Abstract

This study investigates the role of cognitive abilities in making tolerance judgments, toward Neo Nazis and the Far Right, using a standardized and validated measure of intelligence. We also include measures of habitual cognitive styles and emotional reactions, in the form of the Big Five personality traits, sociotropic threat and social ideology; all of which we know are related to political tolerance.

We find that intelligence has a strong effect on political tolerance, even after accounting for differences in personality traits, perceptions of threat, and social ideology. Furthermore, those who are more cognitively able are equally likely to extend civil liberties to the Neo Nazis, an extreme group, as to the Far Right, a non-extreme group, whereas those who are less cognitively able are more likely to extend civil liberties only to the non-extreme group. We speculate that the reason why those who are more intelligent are more politically tolerant is because they are able to engage in “principled reasoning” i.e. the ability to link abstract notions of civil liberties also to disliked and extreme groups such as the Neo Nazis.
Political tolerance is essentially about which rights and liberties political groups you dislike should enjoy (Sullivan, Piereson, and Marcus 1982; Sullivan, Piereson, and Marcus 1979). Without some amount of political tolerance liberal democracy in large complex societies is impossible, but individuals vary considerably in the extent to which they tolerate diversity, difference and dissenting views, notably because their psychological and political dispositions vary. Individual predispositions and values have been featured as important determinants of individual variation in political tolerance. Constructs like 'rigidity of categorization', authoritarianism, dogmatism, ethnocentrism, social conformity and self-esteem are all related to political intolerance (Altemeyer 1981; Feldman 2003; Feldman and Stenner 1997; Kinder and Kam 2010; Sniderman 1975; Stenner 2005; Stouffer [1955] 2009; Sullivan et al. 1981). Depending on conceptualization these individual predispositions include blends of motivational, cognitive and emotional factors that more or less habitually influence political tolerance and related concepts such as prejudice, negative stereotyping and social conservatism. There is, in the study of political tolerance, an increasing focus on getting a fuller understanding of the deeper psychological roots of political tolerance and the role of emotions and cognition (Kuklinski and Riggle 1991; Marcus et al. 2005; Marcus et al. 1995). Constructs like authoritarianism and ethnocentrism are influenced by more deep-seated individual differences in personality traits (Duckitt and Sibley 2009; Sibley and Duckitt 2008; Stenner 2005) and so is political tolerance (Marcus et al. 1995).

In the exploration of the deeper psychological roots of the individual variation in political tolerance it is somewhat surprising that little attention has been devoted to examining the role of one of the most prominent deep-seated dispositions, cognitive ability or intelligence (cf. however Stenner 2005). Intelligence is associated with a cognitive (Gottfredson 1997, 13) “ability to reason, plan, solve problems, think abstractly, comprehend complex ideas, learn quickly and learn from experience”. One of the ‘mental routes to tolerance judgments’ (Kuklinski and Riggle 1991), the cognitive route, presumes a capacity of “principled reasoning” (Sniderman et al. 1989) i.e. an ability to link abstract democratic principles to concrete application, even to political groups one dislikes. Although reasoning in tolerance is targeted a particular object, the least liked groups, the faculties involved in tolerant thinking strongly resemble the construct of intelligence. That, of course, does not automatically imply that individuals of high cognitive ability will use their faculties to develop more tolerant attitudes. Capacity does not guarantee use, and conscious reflection may lose to more reflexive reactions. Habitual cognitive styles and emotional dispositions may be more important. Whether cognitive ability matters for individual variation in political tolerance is an empirical question. A question we will try to answer in this paper. We will make the argument and show that the cognitive ability route to political tolerance has been neglected in recent research on the deep-seated sources of political tolerance.

To do so we have to entertain competing explanations of individual differences in political tolerance, notably personality traits and emotional dispositions associated with perception of threat. In addition we know intelligence is associated with holding social liberal values (Deary, Batty, and Gale 2008; Schoon et al. 2010), which is therefore also an explanation for why intelligence might be associated with political tolerance that needs to be investigated. Our purpose is not to demonstrate the detailed mechanisms involved in the emotional paths to political tolerance, a topic that has received much attention in recent years (e.g. Kuklinski and Riggle 1991; Marcus et al. 2005; Marcus et al. 1995; Sullivan, Piereson, and Marcus 1982), but to interrogate the cognitive antecedents of political tolerance and examine when cognitive ability matters. Demonstrating the precise mechanism involved in using cognitive abilities to arrive at political attitudes and judgment we will leave for future research.

In the following we first review the literature on the role of psychological dispositions for political tolerance. When the focus is deep-seated individual antecedents of tolerance we argue that personality traits as conceptualized in the Big Five Model, which has become the dominant framework in both in personality psychology (John, Naumann, and Soto 2008) and political science (Mondak 2010; Mondak et al. 2010), is the best point of departure. The Big Five Model
both includes traits associated with cognitive style, notably Openness to Experience, and traits more strongly associated with emotional dispositions, notably Extraversion and Neuroticism. Therefore, by entertaining the Big Five Model we test the argument about the role of cognitive ability in the most rigorous way. We will also discuss the influence of sociotropic threat, and its relationship with intelligence, since this is one of the most important predictors of differences in political tolerance (Gibson and Gouws 2003). Then we explicate why cognitive ability, intelligence, is also a likely source of political tolerance and we consider when intelligence should matter most. Next we present measures of central constructs, data and the method of estimation. The analysis that follows shows that intelligence strongly predicts differences in political tolerance; its positive effect on political tolerance is larger than any personality trait and is even larger than sociotropic threat, which in the literature on political tolerance is one of the most consistent and largest predictors of political tolerance (Gibson 2007).

We also demonstrate that intelligence matters most when tolerance judgments are most challenged: Those who have high cognitive abilities are able to resist the impulse to deny civil liberties to the most extreme, undemocratic groups, in this study Neo-Nazis, as compared to other disliked groups such as the Far Right. We take these findings to imply that those who are more intelligent are more tolerant because they engage in principled reasoning and that this effect is most pronounced when individuals are asked about the extent to which civil liberties should be granted to extreme groups that they profoundly dislike such as Neo-Nazis. The conclusion outlines the implications for our understanding of the role of intelligence in making political tolerance judgments.

Predispositions

Authoritarianism is probably the predisposition most often found to be associated with political intolerance, and authoritarianism is also related to constructs like prejudice, negative stereotyping and punitiveness. In Adorno and associates classic treaty The Authoritarian Personality authoritarianism, and ethnocentrism, was seen as a personality syndrome rooted in Freudian dynamics (Adorno et al. 1950). In Freudian psychodynamics it is hard to distinguish emotional from cognitive dispositions. Both on empirical and theoretical grounds this conceptualization has been heavily criticized (Feldman 2003).

Subsequent work by Rokeach (1960) emphasized dogmatism and closed-mindedness as the predispositions associated with constructs like intolerance. Altemeyer's work in the 1980s (1988; 1981) redirected the focus to the authoritarianism construct, but he re-conceptualized it as a cluster of social and political attitudes rooted in social learning and socialization (Altemeyer 1996). Now the 'syndrome' was not a personality characteristic but associated with a package of values and attitudes and a general hostility towards (minority) groups. As argued by Feldman (2003) and Stenner (2005) Altemeyer succeeded in separating authoritarianism from personality and Freudianism, but in doing so he created a host of new theoretical and empirical problems where he ended up predicting social and political attitudes with these very same attitudes, hence the reference to 'syndrome'.

More recent work has argued that authoritarianism is an individual predisposition associated with varying perceived needs for social conformity (Feldman 2003) and group authority (Stenner 2005) rather than individual autonomy and diversity (cf. also Duckitt 1989). However, as argued by Feldman (2003) and shown by Stenner (2005) authoritarianism conceptualized in this way may be associated with a general intolerance of ambiguity as a component of the more deep-seated Big Five personality trait, ‘openness to experience’. Lack of “openness to experience is both substantially related to authoritarianism, however it is measured, and characterized by a variety of traits that can reasonably be supposed to figure prominently in inclining one to intolerance of difference” (Stenner 2005, 146).
Personality Traits

The literature increasingly agrees that deep-seated personality traits influence the predispositions often found to be associated with political tolerance. But so far we have not explicitly discussed what personality traits are, nor have we discussed more specifically which Big Five traits may be related to political tolerance and how.

Personality traits can be conceptualized as “broad individual differences in behavior, thought, and feeling that account for general consistencies across situations and over time” (McAdams and Pals 2006, 212). Traits are general dispositions that have behavioral implications in concrete situations, or “characteristic adaptations” as it coined in the literature (McAdams and Pals 2006; McCrae and Costa 2003). This is not the place to discuss in detail the sources of these deep-seated individual differences in personality traits, but research in behavioral genetics has consistently shown that personality traits is partially heritable, with the genetic component accounting for about half of the individual variation in personality traits, depending on trait, and it is the major source of stability in personality traits across time (Krueger and Johnson 2008).

Three things concerning personality traits are important to note here.

First, in personality psychology it is fully to be expected that individual behavior and judgment is also informed by situations and that individuals occasionally engage in “contra-trait behaviors” (Gallagher, Fleeson, and Hoyle 2011) or experience contra-trait emotions (Wolak and Marcus 2007), but personality traits imply that individuals maintain stable average ways of acting (Gallagher, Fleeson, and Hoyle 2011). Personality traits reflect habitual and typical ways of thinking, feeling and behaving (McAdams and Pals 2006; McCrae and Costa 2003), which, of course, does not imply that individuals who are low in neuroticism never experience anxiety and negative emotionality. By implication, more transient and contemporaneous considerations, e.g. emotions, may play a role no matter which personality traits (Wolak and Marcus 2007) or other dispositions, e.g. authoritarianism, one holds (e.g. Sullivan et al. 1981). We will have more to say about emotions and threat below.

Second, personality traits involve motivational, emotional and cognitive aspects (Denissen and Penke 2008; DeYoung 2010a; DeYoung 2010b, 2011). Some personality traits, like neuroticism with its proneness to experience negative emotionality, anxiety and sensitivity towards punishment or extraversion with its tendency to experience positive emotionality and reward sensitivity, have a strong affective component (Krueger and Johnson 2008; Watson and Clark 1992). Neuroticism and extraversion have consistently been found to relate to mood and correlate strongly with avoidance behavior, the Behavioral Inhibition System (BIS), and approach behavior, the Behavioral Approach System (BAS), respectively (DeYoung 2010b; Watson and Clark 1992). Openness to experience, and in particular the ‘intellect’ aspect of the trait, has a strong cognitive component and people who are high on openness to experience have been found to have a higher ‘need for cognition’ (DeYoung 2011), and it is not related to moods or basic emotional dispositions (Watson and Clark 1992).

If neuroticism and extraversion are related to individual variation in political tolerance, which has been suggested (Marcus et al. 1995), we see this as an indication of the fact that mood or emotional dispositions are important. Meta-analyses on related constructs like prejudice have been able to reproduce the findings by Marcus and associates for extraversion, but not consistently for neuroticism (Duckitt and Sibley 2010; Sibley and Duckitt 2008). Regarding the
directional effect of extraversion on political tolerance, it is not quite clear what to expect. We have to remember that tolerance by definition concerns the rights an individual finds that groups they dislike should enjoy. Thus, per definition you cannot be enthusiastic and experience positive emotions towards these groups. Marcus and colleagues find a negative association between extraversion and political tolerance and argue that this likely is because the intolerant are more intense in their attitudes and extraverts are dispositionally inclined to experience more intense feelings (Marcus et al. 1995, 165).

Third, personality traits concern typical and habitual motivations, thoughts and behaviors, not maximum performance which is the essence of cognitive ability constructs such as intelligence (Cronbach 1949). Scholars who have focused on the importance of cognitive factors for political tolerance usually stress the habitual character of these predispositions. In Rokeach’ work authoritarianism was seen as a closed-minded, cognitive style (1960). In Altemeyer’s learning perspective authoritarianism and political intolerance were related to a general, habitual lack of cognitive thinking (1996). In Siderius work on constructs related to political tolerance the focus is on “cognitive functioning” (complexity and flexibility) conceptualized as a trait-like attribute (1985). Therefore, it is not surprising that in particular openness to experience can be seen as an antecedent to these constructs.

If openness to experience influences political tolerance we see this as lending support to the hypotheses on the importance of habitual cognitive styles. Much research supports this proposition. Not only did Marcus and colleagues find Openness to predict variation in political tolerance (Marcus et al. 1995). Openness is empirically related to other constructs related to cognitive styles, which are all predictors of political tolerance, such as authoritarianism (McClosky and Brill 1983; Stenner 2005), RWA (Crawford and Pilanski 2013; Duckitt and Farre 1994; Sibley and Duckitt 2008) and dogmatism (McCrae 1996; Sullivan et al. 1981; Sullivan, Piereson, and Marcus 1982), intolerance of ambiguity (McClosky and Brill 1983; McCrae 1996) as well as conceptually linked to Stouffers ‘rigidity of categorization’ (Stouffer [1955] 2009). In addition, openness is positively associated with support for democratic values (Mondak and Halperin 2008), one of the strongest predictors of political tolerance (Sullivan, Piereson, and Marcus 1982).

We do not have strong expectations concerning the effects of agreeableness and conscientiousness on political tolerance, the last two Big Five traits we have not discussed so far. Neither of these traits is associated with cognitive ability (DeYoung 2011), and they are only weakly related to experiencing positive and negative emotionality (DeYoung 2010b; Watson and Clark 1992). We know that conscientiousness is related to (social) conservatism (Gerber et al. 2010; Mondak 2010) and attitudes towards immigration (Dinesen, Klemmensen, and Nørgaard 2014) and perhaps also moral traditionalism and judgment (Mondak 2010-135), but it does not seem to be related to authoritarianism (Stenner 2005, chapter 6). Agreeableness is moderately, negatively associated with habitual feelings of anger and hostility (Watson and Clark 1992), but it is not related to ideology or moral judgment (Mondak 2010). We arguably tap general feeling of hostility towards groups when we include perception of threat in our models. Therefore, it is not clear if we can expect an additional dispositional effect of agreeableness on political tolerance. Even if we do not have strong expectations regarding the effect of conscientiousness and agreeableness on political tolerance we include them in the analyses below in order to have a comprehensive control of habitual dispositions as possible.

Threat

Whatever the source of your inclination to be politically tolerant towards a group that you do not like, if you also feel threatened by that group your dispositional motivations and reactions may be strained (Stouffer [1955] 2009; see also Marcus et al. 1995; Sullivan, Piereson, and Marcus 1982). In Sullivan and associates seminal paper The Sources of Political Tolerance (Sullivan et al. 1981)
the perception of feeling threatened by the least liked group for which tolerance was assessed was the single strongest predictor of tolerance and it was not related to psychological disposition.

So far, a general theory of differences in threat perceptions seems to be lacking (Gibson 2006, 24). In a recent review of the literature on political tolerance Sullivan and Hendriks conclude that the important role (Sullivan and Hendriks 2009, 379) “that political threat plays in shaping levels of political tolerance appears to be largely a subjective one, as perceived levels of threat do not correspond well with more objective measures” of individual differences. Also in this study the correlations between threat perception and predispositions and controls are very low as outlined in table 1 below.

Still, the importance of threat for political tolerance has been theorized and modeled in different ways in the literature. Some argue that normative collective threat is activating and thus moderating individual predispositions such as authoritarianism (Feldman 2003; Feldman and Stenner 1997; Stenner 2005). Others argue that perception of threat and seeing the world as a dangerous place is mediating the influence of individual disposition on attitudinal manifestations akin to political tolerance (Sibley and Duckitt 2009; Wolak and Marcus 2007). Of particular relevance in this context is Affective Intelligence Theory, AIT, because the theory argues that threatening stimuli fuel thinking and cognitive effort.

In AIT all individuals possess the ability to reason and deliberate if habits and routines operating in the ‘disposition system’ are challenged by threats or unforeseen events. Threats in AIT make us anxious and attentive, and anxiety activates our ‘surveillance system’ that enhances cognitive functioning, thoughtfulness and information processing (Marcus et al. 2000, 53-57; MacKuen et al. 2010). Following this line of reasoning all people can engage in cognitive reasoning when they feel threatened, and Wolak and Marcus have shown that threat stimuli induced anxiety reactions were (largely) unrelated to individual predispositions, including personality traits (Wolak and Marcus 2007). However, so far nobody has examined if cognitive ability conditions how individuals respond to threats. The fact that all can engage in cognitive reasoning does not imply that all are equally good at it and make the same inferences. If the gist of AIT is correct emotional and cognitive processes are interwoven, and only in conjunction with feelings of threat can we expect differences in cognitive ability to influence political tolerance judgments: without threat no principled reasoning.

As argued above it is fully to be expected that individuals no matter their habitual dispositions can experience different feelings towards groups depending on group characteristics. That is, if one is feeling threatened by a group that one dislikes this feeling may override habitual dispositional influences on political tolerance as well as the (potential) effect of cognitive ability. But as implicitly suggested in AIT feelings of threat may also catalyze cognitive processes and make differences in cognitive ability more important. Therefore, we both have to control for perceptions of threat and examine if an interaction between threat and intelligence influence political tolerance judgments.

The current consensus is that sociotropic threats i.e. collective threats aimed at society or groups, is a stronger predictor of intolerance than egocentric threat i.e. threats aimed at an individual’s safety and well-being (Davis and Silver 2004; Gibson and Gouws 2003). The importance of social threats, as opposed to personal threats, has also been found in the literature on the relationship between threat and authoritarianism (Feldman and Stenner 1997). We therefore focus on sociotropic threat.

Intelligence

There are good reasons to expect intelligence to be positively associated with political tolerance, and a number of studies of constructs related to political tolerance suggest that cognitive ability is an important source of individual variation in dispositions and tolerance judgment. But first what is cognitive ability as represented by the intelligence construct?
Those who are more intelligent are *generally* speaking more cognitively able and have a larger capacity to “reason, plan, solve problems, think abstractly, comprehend complex ideas” (Gottfredson 1997, 13). Although intelligence includes group factors of abilities (Carroll 1993; Johnson and Bouchard 2005; McGrew 2009) these group factors tend to correlate strongly. The notion that there is a general factor of intelligence, $g$, is broadly accepted today (Deary, Penke, and Johnson 2010; Johnson et al. 2004; Mackintosh 2011).

This is not the place to discuss the sources of intelligence at length, but the consensus is that intelligence is highly heritable with heritability estimates accounting for at least half of the individual variation in intelligence (Bouchard and McGue 2003). Environmental influences, and early-in-life interventions, are more important among children/individuals of parents of low social status (Nisbett et al. 2012). Also, and more importantly, general intelligence gets increasingly stable through childhood and early adolescence (Neisser et al. 1996).

The most obvious reason why intelligence may be a source of political tolerance is the fact that the cognitive mental route to tolerance judgments presumes a capacity of “principled reasoning” (Sniderman et al. 1989) and the application of general norms to concrete situations and groups. Charles Spearman argued that those with higher levels of general intelligence are better at “the eduction of relations and correlates” (Spearman 1927, 164-166). To be able to deduce the relationship between abstract norms and concrete applications as well as to actually grasp that the two are related on principle is exactly what the cognitive route to being politically tolerant presumes.

Traditionally, the literature on political tolerance has attributed this cognitive capacity (and inclination) to educational achievement (Jackman 1978; McClosky 1964; McClosky and Brill 1983; Prothro and Grigg 1960). Sniderman and collaborators demonstrate that those who are more educated are more likely to be tolerant on principle (Sniderman et al. 1989); in their study of civil liberties McClosky and Brill found that ‘intellectuality’ was positively related to level of education (McClosky and Brill 1983); and Bobo and Licari argued that the educational effect on political tolerance towards concrete, disliked groups was substantially mediated by cognitively sophisticated styles of reasoning (Bobo and Licari 1989). Concepts like cognitive styles and intellectuality are associated with habitual, cognitive reasoning as discussed above and therefore probably more closely related to openness to experience, but they may be related to intelligence as well. However, none of the cited studies examined if cognitive ability confounds the proposed educational effect, nor did they include comprehensive measures of personality traits, most importantly Openness to experience.

As already argued, ability does not guarantee use. However, collaborative evidence on a host of constructs that correlate with political tolerance suggests that cognitive abilities are put to use when individuals form political attitudes and judgments. McCourt and associates found that those who are more intelligent are less likely to be right wing authoritarians (McCourt et al. 1999, see also Heaven, Ciarrochi & Leeson 2011). A recent meta-analysis estimates the correlation between RWA and intelligence at -0.26 (Van Hiel, Onraet, and De Pauw 2010). Recent studies demonstrate that intelligence is associated with pro-democratic norms and social liberal values (Deary, Barry, and Gale 2008; Schoon et al. 2010). Hodson and Busseri found socially conservatism and prejudice to be associated with lower levels of intelligence (Hodson and Busseri 2012). Holding socially liberal attitudes and favouring pro-democratic norms are both positively associated with political tolerance (Golebiowska 1995; Sullivan and Hendriks 2009; Sullivan, Piereson, and Marcus 1982). If intelligence is based on principled reasoning, rather than based on holding social liberal values, its effect on political tolerance should remain even after controlling for social liberalism.

However, when it comes to establishing a theoretical and empirical link between cognitive ability and political tolerance Karen Stenner’s book *The Authoritarian Dynamic* (2005) offers the most compelling arguments and suggestive evidence. Focusing on authoritarianism as a more
proximate antecedent to political tolerance than cognitive ability and distinguishing carefully between dispositions, situational triggers and attitudinal and judgmental consequences Stenner shows that cognitive ability (measured by verbal ability) is the single strongest predictor of authoritarianism (2005, 169): “cognitive ability to deal with complexity and difference plays a major role, if not the primary role, in the development of the authoritarian predisposition”.

More importantly the effect of predispositions, Stenner argues, is not invariant across situations (cf. Feldman and Stenner 1997; Feldman 2003). Authoritarianism will only influence normative judgment when authoritarians experience threats towards the normative order and social conformity (Stenner 2005; cf. Feldman 2003). Although Stenner focuses on the mediated effect of cognitive ability through authoritarianism normative threat may also activate principled reasoning and cognitive abilities. Leaving aside the emotional reactions that threat may trigger, which we have already discussed above, intelligence and a capacity to principled reasoning may be most important when normative threat is most pronounced. In general, political tolerance judgments are only relevant when they concern disliked groups. However, some disliked groups are more extreme and pose a larger threat towards society and democracy than others. It is very likely that differences in cognitive ability matter most when tolerance concerns the most extreme and normatively threatening groups. That is, when the principled reasoning involved in extending civil liberties to groups is mostly challenged.

Political tolerance
Following James Gibson (Gibson 2006, 23): “tolerance means putting up with that which one disagrees. It means allowing one’s political enemies to compete openly for political power. A tolerant citizen is one who would not support unreasonable or discriminatory restrictions on the rights of groups to participate in politics”. As already argued, this implies that political tolerance has to be ascertained in relation to political groups that one dislikes, perhaps even those that one dislikes the most.

In order to assess whether people are in fact tolerant on principle we need to gauge the breadth of tolerance (Gibson 2007; Petersen et al. 2010; Sniderman et al. 1989). If people are tolerant towards both extreme and non-extreme groups that they dislike this would indicate that they are tolerant on the democratic principle that all groups should be granted the same set of civil liberties. Besides, it may very well be in relation to the most extreme groups that the more intelligent differ in their tolerance judgments because in these situations principled reasoning is most challenged. To interrogate the possible effects of intelligence on principled reasoning in relationship to political tolerance two steps have been taken.

First, we know that intelligence is mainly associated with left-wing political orientations and the least liked groups are therefore right-wing political groups. We have chosen Neo-Nazis and the Far Right, as our two examples of right-wing groups. In addition, we only include those respondents who explicitly dislike the groups (cf. below). If intelligence has an effect in relation to the two right-wing groups, the Far Right and Neo-Nazis, it is a strong indication that intelligence is associated with differences in principled reasoning in forming tolerance judgments.

Second, we also have to rule out that consistent tolerance judgments merely reflect consistency in answering patterns. To this end we have randomly assigned the one of the two right-wing groups to half of the respondents. Had we adopted the so-called fixed group approach (Bobo and Licari 1989; Gibson 2013; Petersen et al. 2010; Sniderman et al. 1989) in which all respondents make tolerance judgments for both groups we would not be able to rule out that the more intelligent simply are giving more consistent answers across groups.

The choice of Neo-Nazis and the Far Right as our target groups also enables us to examine if intelligence moderates the negative effect of normative threat on political tolerance judgments that we discussed above. A recent study using the same methodology and same questions as we do here found that Neo-Nazis were perceived as much more extreme and undemocratic than the Far Right (Petersen et al. 2010). After controlling for sociotropic threat, and a host of other
controls, the study found that the average citizen was still much less tolerant towards the more extreme Neo-Nazis compared to the Far Right, because this group is more extreme and undemocratic.

This design allows us to arbitrate between the two possible paths through which intelligence may influence tolerance judgments. If Affective Intelligence Theory is correct we should only, or at least primarily, see an effect of intelligence when individuals feel sociotropically threatened and engage in conscious thinking. That is, the emotional trigger, in this paper conceptualized as feelings of threat, is what activates the cognitive mental route to political tolerance and may make intelligence important. Emotional and cognitive paths are interwoven. If, on the other hand, principled reasoning is unrelated to emotions but particularly pertinent when principles are challenged the most we expect intelligence to dampen the target group effect according to which Neo-Nazis are less tolerated than the Far Right in the average citizen. The more intelligent should be able to extend the principles of tolerance to the more extreme group irrespective of how they feel about Neo-Nazis. The cognitive route to tolerance judgments is unrelated to emotional triggers such as feeling threatened.

Datasets and measures

To examine if cognitive ability influences political tolerance even when controlling for competing explanations we need solid measures of all constructs. In particular good measures of intelligence are not readily available in representative samples of the general population because intelligence tests have to comply with detailed protocols and time restrictions. To our knowledge, this is the first study of political tolerance that includes both a standardized, validated battery of all the Big Five personality traits and an excellent measure of intelligence.

The sample used in the analysis is a sample of draftees drawn from the Danish draft registry, which means it is a representative sample of young males as all Danish men go to the draft board when they are about 18 years old. The registry has only been in operation since 2006 so most are young at the time when they were surveyed in 2012, and the mean age is around 23. A sizeable number of women, who self-select into the military, also take the test. Both men and women are however fairly representative in terms of demographics and personality traits when compared to the general population.

The survey was fielded in the period 2nd of March 2012 to the 10th of April 2012. The total sample size is 1072 and has a response rate of roughly 28 percent.

The Big Five personality traits are measured using the 60 item NEO-PI-R (Costa and McCrae 2003). For all traits correlations between the 60 item battery and the full personality battery are .9 and above (Costa and McCrae 2003, 74). The NEO-PI-R is a highly validated and reliable measure of the Big Five personality traits (Costa and McCrae 2003).

The intelligence test used in the analysis is called Børge Priens Prøve (BPP) which all draftees appearing for the draftee board have to take before being admitted to military service (Kousgaard 2003). The test is highly g loaded as 50-60 percent of the total variance in BPP scores is accounted for by g (Hartmann and Teasdale 2004); this means that our measure of intelligence comes close to the construct of intelligence by relying on a test which is highly g loaded. Furthermore the BPP has a correlation of .82 with the full Wechsler Adult Intelligence Scale (WAIS) (Mortensen, Reinsch, and Teasdale 1989), one of the most used and validated intelligence tests available. Thus, the validity and reliability of the test is very high (Hartmann and Teasdale 2005; Kousgaard 2003; Rasch 1980; Teasdale et al. 2011).

\[\text{1} \text{ Around 5-15\% do not take the test, primarily on medical grounds. (Teasdale et al. 2011; Teasdale and Owen 1989)}\]

\[\text{2} \text{ See appendix 2}\]
Table 1: Correlation table of constructs and controls

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<td>0.020</td>
<td>-0.038</td>
<td>-0.046</td>
<td>0.025</td>
<td>-0.023</td>
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<td>1</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Intelligence x target group</td>
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<td>0.045</td>
<td>-0.014</td>
<td>0.027</td>
<td>0.141</td>
<td>0.065</td>
<td>0.116</td>
<td>0.103</td>
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<td></td>
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</tr>
<tr>
<td>Threat</td>
<td>-0.260</td>
<td>0.016</td>
<td>0.025</td>
<td>0.042</td>
<td>0.123</td>
<td>0.071</td>
<td>-0.039</td>
<td>0.017</td>
<td>0.070</td>
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<td></td>
</tr>
<tr>
<td>Age</td>
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<td>0.077</td>
<td>-0.080</td>
<td>0.048</td>
<td>-0.013</td>
<td>-0.007</td>
<td>0.004</td>
<td>0.020</td>
<td>-0.005</td>
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<tr>
<td>Education</td>
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<td>0.149</td>
<td>0.020</td>
<td>-0.027</td>
<td>0.020</td>
<td>0.034</td>
<td>0.349</td>
<td>0.085</td>
<td>0.111</td>
<td>-0.029</td>
<td>0.100</td>
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<tr>
<td>Income</td>
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<td>0.259</td>
<td>0.091</td>
<td>-0.098</td>
<td>-0.137</td>
<td>-0.391</td>
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<td>0.515</td>
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<td>Intelligence*</td>
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<td>0.066</td>
<td>0.138</td>
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<td>0.304</td>
<td>0.298</td>
<td>0.328</td>
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<td>0.017</td>
<td>0.285</td>
<td>-0.095</td>
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<tr>
<td>Target group</td>
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<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.921</td>
<td>0.000</td>
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<td>0.000</td>
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<td>0.000</td>
<td>1</td>
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</tr>
<tr>
<td>Gender</td>
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<td>0.060</td>
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<td>-0.287</td>
<td>-0.270</td>
<td>0.094</td>
<td>0.016</td>
<td>-0.102</td>
<td>-0.104</td>
<td>-0.042</td>
<td>-0.024</td>
<td>0.123</td>
<td>0.046</td>
<td>0.000</td>
<td>1</td>
</tr>
</tbody>
</table>

*This correlation table is based on model (4) below.

Finally, our measure of social ideology is constructed using five items asking questions on attitudes toward punishment of violent crimes, preserving national customs, protecting the environment, taxes on gas, and finally whether crime is best prevented through rehabilitation. The two groups used are the Neo-Nazi and the Far Right. Political tolerance is measured by asking four questions about the rights of groups dealing with freedom of speech, freedom of assembly, the right to speak at right schools, and whether the police ought to have better opportunities to wiretap the phones from the group in question. We also include a measure of sociotropic threat similar to the one used in previous studies (Petersen et al. 2010). This is measured by asking people how large a threat the two groups pose to Danish society. Finally, our measure of social ideology is constructed using five items asking questions on attitudes toward punishment of violent crimes, preserving national customs, protecting the environment, taxes on gas, and finally whether crime is best prevented through rehabilitation. The two groups used are the Neo-Nazis and the Far Right.

Education is measured using two questions, one asking about schooling up to high school and another asking about further education; these variables are coded into one continuous variable to reflect total years of school education. Political tolerance is measured by asking four questions about the rights of groups dealing with freedom of speech, freedom of assembly, the right to speak at right schools, and whether the police ought to have better opportunities to wiretap the phones from the group in question. We also include a measure of sociotropic threat similar to the one used in previous studies (Petersen et al. 2010). This is measured by asking people how large a threat the two groups pose to Danish society. Finally, our measure of social ideology is constructed using five items asking questions on attitudes toward punishment of violent crimes, preserving national customs, protecting the environment, taxes on gas, and finally whether crime is best prevented through rehabilitation. The two groups used are the Neo-Nazis and the Far Right.

Education is measured using two questions, one asking about schooling up to high school and another asking about further education; these variables are coded into one continuous variable to reflect total years of school education. Political tolerance is measured by asking four questions about the rights of groups dealing with freedom of speech, freedom of assembly, the right to speak at right schools, and whether the police ought to have better opportunities to wiretap the phones from the group in question. We also include a measure of sociotropic threat similar to the one used in previous studies (Petersen et al. 2010). This is measured by asking people how large a threat the two groups pose to Danish society.

Table 1: Correlation table of constructs and controls

(1) Tolerance | (2) Openness | (3) Coefficient of truthfulness | (4) Extraversion | (5) Agreeableness | (6) Neuroticism | (7) Social ideology | (8) Intelligence | (9) Intelligence x target group | (10) Threat | (11) Age | (12) Education | (13) Income | (14) Intelligence | (15) Target group | (16) Gender
---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
1 | 0.17 | -0.034 | -0.150 | -0.074 | 0.029 | 0.359 | -0.200 | -0.147 | -0.260 | -0.021 | 0.120 | -0.096 | 0.214 | -0.312 | 0.160 |
1 | 1 | -0.003 | 0.333 | 0.007 | 0.261 | 0.409 | 0.020 | 0.045 | 0.016 | 0.015 | 0.149 | 0.250 | 0.066 | 0.000 | 0.030 |
| 1 | 1 | 0.289 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
Model estimation

All models are estimated using structural equation modeling (SEM) via the statistical software Mplus version 7 using the MLR estimator that assumes multivariate normality and provides robust standard errors and robust test statistics.4

SEM takes the measurement error of our constructs into account and in this way avoid biased parameter estimates (Bollen 1989).5 By using SEM we also use a strong technique for handling missing values, i.e. full information maximum likelihood (FIML). This technique only requires the assumption of Missing at Random (MAR) i.e. that the missing values of the dependent variable are unrelated to the values on the dependent variable conditional on observables (Enders 2010).

The controls in this analysis are gender, age and personal income, and a dummy variable indicating whether respondents were assigned to either the Neo-Nazis or the far right in the experimental conditions; using these control variables are fairly standard in the literature on political tolerance (Gibson 2013). Social ideology, democratic rights or any other political source of political tolerance are not included as controls in the initial model because they are hypothesized to be endogenous to the psychological variables (Sullivan et al. 1981), i.e. political orientations are seen as “characteristic adaptations” of social and psychological sources in a given context (McAdams and Pals 2006; McCrae and Costa 2003). Somewhat similarly Marcus and associates argue that predispositions, a general term which for them also includes education, are the most stable long-term factors in determining tolerance judgments, and that both tolerance judgments and “standing decisions”, such as attitudes about democratic principles, are partly the outcome of these causally prior and stable predispositions (Marcus et al. 1995). We do however investigate whether the effect of intelligence on political tolerance is mediated by its effect on new social ideology. We implement this in a model in which we control for ideology.

In the analyses we examine if intelligence predicts political tolerance after personality traits, sociotropic threat, group membership, and education are taken into account. Four models are estimated: (1) a baseline model including only intelligence and the standard set of controls; (2) a model adding personality traits, a target group dummy, and sociotropic threat; and (3) a model in which social ideology is added. In model (4) we include interactions between intelligence and target group and between intelligence and threat to examine (a) if intelligence moderate the negative target group effect associated with extremism and (b) if threat activates reasoning and thus moderate the effect of intelligence.

In line with current practice we are only including those respondents in our analysis who express dislike towards the group as political tolerance by definition requires that the group is disliked, as argued by Sullivan and others (Sullivan, Piereson, and Marcus 1982).6 Only those respondents who indicated they disliked the group i.e. had a score below our midpoint of 5 on our sympathy variable were included.7

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4 Sampling weights are used to account for unit nonresponse. Fit statistics for the various models can be found in appendix 2.
5 Measurement models are available upon request as are the analyses of the items leading to the measurement model for personality traits.
6 There is also a methodological advantage of this approach as argued by Gibson in an analysis of different approaches towards measuring political tolerance (Gibson 2013, 54): “Perhaps the general lesson is that the larger the percentages of the respondents not disliking the groups—i.e., groups not satisfying the “objection precondition”—the more measurement error is introduced into the indicators…”
7 Changing the threshold to a lower point does not change our findings for intelligence but does increase the standard error because the sample size decreases.
Results

Table 2: Effect of intelligence on political tolerance in alternative model specifications

<table>
<thead>
<tr>
<th>Constructs</th>
<th>(1) Intelligence and control</th>
<th>(2) Adding predispositions and threat</th>
<th>(3) Adding social ideology</th>
<th>(4) Adding interactions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unstandardized coefficient</td>
<td>Unstandardized coefficient</td>
<td>Unstandardized coefficient</td>
<td>Unstandardized coefficient</td>
</tr>
<tr>
<td>Intelligence (0-1)</td>
<td>0.175***</td>
<td>0.149***</td>
<td>0.104**</td>
<td>0.038</td>
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<tr>
<td></td>
<td>(0.049)</td>
<td>(0.044)</td>
<td>(0.046)</td>
<td>(0.079)</td>
</tr>
<tr>
<td>Education (0-1)</td>
<td>0.021</td>
<td>0.013</td>
<td>-0.017</td>
<td>-0.016</td>
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<td></td>
<td>(0.019)</td>
<td>(0.018)</td>
<td>(0.019)</td>
<td>(0.019)</td>
</tr>
<tr>
<td>Gender</td>
<td>0.046***</td>
<td>0.036***</td>
<td>0.028**</td>
<td>0.027**</td>
</tr>
<tr>
<td></td>
<td>(0.014)</td>
<td>(0.011)</td>
<td>(0.011)</td>
<td>(0.011)</td>
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<td>Age</td>
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<td>-0.001</td>
<td>-0.001</td>
</tr>
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<td>(0.003)</td>
<td>(0.003)</td>
<td>(0.003)</td>
<td>(0.003)</td>
</tr>
<tr>
<td>Income</td>
<td>-0.018**</td>
<td>-0.011</td>
<td>-0.004</td>
<td>-0.003</td>
</tr>
<tr>
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<td>(0.009)</td>
<td>(0.010)</td>
<td>(0.010)</td>
<td>(0.010)</td>
</tr>
<tr>
<td>Openness (0-1)</td>
<td>0.122**</td>
<td>0.090</td>
<td>0.008**</td>
<td>0.003</td>
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<tr>
<td></td>
<td>(0.049)</td>
<td>(0.035)</td>
<td>(0.035)</td>
<td>(0.035)</td>
</tr>
<tr>
<td>Conscientiousness (0-1)</td>
<td>0.065</td>
<td>0.162**</td>
<td>0.166**</td>
<td>0.072</td>
</tr>
<tr>
<td></td>
<td>(0.063)</td>
<td>(0.071)</td>
<td>(0.072)</td>
<td>(0.072)</td>
</tr>
<tr>
<td>Extraversion (0-1)</td>
<td>-0.089**</td>
<td>-0.064</td>
<td>-0.058</td>
<td>-0.058</td>
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<td></td>
<td>(0.046)</td>
<td>(0.046)</td>
<td>(0.045)</td>
<td>(0.045)</td>
</tr>
<tr>
<td>Agreeableness (0-1)</td>
<td>-0.017</td>
<td>-0.058</td>
<td>-0.060</td>
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<td></td>
<td>(0.039)</td>
<td>(0.042)</td>
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<tr>
<td>Neuroticism (0-1)</td>
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<td>(0.035)</td>
<td>(0.039)</td>
<td>(0.040)</td>
<td>(0.040)</td>
</tr>
<tr>
<td>Sociotropic threat (0-1)</td>
<td>-0.104***</td>
<td>-0.104***</td>
<td>-0.09</td>
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</tr>
<tr>
<td></td>
<td>(0.023)</td>
<td>(0.024)</td>
<td>(0.082)</td>
<td>(0.082)</td>
</tr>
<tr>
<td>Target group dummy</td>
<td>-0.086***</td>
<td>-0.085***</td>
<td>-0.185***</td>
<td>-0.185***</td>
</tr>
<tr>
<td>(Reference group: Far Right)</td>
<td>(0.012)</td>
<td>(0.012)</td>
<td>(0.048)</td>
<td>(0.048)</td>
</tr>
<tr>
<td>Social ideology (0-1)</td>
<td></td>
<td>0.261***</td>
<td>0.057</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>(0.057)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sociotropic threat x intelligence</td>
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<td>-0.085</td>
<td>(0.132)</td>
<td></td>
</tr>
<tr>
<td>Target group x intelligence</td>
<td></td>
<td>0.180**</td>
<td>(0.075)</td>
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N = 838

Standard errors in parentheses. *p<0.1, **p<0.05, ***p<0.01.

In the first model we notice that intelligence exerts a positive and significant impact on political tolerance even after controlling for educational differences (0.175 (p<0.000)). There is also an important non-finding in model (1): Education does not exert a statistically significant influence on political tolerance; in fact it does not exert an independent impact on political tolerance in any of the models. This is quite surprising given the rather large literature pointing to education as an important construct to take into account if we want to understand individual differences in political tolerance judgments. If we exclude intelligence from model 1 above education becomes significant (p=0.036) and the unstandardized effect of education on political tolerance increases to 0.039, roughly double the size of the effect of 0.021 in model (1).

In model (2) including both personality traits, feelings of threat, and the effect of target group membership the effect of intelligence decreases somewhat to 0.149 but the effect is still strong and highly significant (p=0.001). Although there is thus some overlap between intelligence, predispositions and emotional responses toward tolerance of the Far Right and Neo-Nazis, most of the effect of intelligence on political tolerance is not overlapping with these constructs. Note in particular that the effect of intelligence is still strong and significant after we include Openness to Experience that taps habitual cognitive styles. As discussed above Openness is conceptually and empirically related to a host of constructs related to cognitive styles and ways of thinking such as intolerance of ambiguity, dogmatism, and authoritarianism.

In terms of the effect of personality traits on political tolerance there has, to our knowledge, only been a single study using validated measures of three of the Big Five on political tolerance namely the study by Marcus and collaborators (Marcus et al. 1995). The results of their analyses are to some extent reproducible here in model 3 and 4 above: Those who are more open to experience are more politically tolerant 0.122 (p=0.013) and those who are more extroverted are less politically tolerant -0.089 (p=0.050). Contrary to the results from Marcus and associates Neuroticism is not a predictor of political tolerance in this sample (p=0.612). The findings are thus more in line with those of Sibley and Duckitt in relation to prejudice, where Neuroticism is
not consistently predicting differences in this conceptually related construct (Duckitt and Sibley 2010; Sibley and Duckitt 2008).

In terms of effect sizes intelligence is the strongest predictor of political tolerance with an unstandardized coefficient of 0.149, but also sociotropic threat (coefficient=-0.104), and Openness (coefficient= 0.122) strongly predicts political tolerance. These effect sizes are directly comparable as they are all scaled to range from zero to one. They thus represent the effect on political tolerance of going from minimum to maximum for the respective constructs.

As expected there is also a quite large negative effect of being asked to be tolerant towards the Neo Nazis compared to the Far Right, which is the reference group, as evidenced by the significant and negative target group dummy \(0.086 \ (p<0.000)\). In fact the effect is almost unchanged after including social ideology in model (3). We are thus able to reproduce the finding by Petersen et al. (Petersen et al. 2010): people are less tolerant towards extreme groups, even after sociotropic threat and important additional controls like personality traits are included.

In model (3) we include a measure of social ideology to investigate whether differences in ideological orientation is the reason why those who are more intelligent are more politically tolerant. However, most of the intelligence effect is retained in model (3). The effect of intelligence is still strong and significant \(p=0.025\) with a coefficient 0.104 compared to the effect of 0.149. Some of the effect of intelligence is mediated by social ideology which is consistent with the findings in the literature that intelligence is associated with holding social liberal values (Deary, Batty, and Gale 2008; Schoon et al. 2010). But most of the intelligence effect is not shared with social ideology.

The direct effects of the personality traits Openness to experience and Extraversion on political tolerance disappear after including social ideology in the model. A number of previous studies have shown in particular Openness is strongly associated with social liberalism (Gerber et al. 2011; Gerber et al. 2010; Mondak 2010; Mondak and Halperin 2008; Mondak et al. 2010) and ideology seems to fully mediate these personality effects on political tolerance. A similar kind of attitudinal/ideological mediation has been demonstrated for a number of other political behaviors (Blais and St-Vincent 2011; Gallego and Oberski 2012). Somewhat surprisingly, Conscientiousness becomes significant after controlling for the variance that is shared with social ideology.

**Intelligence, threat and principled reasoning**

So far we have ruled out three alternative explanations for why those who are more intelligent are more tolerant. It is not because they are more educated, i.e. model (1); because they possess a certain set of behavioral tendencies and habitual dispositions, i.e. model (2); or because they are more likely to hold social liberal values, i.e. model (3). In addition there is still an effect of intelligence even though the groups are perceived as sociotropically threatening. The results support the proposition that intelligence is associated with principled reasoning and represents a distinct cognitive route towards tolerance judgments. However, we have not examined if the inclination to use ones cognitive abilities is conditional which we may expect according to the literature. Those who are more intelligent may be more politically tolerant because they are better able to link abstract notions of civil liberties to the most extreme and disliked groups, i.e. when challenged the most they are more capable of “principled reasoning” than the average citizen. Alternatively, following the ideas in AIT the effect of differences in cognitive ability is contingent upon feelings of threat that make individuals rely less on habitual disposition and more on effortful thinking.

In model (4) we have included interaction terms between intelligence and target group as well as sociotropic threat. A significant interaction term for either of these would imply that cognitive ability is important in forming tolerance judgments but the interpretation would differ. Since we
include both interaction terms simultaneously the target group term is not associated with sociotropic feelings of threat.

We find a significant interaction between intelligence and target group 0.180 (p=0.017) but not between intelligence and sociotropic threat -0.085 (p=0.522). This suggests that the effect of intelligence on tolerance judgments is strongest when the inclination to be tolerant is challenged the most. By any account, Neo-Nazis are more extremist and less democratic than populist Far Right groups (cf. Petersen et al. 2010). The implication of AIT does not find support. The effect of cognitive ability is not contingent upon feeling threatened. This suggests – but does not prove – that the cognitive, principled route to tolerance judgments is distinct and different from the emotional route. We will elaborate on this in the conclusion.

Figure 1 below illustrates the marginal effect of the target group effect as levels of intelligence increases. This figure demonstrates that for those with lesser cognitive abilities, there is a large negative effect of being asked to be tolerant towards the Neo-Nazis, compared to being asked to be tolerant towards the Far Right. As levels of intelligence increase people are more and more willing to also grant civil liberties to this extreme and highly disliked group. In fact, among the most intelligent there is no target group effect at all, as evidenced by the confidence bands crossing the zero point at a level of intelligence around .8. The general inclination to be less tolerant towards extreme groups is not found by the most cognitively able who, like most other people, strongly disagree with Neo-Nazis but still defend their civil liberties and rights to speak in public.

Conclusion and discussion

We have long known that social sources, primarily education, and psychological sources, such as authoritarianism and “rigidity of categorization” are important sources of tolerance (Finkel, Sigelman, and Humphries 1999; Stouffer [1955] 2009; Sullivan and Hendriks 2009; Sullivan, Piereson, and Marcus 1982). Although previous research has focused on what might be termed cognitive styles, such as authoritarianism, dogmatism, and Openness to experience, this study demonstrates that differences in people’s cognitive abilities also matter for tolerance judgments. This is demonstrated after taking into account both habitual predispositions, in the form of personality traits, education, which has traditionally been perceived as an important social source of tolerance, as well as social ideology, which is an important political source of tolerance (Sullivan, Piereson, and Marcus 1982).

The fact that intelligence is a strong predictor of tolerance has implications for our understanding of the construct political tolerance. As Sniderman and associates and others have argued there is a difference between “principled tolerance” and tolerance based on emotions.
(Bobo and Licari 1989; Kuklinski and Riggle 1991; Sniderman et al. 1989). Most agree that political tolerance is a prerequisite for “the marketplace of ideas” to function efficiently which is an integral part of a liberal democracy (Gibson 2007; Mill [1859] 2002). In terms of how deeply the support for democracy is engrained, being tolerant on principle, as opposed to being tolerant or intolerant based on emotional attachments and detachments, speaks positively toward the degree of support for democracy.

This study has demonstrated that there are in fact people, primarily those with high levels of intelligence, who are tolerant on principle. We are able to infer this from the four steps we have taken to examine if cognitive ability was associated with a principled standpoint on political tolerance: First, we argued and showed that the construct intelligence defined as (Spearman 1927) “the eduction of relations and correlates” comes very close to what principled reasoning implies: The ability to deduce the link between abstract notions of civil liberties and their concrete applications and extend this to groups which one dislikes. Second, we have focused on right wing groups, which are the most disliked groups for intelligent people that tend to be liberal. In doing so we provided a prima facie strong test for the application of principled reasoning, but in addition only the respondents who indicated they disliked the group were included in the analyses. Third, through experimental manipulation we randomly assigned respondents to different right wing groups that varied in terms of their extremism and how much they challenge democratic norms. In doing so we avoid response set effects and yet maintain the possibility to test if intelligence moderates the widespread negative reactions to extremist, undemocratic groups. Fourth, we were able to rule out alternative explanations of why those who are more intelligent are more politically tolerant: Habitual dispositions as ascertained by personality traits, social liberal ideology and education were not able to account for the majority of the positive association between intelligence and political tolerance. Although previous studies have suggested that some people are tolerant on principle (Sniderman et al. 1989) or because they are “cognitively sophisticated” (Bobo and Licari 1989), they have not included the same set of exhaustive controls that we have adopted here nor have they examined if differences in cognitive ability may be the source of sophisticated reasoning.

The embedded survey experiment allowed us to test the argument on principled reasoning in more detail. For the average citizen it is more difficult to express tolerance for politically extremist groups (Petersen et al. 2010). However, the most cognitively able were willing to extend their tolerance towards least-liked extremist groups like Neo-Nazis because, as we argue, on principle all groups should enjoy the same rights. In addition, this reasoned judgment does not seem to be triggered by emotions since we found no interaction between feelings of threat and intelligence on political tolerance. This suggests that intelligence represent a cognitive pathway separate from the emotional pathway to tolerance and intolerance.

On the one hand this is at stake with the general idea in Affective Intelligence Theory that reasoning and deliberate thinking should be activated by threats (as mediated through anxiety) (Marcus et al., 2000, 2005). Hence, we could expect the more intelligent to be better able at principled reasoning when their surveillance system is activated. On the other hand the findings here are compatible with the idea that anxiety reactions are found to be unrelated to personality and other individual dispositions (Wolak and Marcus 2007). The present study does not examine in detail which emotions are triggered by feeling threatened nor does it fully explore the complex interrelations that may exist between emotional and cognitive routes towards tolerance. Although we can rule out that the effect of cognitive ability on political tolerance is moderated by feelings of threat we remain agnostic to exactly which emotions threats are triggering. More research on the complex relations between different emotions and principled reasoning as well as the different pathways is needed. But before embarking on this formidable research agenda future research should take into account that differences in cognitive ability may play a role in how individuals process information and what mental route they are likely to take when they form opinions and make judgments.
In a democratic and normative perspective our findings may both be seen as promising and potentially dismaying. On the potentially pessimistic side the fact that principled tolerance is related to deep-seated individual differences in cognitive ability is somewhat disheartening. However, that depends. If cognitive ability matters because intelligent people are more politically knowledgeable as research seems to suggest (Hamil and Lodge 1986; Harvey and Harvey 1970; Luskin 1990; Neuman 1986; Neuman, Just, and Grigier 1992) the results may not be that discouraging – because all people can become more politically knowledgeable. If cognitive ability is associated with harder and more effortful thinking and information processing there is also reason for cautious optimism – because given the right incentives and situations all people can engage in effortful thinking (Marcus et al., 2010; Valentino et al. 2009). Thus, also for normative reasons it is important to learn more about what principled reasoning implies and what the cognitive route to political tolerance comprises.

On the optimistic side it is comforting to note that not all people base tolerance judgments on negative emotions and gut-feeling reactions; individuals may also take a principled stance. In the aggregate and from a democratic perspective this implies that both emotional and cognitive appeals carry some weight in influencing public opinion. Compared to a situation in which only emotional appeals matter this is clearly preferable in a democracy that thrives on pluralism, arguments and a well-functioning marketplace of ideas.

Bibliography

Crawford, Jarret T., and Jane M. Pilanski. 2013. "The Differential Effects of Right Wing Authoritarianism and Social Dominance Orientation on Political Intolerance." Political Psychology:n/a-n/a.
Deary, Ian J., G. David Batty, and Catharine R. Gale. 2008. "Bright Children Become Enlightened Adults:"


Appendix 1

Questions measuring political tolerance

The police should have better opportunities for tapping telephones owned by [group]

Agree completely
Agree somewhat
Disagree somewhat
Disagree completely
Don’t know
N/a

Representatives for [group] should be allowed to hold demonstrations.

Agree completely
Agree somewhat
Disagree somewhat
Disagree completely
Don’t know
N/a

Representatives for [group] should be allowed to express themselves in public debate

Agree completely
Agree somewhat
Disagree somewhat
Disagree completely
Don’t know
N/a
Measure of personal income

Approximately how large is your yearly gross income i.e. the total income before taxes and other deductibles but including salary, pension and other incomes?

Below 100,000 DKK
100,000-124,999 DKK
125,000-149,999 DKK
150,000-174,999 DKK
175,000-199,999 DKK
200,000-249,999 DKK
250,000-274,999 DKK
275,000-299,999 DKK
300,000-324,999 DKK
325,000-349,999 DKK
350,000-374,999 DKK
375,000-399,999 DKK
400,000 DKK or above.

Don’t know

Measures of education

What is your schooling?

Primary school 7 years or less
Primary school 8/9 years
10th grade
High school
Don’t know

Which vocational or higher education have you completed or are in the process of completing apart from your schooling?

(If you have taken multiple degrees, please only indicate the highest level of education).

Basic vocational education
Vocational education
Short-term higher education (1-2 years)
Medium term higher education (3-4 years)
Long-term higher education (more than 4 years)
None
Don’t know

1 The two educational variables are recoded into one continuous variable. This strategy is chosen to reflect the “years of school education”. The categories are:
1. 9 years or less (primary school)
2. 10-11 years (basic vocational education and vocational education)
3. 11-12 years of education (high school)
4. 13-14 years of education (short-term higher education)
5. 14-16 years of education (medium term higher education)
6. 17-18 years of education (long-term higher education)
Questions measuring ideological differences

For each of the ideological variables the answer categories were:

- Totally agree, agree, disagree, totally disagree, don’t know

Crime is best prevented through rehabilitation
Taxes on gas should be increased
Protecting the environment must not hurt private business
In Denmark we should protect our national traditions
Crime is best prevented through rehabilitation

Sympathy

To what extent do you like the following groups on a scale from 0 to 10 where 0 indicates you like the group very much and 10 indicates you dislike the group?

Perceived group threat

How great a threat do you believe the following groups pose to Danish society?

0
The Far Right
Not threatening at all
0

Dislike the group very much
1 2 3 4 5 6 7 8 9

Don’t know

Neo Nazis

1 2 3 4 5 6 7 8 9
Descriptive statistics

<table>
<thead>
<tr>
<th>Construct</th>
<th>Variable</th>
<th>Observations</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Political tolerance</td>
<td>Speak at high schools</td>
<td>1072</td>
<td>0.33</td>
<td>0.26</td>
<td>0</td>
<td>1</td>
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<td>The environment</td>
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<td>1006</td>
<td>0.47</td>
<td>0.29</td>
<td>0</td>
<td>1</td>
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<td>Taxes</td>
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<td>941</td>
<td>0.39</td>
<td>0.31</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Crime and rehabilitation</td>
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<td>998</td>
<td>0.63</td>
<td>0.31</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Appendix 2

The draftee sample is in the following compared to a random sample of the entire Danish population. For further information on this sample see (Dinesen, Nørgaard, and Klemmensen Forthcoming). In addition age groups 19-27 are also separately compared since 95% of the draftee sample are in this age group. First I will compare demographics and then compare personality traits.

Demographics

<table>
<thead>
<tr>
<th>Construct</th>
<th>Draft sample</th>
<th>Full representative sample</th>
<th>Representative sample ages 19-27</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Standard deviation</td>
<td>Max</td>
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<td>Income</td>
<td>1.8</td>
<td>.89</td>
<td>5</td>
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<tr>
<td>Age</td>
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<td>1.9</td>
<td>33</td>
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<tr>
<td>Gender</td>
<td>46</td>
<td>.5</td>
<td>1</td>
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<tr>
<td>Education</td>
<td>4.2</td>
<td>1.6</td>
<td>6</td>
</tr>
</tbody>
</table>

Demographics are similar when the same age group is compared although it seems the draftee sample is slightly better educated than the representative sample when comparing the same age group. Obviously the mean and standard deviation in the full representative sample is larger.

Personality traits

The table below illustrates the differences in latent factor means across the representative sample and the draftee sample. As is clear, the differences are very slight given the range of the variable is one.¹

¹ Before comparing latent means we have to impose metric invariance and scalar invariance, which is indeed possible to do. Results of these analyses are available upon request.
Fit statistics

Different interpretations of approximate fit statistic exist. The approach taken here is one where they are considered qualitative measures of fit (Kline 2011, 205; Marsh, Hau, and Wen 2004). The table below outlines some “heuristics” used when determining how well fitting the models are.

<table>
<thead>
<tr>
<th>Test statistic</th>
<th>Measure of good/acceptable fit</th>
<th>Measure of excellent fit</th>
</tr>
</thead>
<tbody>
<tr>
<td>RMSEA</td>
<td>≤0.06 (Hu and Bentler 1999)</td>
<td>≤0.05 (Hu and Bentler 1999)</td>
</tr>
<tr>
<td>SRMR</td>
<td>≤0.08 (Hu and Bentler 1999)</td>
<td>≤0.06 (Browne and Cudeck 1992)</td>
</tr>
<tr>
<td>CFI</td>
<td>≥0.90 (Bentler 1990)</td>
<td>≥0.95 (Hu and Bentler 1999)</td>
</tr>
</tbody>
</table>

According to the guidelines outlined above all models either display excellent or good/acceptable fit, although the CFI for model 3 is slightly low. This is however not the final model.

Bibliography


