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Beyond total effects:

Exploring the interplay of personality and attitudes in affecting turnout in the 2009 German federal election

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ABSTRACT

This paper addresses the role of personality traits in shaping electoral participation. Utilizing data from a survey conducted after the 2009 German federal election, we demonstrate that agreeableness and emotional stability increase electoral participation. Yet, the main contribution of this paper is to link personality traits to attitudinal predictors of turnout. First, we demonstrate that attitudinal variables, including party identification, civic duty, political interest, internal and external efficacy, serve as intervening variables that mediate the impact of personality on turnout. Second, we show that personality traits exhibit conditioning effects by in- or decreasing the impact of attitudinal factors on electoral participation. By and large, the evidence suggests that openness, agreeableness, and extraversion render attitudes (somewhat) less powerful in affecting turnout while conscientiousness and emotional stability rather increase the impact of certain attitudes. Third, we put indirect and conditioning effects together and find that emotional stability and conscientiousness exhibit particularly interesting patterns of effects: They shape attitudes in a way conducive to higher turnout and make these attitudes more powerful in affecting voter participation.

INTRODUCTION¹

Political scientists have a long-standing interest both in turnout (e.g., Wolfinger & Rosenstone 1980; Teixeira 1992; Rosenstone & Hansen 1993) and in personality traits (e.g., Adorno et al. 1950). Only recently, however, scholars began to study the role of personality traits in affecting turnout. They demonstrated that personality makes a difference in turnout in different contexts, including Canada, Germany, Italy, and the United States (e.g., Huber & Rattinger 2005; Fowler 2006a, b; Hayes et al. 2006; Fowler & Kam 2006, 2007; Denny & Doyle 2008; Mondak & Halperin 2008; Gerber et al. 2009b, 2011a,c; Vecchione & Capara 2009; Mondak 2010; Blais & Labbé St-Vincent 2011). Scholars have thus established personality traits as factors shaping the most frequent form of political participation.

While inspecting the role of personality in affecting turnout, however, prior research is not tightly interlocked with research on personality and on turnout. For one thing, it exhibits a considerable degree of conceptual heterogeneity. Some scholars employed rather narrow traits like shyness, altruism, and aggressiveness (Denny & Doyle 2008; Blais & Labbé St-Vincent 2010) whereas others utilized the Five-Factor-Model (Huber & Rattinger 2005; Gerber et al. 2009a, b, 2011a; Mondak & Halperin 2008; Mondak 2010; Mondak et al. 2010).² Since the Five-Factor-Model is the leading concept in personality research employing this model in analyses of personality effects on turnout has the important advantage that the results can easily be integrated into scholarship on personality (Sniderman 1975: 16; Mondak 2010: 12). For another thing, prior research added personality as another factor affecting turnout but did not closely study its interplay with traditional factors of turnout, including political attitudes (e.g.,

¹ We would like to thank the reviewers and the editor of this journal for their particularly helpful comments and suggestions.

² As compared to the Big Five, narrow traits address a more specific segment of behavior and have thus a smaller scope. For example, altruism and assertiveness are narrower than agreeableness and extraversion, respectively. Given their smaller scope and greater specificity, narrow traits might be more powerful in predicting specific behavior.

Blais 2000; Caballero 2005). To be sure, some scholars proposed the notion that political attitudes serve as intervening variables that mediate the impact of personality on turnout (e.g., Huber & Rattinger 2005; Blais & Labbé St-Vincent 2011). Moreover, Mondak (2010) suggests that personality traits might exhibit conditioning effects by de- or increasing the effects of other factors shaping electoral participation. These kinds of effects have hardly been subject to rigorous empirical tests, however. What is more, they have not been explored simultaneously. Therefore, prior research was not able to examine whether indirect and conditioning effects of personality traits serve as countervailing forces or whether they mutually reinforce each other. This paper, thus, aims at shedding light on the role of personality traits, in terms of the Five-Factor-Model, in affecting turnout in the 2009 German federal election, with a special emphasis on the interplay of personality traits and traditional attitudinal factors of turnout. In order to address these issues the paper is organized as follows: The next section will give an outline of the conceptual and theoretical underpinnings of our analysis and will present the hypotheses to be tested. Then we will briefly describe the data, measurement and methods we utilize, before presenting the empirical evidence. Finally, we will summarize and discuss the findings.

THE BIG FIVE PERSONALITY TRAITS AND TURNOUT

Personality psychology has developed a host of conceptualizations of “broad dimensions of individual differences between people, accounting for inter-individual consistency and continuity in behavior, thought, and feeling across situations and over time” (McAdams & Pals 2006: 207). Since the 1990s, however, the trait-based paradigm has emerged as the leading approach. Methodologically-diverse research in this paradigm led to an agreement that the Five-Factor-Model, aka the Big Five, is the most appropriate concept to describe personality in

various cultures (e.g., Goldberg 1993, John et al. 1988; John 1990; Ostendorf & Angleitner 1994; Saucier & Goldberg 1996; McCrae & Costa 1997; but see also Cheung et al. 2001).

What is more, personality traits are not merely descriptive dimensions, but have explanatory power. This conclusion rests on the finding that the five factors have a biophysical basis (e.g., McCrae & Costa 1995: 238, 248) and have motivational implications. They play a role in influencing the stimuli a person perceives as relevant in her environment, the goals a person pursues and how she responds to external stimuli (e.g. Costa & McCrae 1988; Luk & Bond 1993; Jost et al. 2003). They are thus causally prior to values and attitudes that emerge from and are shaped by the interaction of personality traits and environmental stimuli (McAdams & Pals 2006; McCrae & Costa 1996).

The five factors are agreeableness, conscientiousness, extraversion, emotional stability (or, as its opposite, neuroticism), and openness. To begin with, agreeableness refers to trust, straightforwardness, altruism, compliance, modesty, and tender-mindedness. High scorers on this trait are thus characterized as being altruistic, trusting, generous, soft-hearted, and sympathetic, while low scorers are suspicious, hard-hearted, and demanding. Conscientiousness mainly refers to impulse control that is socially prescribed so that persons at the high end of this scale are thorough, organized, industrious, ambitious, resourceful, and enterprising, whereas their counterparts at the lower end are immature, impatient, lazy, careless, and moody. Extraversion comprises warmth, gregariousness, positive emotions, and assertiveness. Thus, extraverts are upbeat, energetic, active, friendly, talkative, and assertive, while introverts are reserved or even shy. Emotional stability chiefly refers to controlling negative emotions like anxiety, depression, anger, discontent, and irritation. Finally, openness refers to tolerance of diversity, broadness of one's own cultural interest, and exploration of novelty. As a result, persons who score high on this dimension are curious, imaginative and original, while persons who exhibit low scores are mild, cautious, and conservative (e.g., Costa & McCrae 1989, 1992; Mondak 2010).

In line with prior research, we first suggest that personality traits exhibit total effects on turnout (see Table 1 for an overview of all our hypotheses). The existing literature does not provide consistent results on any of the five traits; rather, findings differ across contexts and indicators. To start with, the main findings of previous research on the effects of conscientiousness are the most heterogeneous. Analyses on the United States suggest that this trait has no effect on turnout (Mondak 2010; Mondak & Halperin 2008; Mondak et al. 2010) or that it even affects turnout negatively, particularly if validated turnout is used as indicator instead of self-reported turnout (Gerber et al. 2011a, 2011c). However, previous research on Germany by Huber and Rattinger (2005), utilizing the NEO-FFI, provided evidence for conscientious people being more willing to participate in elections at the national, state, and local level.

- Table 1 about here -

Gerber et al. (2011a: 273ff.) have provided several reasons for inconsistent findings on the relationship between the Big Five and turnout, among them the ambiguous meaning of turnout (or political participation in general) as a stimulus in surveys, differences in the importance and understanding of turnout depending on context, as well as the different measurement of personality traits. Gerber and his colleagues (2011a: 279ff.) show the impact of different personality batteries (TIPI (Ten Item Personality Inventory) and BFI (Big Five Inventory)) on several dependent variables, among them turnout. In addition, the different understanding of the Big Five traits by respondents and the questionable reliability of self-assessments (Vazire & Carlson 2010) might lead to (social desirability) bias in self-reported personality (Gerber et al. 2011a). Finally, the different measurement of the dependent variable turnout (probability of turnout, recalled turnout, validated turnout) might lead to varying results. With respect to conscientiousness we think that its impact on turnout should be strongly

influenced by country characteristics, namely the high level of turnout and strong support for citizen duty in Germany compared to the US and many other countries (Caballero 2005: 350). Accordingly, we expect that high levels of conscientiousness will increase the probability of participation in German federal elections since it makes citizens more eager to obey to social norms including the norm of participating in elections.³

Empirical evidence on total effects of agreeableness is mixed, too. While Gerber et al. (2011a, 2011c) find no effects at all using reported and validated turnout measures, Mondak (2010) as well as Mondak and Halperin (2008) conclude that agreeable persons are less likely to participate in elections. The latter conclusion is also supported by Gerber and his colleagues (2011a) using a validated turnout measure covering several elections in the U.S. By contrast, Huber and Rattinger (2005), utilizing the NEO-FFI, report a positive impact of agreeableness on turnout in Germany as well as Gerber et al. (2011a) do for the altruism-facet of agreeableness. These results are in accordance with analyses that addressed the impact of altruism on turnout in particular (Fowler 2006b; Fowler & Kam 2007; Blais & Labbé St-Vincent 2010). Given the mixed evidence, we might expect no effect. Yet, prior research suggests country-specific effects, with agreeableness being conducive to turnout in Germany (Huber & Rattinger 2005). We thus hypothesize a positive effect of agreeableness on turnout because high turnout in this country might provide many social incentives for turnout to which highly agreeable persons might be particularly responsive.

Emotional stability should be a predictor of high levels of turnout because it coincides with higher levels of self-assuredness and a lack of anxiety making people more willing to engage in politics. This hypothesis is in line with the majority of findings on effects for this trait (Denny & Doyle 2008; Gerber et al. 2011a (for validated turnout), 2011c; Huber & Rattinger 2005; but see Gerber et al. 2011a (for reported voting), Mondak 2010, and Mondak et al. 2010).

³ Effects of patience on turnout might also be considered as suggestive of effects of conscientiousness since this trait comprises self-restrictive facets (Fowler & Kam 2006).

Findings on effects of extraversion on general political participation are overall quite consistent (Gerber et al. 2011a: 274). This trait should exhibit positive effects on turnout (Huber & Rattinger 2005; Gerber et al. 2011c; Blais & Labbé St-Vincent 2010) because extraverts are more energetic and active than other citizens. In addition, extraverts should value the expressive function of and social interaction implied by electoral participation and thus should show higher turnout. As voting does not entail, as compared to protests and other forms of participation, much interpersonal interaction and expressive behavior, we might caution, however, that the effect might be limited or even inexistent (see for non-findings Mondak 2010; Mondak & Halperin 2008; Mondak et al. 2010; Gerber et al. 2011a).

High levels of openness might also increase the probability of turnout because persons at the higher end of this dimension are interested in diverse topics, including politics. At the same time, to some extent turnout is habitual (Green & Shachar 2000; Plutzer 2002; Fowler 2006a) and openness might be thought of as somewhat at odds with habitual behavior. Accordingly and in line with prior research (Gerber et al. 2011a, 2011c; Mondak 2010; Mondak & Halperin 2008, but see Huber & Rattinger 2005), we expect that openness exhibits no effect on electoral participation.

As outlined above, the main focus of this paper is not on total effects, but on the interplay of personality traits and traditional attitudinal predictors of turnout. In this analysis, we examine five attitudinal factors of turnout. Building on the Michigan model of electoral behavior (Campbell et al. 1960), we assume that civic duty, strength of party identification, internal and external efficacy, and interest in politics exhibit direct effects on turnout (Caballero 2005), thereby mediating the effect of personality. Party identification promotes psychological involvement in the political process; a (strong) identification with a political party should thus increase turnout (Campbell et al. 1960: 97ff.). Subscribing to the notion of civic duty is a particularly powerful individual-level factor of turnout (e.g., Rattinger & Krämer 1995: 279; Steinbrecher et al. 2007: 227ff., 285ff.). Interest in politics captures an individual's level of

political involvement and is thus conducive to turnout (e.g., Caballero 2005: 350; Steinbrecher et al. 2007: 240ff., 285ff.). While internal efficacy reflects how an individual evaluates his own capabilities to influence politics, external efficacy is a measure for the perceived responsiveness of the political system to citizens' attempts to exert influence. Both efficacy indicators affect turnout positively (Campbell et al. 1960: 105; Caballero 2005).

These predictors of turnout might in turn be shaped by personality traits. As noted above, personality traits affect a person's goals and motives, the perception of external stimuli and the responses to them. In this vein, personality traits, in interaction with environmental factors, lead to "characteristic adaptations" (McAdams & Pals 2006: 208), including motives, goals and values that fit with a person's traits. Political attitudes that prior research on political behavior has shown to be influential in affecting turnout might also be conceived of as (domain-specific) characteristic adaptations (Gerber et al. 2010). We thus conclude that attitudes might mediate the impact of personality traits on political behavior (see indirect effects in Table 1).

As refers to the impact of the Big Five on these presumably intervening factors, we first address conscientiousness. Conscientiousness makes voters more inclined to obey to socially-prescribed norms. We thus expect that conscientiousness will make voters more likely to subscribe to the notion of citizen duty (Huber & Rattinger 2005: 161ff.). Moreover, conscientiousness should be conducive to (strong) party attachments because they might satisfy highly conscientious persons' need for structure (Gerber et al. 2011b). As prior research suggests, this hypothesis is borne out by evidence on Germany (Mößner 2005), but not on the U.S. (Gerber et al. 2011b). Given their striving for competence, highly conscientious persons might feel more internally and externally efficacious (Huber & Rattinger 2005: 161ff.; but see Mondak 2010: 123ff.). Openness, by contrast, should make voters more likely to be interested in a topic as distant to everyday life as politics, thereby indirectly increasing the probability of turnout (Denny & Doyle 2008). Within politics, they might also be inclined to explore

alternative ideas. As a result, openness might undermine party attachments (Gerber et al. 2011b), but promote internal efficacy (Mondak 2010: 123ff.).

Given their low self-confidence, emotionally instable persons should lack a sense of political efficacy and might also pay less attention to a topic as conflict-prone as politics (Huber & Rattinger 2005; Blais & Labbé St-Vincent 2011; see also Mondak 2010: 123ff.). For Extraverts, we might expect the opposite pattern because they are energetic and talkative (Huber & Rattinger 2005; Vecchione & Caprara 2009; Mondak & Halperin 2008). In addition, high levels of extraversion should lead to a strong identification with one of the parties because party attachments provide a sense of belonging (Mößner 2005; Gerber et al. 2011b). This argument also suggests that agreeableness is conducive to strong party attachments (Gerber et al. 2011b). Moreover, we expect that agreeable persons are inclined to subscribe to the notion of citizen duty as this is a widely held view in Germany (Huber & Rattinger 2005; Gerber et al. 2011b; Blais & Labbé St-Vincent 2011). Moreover, given their inclination to trust in other people and not to quarrel with existing conditions, agreeable persons might consider political parties and politicians as rather responsive (Mondak & Halperin 2008; but see Mondak 2010).

Thus far, this paper has linked personality traits with attitudinal predictors of turnout by assuming the former are sources of the latter. Yet, this is not the only plausible linkage. Rather, the impact of attitudes on turnout might be considered dependent on the voter's personality. This notion results from the observation that personality traits, due to their motivational implications, make citizens eager, e.g., to respond to particular perceptions or attitudes. In this line of reasoning, personality traits might exhibit conditioning effects (Mondak 2010).

In proposing specific hypotheses (see conditional effects in Table 1), we anticipate that high levels of conscientiousness increase the impact of pro-participation attitudes on turnout. This hypothesis rests on the assumption that, given their diligence and deliberateness, highly conscientious persons are likely to act in line with their intentions, in this case with pro-participation attitudes. As concerns the effect of civic duty on turnout, in addition, it might be

argued that conscientiousness makes voters more willing to obey to social norms, thereby increasing the impact of citizen duty. In a similar vein, emotional stability might facilitate political behavior in line with political motivations because even-temperedness permits planned behavior in accordance with intentions. By contrast, citizens lacking self-esteem, e.g., might be prone to ask themselves whether they are really capable to perform certain tasks or to attain a goal. In effect, low levels of emotional stability might decrease the impact of pro-participation attitudes on turnout.

Whereas emotional stability and conscientiousness are hypothesized to increase the impact of (certain) attitudes on turnout, agreeableness, extraversion, and openness should not exhibit parallel effects. Rather, we suggest that these traits depress the effects of attitudes on turnout, if they exhibit any conditioning effects at all. Agreeableness and extraversion refer to interpersonal relations. High scorers on these traits are thus particularly responsive to social cues and pressure which might motivate them to turn out or to abstain, irrespective of their pro-participation attitudes. Accordingly, high scores on both traits might weaken the connection between pro-participation attitudes and turnout. Likewise, given their need for novelty, highly open persons might be attracted by a diversity of stimuli that might motivate them not to act in accordance with their pro-participation attitudes. High levels of openness thus might decrease the impact of pro-participation attitudes on turnout.

Indirect and conditioning effects of personality traits are at work simultaneously. Depending on the nature of these effects, they may mutually reinforce each other or they may act as countervailing forces. According to our hypotheses, high levels of openness, extraversion, and agreeableness decrease, rather than increase, the impact of some attitudinal factors on turnout. As we also hypothesized that these traits, by and large, affect attitudes in a way conducive to higher turnout, indirect and conditioning effects work as countervailing forces. By contrast, we expect that high levels of conscientiousness both make party identification, citizen duty, internal and external efficacy more powerful in affecting electoral

participation and shape these attitudes in a pro-participation direction. Both effects thus might reinforce each other. Likewise, emotional stability is hypothesized to increase some pro-participation attitudes and to increase the impact of these attitudes on turnout. Given these patterns of effects, conscientiousness and emotional stability might be considered particularly important personality traits when it comes to electoral participation.

DATA AND MEASUREMENT

In our analysis, we rely on survey data collected after the 2009 German federal election. The data set is part of the German Longitudinal Election Study (GLES) that is a joint enterprise of the German Society for Electoral Studies (DGfW).⁴ Fieldwork started on September 28, 2009 and lasted until November 23, 2009. This post-election cross-section data set comprises 2,115 respondents and is based on a household survey. Households were selected by random-route. Within households, the respondents were chosen according to the Kish-selection grid and then interviewed via CAPI. In our analyses, we apply a weight that ensures proportional representation of East and West Germans according to their share in the German population that additionally corrects for different selection probabilities due to household size.

The dependent variable used in this paper is based on self-reported turnout in the 2009 German federal election.⁵ As the German protection of data privacy laws do not allow to validate reported turnout, we have to rely on this measure as the best available indicator of

⁴ Data for this paper has been made accessible to the public by GESIS- Leibniz Institute for the Social Sciences. The data are part of the German Longitudinal Election Study (GLES), conducted by Prof. Dr. Hans Rattinger (University of Mannheim), Prof. Dr. Sigrid Roßteutscher (University of Frankfurt), Prof. Dr. Rüdiger Schmitt-Beck (University of Mannheim), and PD Dr. Bernhard Weßels (Social Science Research Center Berlin). GLES is funded by Deutsche Forschungsgemeinschaft (DFG). Neither the mentioned primary researchers nor GESIS are responsible for analysis and interpretation of the data in this paper. Data sets are available to the public and can be downloaded at <http://www.gesis.org/dienstleistungen/forschungsdatenzentren/fdz-wahlen/gles/daten/>. For further information about design and survey components of the GLES, see <http://www.dgfw.info/index.php?lang=en>.

⁵ See Table A.1 in the appendix for summary statistics. The Appendix also includes information on the operationalization of all our variables.

turnout. Yet, with turnout in our data being 13 percentage points higher than in the 2009 German federal election, we shall not downplay the methodological problems potentially arising from this measure, namely overreporting. Prior research suggests that overreporting of turnout is correlated with socio-demographic variables and personality traits, and political attitudes (e.g., Bernstein et al. 2001; Gerber et al. 2011a; Silver et al. 1986; Vavreck 2007). If these findings apply to Germany, our findings on the role of personality traits in affecting turnout will be biased. What is more, our findings on potential mediators might also be biased. This will be the case if overreporting of turnout is correlated with (reporting bias in) mediators (Vavreck 2007). As the potential mediators, i.e. interest in politics, party identification, political efficacy, and civic duty, have been shown to be conducive to overreporting of turnout (e.g., Bernstein et al. 2001; Gerber et al. 2011a; Silver et al. 1986; Vavreck 2007), our findings on mediation might be exaggerated.⁶ Reporting bias in mediators might make things even worse (Vavreck 2007).

Given the time constraints of multi-purpose election surveys, it is impossible to utilize full-fledged trait inventories, like the NEO-FFI (Five Factor Inventory), to capture the Big Five. Instead, researchers have to employ short measures of the five factors (Gosling et al. 2003; Rammstedt & John 2007; Rammstedt 2007). In the GLES survey respondents were presented one item per trait (see Appendix for wording in German and English). This is rather unusual as a ten-item version of the Big Five has been established as a standard instrument in research on effects of personality traits. However, analyses by Gosling et al. (2003) and Woods and Hampson (2005) show that the Big Five can be measured adequately with data on only one trait factor per dimension. Despite these conclusions, we have to allow for measurement issues when it cannot be ruled out, particularly because Gerber and his colleagues (2011a: 279ff.) have shown that the impact of the Big Five on political participation depends on the Big Five

⁶ We focused our analysis on turnout, rather than a composite index of political participation, because prior research suggests that the role of personality traits in affecting turnout varies across forms of political participation (see for the U.S. Gerber et al. 2011c).

measures applied. Since the personality traits just cover specific facets of the respective dimension of personality, we will thus keep in mind for the interpretation of our results that deviations of our findings from those of other researchers might be related to the suboptimal operationalization of our core variables.⁷

In our analysis, we first aimed at estimating total effects of personality traits on turnout while controlling for social structural variables, including gender, age, age squared, education (dummy variables for low and high education)⁸, and place of residence (East/West). As we are interested in the role of attitudes in mediating the effects of personality traits on turnout we then added the attitudinal factors discussed in the previous section and perform a mediation analysis, using structural equation modeling, to disentangle direct and indirect effects. To control for differential measurement error, we standardized the raw scores of the attitude measures.⁹ Finally, exploring the role of personality traits in serving as conditioning factors requires including multiplicative terms that interact traits with attitudes in the models that predict turnout. This was done in a final set of models. All these models were performed using WLMSV estimation in MPlus 6.1 (Muthén & Muthén 1998-2010).¹⁰

We shall be clear about assumptions and limitations of our analysis. In particular, we utilize the so-called Baron-Kenny (1986) method to examine whether potential mediators serve as intervening variables between personality traits and turnout. This method of mediation analysis rests on several strong assumptions (Bullock et al. 2010; Bullock & Ha 2011; Coffman 2011; Green et al. 2010; Imai et al. 2011). Concerning the causal order, personality traits are assumed to shape political attitudes that affect turnout. Building on the above discussion of the

⁷ As personality traits and turnout are measured in the same survey, it might be objected that the analysis does not demonstrate the temporal antecedence of the independent variable and correlations might be inflated due to respondents' inclination to give consonant answers. However, personality is assumed to be stable over time and the survey items that tap personality traits have no apparent political content, so that inflated estimates due to consistency effects are not particularly likely.

⁸ As far as personality plays a role in affecting formal education, controlling for the latter implies some kind of "over-controlling" eventually leading to overly conservative estimates of the effects of personality on turnout.

⁹ We would like to thank one reviewer for this suggestion, which implies linear, rather ordinal logistic, regression as appropriate technique to estimate effects on these attitudes.

¹⁰ WLMSV is mandatory as MPlus employs only this technique for data with sampling weights.

notions that attitudes serve as characteristic adaptations and that personality traits do not affect behavior directly, but via attitudes, this assumption appears to be reasonable. Moreover, to interpret findings causally we assume that there is neither an unobserved variable nor random measurement that drives variation in personality traits, attitudes, and turnout. By employing the Baron-Kenny method, we also assume that there are no unobserved causes of turnout that are positively correlated with the mediators included in the analysis. Otherwise, the results of our analysis will be biased in favor of the hypothesis that the included potential mediators serve as intervening variables (e.g., Bullock et al. 2010; Green et al. 2010). Although we carefully picked exogenous and intervening variables to be included in our analysis, this kind of bias cannot be completely ruled out.

RESULTS

In our analysis, we first address the hypotheses concerning the effect of personality traits on turnout in the 2009 federal election. The results reported in the column “Turnout (base model)” in Table 2 indicate that personality traits make a difference in turnout even after socio-demographic variables are controlled for.

- Table 2 about here -

To begin with, the strongest predictor is agreeableness. High scorers on this trait are – while setting the remaining variables in the model at their mode, median, and mean, respectively – by some 12 percentage points more likely to turn out than very competitive citizens (percentage point changes not shown in table). Likewise, emotional stability is conducive to turnout, albeit the magnitude of this effect is more moderate with some 9 percentage points. The coefficient on conscientiousness is, as expected, positively signed, but

fails to pass conventional levels of statistical significance. Coefficients on extraversion and openness are negatively signed and not statistically significant.

Having examined total effects of personality traits on turnout, we turn to the role of attitudinal variables as intervening variables. The results reported in the right-hand column in Table 2 indicate that citizen duty, party identification, political interest, and both internal and external efficacy affect turnout. As a result, the five proposed attitudes might serve as intervening variables. The results in this column of Table 2 also indicate that controlling for these attitudinal variables does not eliminate the impact of personality traits on turnout, even though our research design is likely to inflate the impact of the included mediator variables (Green et al. 2010; Bullock & Ha 2011).

But do the attitudes included in our model serve as mediating variables at all? To examine this hypothesis, we estimated the effects of personality traits on the potentially mediating variables and performed a mediation analysis to identify the direct, total, and specific indirect effects of personality traits on turnout. The evidence reported in Tables 2 and 3, by and large, supports our anticipations. Agreeableness indirectly increases the likelihood of turnout by making voters more inclined to identify strongly with a party, to feel internally and externally efficacious,¹¹ and to accept the notion of citizen duty. The impact of emotional stability is mediated by similar but not identical paths as internal and external efficacy as well as party identification serve as mediators. Hence, the total effects of agreeableness and emotional stability on turnout are largely indirect effects that are mediated by political attitudes.

- Table 3 about here -

¹¹ This effect might be somewhat inflated as agreeableness is measured by an indicator tapping interpersonal trust (e.g., Kaase 1999).

Political attitudes also appear to serve as intervening variables when it comes to extraversion, openness, and conscientiousness, i.e. those traits that do not exhibit significant total effects. Starting with extraversion, party identification, political interest, internal efficacy, and external efficacy almost equally contribute to a sizable indirect effect of extraversion on turnout. This effect, however, is cancelled out by a considerable negative direct effect. In a similar vein, openness increases turnout via interest in politics, but – as expected – not via other attitudes. This indirect impact, however, is neutralized by a negative direct impact. Finally, conscientiousness increases turnout mainly via citizen duty. This indirect effect does not result in a sizable total effect because conscientiousness tends to exhibit a negative direct effect on electoral participation.

In summary, the evidence lends support to the notion that attitudes serve as intervening variables that mediate the impact of personality traits on turnout. We have to keep in mind, however, the methodological limitations of our research design. As we have outlined above, our analysis will yield unbiased results under certain assumptions only. If these assumptions are not met, the estimates will exaggerate the role of potential mediators included in the analysis.

As argued above, personality traits might condition the impact of attitudinal predictors of turnout. To examine our hypotheses we ran logistic regression models with the independent variables included in the full model in Table 2 and added multiplicative terms which represent the interaction of personality traits with the attitudes to our models. The results of these analyses are reported in Table 4. To make the results more accessible, we also report the coefficients on attitudinal variables when the respective traits are set to one or two standard deviations below or above their means.

As anticipated, agreeableness, extraversion, and openness differ from conscientiousness and emotional stability in that they exhibit negative, rather than positive, moderator effects, if any. In particular, both extraversion and agreeableness (tend to) decrease the impact of civic duty on turnout. To make these moderator effects more accessible, we take a closer look at the

findings on agreeableness. At low scores on agreeableness, i.e. two standard deviations below its mean, moving from two standard deviations below the mean of civic duty to two standard deviations above its mean – *ceteris paribus* – increases the likelihood of turnout by some 67 percentage points. By contrast, at high levels of agreeableness the increase in the likelihood of turnout is – *ceteris paribus* – 40 points (not reported in table). To be sure, this is still a considerable increase, but its magnitude is less impressive. When it comes to openness, we consistently find negatively signed coefficients on the multiplicative interaction terms. These findings suggest that high scores on openness (tend to) decrease the turnout increasing effect of civic attitudes. To give but an example, internal efficacy is conducive to electoral participation among respondents scoring low on openness, while it tends to decrease turnout among persons scoring high on this trait.

- Table 4 about here -

The role of conscientiousness and emotional stability in conditioning the impact of civic attitudes, in contrast to the three other traits, is that they increase, rather than decrease, the impact of attitudinal predictors on electoral participation. The coefficients on the interactive terms including conscientiousness are positively signed in four cases suggesting that high scores on this trait make the respective attitudes more powerful predictors of turnout. A closer look at the results reveals, however, that conscientiousness makes a clear difference only in the impact of external efficacy on turnout. Two standard deviations below the mean of conscientiousness, external efficacy does not affect turnout. Two standard deviations above the mean of conscientiousness, by contrast, external efficacy has a strong impact on turnout. Moving from two standard deviations below the mean of external efficacy to two standard deviations above the mean, while setting the remaining variables in the model to the mode, median, and mean, respectively, increases the likelihood of turnout by some 60 percentage

points (not reported in table). This strong interaction effect between conscientiousness and external efficacy fits quite well the findings of Mondak (2010: 164-81). Moreover, we find a tendency of conscientiousness to moderate the impact of internal efficacy, although this effect does not pass conventional levels of statistical significance.

Emotional stability resembles conscientiousness in making external efficacy more powerful in affecting turnout. Two standard deviations below the mean of emotional stability, external efficacy does not make any difference in turnout. Two standard deviations above the mean, however, external efficacy is a strong predictor: Moving from two standard deviations below to two standard deviations above the mean of external efficacy increases the likelihood of turnout by some thirty percentage points (not in table). Interestingly, emotional stability also tends to moderate the impact of internal efficacy. Yet, this effect differs somewhat in nature from the one described above. At high levels of emotional stability, internal efficacy increases turnout, whereas at low levels of emotional stability it tends to decrease turnout. Moreover, emotional stability tends to increase the impact of party attachments on turnout somewhat. As refers to the remaining attitudinal predictors of turnout, the evidence does not suggest that emotional stability serves as moderator in a meaningful way.

In summary, we find moderator effects of personality traits. But they differ in kind as agreeableness, extraversion, and openness (tend to) decrease the impact of attitudes on turnout whereas conscientiousness and emotional stability make (certain) attitudes more powerful in increasing turnout.

Given this pattern, it is reasonable to distinguish these two categories when we put indirect and conditioning effects together to explore whether they mutually reinforce each other or serve as countervailing forces. As the results above indicate, agreeableness, extraversion, and openness – by and large – (tend to) decrease the impact of attitudes on turnout. At the same time, these personality traits exhibit positive, if any, effects on these attitudes. As a result, concerning these traits, indirect and conditioning effects act as countervailing, rather than

reinforcing, factors. Put differently, personality traits increase the level of pro-participation attitudinal variables but at the same time decrease their impact on turnout.

A different pattern applies to emotional stability and conscientiousness, however. These traits affect some attitudinal factors of turnout and increase the impact of these very factors on turnout. In this respect, they exhibit mutually reinforcing indirect and conditioning effects.

To demonstrate this intriguing effect, we turn to the role of conscientiousness in increasing external efficacy and conditioning its effect on turnout. Figure 1a depicts the likelihood of turnout as dependent on the level of external efficacy, as gleaned from the above models. As the three lines in the figure indicate, the effect of external efficacy on turnout is – as demonstrated above – conditioned by conscientiousness. Given this set-up, we can demonstrate the combination of indirect and conditioning effects of conscientiousness. Assume a move from two standard deviations below the mean of conscientiousness to two standard deviations above its mean. This change translates – while setting all other variables in the models to their mode, median, or mean, respectively – into an increase of external efficacy from 0.20 to 0.40 (x-axis). If the impact of external efficacy did not depend on conscientiousness, this increase would result – on the “unconditioned effect” line – in an increase in turnout by roughly a percentage point (dashed arrow). Given the conditioning effect of conscientiousness, things look quite different. For persons who are two standard deviations below the mean of conscientiousness, the almost flat line applies. A move from two standard deviations below to two standard deviations above the mean of conscientiousness does not only lead to an increase in external efficacy from 0.20 to 0.40 but it also implies a switch from the flat to the steep line (solid arrow). As a result, the combined effect of this change in conscientiousness increases the likelihood of turnout by some 13 points.

- Figures 1a to 1c about here -

Figures 1b and 1c show that a similar pattern applies to the role of emotional stability in affecting turnout. A move on emotional stability from two standard deviations below the mean to two standard deviations above it increases external efficacy from 0.06 to 0.97 (internal efficacy: 0.16 to 0.44). On the “unconditioned effect” line this increase results in an increase in the likelihood of turnout by just one (internal efficacy: one) percentage point (dashed arrows). Taking conditioning effects into account changes the picture considerably, because a change in emotional stability also implies a switch from one line to the other (solid arrows). Accordingly, the increase in emotional stability actually results in an increase in the probability of turnout by 14 (17) points.

DISCUSSION AND CONCLUSION

This paper addressed the role of personality traits in shaping turnout at the 2009 German federal election. Drawing on data from the post-election cross-section survey of the GLES, the analysis explored four kinds of effects personality traits might exhibit on turnout. In line with prior research, the paper demonstrated that the Big Five affected turnout, after controlling for socio-demographic characteristics. In particular, agreeableness and emotional stability considerably affected turnout, while conscientiousness tended to exhibit an effect. Openness and extraversion turned out to be ineffective. These findings are partly in line with prior research. The differences to prior findings might be due to methodological or contextual factors. Concerning the latter, the effects of personality traits might differ from election to election within a political system and across political systems. From a methodological point of view, our one-item-per-trait indicators differ considerably from measures employed in several prior studies. Moreover, we utilized self-reported, rather than validated, turnout, so that

differences to Gerber et al.'s (2011a, c) and Mondak's (2010) findings might stem both from contextual and methodological differences. Future research will have to explore the contribution of these sources of the observed differences.

The main contribution of this paper is to explore the links of personality traits to attitudinal predictors of turnout. To begin with, we presented evidence that suggests that attitudinal variables serve as intervening variables that mediate the impact of personality on turnout. To be sure, the methodological limitations of our research design bias the results in favor of mediator effects of the included intervening variables. Despite these limitations, we might conclude that the evidence supports the conclusion that the impact of personality on turnout is not (completely) direct in nature. Personality traits appear to shape characteristic adaptations, which in turn shape political behavior. Future research along these lines might employ more appropriate data and explore more potential intervening variables.

Moreover, the evidence suggests that personality traits exhibit conditioning effects by in- or decreasing the impact of attitudinal factors on electoral turnout. By and large, the evidence suggests that openness, agreeableness, and extraversion render attitudes (somewhat) less powerful in affecting turnout. Conscientiousness and emotional stability rather increase the impact of certain attitudes on turnout. Finally, we put indirect and conditioning effects together and found that emotional stability and conscientiousness exhibit particularly interesting patterns of effects: They shape attitudes in a way conducive to higher turnout and make these attitudes more powerful in affecting turnout, i.e. indirect and conditioning effects mutually reinforce each other. As a result, emotional stability and conscientiousness appear to be personality traits whose role in affecting electoral participation deserves considerable scholarly attention.

In effect, our findings suggest that it is a promising strategy to integrate research on turnout and scholarship on personality traits. Traditional attitudinal predictors of turnout might be conceived of as characteristic adaptations that scholars in personality research have identified as middle-level constructs which mediate the impact of personality on specific

behavior (McAdams & Pals 2006). Hence, this approach helps to better understand the role of personality in shaping turnout as well as it sheds additional light on the sources of traditional predictors of turnout. It might thus be considered a step toward a better understanding of the complexity and the interplay of the sources of political behavior.

In addition to the limitations already mentioned, our analysis suffers from several methodological shortcomings. The cross-sectional design of the analyses might be conducive to inflate estimates of mediator effects and does not allow testing the causal order in the mediation models in a strict sense. Moreover, utilizing the so-called Baron-Kenny method of mediation analysis is likely to yield results that are biased in favor of the mediation hypothesis. In addition, the Big Five have been measured by only one item per dimension. This operationalization might affect both the distribution of the Big Five among the respondents as well as the magnitude of effects of personality traits. Future research might thus employ better indicators and more appropriate research designs as well as it might include additional intervening variables to get a fuller grasp of mediation and to reduce omitted variable bias in this respect. It will thus be in a position to establish, *inter alia*, whether our findings are affected by measurement error on independent and dependent variables. Besides methodological issues, our paper is also limited in that it covers just one election in one country, rather than comparing the importance of personality traits, measured equivalently, for turnout across time and space. Furthermore, the logic underlying our arguments suggests that the factors mediating the impact of personality and the conditioning role of personality traits might vary across forms of political participation. So, future studies should not be confined to the electoral arena to better understand the interplay of personality traits, political attitudes, and political and institutional context in shaping political behavior.

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Table 1: Overview of hypotheses for total, indirect, and conditional effects of the Big Five

	Extraversion	Agree- ableness	Openness	Conscien- tiousness	Emotional Stability
<i>Total effect</i>					
Turnout	+	+	0	+	+
<i>Indirect effects</i>					
Citizen duty	0	+	0	+	0
Party identification	+	+	-	+	0
Political interest	+	0	+	0	+
Internal efficacy	+	0	+	+	+
External efficacy	+	+	0	+	+
<i>Conditional effects</i>					
Citizen duty	-	-	-	+	+
Party identification	-	-	-	+	+
Political interest	-	-	-	+	+
Internal efficacy	-	-	-	+	+
External efficacy	-	-	-	+	+

Table 2: Effects of personality traits on turnout and its determinants (linear/logistic regressions (WLMSV))

	Civic duty	Party Identification	Political interest	Internal efficacy	External efficacy	Turnout (base model)	Turnout (full model)
Extraversion	-.03 (.03)	.08** (.03)	.10** (.03)	.13** (.02)	.11** (.03)	-.04 (.05)	-.20** (.04)
Agreeableness	.09** (.02)	.16** (.03)	-.01 (.02)	.15** (.02)	.14** (.03)	.21** (.04)	-.02 (.04)
Openness	.04 (.03)	-.02 (.03)	.20** (.03)	-.01 (.03)	-.05 (.03)	-.02 (.05)	-.12** (.04)
Conscientiousness	.13** (.03)	.04 (.03)	-.04 (.03)	.09** (.02)	.05 (.03)	.06 (.05)	-.07 (.05)
Emotional stability	-.01 (.03)	.07* (.03)	.02 (.03)	.23** (.02)	.07* (.03)	.14** (.05)	.01 (.05)
Civic duty							.63** (.03)
Party identification							.50** (.03)
Political interest							.56** (.03)
Internal efficacy							.25** (.04)
External efficacy							.49** (.03)
Gender (female)	.03 (.05)	-.07 (.05)	-.39** (.05)	-.20** (.05)	.01 (.05)	-.05 (.09)	.23** (.08)
Age	.03** (.01)	.01 (.01)	.02* (.01)	.03** (.01)	.01 (.01)	.05** (.01)	.01 (.01)
Age ²	-.000* (.000)	.000 (.000)	.000 (.000)	.000** (.000)	.000 (.000)	-.000 (.000)	-.000 (.000)
Region (West)	.52** (.05)	.38** (.06)	.25** (.05)	.37** (.05)	.39** (.06)	.32** (.08)	-.62** (.09)
Education – low	-.06	-.07	-.27**	-.22**	-.08	-.35**	-.04

Education – high	(.06) .26**	(.06) .19**	(.06) .42**	(.06) .24**	(.07) .27**	(.10) .45**	(.09) -.23
Intercept / threshold	(.06) -1.25**	(.07) -.63**	(.06) -.78**	(.06) -.77**	(.07) -.70**	(.12) .64	(.12) -1.44**
	(.20)	(.21)	(.20)	(.20)	(.23)	(.33)	(.35)
R ² / RMSEA (turnout)	.12	.11	.21	.25	.10	.10	.10
N	1786	1786	1786	1786	1786	1786	1786

Entries are (logistic) regression coefficients with robust standard errors in parentheses. WLMSV estimates (MPlus 6.1). Levels of significance: ** p<0.01, * p<0.05.

Table 3: Total, direct and (specific) indirect effects of personality traits on turnout (linear/logistic regressions (WLMSV))

	Total	Direct	Indirect	Specific indirect effects				
	effect	effect	effect	Civic duty	Party Ident.	Political interest	Internal efficacy	External efficacy
Extraversion	-.04 (.05)	-.20** (.04)	.17** (.04)	-.02 (.02)	.04** (.02)	.05** (.01)	.03** (.01)	.05** (.01)
Agreeableness	.21** (.04)	-.02 (.04)	.24** (.04)	.05** (.02)	.08** (.02)	-.004 (.01)	.04** (.01)	.07** (.01)
Openness	-.02 (.05)	-.12** (.04)	.10* (.04)	.02 (.02)	-.01 (.01)	.11** (.02)	-.003 (.006)	-.02 (.01)
Conscientiousness	.06 (.05)	-.07 (.05)	.13** (.04)	.08** (.02)	.02 (.01)	-.02 (.01)	.02** (.01)	.02 (.01)
Emotional stability	.14** (.05)	.01 (.05)	.13** (.04)	-.01 (.02)	.04* (.02)	.01 (.01)	.06** (.01)	.03* (.01)

Entries are (logistic) regression coefficients with robust standard errors in parentheses. WLMSV estimates (MPlus 6.1). Levels of significance: ** p<0.01, * p<0.05.

Table 4: Conditioning effects of personality traits on turnout (WLMSV estimates)

	Political Interest	Internal Efficacy	External Efficacy	Party ID	Civic duty
Conscientiousness	.02 (.06)	.05 (.06)	.07 (.06)	.03 (.06)	.02 (.06)
Attitude	.33** (.06)	.08 (.07)	.41** (.06)	.30** (.06)	.66** (.06)
Conscientiousness * Attitude	-.01 (.06)	.07 (.06)	.19** (.05)	.02 (.05)	.001 (.06)
Attitude (-2 sd. Cons.)	.36** (.13)	-.06 (.13)	.04 (.13)	.26 (.15)	.65** (.13)
Attitude (-1 sd. Cons.)	.35** (.08)	.01 (.09)	.22* (.09)	.28* (.10)	.66** (.08)
Attitude (+1 sd. Cons.)	.32** (.08)	.16 (.09)	.59** (.07)	.32** (.05)	.66** (.08)
Attitude (+2 sd. Cons.)	.31** (.13)	.23 (.13)	.78** (.10)	.35* (.09)	.66** (.13)
Extraversion	-.16* (.06)	-.11* (.07)	-.15* (.07)	-.14* (.06)	-.17** (.06)
Attitude	.33** (.06)	.07 (.07)	.36** (.06)	.30** (.06)	.67** (.06)
Extraversion * Attitude	-.06 (.05)	.06 (.06)	-.04 (.06)	-.02 (.05)	-.10 (.06)
Attitude (-2 sd. Extra.)	.46** (.12)	-.05 (.13)	.44** (.14)	.34* (.14)	.87** (.13)
Attitude (-1 sd. Extra.)	.39** (.08)	.01 (.09)	.40** (.09)	.32* (.09)	.77** (.08)
Attitude (+1 sd. Extra.)	.27** (.08)	.13 (.09)	.32** (.07)	.28** (.07)	.56** (.08)
Attitude (+2 sd. Extra.)	.21 (.12)	.20 (.13)	.28* (.14)	.26* (.10)	.46** (.13)
Agreeableness	.13 (.07)	.12 (.07)	.10 (.07)	.11 (.06)	.07 (.06)
Attitude	.34** (.07)	.08 (.07)	.36** (.06)	.30** (.06)	.66** (.06)
Agreeableness * Attitude	.04 (.07)	.04 (.06)	-.05 (.06)	-.02 (.05)	-.11* (.06)
Attitude (-2 sd. Agree.)	.25 (.15)	.01 (.14)	.45* (.14)	.34* (.14)	.88** (.13)
Attitude (-1 sd. Agree.)	.30** (.09)	.04 (.09)	.41** (.09)	.32* (.09)	.77** (.08)

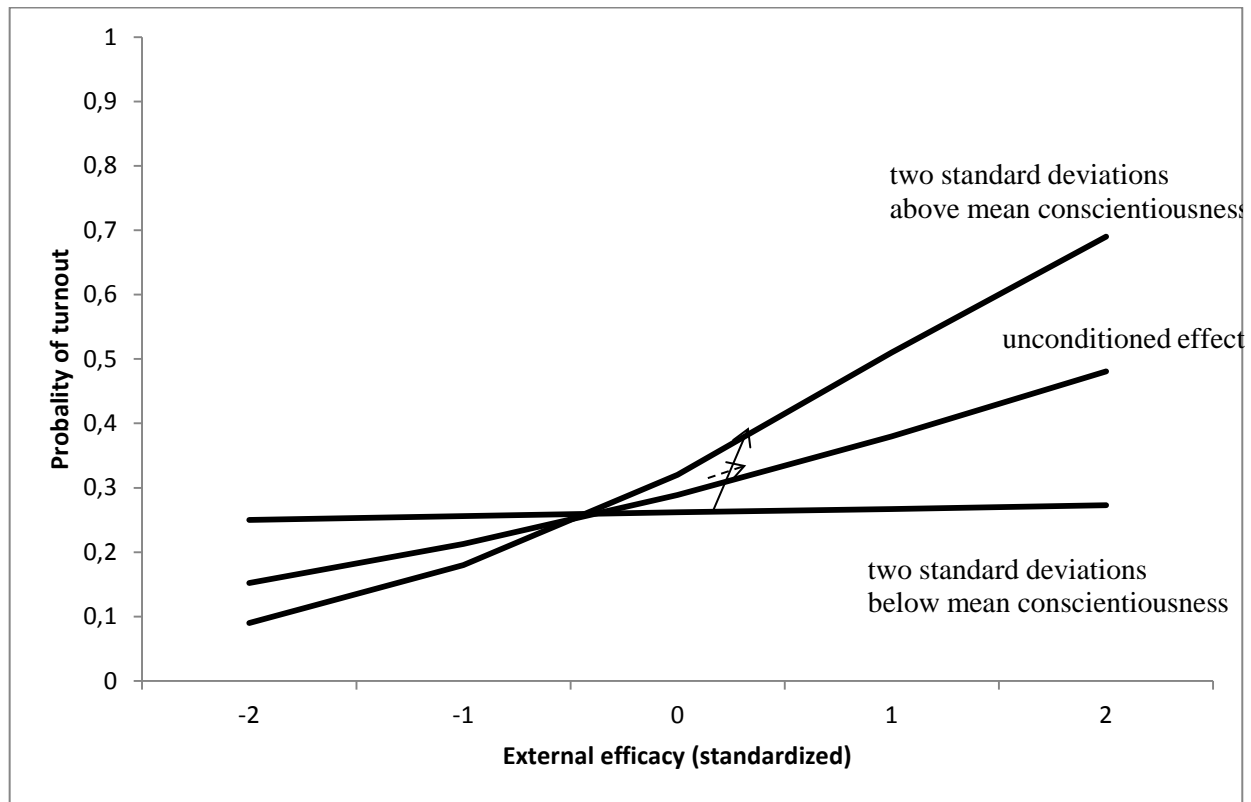
Attitude (+1 sd. Agree.)	.39** (.09)	.11 (.09)	.31** (.09)	.28** (.07)	.54** (.08)
Attitude (+2 sd. Agree.)	.43* (.15)	.15 (.14)	.27 (.14)	.26* (.10)	.43* (.13)
<hr/>					
Emotional Stability	.15* (.06)	.19** (.06)	.19** (.06)	.18** (.06)	.14* (.06)
Attitude	.33** (.06)	.08 (.07)	.38** (.06)	.30** (.06)	.66** (.06)
Emotional Stability *	-.03 (.04)	.10 (.05)	.15** (.05)	.06 (.05)	-.04 (.05)
<hr/>					
Attitude (-2 sd. Stability)	.39** (.10)	-.12 (.12)	.08 (.11)	.18 (.15)	.74** (.12)
Attitude (-1 sd. Stability)	.36** (.08)	-.02 (.08)	.23* (.08)	.24* (.10)	.70** (.08)
Attitude (+1 sd. Stability)	.30** (.08)	.17* (.08)	.53** (.08)	.37** (.05)	.61** (.08)
Attitude (+2 sd. Stability)	.27* (.10)	.27* (.12)	.68** (.11)	.43** (.08)	.57** (.12)
<hr/>					
Openness	-.16* (.06)	-.17* (.07)	-.15* (.06)	-.14* (.06)	-.15* (.06)
Attitude	.34** (.06)	.09 (.07)	.37** (.06)	.30** (.06)	.66** (.06)
Openness *	-.08 (.05)	-.10 (.06)	-.07 (.05)	-.03 (.05)	-.05 (.05)
<hr/>					
Attitude (-2 sd. Openness)	.49** (.11)	.30* (.14)	.50** (.14)	.35* (.15)	.75** (.12)
Attitude (-1 sd. Openness)	.42** (.08)	.19* (.09)	.43** (.09)	.33* (.10)	.71** (.08)
Attitude (+1 sd. Openness)	.27** (.08)	-.02 (.09)	.30** (.07)	.27** (.05)	.61** (.08)
Attitude (+2 sd. Openness)	.19 (.11)	-.12 (.14)	.24* (.10)	.25** (.08)	.57** (.12)

Entries are regression (WLMSV) coefficients with robust standard errors in parentheses. Levels of statistical significance: ** p<0.01, * p<0.05.

The models include the predictors reported in Table 1; the respective results are not reported for the sake of brevity.

Figure 1: Indirect and conditioning effects of conscientiousness and emotional stability on turnout

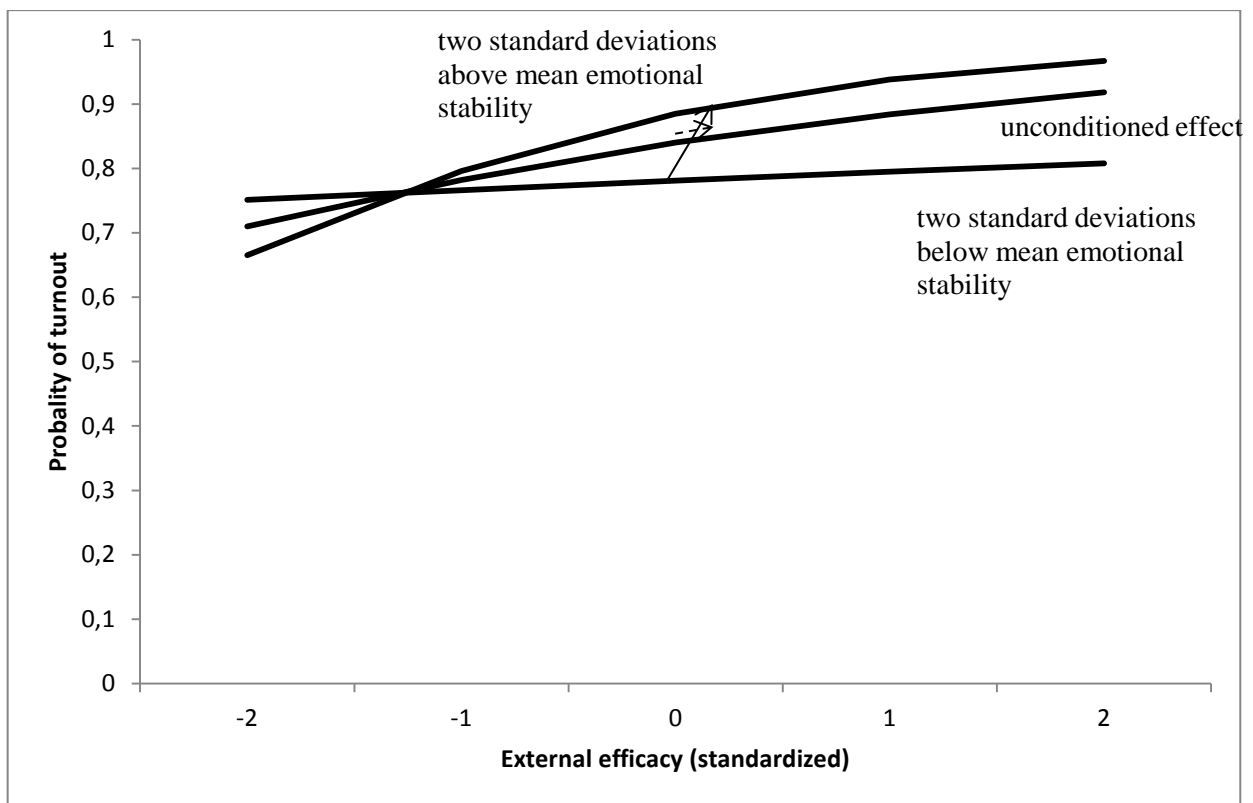
(a) Conscientiousness, external efficacy, and turnout



Note: The dashed arrow indicates the impact of a move from two standard deviations below to two standard deviations above the mean of conscientiousness on turnout assuming the unconditioned effect of external efficacy on turnout. To glean this result, the effect of this change in conscientiousness on external efficacy was calculated (an increase from 0.20 to 0.40) and then the effect of this change in external efficacy on turnout was calculated. For these calculations the other variables in the model were set to their mode, median, and mean, respectively.

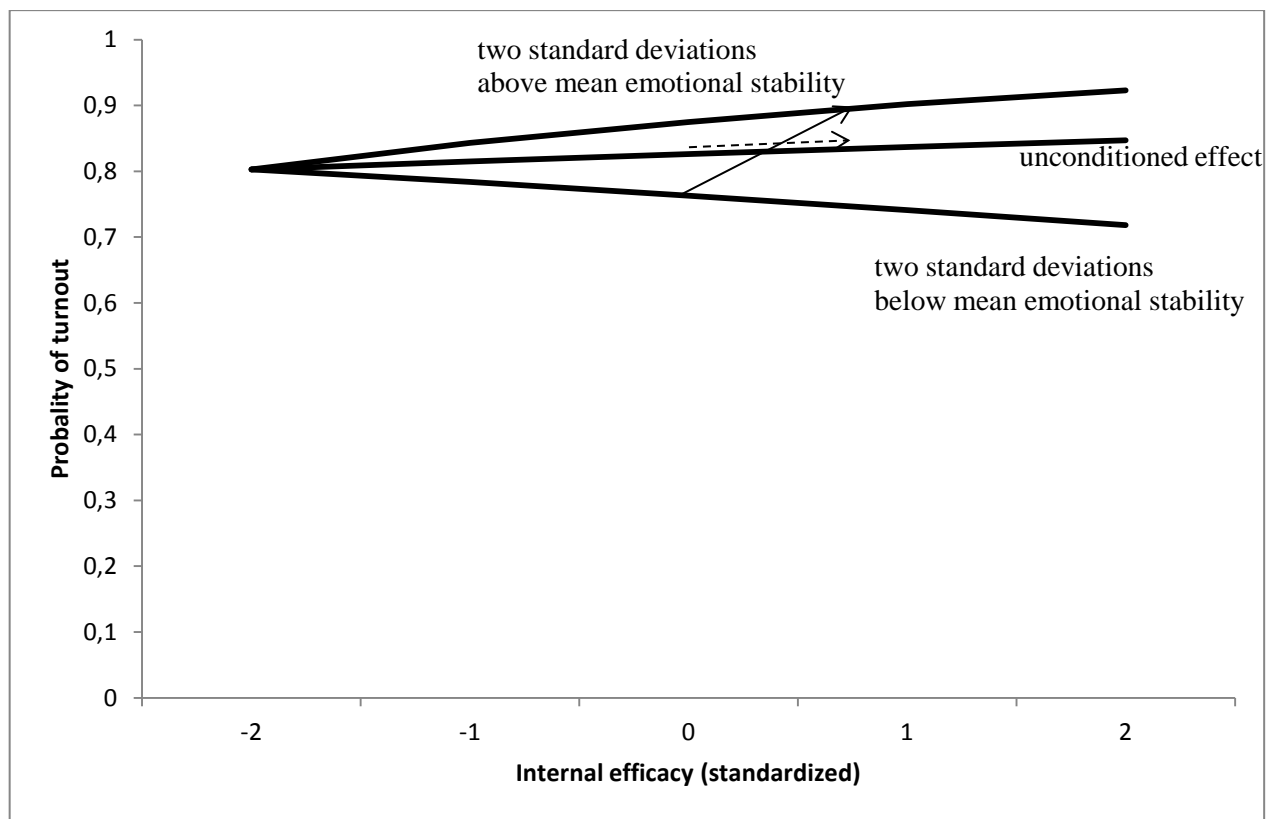
The solid arrow indicates the impact of a move from two standard deviations below to two standard deviations above the mean of conscientiousness on turnout when the conditioning of conscientiousness on the impact of external efficacy on turnout is taken into account. To glean this result, the effect of this change in conscientiousness on external efficacy was calculated (an increase from 0.20 to 0.40). Then, we calculated the probability of turnout for persons two standard deviations below the mean of conscientiousness, i.e. using the respective level and impact of external efficacy. Finally, we calculated the probability of turnout for persons two standard deviations above the mean of conscientiousness, i.e. using the respective level and impact of external efficacy. For these calculations the other variables in the model were set to their mode, median, and mean, respectively.

(b) Emotional stability, external efficacy, and turnout



Note: See Figure 1a.

(c) Emotional stability, internal efficacy, and turnout



Note: See Figure 1a.

APPENDIX

Wording of the Big Five in the GLES post-election cross section 2009:

German version (Rammstedt & John 2007):

Bitte sagen Sie mir für jede der folgenden Aussagen auf dieser Liste, inwieweit sie auf Sie zutrifft. Benutzen Sie dazu bitte die Skala.

(A) Ich bin eher zurückhaltend, reserviert.

(B) Ich schenke anderen leicht Vertrauen, glaube an das Gute im Menschen.

(C) Ich erledige Aufgaben gründlich.

(D) Ich habe eine aktive Vorstellungskraft, bin phantasievoll.

(E) Ich werde leicht nervös und unsicher.

(1) trifft überhaupt nicht zu, (2) trifft eher nicht zu, (3) teils/teils, (4) trifft eher zu, (5) trifft voll und ganz zu.

English translation (own literal translation):

Please tell me to what extent you think the statements in the following list accurately describe you. Please use the scale for this purpose.

(A) I am rather cautious and reserved.

(B) I trust others easily, I believe in the good in humans.

(C) I perform tasks very thoroughly.

(D) I have an active imagination, and am imaginative.

(E) I get nervously and insecure easily.

(1) strongly disagree, (2) tend to disagree, (3) neither agree nor disagree, (4) tend to agree, (5) strongly agree.

Our English translation differs somewhat from Rammstedt & John's (2007) English version of the items which are evidently not literal translations.

Operationalization of the variables in the analysis:

Turnout in 2009 German Federal Election: dichotomous variable with 0: no, 1: yes.

Big Five: For the exact wording of the items, see above. Original items were rescaled to a scale from 0 (strongly disagree) to 1 (strongly agree).

Civic duty: based on the following question: "In a democracy it is the duty of all citizens to vote regularly in elections." Categories: 1: strongly disagree, 2: tend to disagree, 3: neither agree nor disagree, 4: tend to agree, 5: strongly agree. The variable was recoded and ranges from -1 (strongly disagree) to 1 (strongly agree).

(Strength of) Party identification: based on the following questions: "And now let's go back to the political parties again briefly. Many people in Germany are inclined to support a particular political party for a longer period of time even if they occasionally vote for another party. What about you? In general terms, are you inclined to support a particular political party? And if so, which one?" Respondents who mentioned a party were asked about the strength of their identification: "All in all, how strongly or weakly are you inclined to support this party: very strongly, fairly strongly, moderately, fairly weakly or very weakly?" Categories: 1: very strongly, 2: fairly strongly, 3: moderately, 4: fairly weakly, 5: very weakly. Both variables were combined and coded as follows: 0: no identification with any party, 0.25: fairly weakly+ very weakly, 0.5: moderately, 0.75: fairly strongly, 1: very strongly.

Political interest: based on the following question: "How interested in politics are you?"

Categories: 1: very interested, 2: fairly interested, 3: moderately interested, 4: not very interested, 5: not interested at all. The variable was rescaled to range from 0 (not interested at all) to 1 (very interested).

Internal efficacy: based on the following questions: "I often find political issues difficult to understand." "Today's problems are so complex that politicians are no longer able to solve them." Categories for both items: 1: strongly disagree, 2: tend to disagree, 3: neither agree nor

disagree, 4: tend to agree, 5: strongly agree. Both items were combined and rescaled to an index from -1 (no internal efficacy at all) to 1 (very high internal efficacy).

External efficacy: based on the following question: “The political parties are only interested in people’s votes, not in what voters think.” Categories: 1: strongly disagree, 2: tend to disagree, 3: neither agree nor disagree, 4: tend to agree, 5: strongly agree. The variable was rescaled to range from -1 (no external efficacy at all) to 1 (very high external efficacy).

Gender: dichotomous variable with 0: male, 1: female

Age: Age in years

Age²: Age in years*age in years

Region: dichotomous variable with 0: East Germany, 1: West Germany

Education - low: based on self-reported education level of respondent with the following categories: 1: Finished school without school leaving certificate, 2: Lowest formal qualification after 8 or 9 years of schooling, 3: Intermediary secondary qualification 4: Certificate fulfilling entrance requirements to study at a polytechnical college, 5: Higher qualification, entitling holders to study at a university, 6: other school leaving certificate, 9: still a school student. New dichotomous variable with 0: no low education, 1: low education (combining the categories 1+2 of the original variable).

Education - high: based on self-reported education level of respondent (see above): New dichotomous variable with 0: no high education, 1: high education (combining the categories 4+5 of the original variable).

Table A1: Descriptive Statistics: dependent variables, personality traits, explanatory and control variables

Variable	N	Min	Max	Mean	Std. dev.
Turnout	1786	0	1	0.84	-
Extraversion	1786	0	1	0.54	0.29
Agreeableness	1786	0	1	0.57	0.25
Conscientiousness	1786	0	1	0.84	0.19
Openness	1786	0	1	0.65	0.25
Emotional stability	1786	0	1	0.68	0.26
Civic duty	1786	-1	1	0.41	0.64
Party identification	1786	0	1	0.50	0.36
Political interest	1786	0	1	0.45	0.25
Internal efficacy	1786	-1	1	0.07	0.50
External efficacy	1786	-1	1	-0.25	0.51
Gender (female)	1786	0	1	0.51	-
Age	1786	18	89	49.35	17.40
Age ²	1786	324	7921	2738.22	1761.19
Region (West)	1786	0	1	0.81	-
Education – low	1786	0	1	0.40	-
Education – high	1786	0	1	0.23	-

For the analyses trait and attitudinal variables were standardized.