

Does size matter? The implications of brief personality measures for political psychology

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Abstract

Brief measures of the Big Five personality traits are increasingly included in large omnibus surveys where space and time are limited. However, short measures may threaten the validity of the association between personality and politics. In this study, we report the results of a unique population-based study which includes brief (Ten Item Personality Inventory) and more elaborate measures of personality (20-item Mini-IPIP & 50-item IPIP-FFM). We show that that the more elaborate measures of personality are generally more strongly associated with politics. In fact only measures of Openness yield consistent relationships across batteries. Traits that been largely dismissed as relevant to politics – Neuroticism, Agreeableness, Extraversion and even Conscientiousness – yield very different relationships between batteries. Our results imply that the measurement of personality conditions our results and accordingly our understanding of the role of personality in politics.

Keywords: Political Ideology, Big Five, TIPI, Measurement

Does size matter? The implications of brief personality measures for political psychology

The study of personality in political behavior has made a resurgence in recent years (e.g., Carney, Jost, Gosling, & Potter, 2008; Gerber, Huber, Doherty, Dowling, & Ha, 2010; Mondak & Halperin, 2008; Schoen & Steinbrecher, 2013). Many of these studies are based on short measures of the Big Five personality traits, especially the Ten Item Personality Inventory which measures each trait using two items (henceforth, TIPI; Gosling, Rentfrow, & Swann, 2003). While short measures leave room for the many other constructs that we are interested in measuring, they also tend to yield less reliable estimates of underlying traits than do longer instruments (Gosling et al., 2003). In this paper, we explore the consequences of using these short measures for our understanding of the role of personality in politics.

The TIPI is now included in the World Values Survey, the 2009 Cooperative Congressional Election Study, the American National Election Study as well as various election studies in other western countries. Accordingly, the TIPI is increasingly used to assess the role of personality in politics (see for instance, Carney et al., 2008; Gerber et al., 2010; Ha, Kim, & Jo, 2013; Ha & Lau, 2015; Wang, 2014; Weinschenk, 2014).¹ However, because the TIPI is less reliable than other personality scales (Gosling et al., 2003, p. 523), the decision to include it in these omnibus surveys rather than the widely available longer batteries is justified only if our conclusions about the association between personality and politics are roughly the same, regardless of the measure.

In this paper, we determine whether the relationship between personality traits and politics varies by the length of the battery. We utilize a unique population-based study which includes (in different waves, but within one year) the TIPI (Gosling et al., 2003) and the medium length 50-item International Personality Item Pool - Five Factor Model (henceforth, IPIP-FFM, Goldberg et al., 2006).² The 50-item IPIP-FFM also

¹Others studies employ brief personality batteries that measure personality using one (Schoen & Steinbrecher, 2013) or three items per trait (Bakker, Hopmann, & Persson, 2015).

²Longer personality inventories such as the 100 item IPIP model (Goldberg et al., 2006) or 240 item NEO PI R (Costa & McCrae, 1992) have rarely been employed in population based studies (but see, Hatemi & Verhulst, 2015).

allows us to construct the 20-item Mini-IPIP (Donnellan, Oswald, Baird, & Lucas, 2006), which is increasingly used as a compromise between the short and long batteries (see for instance, De Neve, 2015; Osborne & Sibley, 2015). We compare the relationships between the various Big Five traits measured by these batteries, on the one hand, and various outcomes commonly studied in the field of political psychology, on the other.

Measuring personality

Brief measures of personality offer several advantages over their longer counterparts. First, the boredom and fatigue that may arise as a result of long indices may increase measurement error (Burisch, 1984). Second, since hundreds of questions often appear in a single wave of an omnibus survey, space comes at a premium. Brief measures allow scholars to study personality when they have limited space available on a survey. Fortunately, some of the psychometric properties of the TIPI and other brief measures are satisfactory. The test-retest reliability of the brief TIPI is acceptable (Gosling et al., 2003). Likewise, the convergent validity of brief measures is satisfactory when the TIPI was compared to the personality batteries with a modest length (Donnellan et al., 2006; Ehrhart et al., 2009; Gosling et al., 2003; Hofmans, Kuppens, & Allik, 2008).

Other psychometric properties of brief batteries – such as the TIPI – are more problematic (Krueger, Emons, & Sijtsma, 2013). Personality traits are often broad constructs that contain multiple sub-dimensions. The items for a short measure of such a broad trait are usually selected so that the short measure reflects the breadth of the original dimension (Gosling et al., 2003; Woods & Hampson, 2005). Accordingly, the inter-item correlation will be low. Second, and more fundamentally, the brief personality measures are intended to capture the variance in broad Big Five traits (Smith, McCarthy, & Anderson, 2000). However, some aspects of a trait will be underrepresented, which limits the content validity of the trait. This, Credé, Harms, Niehorster, and Gaye-Valentine (2012) point out, can yield both Type 1 and Type 2 errors when assessing the relationship between personality traits and other constructs of

interest. Personality traits are multidimensional constructs. Short batteries, such as the TIPI, may only tap into, at best, a few of these sub-dimensions. If the target measure we are interested in is associated with a sub-dimension that is missed by the TIPI, any correlation will be attenuated. Conversely, if a target measure is only related to one specific sub-dimension of that trait, but not others, any correlation will be overestimated (see also, [Messick, 1995](#); [Paunonen & Jackson, 1985](#)).

We study the association between personality and politics. Building upon the aforementioned discussion, the measurement of the personality trait could condition the strength and direction of the association between a trait and a political dimension. Following the work by [Credé et al. \(2012\)](#), we expect both *overestimation* and *underestimation* of the association between personality and politics when using briefer personality batteries compared to larger personality batteries.

In the field of personality and politics there have been, to our best knowledge, only a few assessments of the consequences of personality. [Mondak, Hibbing, Canache, Seligson, and Anderson \(2010\)](#) find that Openness and Conscientiousness correlated consistently with a uni-dimensional measure of ideology when each trait was measured using two or five items per trait. However, the results for the other three traits were less consistent across the two batteries. In another study, [Gerber, Huber, Doherty, and Dowling \(2011\)](#) reported that the association between personality traits and economic ideology and political interest differed across the TIPI and a larger personality inventory (the 44 item Big Five Inventory). In their study, the TIPI seemed to overestimate the association between personality and politics. Evidence for the underestimation of the association between personality and politics due to brief measures of personality was provided by [Bakker, Klemmensen, Nørgaard, and Schumacher \(2016\)](#). Using a 12-item Extraversion battery, extraverts were less likely to switch vote choice, while using a 3-item Extraversion battery there was no such association. This mix of findings suggests that the length of personality batteries may impact our conclusions.

We extend past work in a number of ways. We report the results of a probability sample outside the U.S. context. We compare the association between the TIPI and

politics with the association between a different longer personality battery and politics, namely the IPIP. Moreover, this set-up allows us to compare the 2-item per trait TIPI to validated and reliable 4-item (i.e. Mini-IPIP) and 10-item per trait (i.e. IPIP-FFM) measures. In doing so we get a better insight whether the size of the personality battery matters in the study of politics.

Data and Methods

Participants

We use the World Values Survey (WVS) of 2012 conducted in the Netherlands. The WVS was fielded in 2012 between December 3 and December 31 among panelists of the Dutch Longitudinal Internet Studies for Social sciences (LISS) panel (Scherpenzeel & Das, 2010). The WVS was fielded to 2,479 LISS respondents; the response rate was 76.6% (N=1,901) and the completion rate was 76.0% (N=1,884). The Dutch respondents had previously taken part in an ongoing panel survey. As part of this panel survey they also completed a larger personality inventory.³ Roughly 1,500 participants provided their answers on the WVS as well as the larger personality inventory.

Measuring personality

The TIPI (Gosling et al., 2003) was included as part of the WVS in European countries. The Dutch participants had also completed a larger 50-item (10 per trait) personality inventory six months earlier, namely the International Personality Item Pool – Five Factor Model (IPIP-FFM) (Goldberg et al., 2006). Since personality traits are relatively stable over shorter time periods (Gerber, Huber, Doherty, & Dowling, 2013) – and are stably associated with political attitudes over time (Bloeser, Canache, Mitchell, Mondak, & Poore, 2013) – the lag between waves should not affect the nature of the associations reported here. A unique aspect of the 50-item IPIP-FFM is that it is also possible to derive a validated and reliable 20-item instrument, the Mini-IPIP (Donnellan et al., 2006). Accordingly, we can assess the relationship between

³This survey was fielded to 7475 LISS panel members and completed by 79.3%

personality and politics using personality inventories that measure each trait using 2-items (i.e., TIPI), 4-items (i.e., Mini-IPIP) and 10-items (i.e., IPIP-FFM) per trait.

We report summary statistics and Cronbach's α for each trait of the three batteries of personality (See Table 1). As expected – given the low number of items per trait – TIPI traits are less reliable than either the Mini-IPIP or IPIP-FFM. As can be seen in Table 1, Agreeableness, and to a lesser extent Openness, Conscientiousness, Extraversion and Neuroticism suffer from low internal consistencies. Clearly, the 20-item Mini-IPIP and the 50-item IPIP-FFM do not suffer from this problem and have acceptable internal consistencies. While the standard deviations tend to be slightly larger among the TIPI traits than the Mini-IPIP and IPIP-FFM, the means tend to be very similar. The correlations between the TIPI and the IPIP measures range from weak (Agreeableness) through modestly strong associations (Neuroticism). These associations are considerably weaker compared to the associations between the TIPI and the IPIP measures reported in previous studies (Ehrhart et al., 2009; Goldberg et al., 2006). However, these studies relied upon college students while we report the results of a population-based survey. Importantly, the strength of the association between the TIPI and the IPIP measures does not differ between the brief Mini-IPIP and the longer IPIP-FFM. Moreover, correlations between the Mini-IPIP and IPIP-FFM traits are high (see most right-hand column of Table 1).

Criterion Measures

We compared the relationships between the personality traits and political ideology dimensions as well as political interest, which have been of particular interest to the field. The ideology dimensions were – with the exception of the immigrant attitudes – measured using items that were part of the 2012 World Values Survey. *Uni-dimensional ideology* was measured by asking panelists to rate themselves on a scale from left (0) to right (10). We recoded the ideology dimension to range from the most liberal (0; left) to most conservative (1; right) observation ($M = 0.50$, $SD = 0.23$). *Social ideology* was measured using two items, namely “I find it shocking when a man

and a woman kiss in public” and “I find it shocking if two men kiss in public.” Both items were scored on a five point Likert-scale ranging from “strongly disagree” through “strongly agree”. The items correlate highly ($r = 0.62$) and were internally consistent ($\alpha = 0.75$). Accordingly, we created a scale ranging from the most liberal (0) through the most conservative (1) social ideology ($M = 0.38$; $SD = 0.24$). *Economic ideology* was measured using two items. The first item asks people to rate themselves on a scale from (1) “Government should take more responsibility to ensure that everyone is provided for” through (10) “People should take more responsibility to provide for themselves.” The second item asked participants to rate themselves on a scale range from (1) “Incomes should be made more equal” through (10) “Individual effort should be rewarded.” We created a scale ($\alpha = 0.76$) ranging from the most liberal (0) through the most conservative (1) economic ideology ($M = 0.52$, $SD = 0.21$).

Immigrant attitudes were measured using six items. These items were not included in the World Values Survey but in the “Politics and Values” wave of the LISS panel that was conducted in December 2012. The first item asked participants to indicate “Where would you place yourself on a scale of 1 to 5, where 1 means that immigrants can retain their own culture and 5 means that they should adapt entirely?” The other items were: (2) “It does not help a neighborhood if many people of foreign origin or descent move in”; (3) “It is good if society consists of people from different cultures”; (4) “Legally residing foreigners should be entitled to the same social security as Dutch citizens”; (5) “It is difficult for a foreigner to be accepted in the Netherlands while retaining his/her own culture”; (6) “There are too many people of foreign origin or descent in the Netherlands”. All items were all answered on a five point Likert scale ranging from “fully disagree” (1) through “fully agree” (5). The items were internally consistent ($\alpha = 0.81$) and the items were, where necessary, recoded, so that the scale ranged from low to high anti-immigrant attitudes ($M = 0.54$, $SD = 0.17$).

Lastly, *political interest* was measured using one item tapping into the political interest of participants ranging from (1) “not at all interested” through (4) “very interested.” Again, we recoded the item to range from no interest (0) in politics through

very interested (1) in politics ($M = 0.57$, $SD = 0.29$). Table 1, in the *Supplementary Material*, confirms that the dependent variables independent of each other due to the weak correlations between the constructs.

Modeling strategy

For each personality battery, we regressed the five criterion measures on each trait as well as sex, age, education and income. The descriptive statistics of the control variables are provided in Table 2 of the *Supplementary Material*.⁴ To make the results easily comparable, we plot regression coefficients and 95 percent confidence intervals. We discuss the results trait by trait, i.e., one trait per figure. Each column of a figure presents the results for the association between a trait measured by the TIPI, the Mini-IPIP and the IPIP-FFM with one of the dependent variables, respectively.⁵

Results

The number of items used to measure Openness did not substantively change its relationship to the various criterion measures (Figure 1). Higher levels of Openness was negatively correlated with conservatism (column 1), social conservatism (column 2), anti-immigrant attitudes (column 4) and positively correlated with political interest (column 5). However, Openness was not related to the economic conservatism dimension (see Figure 1 column 4). This confirms the generally held observation that Openness is the most reliable correlate of political ideology (Sibley, Osborne, & Duckitt, 2012) as well as social ideology (Carney et al., 2008), anti-immigrant attitudes (Gallego & Pardos-Prado, 2014) and political interest (Mondak & Halperin, 2008). Yet, the null findings between Openness and economic ideology confirm that Openness is “less relevant to economic issues” (Hibbing, Smith, & Alford, 2014, p. 304).

The conclusion about the relationship between Conscientiousness and the various

⁴The results do not change if we do not control for education and income. Results are available upon request.

⁵The *Supplementary Material* provides the tables with results of the regression models for the models including the TIPI (Table 3), the mini-IPIP (Table 4) and the IPIP-FFM (Table 5).

criterion measures are conditional upon the measurement of personality (Figure 2). In line with Sibley et al. (2012) there is a consistent association between Conscientiousness and uni-dimensional measure of conservatism. However, because the 95 percent confidence intervals of the TIPI and the Mini-IPIP contain zero, we would likely conclude that there is no relationship between Conscientiousness and social ideology, economic ideology and political interest. Using the more elaborate IPIP-FFM, we find positive associations between Conscientiousness and social and economic conservatism and political interest. Moreover, the size of the effects and the conclusions we would likely draw vary. The relationship between Conscientiousness and uni-dimensional ideology and immigrant attitudes, respectively, is at least twice as large when the IPIP-FFM is used than when the TIPI or the Mini-IPIP is used.

The results for Neuroticism are also sometimes conditional upon the measurement of personality (see Figure 3). The direction of the relationships between Neuroticism and uni-dimensional ideology, social ideology and immigrant attitudes, respectively, are not contingent upon the personality instrument; however, the coefficients from the TIPI models are between 50% and 100% smaller than the coefficients from the IPIP models. Based upon the TIPI and the Mini-IPIP, we would conclude that there is a negative correlation between Neuroticism and economic conservatism. Yet, the more elaborate IPIP-FFM indicates that Neuroticism is unrelated to economic conservatism (see also, Van Hiel & Mervielde, 2004).

Turning to Agreeableness, we observe striking differences regarding the association between this trait and the different dependent variables in this study (see Figure 4). When measured by the TIPI, Agreeableness is weakly associated with economic ideology and anti-immigrant attitudes but unrelated to the uni-dimensional measure of ideology and social ideology. Yet, when we operationalize Agreeableness using the IPIP-FFM, or the Mini-IPIP, we conclude that Agreeableness correlates negatively with a uni-dimensional measure of ideology, social conservatism, economic conservatism and immigrant attitudes. Among all these dimensions the strength of the associations is more than twice the size of the association that would be obtained using the TIPI.

Lastly, the results show that Agreeableness is generally unrelated to political interest, but the coefficients are positive for both IPIP batteries and negative for the TIPI.

Lastly, the results for Extraversion indicate that a brief measure of personality lead to much different results than do the longer versions. We would conclude from the TIPI that Extraversion is unrelated to conservatism as measured with a uni-dimensional measure of ideology and economic conservatism (see also [Carney et al., 2008](#); [Gerber et al., 2011](#); [Sibley et al., 2012](#)), but Extraversion is related with these ideology dimensions if we use the IPIP-FFM or Mini-IPIP. Second, using the TIPI we would find a negative association with anti-immigrant attitudes, while the IPIP suggests that Extraversion is positively associated with anti-immigrant attitudes. Third, Extraversion measured via the TIPI is negatively associated with social conservatism, while the IPIP results in null findings. Lastly, there is only dimension where we find consistent results and that is the null finding between this trait and political interest. To summarize, the associations between the trait and most measures of political ideology seems to be contingent upon the operationalization of the trait.

Discussion

We have shown that – with the exception of Openness – the association between personality and political dimensions is conditional upon the measurement of personality. Utilizing a unique population based panel study, we found that the TIPI tends to underestimate the association between personality and politics, while the more elaborate 50-item IPIP-FFM tend to result in stronger and more reliable associations with politics. Importantly, the Mini-IPIP – which only consists of four items per trait – performed generally more in line with the large IPIP battery, especially for the traits that yield the most inconsistent findings between the IPIP and TIPI.

Our study affirms the points raised by [Credé et al. \(2012\)](#) that short measures may yield both over-estimations and underestimations. First, while [Gerber et al. \(2011\)](#) reported that the TIPI sometimes overestimates the association between personality and politics, we show that brief measures of personality tend to underestimate the

association between personality and politics. Moreover, our study confirms that the move from two-items per trait towards personality measures using a couple more items in the study of personality and politics already is an improvement. This is especially the case among traits that have been largely disregarded as relevant for politics, namely Conscientiousness, Neuroticism, Agreeableness and Extraversion. The current study shows that we should critically assess whether brief measures of personality yield reliable estimates of the association between personality and politics.

This study has two limitations. First, we conducted our study in only one political context, namely the Netherlands. The Netherlands is a western European country increasingly used as a political context in the field of personality and politics (see for instance, [Gallego & Pardos-Prado, 2014](#)). We do not have a priori reasons to expect that the effects should differ in other western countries (see the meta-analysis by [Sibley et al., 2012](#)). However, future research could assess the generalizability of our findings in other political contexts.

Second, we do not have a way of knowing if the TIPI is actually more (or less) accurate than the longer measures. Many validation studies utilize some gold standard, wherein they compare some self-reported behavior with an actual behavior such as the study of electoral participation. We do not have an analogous criterion measure here. This implies that we have to be careful with drawing conclusions that the IPIP results in *better* estimates. We have reasons to believe that the IPIP results in estimates closer to the *true* estimate because of the superior measurement properties. Yet, we have no way of proving this point. However, more research, using independent samples, but equivalent measures should help us to get one step closer to understanding the size and direction of the association between personality and politics.

[Gosling et al. \(2003\)](#) already raised awareness that the brief measures such as the TIPI comes at the cost of the psychometric properties. With the currently increasing interest in the association between personality and politics, our study raises awareness that the reliance upon brief measures of personality in omnibus surveys has potential detrimental effects on the development of the literature. Scholars relying upon the TIPI

at best underestimate the association with most political ideology dimensions, while in the worst case scenario they conclude that a trait is unrelated to politics or even misstate the direction of effects. The results of our study point out that this is especially the case among traits that have yielded inconsistent associations in the study of personality and politics such as Agreeableness, Neuroticism and Extraversion.

We are not arguing that batteries of personality need to be excessively long. Our study suggests that we might be relatively well off once we use the 20-item Mini-IPIP (see also, [Credé et al., 2012](#)). First, the Mini-IPIP could be a suitable instrument because it has similar psychometric properties as the 50-item IPIP. Second, the Mini-IPIP tends – with a few exceptions – to yield similar results as the 50-item IPIP-FFM. Accordingly, this study should help researchers make a case to convince collaborators, managers of omnibus surveys and funding agencies to at least upgrade the measures of personality from using two items per trait to include slight larger personality inventories in future studies. Such a small step, we believe, would improve the personality and politics literature.

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Table 1

Descriptive statistics

Trait	Battery	Mean	SD	Skew	Kurtosis	α	r TIPI	r mini-IPIP
Openness	TIPI	0.54	0.25	-0.08	2.34	0.46	-	
	Mini-IPIP	0.59	0.18	0.04	3.09	0.60	0.47	-
	IPIP-FFM	0.57	0.14	0.07	2.95	0.76	0.45	0.84
Conscientiousness	TIPI	0.73	0.21	-0.56	2.66	0.42	-	
	Mini-IPIP	0.67	0.18	-0.39	2.83	0.67	0.46	-
	IPIP-FFM	0.68	0.13	-0.29	2.93	0.77	0.51	0.89
Extraversion	TIPI	0.53	0.23	0.19	2.64	0.41	-	
	Mini-IPIP	0.55	0.19	-0.07	2.84	0.75	0.46	-
	IPIP-FFM	0.54	0.17	-0.01	2.92	0.87	0.51	0.93
Agreeableness	TIPI	0.69	0.18	-0.40	3.09	0.19	-	
	Mini-IPIP	0.72	0.16	-0.60	3.66	0.76	0.22	-
	IPIP-FFM	0.68	0.15	-0.51	3.81	0.83	0.24	0.91
Neuroticism	TIPI	0.35	0.24	0.42	2.61	0.68	-	
	Mini-IPIP	0.34	0.19	0.39	3.01	0.73	0.62	-
	IPIP-FFM	0.37	0.17	0.38	2.91	0.88	0.67	0.93

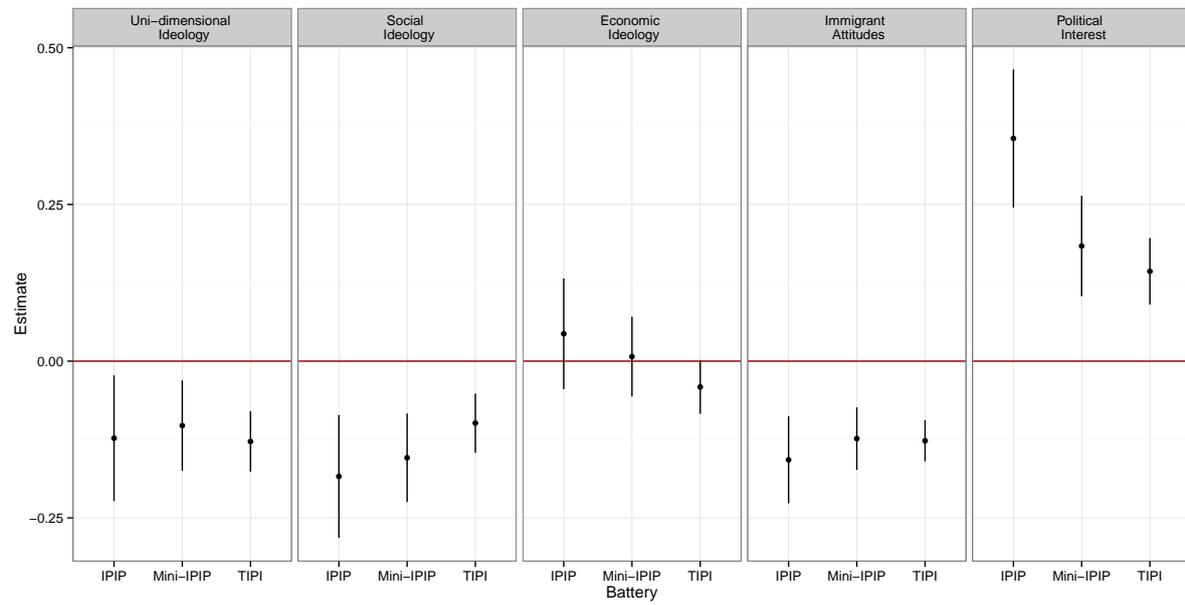
Figure 1. Openness and Political Ideology: TIPI, Mini-IPIP and IPIP-FFM results

Figure 2. Conscientiousness and Political Ideology: TIPI, Mini-IPIP and IPIP-FFM results

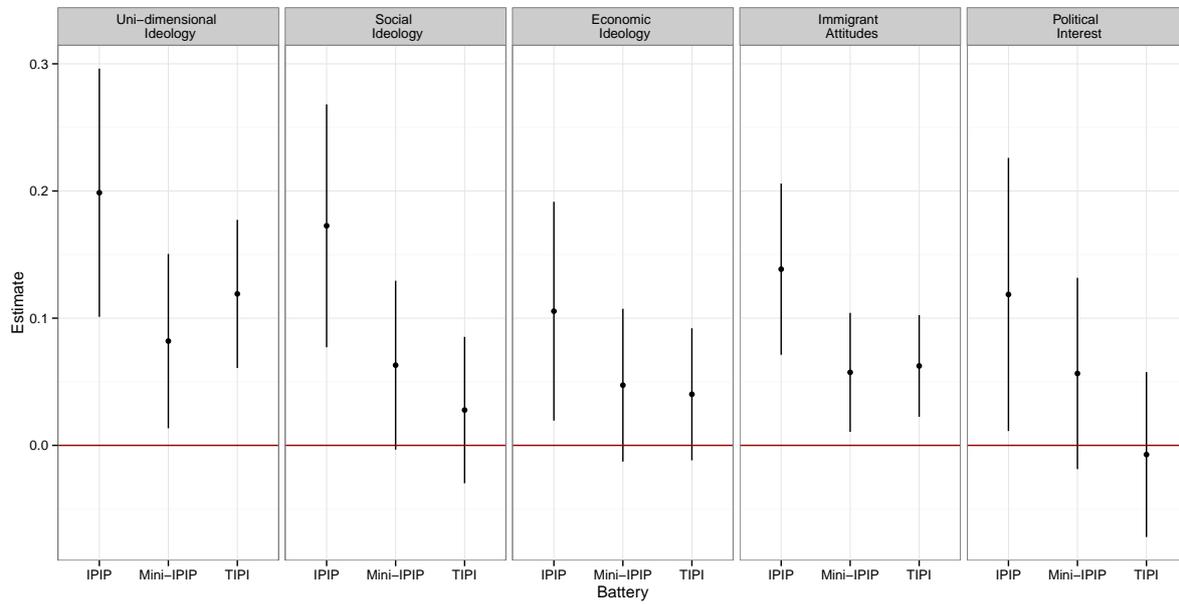


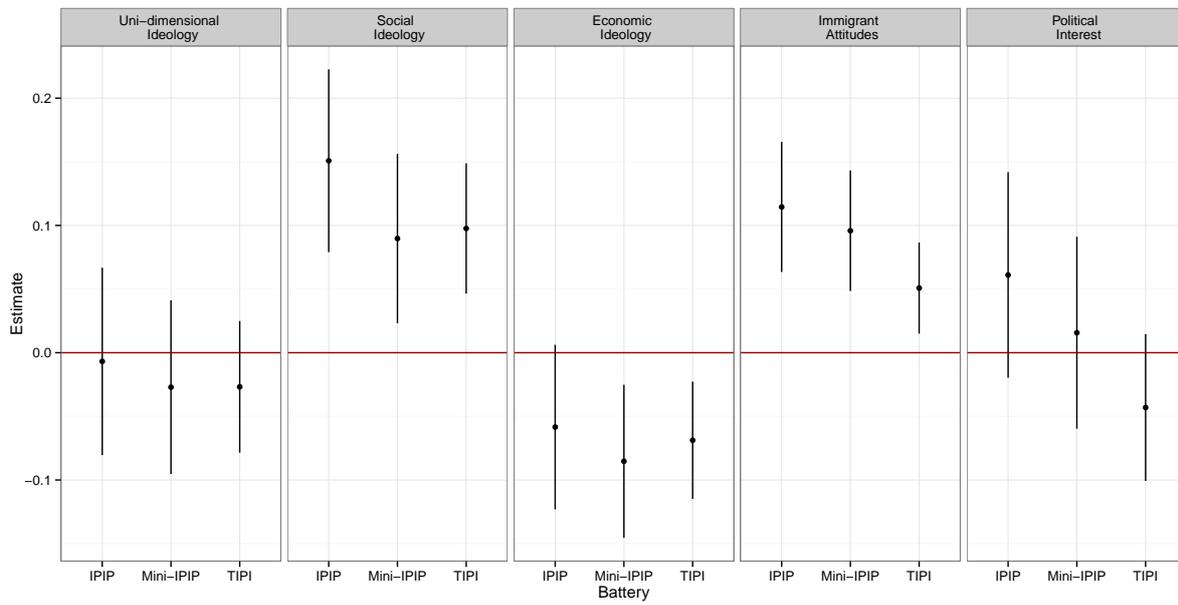
Figure 3. Neuroticism and Political Ideology: TIPI, Mini-IPIP and IPIP-FFM results

Figure 4. Agreeableness and Political Ideology: TIPI, Mini-IPIP and IPIP-FFM results

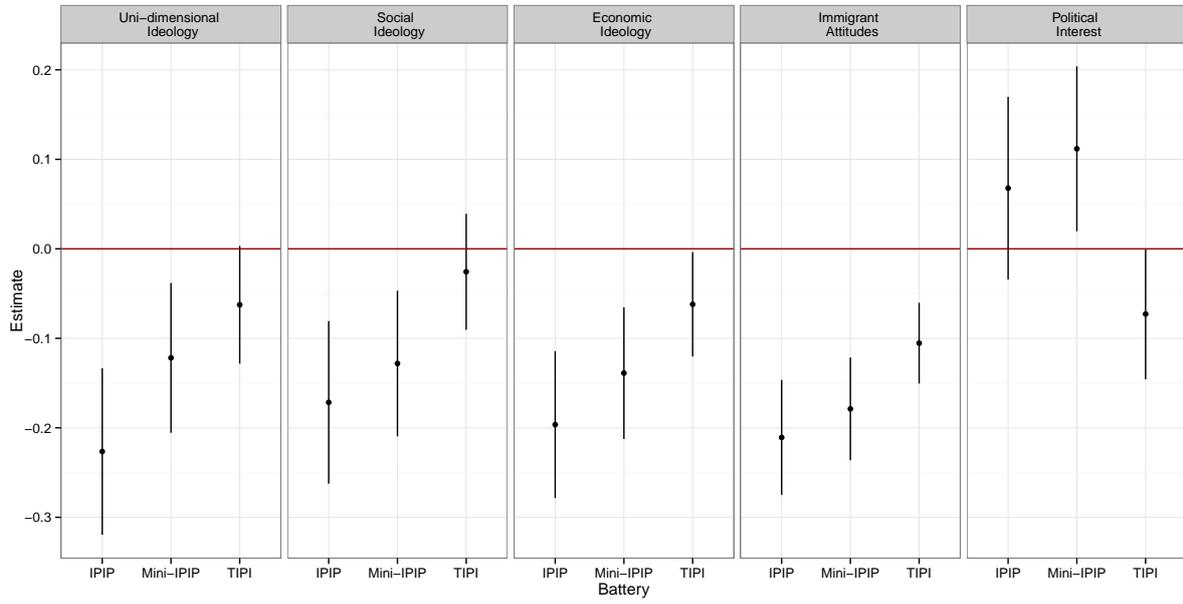


Figure 5. Extraversion and Political Ideology: TIPI, Mini-IPIP and IPIP-FFM results

