do not want to engage with politics. While the empirical results show that the motivational framework in its current form is not the final word on the origins and structure of political engagement, the general line of thinking demonstrated in this thesis may serve as a useful stepping stone for future research.

In particular, the idea to employ ultimate explanations that are based on first principles may remain fruitful even when revising some of its components in future work. In doing so, it remains a daunting task to identify the correct set of first movers. Here, the presented empirical findings may prove valuable as they provide some indication for theory revision. For instance, throughout the research chapters the need for autonomy which is a centerpiece of self-determination theory but more controversial in other theoretical traditions (Sever, 2000) has consistently not exhibited the expected strong ramifications for political motivation, suggesting that it may be less promising for future inquiries on political engagement. Instead, the widely accepted need for relatedness/belonging received stronger support – at least in the socialization analysis. In this vein, future research could leverage recent advances towards theoretical integration in motivation science (Baumeister, 2015; Dweck, 2017) to identify need candidates that may possess more explanatory power than the ones tested here when attempting to explain political engagement based on the idea of first movers.

6 Bibliography

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