Should Voters be Encyclopedias?
Measuring the Relative Performance of Sophistication Indicators

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ABSTRACT

Extant research has typically relied on the use of political knowledge items or interviewer evaluations to measure the political sophistication of survey respondents. In this paper, I further develop Luskin's approach to measuring sophistication using knowledge items, items based on recognition and understanding of ideological terms, and items based on correct candidate and party placements on issue scales. I also present the advantages of developing a measure based on an item-response theory model rather than the typical approach of using an additive index.

Keywords: political sophistication, item-response theory, measurement.

> The democratic citizen is expected to be well informed about political affairs. He is supposed to know what the issues are, what their history is, what the relevant facts are, what alternatives are proposed, what the party stands for, what the likely consequences are. By such standards the voter falls short.
>
> — Berelson, Lazarsfeld and McPhee 1954, 308

Ever since the first studies of political behavior, political scientists have been aware of vast differences between the level of political knowledge of the American public and that expected in democratic theory. From this statement about the lack of knowledge of citizens, a literature on the concept of *political sophistication*, sometimes discussed using different terminology, has evolved. In addition to disputes over the role of political sophistication in citizen opinion formation and voter decision-making, various scholars have also debated how sophistication is best measured.

After a brief overview of the dominant approaches to the measurement of sophistication, I discuss the use of *item-response theory* models to measure voter sophistication and demonstrate the use of these models using data from the 1998 Dutch Parliamentary Election Study and the 1992, 1996, and 2000 American National Election Studies. I also present results suggesting the reliability and validity of these measures.

1. LITERATURE REVIEW

Efforts to measure political sophistication date back at least to Campbell et al. (1960), although they did not use this terminology per se, instead classifying voters on the basis of the degree to which they conceptualized politics through an ideological prism. They described what they sought to measure as follows:

> We are interested in the presence or absence of certain abstractions that have to do with ideology; but we are also interested in the degree to which an individual's political world is differentiated, and, most important, in the nature of the degree of "connectedness" between the elements that are successfully discriminated. In

> short, we are interested in the structure of thought that the individual applies to politics; and this interest forces us to deal in typologies and qualitative differences (221–22).

Subsequently, they established a typology of four levels of conceptualization (identified as levels A–D), based on a reading of the responses to the open-ended "likes and dislikes" questions they included in the 1956 American National Election Study.[1] Level A consisted of "all respondents whose evaluations of the candidates and the parties have any suggestion of the abstract conception one would associate with ideology" and the three lower levels consisted of those expressing "fairly concrete and short-term group interest" or "ideology by proxy" (level B), attitudes reflecting their perceptions of the state of the times (level C), and those whose attitudes toward the two major parties and presidential candidates were unconnected with domestic policy (level D) (222–23). The bulk of the sample fell into levels B–D, with only about 11.5 percent showing some degree of ideological conception (level A) (249). Campbell et al. also demonstrated that the higher levels of conceptualization were associated with higher levels of education and political involvement.

The use of ideology as an indicator of sophistication was advanced further by Converse (1964), who also introduced the concept of a "belief system" to generalize the concept of ideology used by Campbell et al.. He defined a belief system "as a configuration of ideas and attitudes in which the elements are bound together by some form of constraint or functional dependence" (207). Converse argues that the level of constraint in a person's belief system is largely a function of the level of information that individual possesses; by information, he means both simple facts and the "contextual knowledge" or essential relationships between those facts (212–13). He examined two different approaches to measuring the level of sophistication of members of the public: the "active use" of ideology in making political decisions, a recasting of Campbell et al.'s levels of conceptualization using the same "likes and dislikes" questions, and the recognition of the ideological positions of parties and understanding of those ideological labels, based on the ability of a respondent to characterize one of the parties as more conservative than the other and give a reasonable explanation of what "conservative" meant. Converse noted that high levels of sophistication according to both measures were associated with higher levels of political activity and education, consistent with the findings of Campbell et al..

The conception of political sophistication in terms of the levels of conceptualization continued to have some currency in the literature through the 1970s. Pierce (1970), Pierce and Hagner (1982) and Nie, Verba and Petrocik (1976) used Campbell et al.'s levels of conceptualization in various forms to illustrate the changing role of ideology in how voters made political decisions,[2] arguing that voters had in general increased their sophistication in the 1960s and 1970s. However, these works were strongly criticized by Smith (1980), who presented evidence that the levels of conceptualization measure had neither validity

[1] Since 1956, the presidential-year NES studies have included a series of open-ended questions asking respondents to identify things they like and dislike about the two major parties and the two parties' presidential candidates; they have commonly been referred to as the "likes and dislikes" questions since.

[2] Pierce (1970) and Pierce and Hagner (1982) used the interview transcripts to produce their coding, while Nie, Verba and Petrocik (1976) used the set of "master codes" provided by the NES in the public dataset to preserve anonymity.

nor reliability.[3] When Smith examined both the *Changing American Voter* (Nie, Verba and Petrocik 1976) and Pierce (1970) measures of the levels of conceptualization, as well as the original measure used by Campbell et al. (1960), during the 1956–60 American National Election Study panel using three different tests,[4] he found that the reliability—and hence the validity—of the measures was very low.[5] Smith also argued that voters in general were no more ideological or sophisticated than they were at the time of *The American Voter*. More recent research appears to have abandoned attempts to measure sophistication based on the levels of conceptualization *per se*.[6]

Other efforts to use ideological constraint as an indicator of sophistication were advanced in the 1980s, but failed to gain much traction by practitioners. The most developed approach was via *schemas*, which were said to be representations of the connections between ideas and concepts. These approaches were pioneered by Fiske and Kinder (1981) and advanced by others, including Conover (1984); Conover and Feldman (1984) and Hamill, Lodge and Blake (1985), but roundly criticized by Kuklinski, Luskin and Bolland (1991), who argued that schemas were being measured inappropriately, their applications were merely "cosmetic," and their use generally failed to give any additional insight than similar concepts such as cognitive maps and attitudes. Nonetheless they noted the similarity between Hamill, Lodge and Blake's measure of partisan schema usage and measures of sophistication used elsewhere in the literature by Zaller (1986) and Luskin (1987) (Kuklinski, Luskin and Bolland 1991, 1352, n.11), suggesting that there were at least some valuable insights that could be applied to future research on sophistication from the "dead end" research program that they criticized.

More recently, researchers have sought to use political knowledge (or information-holding) either directly or indirectly as an indicator of sophistication. Fiske, Kinder and Larter (1983) suggest that political sophistication is the result of acquiring knowledge about politics:

> Experts have more chunks of knowledge, and the chunks themselves contain more concepts (Chase & Simon, 1973). In addition, however, the structure of knowledge apparently changes. As people become more expert, their knowledge becomes more organized. In any case, the cohesion of organized knowledge seems to be greater in experts' memory (384).

Thus, if we can measure a person's political expertise, we are inherently able to understand their level of political sophistication. And since expertise is largely a function of

[3]For a continuation of this debate, see Abramson (1981); Nie, Verba and Petrocik (1981); Smith (1981); Cassel (1984); and Luskin (1987).

[4] Smith used test-retest correlations (Kendall's τ-b), a test of reliability in the presence of measurement error developed by Wiley and Wiley (1970), and attempting to explain changes in respondent sophistication by changes in their interest in politics, political participation, and media use through bivariate correlations.

[5]However, he later (Smith 1989, 22–42) reaches exactly the opposite conclusion based on the same data—that the measures display a high level of individual-level stability, and hence are reliable. However, he argues that they still lack validity, mainly because they fail to explain differences in political attitudes and behavior that one would expect sophistication to affect (76–80). He generally blames this lack of validity on the failure of Campbell et al. (1960) to tie the "levels of conceptualization" to any extant psychological theory (81–82). Additional contributions of Smith (1989) to the measurement of sophistication are discussed below.

[6]See, e.g., Miller and Shanks (1996), which mentions the levels of conceptualization only in passing (567); however, see Bafumi (2003) for a recent application.

knowledge, a voter's level of knowledge may be a good measure of sophistication. Fiske, Kinder and Larter indicate that political expertise includes "the interlocking set of knowledge, interest and participation" (1983: 385), although their measure largely reflects the latter two items.

The meaning of political expertise was further explored in an issue of *Social Cognition* devoted to the topic; Krosnick (1990a), in the introduction to that issue, explicitly relates political expertise to the conception of sophistication embodied in Campbell et al. (1960) and Converse (1964). However, Krosnick also notes that the measurement and definition of political expertise is subject to considerable debate: unlike in other fields, political expertise doesn't reflect performance *per se*. Instead:

> [P]olitical experts are presumed to be keenly interested in political affairs, to expose themselves to lots of political information (both directly through behavioral participation in political events and indirectly through the mass media), to pay close attention to the political information they encounter, and to reflect on the meaning and implications of that information long after it is acquired (4).

The authors in the issue used various measures of political expertise. Krosnick (1990b) indicates that the researchers in the volume demonstrated that

> knowledge, interest, exposure and behavioral participation have independent effects on some phenomena. Taken together, this evidence indicates that the various dimensions of political expertise considered here may each have unique impacts via unique mechanisms. Thus, investigators should recognize the possibility that these dimensions can sometimes function as distinct factors (156–57).

Zaller (1990) measures political expertise in terms of four measures of "political awareness," based on the ability to correctly locate groups and candidates on a 7-point ideological scale (the "information scale") and measures of self-reported participation, media exposure, and political interest from the 1972–76 NES panel study. He concludes:

> One is politically aware to the degree that one chronically exposes oneself to and comprehends media reports of political events, issues, and personages. It has been argued [earlier in the article] that political awareness, understood in this way, is best measured by tests of political information (147; an extended discussion is at Zaller 1992: 333–39).

Luskin (1987) also makes an effort to consolidate various definitions of political sophistication. He first famously noted that "most sophistication research skips rapidly past definition trusting a citation to Campbell et al. (1960) or Converse (1964) to do the rest" (857). He defines political sophistication as "the extent to which [a person's personal belief system] is large, wide-ranging, and highly constrained" (860), and "the political case of a more general variable," *cognitive complexity* or *expertise* (861). This definition suggests that, at least to him, political sophistication and political expertise are essentially the same thing.

Luskin revisits Converse (1964), and finds little to recommend in the correlation-based measures of sophistication suggested there (and in the schema literature), but finds more promise in his "active use" (AU) and "recognition and understanding" (RU) measures,

developing a sophistication measure of his own that he refers to as S, incorporating both knowledge of politics (or information holding) and the ideological measures derived from Converse. Like Krosnick (1990b) and Zaller (1990), Luskin finds some value in using political knowledge as a measure of sophistication, although he also suggests that measures like S are likely to perform better (890).

Largely independent of the psychological line of research, Smith (1989) arrives at a broadly similar conclusion about the use of political knowledge as a measure of sophistication. He argues that neither the levels of conceptualization nor measures of attitude consistency are worthwhile measures of political sophistication; he argues that for most purposes in the study of mass political behavior, political knowledge and what he terms "conceptual sophistication" are highly correlated to the point that they are essentially indistinguishable, although he concedes that that better measures of sophistication might reveal meaningful differences (226–27).

The literature subsequent to Luskin (1987), Smith (1989) and Zaller (1992) has mostly used the respondent's level of political information or political knowledge as the indicator of voter sophistication; see, for example, Lupia (1994), Bartels (1996), Delli Carpini and Keeter (1996), Cassel and Lo (1997), Althaus (1998), Duch, Palmer and Anderson (2000), Mondak (2000a,b), and Smith (2002), and in a cross-national context, Gordon and Segura (1997), suggesting that a broad consensus on the particular indicator to be used has been reached.[7] And, famously, Delli Carpini and Keeter (1996), have asserted that political knowledge itself is critical to political reasoning in its own right.

The other popular approach in the literature is to make use of the interviewer evaluation of the respondent's level of political information as an indicator of sophistication. Zaller (1985) noted that the interviewer evaluation appeared to be highly correlated with other measures of sophistication, and it has been adopted by many researchers based on its apparent validity and convenience—the NES data set typically does not even provide an index of the number of correct knowledge items for each respondent, unlike the DPES.

2. THE ITEM-RESPONSE THEORY MODEL

Traditionally the measure of information-holding used in the literature is an index or additive scale: each respondent is given one point for each item they answer "correctly," and these points are tallied, producing an index. This approach presents one immediately-apparent problem: how to treat missing data. There are three essential approaches: we could treat missing responses as incorrect, indicating a lack of knowledge (Luskin and Bullock 2005); we could recast the index as a proportion or percentage of questions answered that were correct; or we could attempt some form of imputation.

Calculating indices also presents a non-obvious conceptual issue: by adding each item independently, we essentially are assuming that each question is of equal difficulty for respondents and is an equally-good indicator of knowledge or sophistication, two assumptions that are unlikely to hold up in practice.[8]

[7]The specific measure of information-holding varies in some of these studies, but the use of some form of "knowledge" as the indicator of sophistication is common to all of these works.

[8]For example, it is immediately obvious from the American National Election Study in any given year that more citizens know the person occupying the office of the vice-president of the United States than the chief justice of the United States; presumably the latter item is both more difficult and a better indicator of

Thus I depart from the above techniques by employing an *item-response theory* model (Johnson and Albert 1999) to measure respondent sophistication. IRT models were developed for use in educational psychology to facilitate standardized testing, and have been adapted for use in political science previously to estimate the ideal points of Supreme Court justices (Martin and Quinn 2002) and legislators (Clinton, Jackman and Rivers 2004). In addition, the technique has also been proposed for the measurement of political knowledge (Delli Carpini and Keeter 1996; Levendusky and Jackman 2003) but has not been widely used to date in the literature. For estimation of respondent sophistication, the IRT model has two key advantages over the use of a nave index: the estimates inherently give greater weight to more "useful" items, and the IRT estimates are less coarse than additive indices, which take on only integer values. In addition, missing data are accounted for as part of the estimation procedure, avoiding the potential pitfalls of imputation; however, if there is a substantive reason to believe that particular non-responses indicate a true lack of knowledge (as opposed to non-response due to the respondent interrupting the survey or the question not being administered to the respondent), that coding choice is also available to the researcher.

The method is briefly as follows: assume each subject j has a latent ability or ideal point θ_j and each item (survey question) i has two parameters associated with it: a *difficulty* denoted α_i (how "hard" the question is—a measure of how likely a randomly-selected subject is to get it correct) and a *discrimination parameter* denoted β_i (how well the question distinguishes between subjects with varying levels of the latent trait—essentially, how "good" the question is). Then we can define z_{ij}, the probability that the observed response x_{ij} is correct, as:

$$z_{ij} = -\alpha_i + \beta_i \theta_j + \epsilon_{ij}$$

We cannot observe this probability directly; however, we can treat z_{ij} as an unobserved utility, and use a random utility approach (as in the standard probit and logit models):

$$\Pr(x_{ij} = 1|\theta_j) = F(z_{ij})$$

Generally, F is the standard normal cumulative density function (Φ). With suitable constraints on the distribution of α and β (namely, that they are distributed normally with a mean of zero and a precision[9] of one) and *theta* (assumed to be normally distributed as well), the model is identified sufficiently to produce a solution.[10] Estimation of this model via Markov chain Monte Carlo is readily available in `MCMCpack` for R (Martin, and Quinn 2007) using the `MCMCirtKd` procedure.

3. ESTIMATION

In order to validate these measures, questions from the 1998 Dutch Parliamentary Election Survey (Aarts, van der Kolk and Kamp 1999) and the 1992, 1996, and 2000 American National Election Studies (Rosenstone et al. 1999a,b; Burns et al. 2002) were used. Both the DPES and NES are surveys based on national probability samples of citizens, including

voters' attentiveness and interest in politics.

[9] In the Bayesian framework, precisions are used instead of variances. The precision is simply the reciprocal of the variance.

[10] It may also be helpful to identify the sign of one of the β parameters to constrain the directionality of the recovered latent factor, for ease of interpretation.

lengthy interviews conducted prior to and after the election in question. The 1998 DPES had 2101 respondents in the pre-election wave (from which the knowledge items were drawn), while the NES had 1980 respondents in 1992, 1714 respondents in 1996, and 1807 respondents in 2000.

The responses used to estimate the respondents' level of sophistication fall into two broad categories: knowledge items included in the survey, and the correctness of the relative placement of the major parties and major-party politicians on ideological and/or issue scales. In the case of the 1998 DPES, 44 items were used in five groups:

> Respondent identification of whether or not 10 countries were members of the European Union. (10 items)
>
> Respondent knowledge of the relative seat shares of major parties in the lower house of the Dutch parliament. (4 items)
>
> Respondent identification of the name, party, and position of four Dutch political figures from major parties. (12 items)
>
> Respondent identification of members and non-members of the governing coalition prior to the 1998 election. (13 items)
>
> Correct relative placement of Dutch political parties on five issue scales (political asylum, minority assimilation, euthanasia, EU expansion, and concern about income inequality). (5 items)

In the case of the NES, the knowledge items used are correct identification of the vice president (1992 and 1996) or key cabinet member (Attorney General Janet Reno in 2000), the chief justice of the United States, a prominent foreign leader (Russian president Boris Yeltsin in 1992 and 1996; British prime minister Tony Blair in 2000), the speaker of the House (Tom Foley in 1992 and Newt Gingrich 1996) or Senate majority leader (Trent Lott in 2000), and correctly identifying the majority party in each chamber of Congress. In 1992, two additional questions are included—one testing respondents' knowledge of the Supreme Court's power of judicial review, the other testing if respondents knew the president was responsible for nominating judges to the federal bench. In 2000, some biographical questions about the major-party presidential candidates and their running-mates were also included in NES, and thus included in the scale.

The relative placement items included (in years the questions were available) placement of both the major-party presidential candidates and their parties on the liberal-conservative 7-point scale; the traditional NES services-spending scale; the government-financed versus private health insurance scale; the government/individualist jobs scale; the aid to blacks scale; the abortion scale; a crime policy scale; an environmentalism versus jobs scale; a environment versus business regulation scale; and a gun control scale.

4. EFFECTIVENESS OF INDIVIDUAL ITEMS

The estimates of the item difficulties and discrimination parameters are illustrated graphically in the appendix. Questions that perform well generally have high discrimination

parameters, and in order to produce a scale that reflects the range of respondents the scale should include questions with varying levels of difficulty; while including additional questions that have low discrimination or only tap part of the difficulty range will not harm the performance of an IRT-based scale, scales including *only* poorly-performing items will be poor indicators.

In the case of the 1998 survey of voters in the Netherlands, there are clear distinctions between the quality of items based on the type of question that was asked. None of the European Union membership items performed particularly well as an indicator of sophistication; while voters did exhibit some difficulty in deciding which of Norway and Sweden was a member of the EU, the discrimination parameters for those items indicate that these questions did not do a very good job of distinguishing sophisticated from unsophisticated respondents. By contrast, the items that were based on identifying key figures in the Dutch parliament generally exhibited high discrimination and represented a range of difficulty levels. The DPES items that dealt with the relative size of the party contingents in parliament and the composition of the governing coalition occupied a middle ground, with few difficult items but some items at least exhibiting decent levels of discrimination, most notably the questions concerning whether the Christian Democrats and Democrats '66 were in the government. The items relating to the issue positions of parties similarly occupied this middle ground of question quality, with all five constructed items having about equal discrimination and difficulty parameters.

The comparable NES items in 1992, 1996, and 2000 exhibited somewhat different patterns when compared to items administered in the Netherlands. Generally speaking, the issue placement items performed better with American voters than with Dutch voters, although again we do not see much variation in these items' difficulty levels. Knowledge-based measures also performed better in the U.S., although this might be explained in part because the knowledge questions chosen were probably more salient to voters than, particularly, the EU membership items administered in the Netherlands. By contrast, the identification-based measures seem to have performed more poorly with American voters; again, the different interview approaches may explain part of the difference, as Dutch voters were shown photographs of the political figures as part of the interview while U.S. voters were only given names to identify.The biographical items about the major party presidential and vice-presidential candidates included in the 2000 NES exhibited wildly varying degrees of difficulty and generally low discrimination; as it is the first time these items were used on the NES, it is difficult to discern much of a pattern in the responses, except to say that none of the eight items performed particularly well.

5. VALIDATION OF THE MEASURES

The measures were examined for construct validity in two ways: first, they were compared to other measures of political knowledge included in the surveys, and second, they were compared to other respondent measures that are believed to be related to political sophistication.

In the case of the DPES measure, the Pearson correlation coefficient r was used to estimate the correlation between the estimates of respondent sophistication and two measures of sophistication included in the survey: a simple index of the number of correct answers to the politician identification questions, and an index based on the number of politicians

	Political interest		Civic engagement		Education	
Study	Pearson's r	Polyserial ρ	Pearson's r	Polyserial ρ	Pearson's r	Polyserial ρ
1998 DPES	0.47	0.49	0.29	0.32	0.34	0.35
1992 ANES	0.48	0.51	—	—	0.52	0.53
1996 ANES	0.43	0.53	—	—	0.50	0.52
2000 ANES	0.44	0.49	—	—	0.45	0.46

Table 1: Validation of the IRT measures

completely correctly identified. The Pearson's correlation r between the IRT estimate and the first index was 0.95 and the polyserial correlation ρ [11] was 0.99, while the Pearson's r between the IRT estimate and the second index was 0.85 and the polyserial correlation was 0.93.[12] While this would suggest that the traditional additive index is a reasonable measure of sophistication, in terms of its potential use in second-stage analysis we would still prefer the IRT-based measure.

For the 1992 American National Election Study, Pearson's correlation coefficient (r) between the generated sophistication measure and the commonly-used interviewer evaluation was 0.58 and the polyserial correlation was 0.60; for 1996, the Pearson's r was 0.41 and the polyserial correlation was 0.53; and for 2000, the Pearson's r was 0.59 and the polyserial correlation was 0.61. In all cases, the correlation was statistically significant at the 99.9% confidence level.

As a second stage of validation, the IRT measures were validated by examining the correlation between those measures and other items that we would theoretically expect to be correlated with respondent sophistication: self-reported political interest level of education, and (in the case of the DPES) an index based on the respondent's level of civic participation. These correlations are shown in Table 1, and are further suggestive of the validity of the measure.

6. CONCLUSIONS

In this article, I have presented an innovative approach to estimating the political sophistication of voters in sample surveys that improves on the traditional practice of producing indices of political knowledge. These item-response theory measures have a number of key advantages over traditional indices, including (but not limited to) accounting for the difficulty and quality of each item, graceful handling of missing data, recovering an interval-level estimate of respondent sophistication, and producing estimates of the measurement error for each question and respondent ability. Each of these benefits may be of use to researchers who wish to use political sophistication as an independent or intervening variable in second-stage analyses.

Another important, but perhaps non-obvious, advantage over the current practice of relying on the interviewer evaluation of sophistication is that this measurement approach

[11] The polyserial correlation is preferred to Pearson's r when one variable is ordinal and reflects a conceptually-continuous variable; see e.g. Drasgow (1986).

[12] This validation is somewhat unsatisfactory due to these items being included in the IRT measure to begin with; nonetheless, it does indicate that including additional items leads to a measure that is similarly valid.

does not rely on the presence of a human interviewer;[13] as more social science research is administered over the Internet via services such as PollingPoint, Knowledge Networks, and Harris, this is an increasingly important consideration for researchers.

A third advantage of the IRT approach is that it can be a valuable tool in the process of survey development. As discussed above, the IRT model provides estimates of both the difficulty and discrimination of each item included in the estimates; these estimates are potentially useful in developing future questionnaires, as they broadly indicate which questions "work" and which do not, allowing either the streamlining of questionnaires or the replacement of poorly-performing items with better items or other types of questions. These advantages, taken together, suggest that the benefits of using the IRT approach outweigh the additional computational and logistical costs of utilizing this measurement technique.

As the estimates of voter sophistication provided by the IRT model include estimates of their error bounds, in future it would be valuable to develop and broaden the availability of second-stage models that incorporate knowledge of this measurement error in order to provide better estimates of the effects of voter sophistication—or in the case of other applications of IRT models in political science, the ideal points of elected and appointed officials—on behavior. There are a number of approaches to incorporating this known uncertainty in second-stage estimation in the statistical literature (see e.g. Cook and Stefanski 1994; Hardin, Schmiediche and Carroll 2003), but they have not yet seen widespread application yet in political science, despite their potential value in improving social scientific inference about the effects of unobservable variables.

[13]Of course, in the face-to-face interview context, there are other biases that may interfere with the measurement of sophistication; see e.g. Davis and Silver (2003).

Figure 1: Performance of EU Membership Items, 1998 DPES

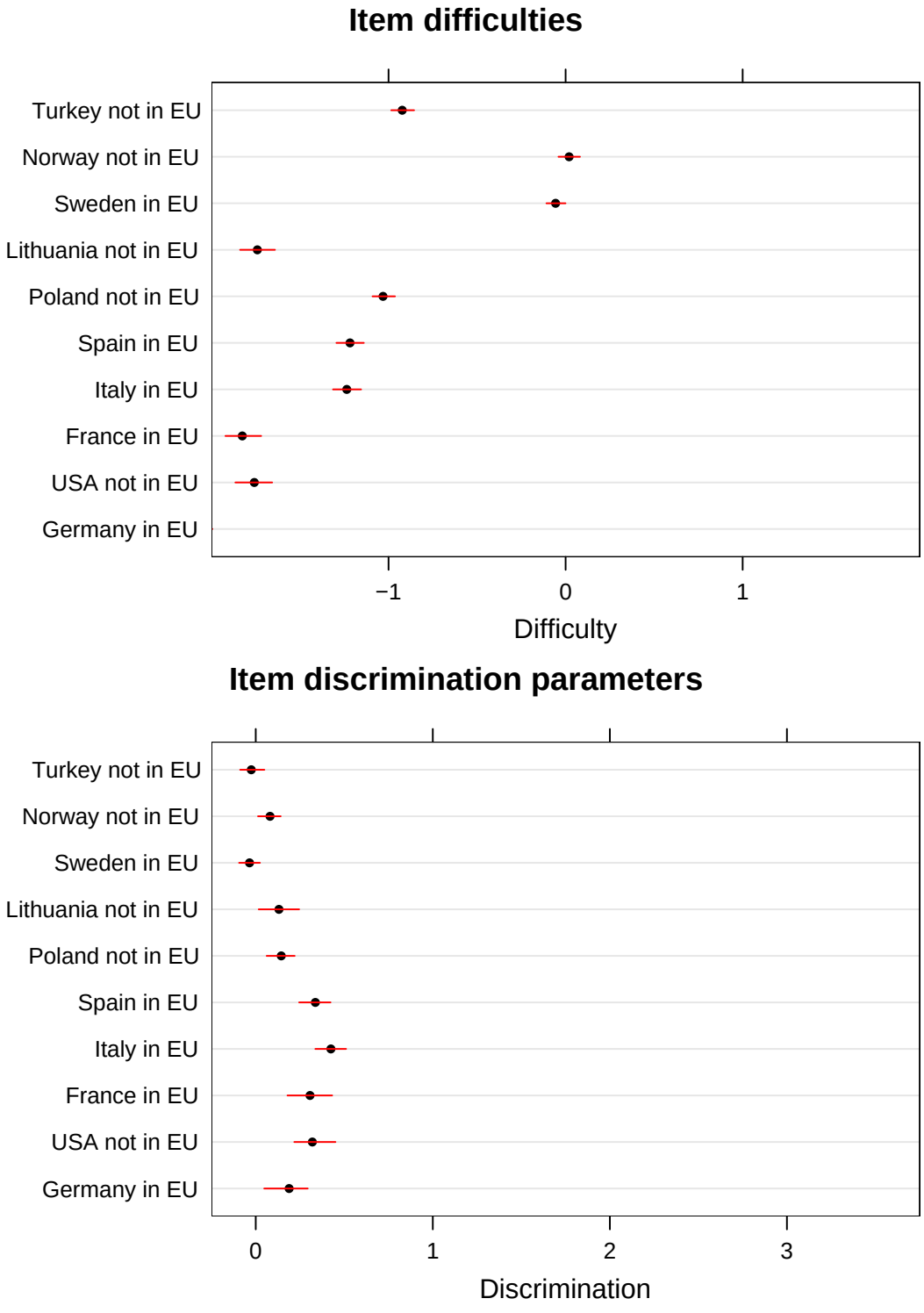


Figure 2: Performance of Political Figure Items, 1998 DPES

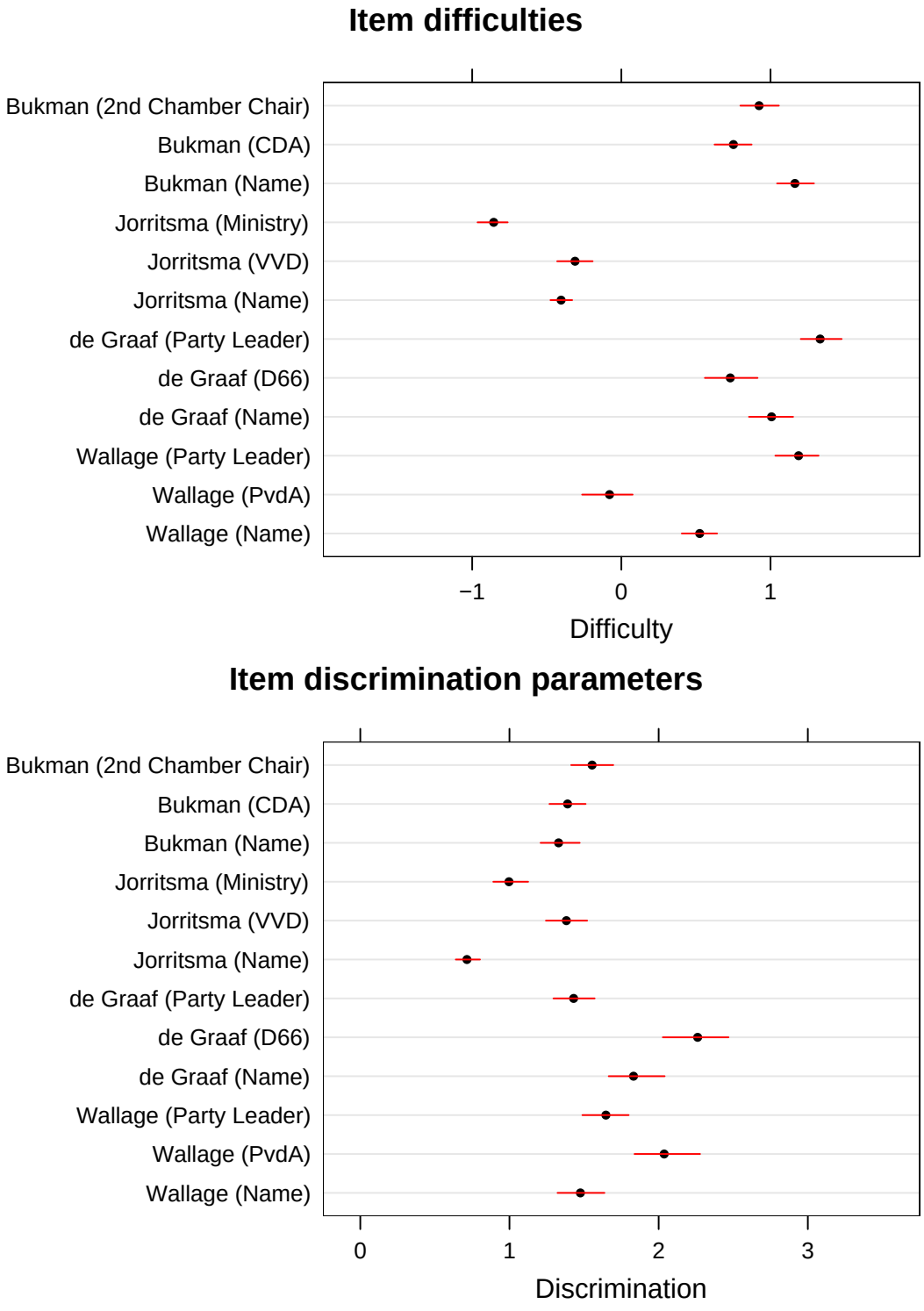


Figure 3: Performance of Party Size Items, 1998 DPES

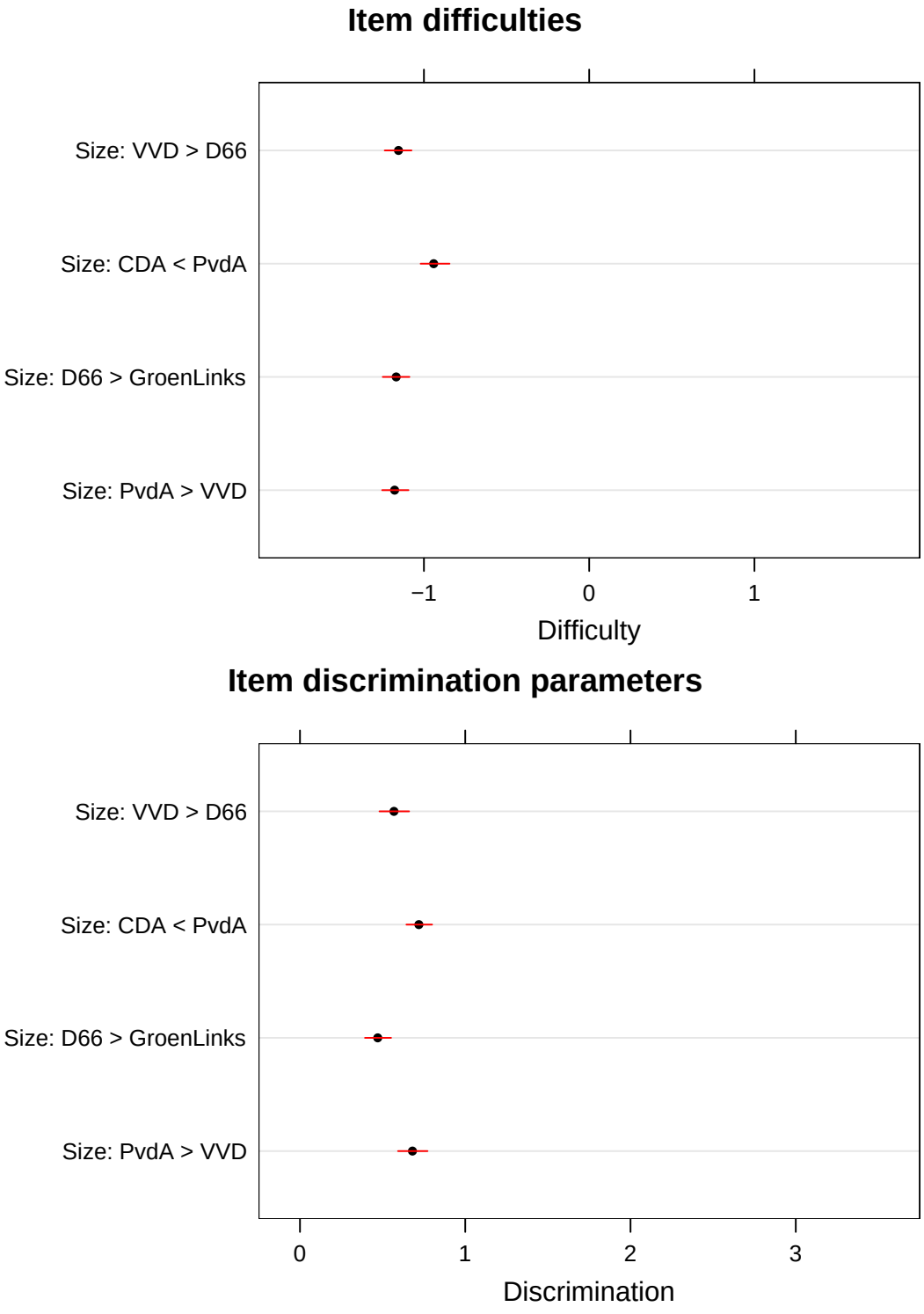


Figure 4: Performance of Coalition Membership Items, 1998 DPES

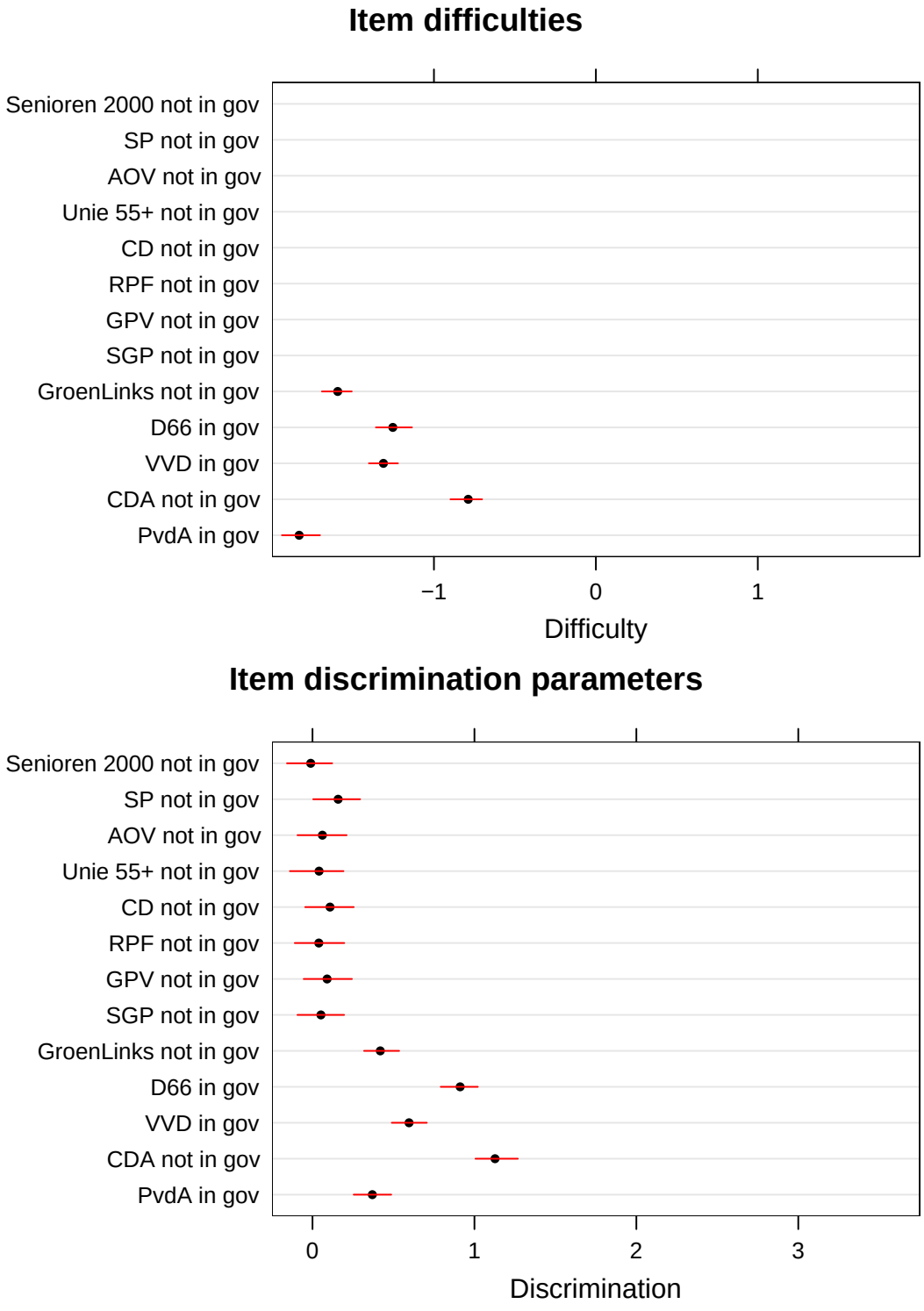


Figure 5: Performance of Issue Placement Items, 1998 DPES

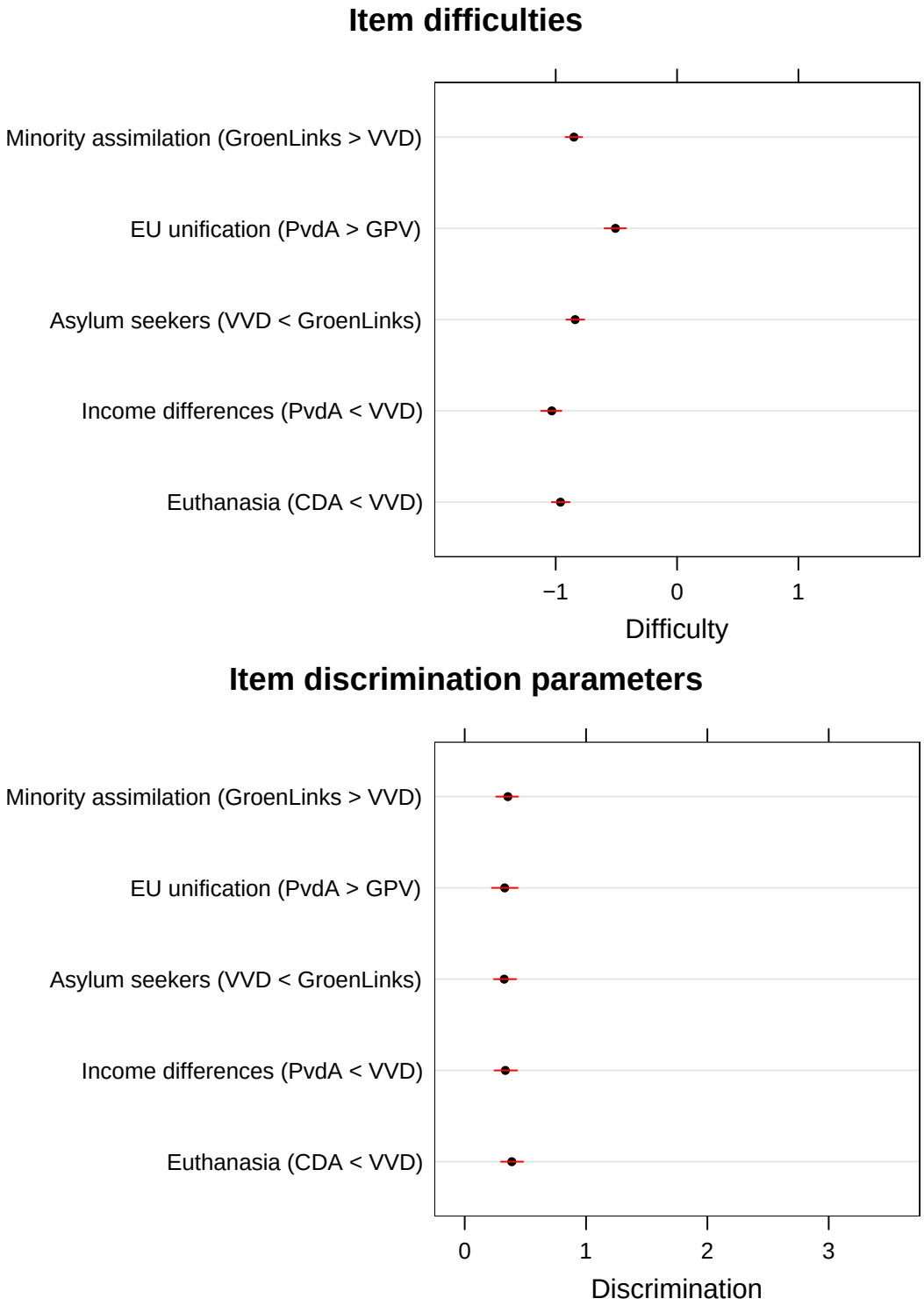


Figure 6: Performance of Party/Candidate Placements, 1992 ANES

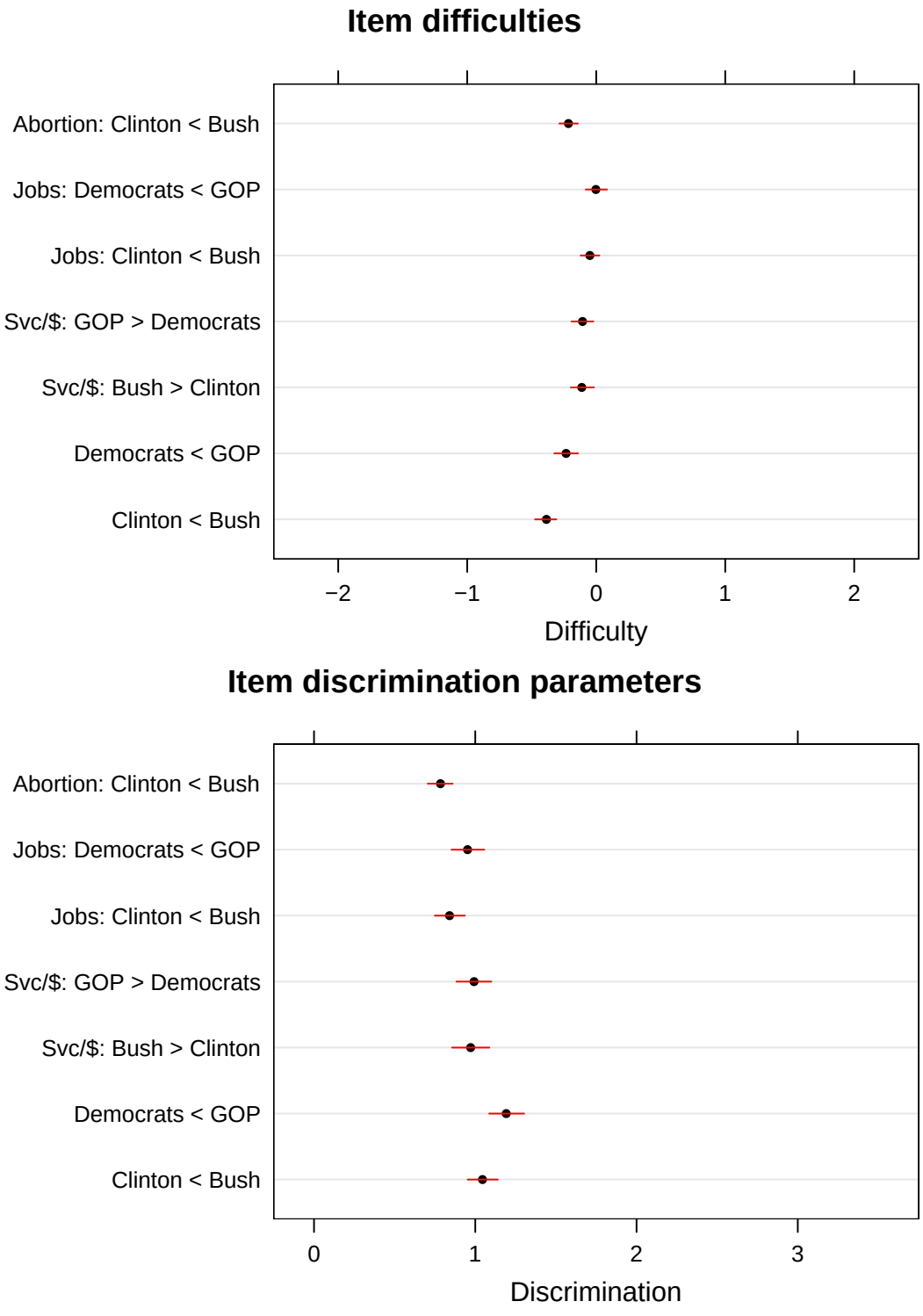


Figure 7: Performance of Knowledge Items, 1992 ANES

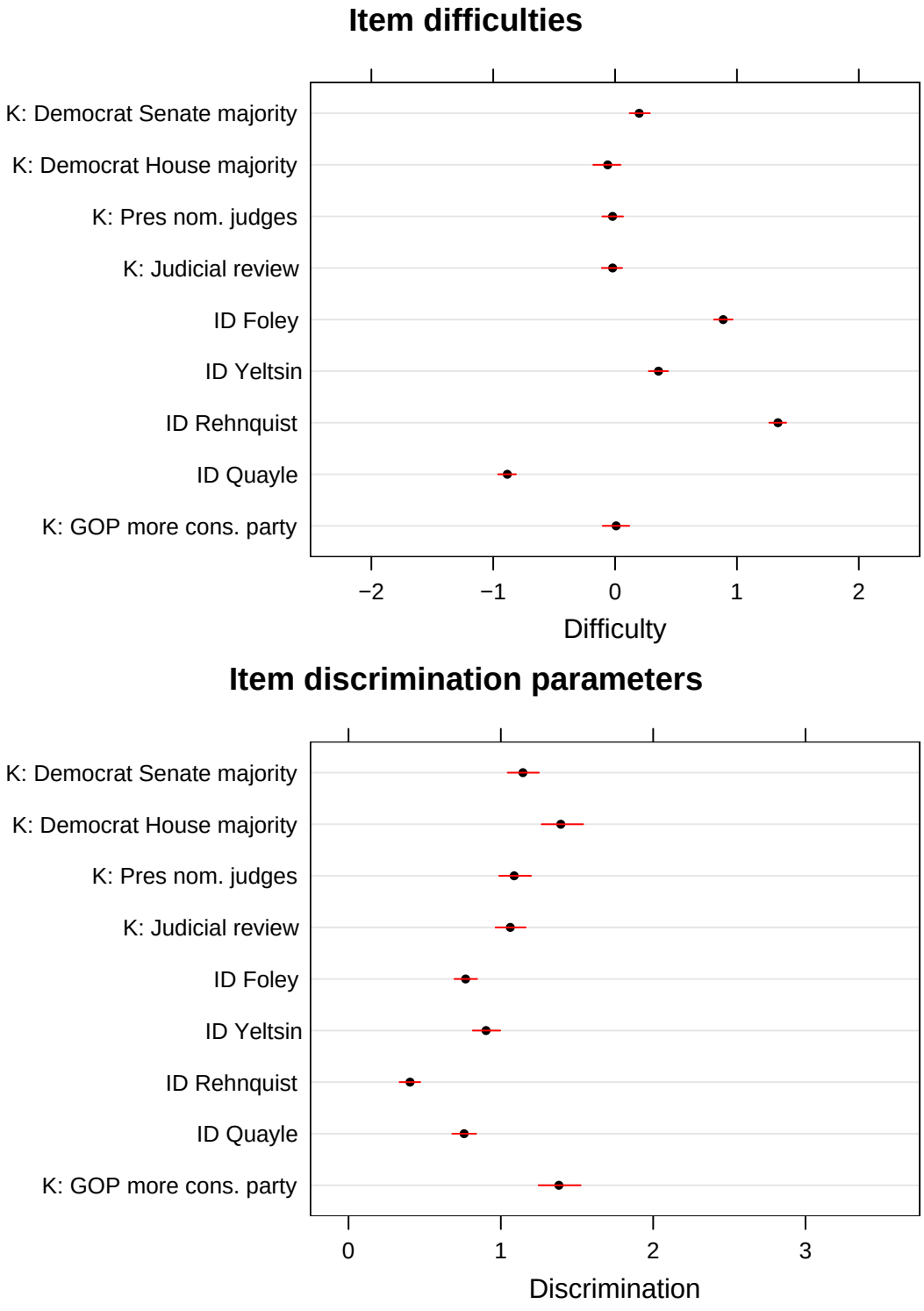


Figure 8: Performance of Party/Candidate Placements, 1996 ANES

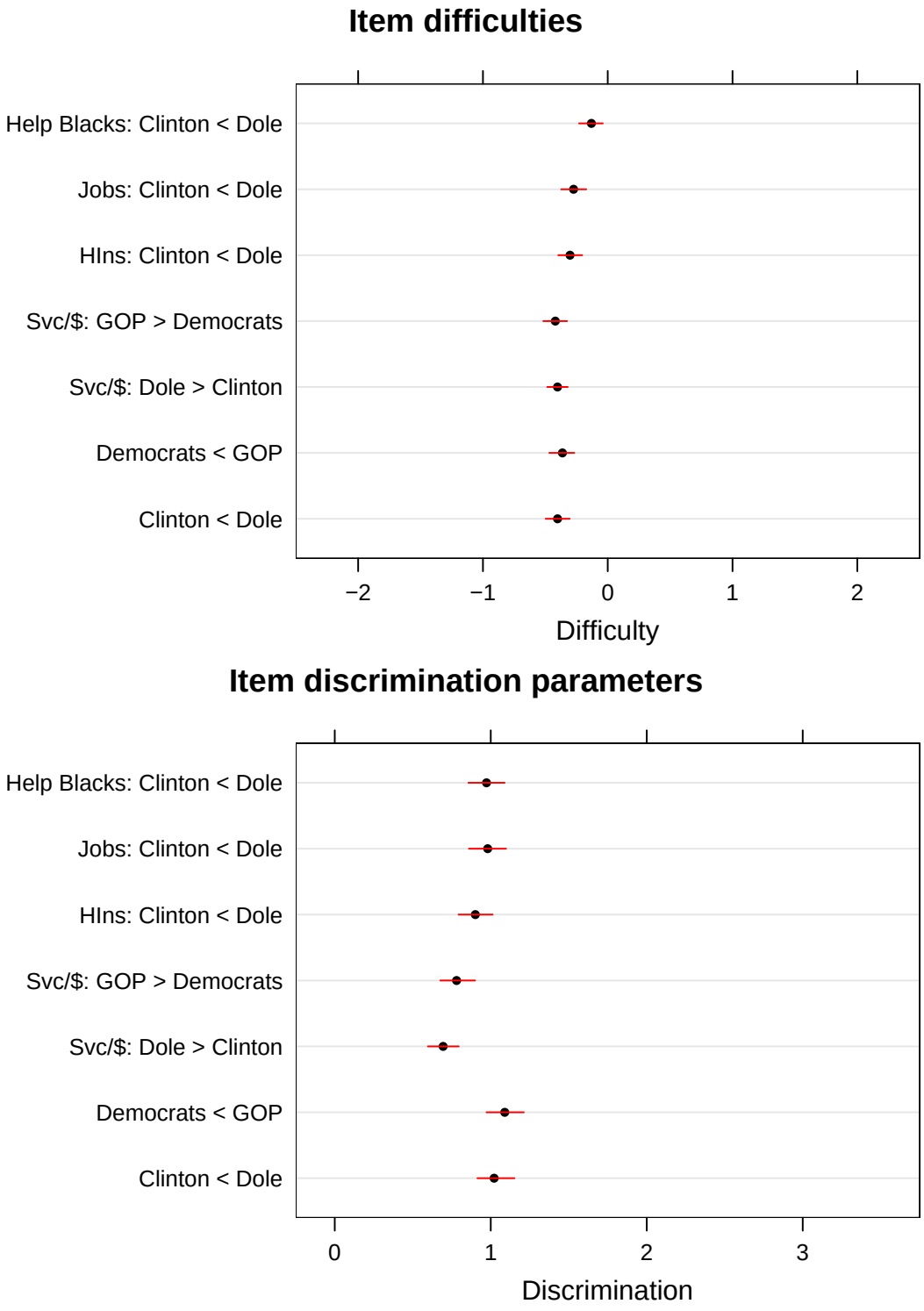


Figure 9: Performance of More Party/Candidate Placements, 1996 ANES

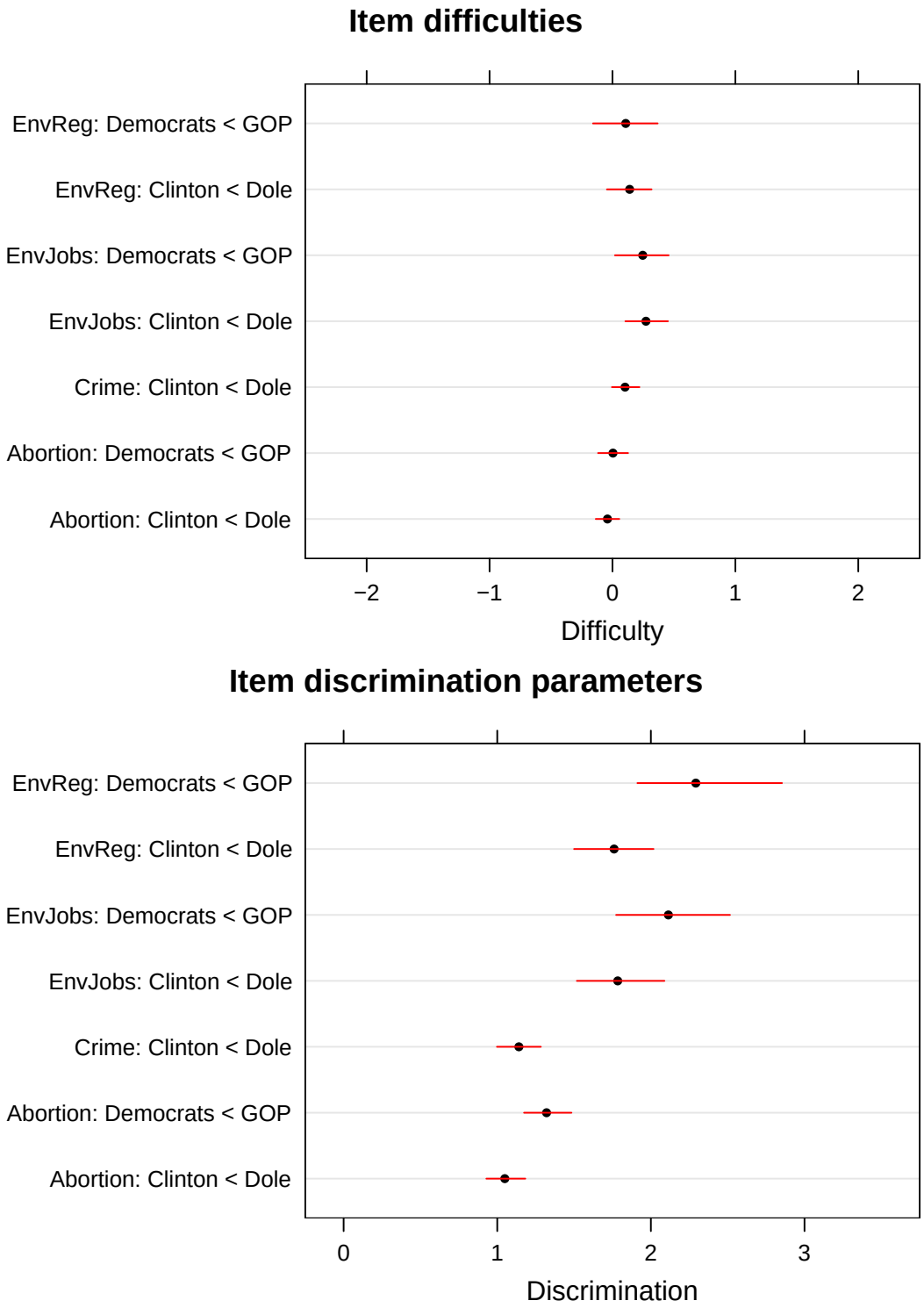


Figure 10: Performance of Knowledge Items, 1996 ANES

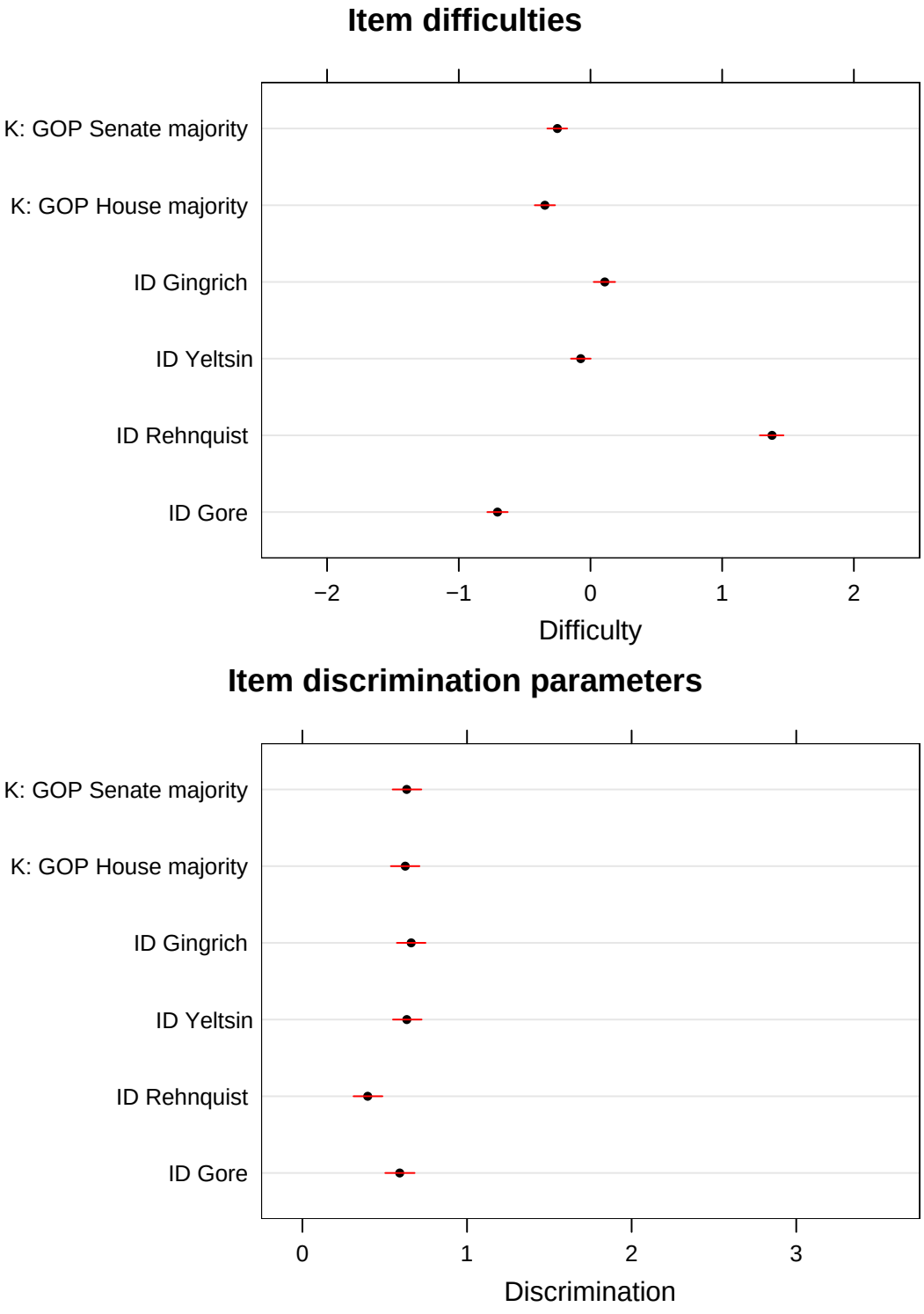


Figure 11: Performance of Party/Candidate Placements, 2000 ANES

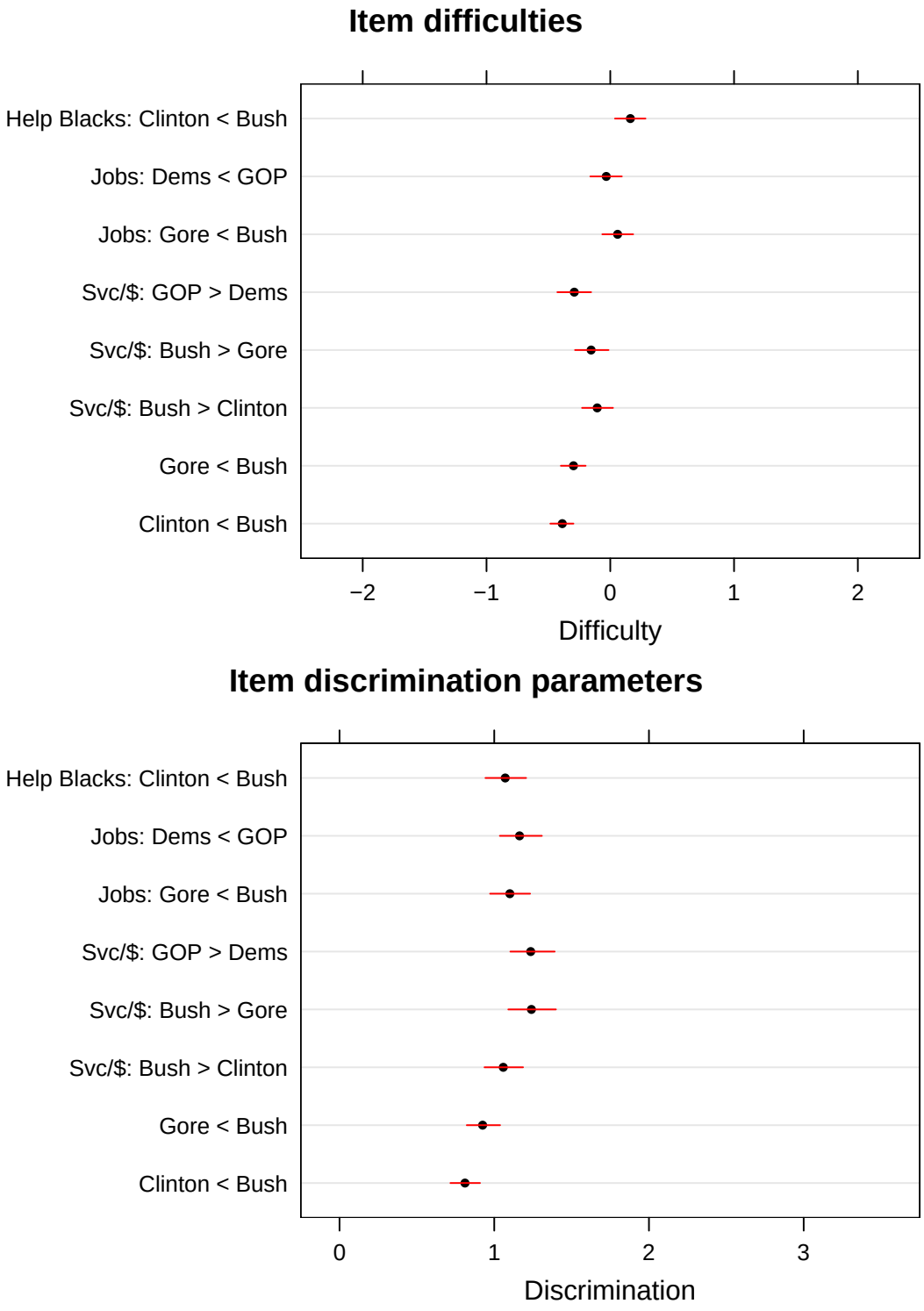


Figure 12: Performance of More Party/Candidate Placements, 2000 ANES

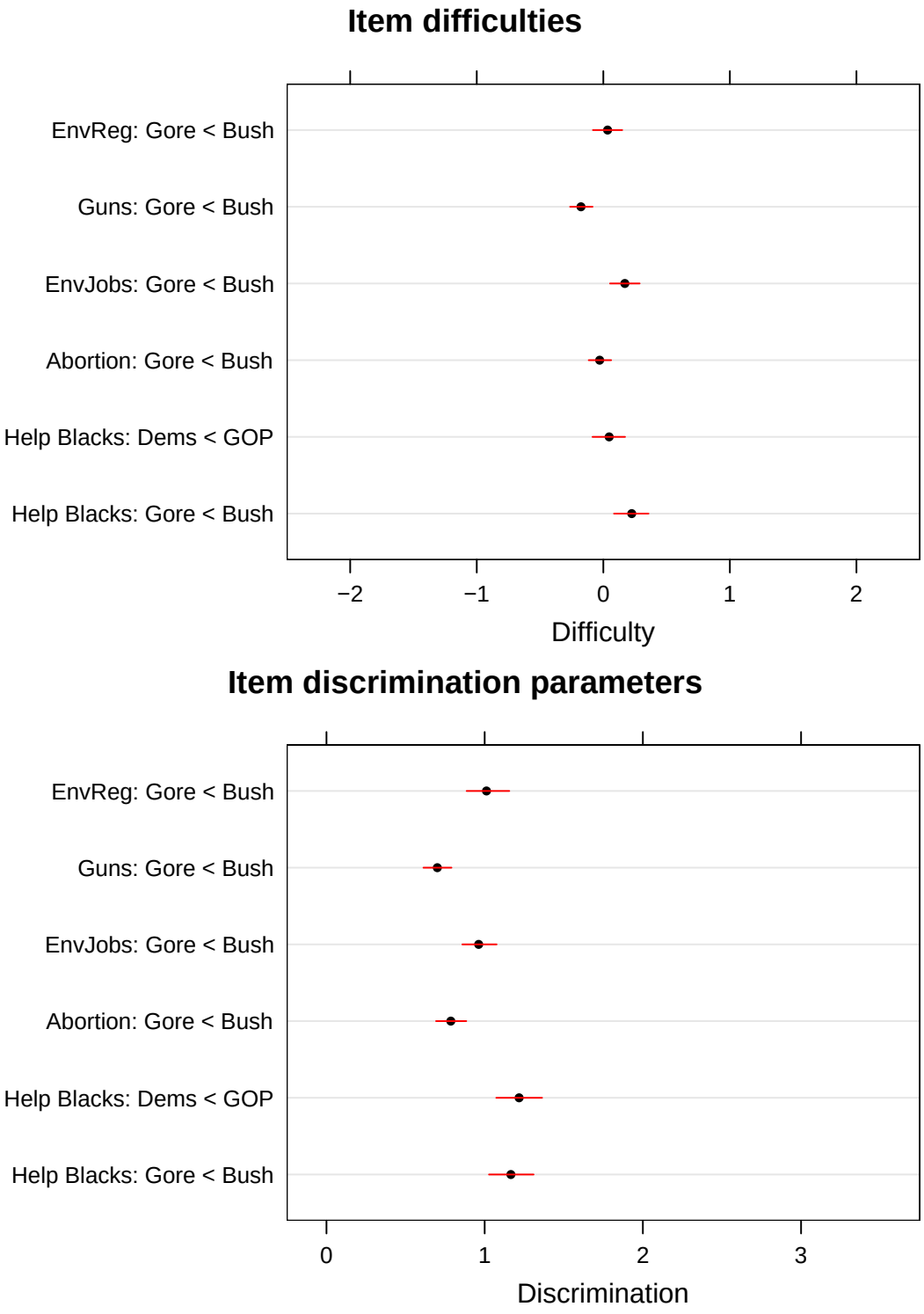


Figure 13: Performance of Knowledge Items, 2000 ANES

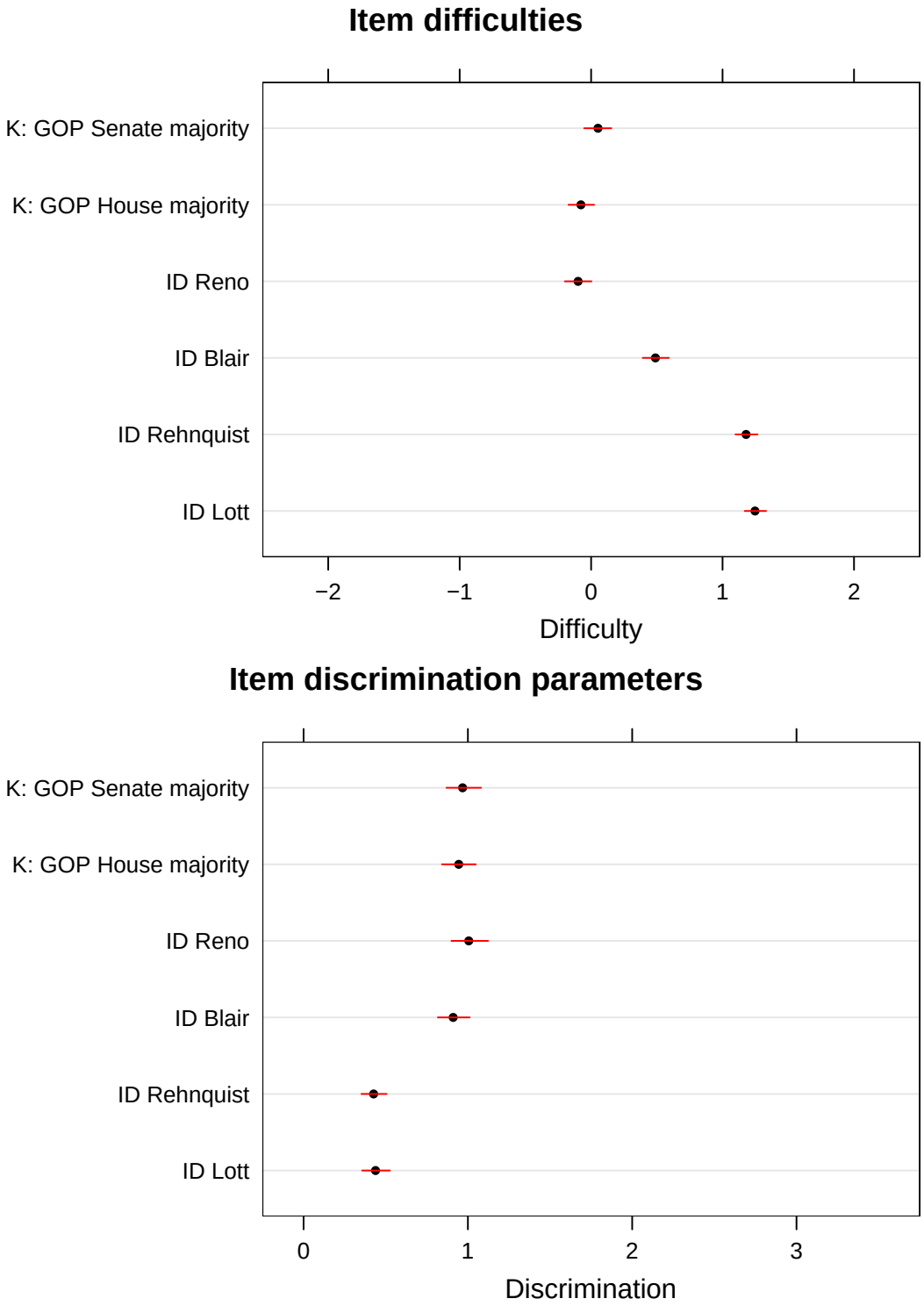
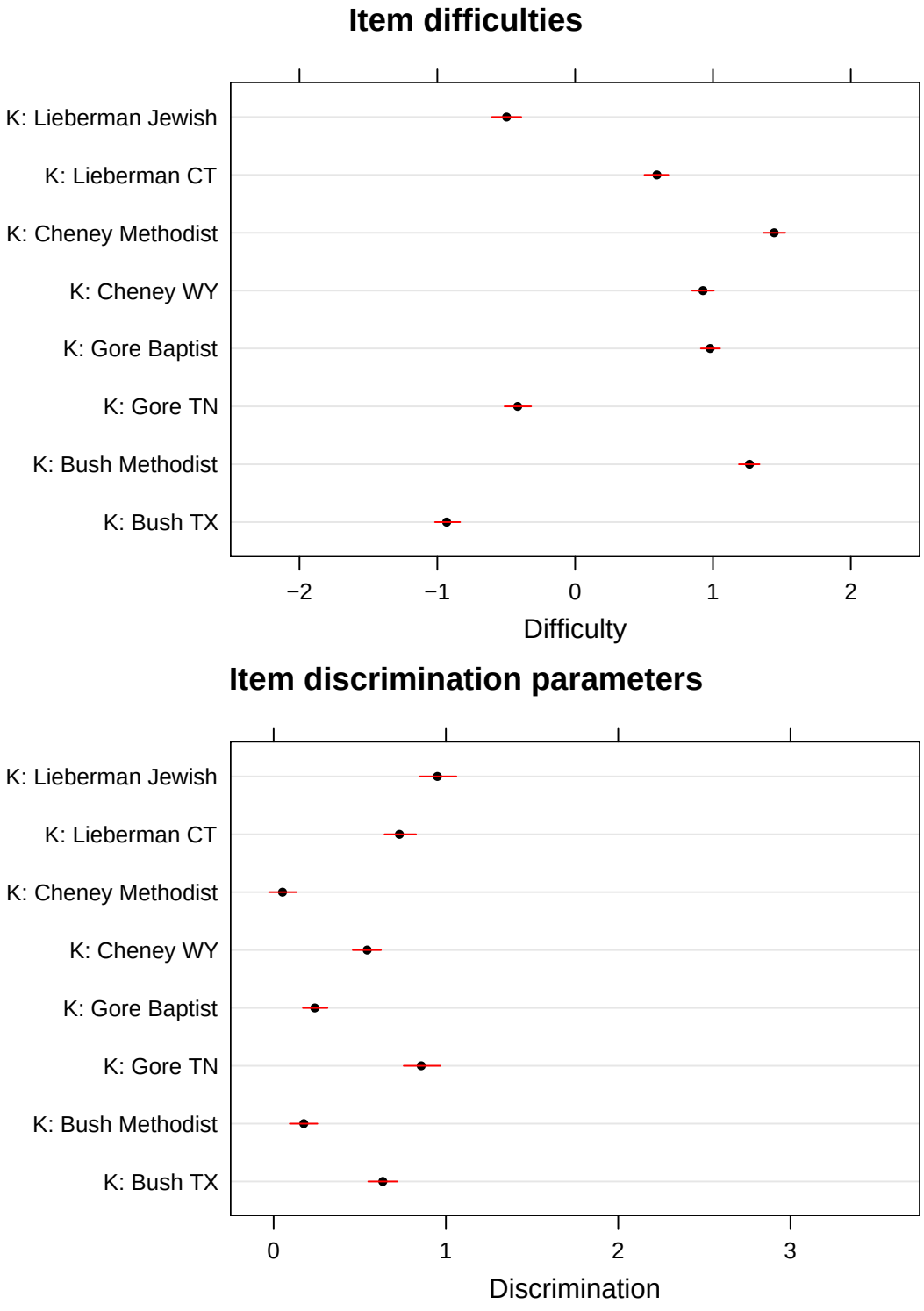


Figure 14: Performance of Candidate Biographical Items, 2000 ANES



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