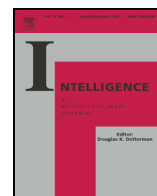




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Intelligence



Verbal ability drives the link between intelligence and ideology in two American community samples

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ABSTRACT

Despite meta-analyses highlighting a nontrivial relation between intelligence and ideology, theoretical accounts of the origins of ideological differences often neglect these differences. Two potential contributors to this neglect are that (a) the true magnitude of the association may be understated by studies using imperfect cognitive ability measures, and (b) nuances on the general association between ideology and intelligence are underexplored, limiting our ability to select among several highly divergent accounts of this association. The present study uses two moderately large ($Ns = 786$ and 338) American community samples to explore two questions: (1) how does the link between ideology and ability differ between self-administered and more conventional ability tests, and (2) is this link common to all aspects of ability, or does it depend primarily on one domain. We found a clear dominant role for verbal rather than non-verbal ability, and support for the proposition that self-administered ability measures understate the intelligence-ideology link.

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1. The relation between cognitive ability and ideology

It is common to think one's ideological opponents differ from oneself not merely in their sociopolitical views but at more fundamental levels as well. Perhaps one of the first intuitions of the layperson is to attribute such differences to differences in intelligence: your ideological opponents think differently than you because they think less well. Despite the personal appeal of such explanations, however, intelligence is commonly omitted altogether from recent integrative accounts of the origins of sociopolitical attitude differences (Hodson, 2014).

This omission is all the more surprising because of recent meta-analytic research concerning the relation between cognitive characteristics and ideology. Whereas Jost, Glaser, Kruglanski, and Sulloway's (2003) highly influential overview reported moderate to large associations between ideology and cognitive style variables such as intolerance of ambiguity and cognitive complexity, Van Hiel and colleagues (Van Hiel & Crowson, 2017; Van Hiel, Onraet, & De Pauw, 2010) demonstrated that such predictive power belongs primarily to self-report measures of those constructs, with behavioral measures providing considerably more modest predictive power. By contrast, meta-analyses confirmed a role for intelligence in the prediction of sociopolitical attitudes (Onraet et al., 2015; Van Hiel et al., 2010).

One contributing factor to the neglect of intelligence in theoretical accounts of sociopolitical differences may be the challenges in

identifying systematic trends in the relation between the two constructs. Both constructs exhibit significant diversity in their assessment and conceptualization, and there is evidence that this diversity impacts the apparent size of the relation between the two constructs. For example, the meta-analyses by Onraet, Van Hiel, and colleagues (Onraet et al., 2015; Van Hiel et al., 2010) indicated that the type of ideology measure used served as a substantial moderating factor, and they reported tentative evidence that verbal ability is a more powerful predictor of attitudes than is nonverbal ability.¹ However, such conclusions should probably be considered provisional, as the number of studies performed on the topic is insufficient given the strikingly diverse operationalizations of the constructs in question across these studies. For example, although the nature of the ideology measure has been noted as a moderator – with stronger effects observed for measures of authoritarianism than of conservatism – there is also considerable heterogeneity in the measures used to assess these characteristics, with perhaps half as many different operationalizations of “conservatism” as there were studies assessing some version of the characteristic. This diversity appears to matter: for example, Oskarsson et al. (2014) observed intelligence to exhibit comparably (moderate) sized positive links with left-wing

¹ One long-standing issue in the intelligence literature concerns the appropriate division and characterization of different sub-components of cognitive ability. The details of this dispute are beyond the scope needed for the present paper. We adopt a two-part distinction of ability, between verbal and nonverbal abilities. The latter is highly similar to what some researchers call “fluid” intelligence, and includes what other researchers categorize as “performance” and “image rotation” (Johnson & Bouchard, 2005). Verbal ability is highly similar to what some researchers call “crystallized” intelligence.

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responses towards immigration as well as with *right-wing* orientation towards economic redistribution (see also Carl, 2014; Kimmelmeier, 2008). This apparently heterogeneous relation between different strands of conservatism and intelligence challenges easy identification of the relation between ideology and intelligence, particularly because the measures used in these studies were often study-specific and not easily tied in to a broader ideological structure that would facilitate generalizations across studies.

Similar issues challenge the understanding of effects of specific abilities, with studies differing markedly not merely in the nature of the ability assessed (e.g. verbal vs nonverbal) but also in the method of assessment: studies reviewed by Onraet et al. (2015) differ in whether ability was assessed individually or in mass settings; whether the assessment was conducted by a survey-taker, teacher, or trained assessor; whether the ability score was self-reported or objectively determined; and whether the ability assessment was self-administered or not. This latter distinction may be particularly important to consider given the recent rapid increase in internet-based studies and their reliance on such self-administration, in contrast to previous study procedures concerning cognitive ability.

This diversity in the conceptualization and assessment of the core constructs is of course also accompanied by a diversity of the samples used: Onraet et al. (2015) found effect sizes across existing studies were heterogeneous based on age, and just as cultural context moderates the relation between right-wing attitudes and measures of cognitive style (Kossowska & Van Hiel, 2003), others have argued cultural context also moderates the relation of attitudes and cognitive ability (Woodley, 2011).

1.1. The present study

1.1.1. *G* and specific ability domains

A first contribution of the present study is to identify the role of *g*, verbal, and nonverbal ability in the association between ability and ideology. As discussed above, Onraet et al. (2015) note tentative evidence that verbal ability contributes to ideology more so than does nonverbal ability. Although most studies contributing to this conclusion assessed only one type of ability, several assessed both dimensions simultaneously: Deary, Batty, and Gale (2008) reported stronger correlations between ideology and the verbal rather than nonverbal scales in a large cohort study, with similar trends identified by Egan (1989), Kimmelmeier (2008), and Gross (2013) (though see Schoon, Cheng, Gale, Batty, & Deary, 2010). However, these studies do not allow any statement concerning whether a given dimension of ability has any possible contribution to ideology over and above the variance it shares with general cognitive ability, as they do not present any analyses simultaneously comparing different dimensions of ability against each other as predictors of ideology. To our knowledge, this has never been done in a study of a general left-right measure of attitudes. In the only study of which we are aware that used both verbal and nonverbal ability measures to predict any sociopolitical attitude measure (specifically, Right Wing Authoritarianism and Social Dominance Orientation), nonverbal ability's association with attitudes was attributable to general ability whereas verbal ability retained predictive power for attitudes over and above that attributable to general ability (Heaven, Ciarrochi, & Leeson, 2011). However, Heaven et al. (2011) used curriculum-based measures of ability, which are valid but imperfect indicators of IQ. Additional research using established IQ measures is needed.

Confirmation of the differential contributions of verbal and nonverbal ability suggested by Onraet et al. (2015) would require that future efforts to explain the linkage between cognitive ability and ideology be able to account for this differential linkage. This is not a trivial challenge, as the relation between cognitive ability and both behaviors and life outcomes is typically viewed as primarily deriving not from specific facets of ability but from general ability (Jensen, 1998). However, we discuss below one potential interpretation, namely that the relation

of cognitive ability to ideology can be accounted for by cognitive-style characteristics, which not only exhibit significant linkages with cognitive ability but are typically more strongly linked to verbal than nonverbal ability (Ackerman & Heggestad, 1997; Bors, Vigneau, & Lalonde, 2006; DeYoung, Quilty, Peterson, & Gray, 2014; Kardash & Noel, 2000).

1.1.2. Cognitive ability: the importance of assessment procedures

A second contribution of the present study concerns a potential moderating role of the method of assessing intelligence. Studies using self-administered intelligence tests are certain to represent an increasing proportion of the research literature on this and other topics, thanks to the increasing use of online surveys and the development of valid, public-domain measures of cognitive ability (e.g. Condon & Revelle, 2014). However, the comparability of self-administered ability tests to standard IQ batteries is still being established, and there are some reasons for concern. For example, extremely high correlations have been observed in a large and representative sample between cognitive ability measures such as the Armed Services Vocational Aptitude Battery and standardized achievement tests such as the SAT ($r = .82$) and ACT ($r = .77$; Koenig, Frey, & Detterman, 2008), but the correlations of those same achievement tests with a popular self-administered test in a recent large study were considerably more modest ($r_s = .49$ and $.39$, respectively; Condon et al., 2015). Similarly, the four samples we could identify as having reported correlations between left-wing ideology and self-administered ability (Iyer, Koleva, Graham, Ditto, & Haidt, 2012; Xu, Mar, & Peterson, 2013) reported a relatively modest association (meta-analytic $r = .06$) compared to that observed in the literature as a whole (meta-analytic $r = .20$, according to Onraet et al., 2015).

We address these two questions by analyzing previously collected data from two moderately large American community samples of adults ($N = 786$ and 338). Both samples used the same measure of ideology, and both used measures of cognitive ability that included both verbal and nonverbal intelligence, allowing tests in both samples of the comparative role of specific ability domains as well as *g*. A major difference between the two samples was the nature of that ability assessment: Sample 1 employed a self-administered ability measure, completed by participants at the location of their choosing, whereas Sample 2 used an in-person assessment of a standard IQ inventory conducted by a trained researcher in a laboratory setting. Although this does not constitute an ideal test – which would use the same sample for both ability assessments – we suggest it is nevertheless instructive.

This question has substantial theoretical and practical importance. Hodson's (2014) claim that cognitive ability is substantially under-addressed in contemporary accounts of ideological differences is difficult to dispute given the relative effect sizes of cognitive ability and more-frequently invoked constructs such as cognitive style and personality. However, we should not expect this neglect to be remedied by further research if self-administration of ability measurement substantially attenuates the link between ideology and ability: the increasing use of large web samples completing self-administered assessments will instead shrink meta-analytic estimates of this link to a size more commensurate with current tendencies to ignore intelligence in theoretical accounts of ideological differences.

2. Method

2.1. Participants

2.1.1. Sample 1: Eugene-Springfield community sample (ESCS)

Participants in the ESCS were drawn from a list of homeowners in the Eugene-Springfield area of Oregon, completing surveys by mail since 1994. We analyzed data from all 786 participants who completed at least one of the primary two measures assessed in this study (intelligence, and ideology), and 567 of these completed both measures. Participants were primarily female (55%), Caucasian (99%), and middle-aged ($M = 51$, $SD = 13$). Further details concerning recruitment and

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