

Identifying the Unidentified: Predicting voting behavior of Independents using the
Implicit Association Test.

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Abstract

What motivates individuals who are not affiliated with one of the two major political parties (Independents) to vote for a Republican or a Democratic candidate? One possibility is that individuals hold unidentified or implicit preferences for political parties that contribute to behavioral decisions. This report utilized the Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998) to measure implicit preferences for the Republican Party relative to the Democrat Party. Across three political races during the 2000 election year, we examined the extent to which the political IAT predicted self-reported voting behavior. Linear regression analyses found that the political IAT reliably predicted Independent's voting behavior (average $\beta = .36$), as well as the voting behavior of individuals who identified with a political party (average $\beta = .51$). Results suggest that the IAT may prove to be a useful tool in predicting behavior for those individuals who claim to have no explicit behavioral preference.

Identifying the Unidentified: Predicting voting behavior of Independents using the Implicit Association Test.

For much of the past century, the existence of a meaningful relationship between attitudes and subsequent behavior (i. word choice (meaningful), I think, what determines meaning. Are you talking about a direct relationship, and that this has not been shown?² e., attitudes guiding behavior) has been difficult to establish. how about 'how attitudes guide behavior'?³ Over the past few decades, however, increasing questions about the types of behaviors that can be predicted from certain attitudes, not to mention under what circumstances this relationship manifests, has spawned a great deal of research into the attitude-behavior relationship (Fazio & Zanna, 1981). Run on sentence - I forgot the beginning by the end.⁴ So these are NEW questions? Not just NEW research?⁵ I got lost in this sentence.⁶ good content but needs a verb much earlier to hang it on! break up into 2 sentences, and skip 'over...decades' -- it's a time frame that's not that meaningful. E.g. 'However, much research has been devoted to exploring what types of behavior can be predicted from certain attitudes, and under what circumstances this attitude-behavior relation manifests itself.'⁷ As a result, several theoretical models have been offered to help clarify this relationship. relationship...between attitudes and behavior (spell it out for me).⁸ Drop 'As a result'.⁹ One of the most widely cited models of attitude-behavior consistency has been Fazio's Motivation and Opportunity model for Determining Behavior (MODE; Fazio & X, 1986; Fazio, 1990). The basic tenet of the model is that explicit attitudes drive or predict conscious and deliberate actions, whereas implicit attitudes predict spontaneous or automatic behavior. The basic tenet of this model is that... (can this be stated with less words and in simpler form?)¹⁰

Notice that the MODE model divides attitudes and behaviors into two dichotomous categories: attitudes (explicit vs. Drop 'notice that'.¹¹ implicit) and behaviors (conscious vs. automatic). Explicit attitudes are understood as conscious evaluations of positivity or negativity that the subject has assigned to a social object (). It is assumed that explicit attitudes are under conscious control of the individual and can be effectively measured via self-report questionnaires (provided that the individual responds truthfully). For some reason, the parenthetical remark bothers me.¹² how about, 'and, provided that etc., can be effectively measured...' As written puts undue emphasis on the honesty of the individual.¹³ Alternatively, implicit attitudes are defined as "introspectively unidentified (or inaccurately identified) traces of past experience that mediate favorable or unfavorable feeling, thought, or action toward social objects" (Greenwald & Banaji, 1995; p. 8). In other words, implicit attitudes are automatic associations between an attitude object and feelings of positive and negative valence. You lose me on this last sentence, is attitude object a term used regularly in the literature. I imagine it means the object of the individuals attitude, but I had to stop.¹⁴

The second categorization, behavior, is divided into two types as well. The first behavioral type is described as deliberative or conscious. These behaviors occur when the person consciously reflects on a decision before behaving in a certain manner. For example, the decision to buy a certain car most likely involved conscious reflection concerning price, gas mileage, air conditioning, warranty, etc. The second type of

behavior is an automatic or spontaneous behavior in which the person is thought to give the decision no conscious deliberation whatsoever. In fact, in many instances the behavior may be so automatic that its execution goes unnoticed. For example, replying with “what” after someone asks you a question even though you heard the question or rolling your eyes after a particularly annoying and useless statement is made. *Is this a complete sentence?*¹⁵ *I don't get how these examples explain automaticity.*¹⁶ *Not a sentence, and the nature of the example is distracting from the point it's trying to make.*¹⁷

As described earlier, the MODE model states that explicit attitudes will predict deliberate or conscious behavior, whereas implicit attitudes will predict spontaneous or automatic behaviors. *Can you find a stronger transition here than just to reiterate info from one para. earlier? E.g. 'The MODE model's basic assumptions (that X and Y) have more specific implications.'*¹⁸ More specifically, when an individual consciously reflects on a decision, the model states that the relevant attitude is activated and accessed and used as one of the primary contributors to the final behavioral decision. *relevant attitude stopped me for a bit. Your point is that attitude influences behavior, right? (According to this theory).*¹⁹ Alternatively, an attitude might influence the decision without the individual ever consciously being aware of the attitude's influence. In this case, the attitude is said to have a spontaneous effect on the behavioral decision because the individual does not consider or is not allowed, by the nature of the decision (i.e., quick decision), to consciously access the attitude. *I'd break into two sentences.*

²⁰ To illustrate, when encouraged to make a quick decision about the choice of an apple or candy bar, an individual might choose the candy bar because chocolate activates positivity to a greater degree relative to fruit. *Clean example but the wording obscures it. What's the guy-at-bus-stop version?*²¹ When given a chance to deliberate about whether to choose the chocolate or fruit, however, the individual may choose the apple because he/she knows it is a healthier choice. Thus, an implicit measure of attitudes may be better able to predict automatic behavior because the behavior is more likely to be influenced by the initial association of chocolate and positive, whereas, when given a chance to think about the decision, an explicit measure of attitudes might provide greater predictive power because it taps into the most appropriate attitude relevant to the decision. *Ahh, now I'm getting it! But this sentence is too long :)*²² *But can't you still choose the chocolate over the apple, even when being deliberate and explicit?:)*²³ Hey Mark, it might be good to break up the length of your sentences, mixing short and long sentences, because when they're mostly long, I lose what you're trying to say. I guess this intro is before your voting stuff?²⁴ *I'd make this two sentences to make the point more memorable.*²⁵ *Content and organization look pretty good. for the next version, work on making the writing state your message as effectively as you can - fortunately, this is usually one of the more enjoyable tasks in revising!*²⁶

In the domain of politics, for example, voting is regarded as a deliberate or reasoned decision. According to the MODE model, voting behavior would be best predicted by an explicit attitude, say political affiliation. Indeed, it would be no surprise to discover that self-identified Republicans and Democrats vote for Republican and Democratic candidates, respectively. However, the difficulty with using explicit measures of political preference, such as political affiliation, is that a significant minority of the population falls somewhere between the major political parties. The number of individuals who reported not belonging to one of the two major political parties has steadily increased

from approximately 20 percent in 1969 to 35 percent in 2002 (Taylor, 2003). Of the 35 percent of voting public that did not identify themselves as Democrats or Republicans, approximately 24 percent identified themselves as Independents, the remaining 11 percent answered “unsure” or were members of another political party. It seems approximately 1/3 of the current voting public can be considered politically indifferent. That is, based on an explicit measure of political affiliation, we do not have enough useful information to deduce whether these individuals would be more likely to vote for a Republican or Democratic candidate. Naturally, the question must be posed of whether an implicit measure of political attitudes can improve the predictive power of a deliberate behavior, such as voting, for those individuals who are politically indifferent.

Experimental Summary (add)

Method

Overview

The experiment involved three separate phases. In Phase I, subjects logged onto to a website to complete political attitude questionnaires and anticipated voting behavior in four 2000 elections. In Phase II, we measured implicit political attitudes using the Implicit Association Test (IAT). In the final Phase, we contacted subjects after the elections had taken place to determine whom they actually voted for.

Subjects

In exchange for course credit, 241 introductory psychology students (174 females and 67 males) from Western Washington University participated in phases I & II. Over 87 % of the sample described themselves as White and ranged in age from 18 to 25 years ($M = 18.89$, $SD = 1.21$). In phase III we contacted 191 subjects, of which, 139 (73 %) voted in the 2000 Election. One additional subject was excluded from data analysis because of missing data. The final sample numbered 138.

Materials

Phase I: Explicit Measuresⁱ

Political preference measures. We adopted measures used by Sidanius, Pratto, and Bobo (1996) to collect two political preference measures. These questions consisted of two Likert-type scales to assess general political affiliation (“I consider myself to be,” where 1 = Strong Democrat and 7 = Strong Republican) and political conservatism (“I consider myself to be,” where 1 = Very Liberal and 7 = Very Conservative”). Using the political affiliation measure, subjects were sorted into one of three political affiliations. Those subjects giving a response of a 1 or 2 on the political affiliation measure were classified as Democrats ($N = 46$), whereas responses of a 6 or 7 were classified as Republicans ($N = 14$). Subjects who responded with a 3, 4, or 5 were classified as Independents ($N = 78$).

Alternative political affiliation measure. We also created two questions designed as an alternative measure of political affiliation. The first question asked subjects to rate “which party shares your views about most political issues?” The second question asked subjects to rate “which party do you trust to more represent your views?” Each question was rated on a 7 point Likert-type scale, where 1 = Exclusively Democrat, 4 = Neither Party, and 7 = Exclusively Republican. The average response to these questions was computed to create a single alternative political affiliation measure.

Attitudes toward government policy. Twelve questions, primarily adapted from Pratto, Stallworth, and Sidanius (1997), were gathered to assess attitudes towards government policy issuesⁱⁱ. Subject indicated on a 7 point Likert-type scale, where 1 = Strongly Disapprove and 7 = Strongly Approve, the extent they favored or opposed each policy issue. An average of all responses to the 12 policy questions was computed to obtain a single government policy measure.

Phase II: Implicit Association Test (IAT)ⁱⁱⁱ

In this phase, subjects completed an IAT that assessed political attitudes. Subjects sorted exemplars of Democrat and Republican stimuli (e.g., Gore, Democrat vs. Bush, Republican) with the same keys that they used to sort positive and negative attributes (e.g., flower, rainbow vs. cancer, poor; see appendix X for a full set of stimuli). Specifically, subjects sorted the political and evaluative stimuli according two sets of instructions. In one set of instructions we asked subjects to sort Positive and Democrat stimuli with the ‘a’ key, whereas Negative and Republicans stimuli were sorted with ‘5’ key on the numeric keypad. The second set of instructions reversed the task of the subject. This time subjects sorted Positive and Republican stimuli with the ‘a’ key, whereas the ‘5’ key was pressed for Negative and Democrat stimuli. Across subjects, we counterbalanced key assignment for evaluative stimuli (positive stimuli assigned to either the ‘a’ or ‘5’ key) and the order of instructions subjects were asked to perform (Democrat+Positive first or second).

The IAT procedure was consistent with that administered by Greenwald et al. (1998) and Ottaway, Hayden, and Oakes (2002) except subjects completed only tasks in which stimuli were combined. Thus, we eliminated the single category discrimination tasks (i.e., Democrat vs. Republican as well as Positive vs. Negative) typically used in IAT studies. Subjects were familiarized with the procedure by completing an IAT that assessed flower-insect attitudes prior to collecting data for the political attitudes IAT. In two separate tasks subjects either sorted flowers and pleasant stimuli with a single key (as well as insect stimuli with the same key the use to identify negative stimuli) or flowers and unpleasant stimuli (insects and pleasant stimuli).

Data reduction. Consistent with conventional methods of scoring the IAT, all latencies below 300 ms and above 3000 ms were recoded as 300 ms and 3000 ms respectively (). IAT scores were eliminated for a subject if they made more than 30% errors for any of the critical blocks within each IAT, or had average latencies for a block over 2000 ms.

Contrary to convention, all reaction times exclude trials in which participants made errors. Additionally, we log transformed all RTs to more adequately meet the distribution assumptions for analyses. However, for ease of understanding we report raw RTs in all figures and tables. A Political IAT effect was computed by subtracting Republican+Positive condition from the Democrat+Positive condition. Thus, a positive Political IAT effect indicates a preference for Republican relative to Democrat, whereas a negative Political IAT effect indicates a preference for Democrat relative to Republican.

Phase III: Voting Behavior

After the 2000 Election, we contacted as many subjects as possible via phone and asked whether they did in fact vote in the election. If they had voted, we asked who he/she voted for in the presidential, gubernatorial, senatorial, and congressional elections that were on the ballot in Washington State (e.g., “For President, whom did you vote for? Al Gore (D), George W. Bush (R), Ralph Nader, Other, Don’t Know or None”). Two different dependent variables were computed. The first was an average voting tally over all four elections. This will be the primary dependent variable used in analyses. However, an additional measure was created because of concerns that the gubernatorial election was the only state election collected and could result in somewhat different voting patterns. The other three elections consisted of decisions about representation in the federal government. For this reason, a second dependent variable consisting of the average voting behavior for federal government representation was computed.

Apparatus (IAT only)

Four Dell Dimension 333 MHz Pentium III computers with Windows NT presented the IAT tasks. The pixels on the 17-inch color monitor had a resolution of 1024 x 768 and the refresh rate was set at 85 MHz. INQUISIT Development Software (www.millisecond.com) was used to create and administer the IAT. All words were presented in a black, Times New Roman, size 24 font and the color pictures were 1.46” x 2.8”.

Procedure

Subjects were recruited from introductory psychology courses to participate in the three phases of the study. Initially, subjects received information on how to complete the surveys, which were presented on a local network. Subjects were instructed that all information would be secure and confidential and that they needed to complete all surveys without interruption. Students were then instructed that they would select their answer by clicking on the bubble corresponding to the response that best answers the question or statement. Subjects completed one of four randomly determined orders of surveys. The entire web survey phase lasted about 1 hour.

Approximately one to two weeks after completing the web surveys, subjects were invited back to complete the second phase of the study. Upon arrival, subjects completed a

second consent form and were given general instruction prior to completing the Political IAT. The instructions consisted of telling subjects that they were about to complete a series of reaction time tasks and to make their responses as quickly as possible while avoiding errors. Next, subjects read a set of instructions presented on the computer that informed them of the keys that would be used in the IAT and described the categories and the category pairings. The researcher then left the room and turned off the lights to reduce glare on the computer monitor. Before the Political IAT, subjects completed a practice IAT that included the categories of Flower, Insect, Positive and Negative. At the end of the 30-minute experiment, subjects were debriefed.

Immediately after the November 7th, 2000, subjects were contacted via phone to assess who they had voted for in U.S. Presidential election, as well as the U.S. Senate (WA), U.S. House of Representatives (WA), and Washington State Gubernatorial elections.

Results

Our hypotheses were fourfold: (a) individuals completing the political attitude IAT will respond more quickly and make fewer errors, indicating a stronger association, when positive words were paired with the political group that they most closely identify (e.g., Democrats would pair Positive+Democrat more quickly than Positive+Republican), (b) self-reported measures of political preference and the Political IAT will be related, (c) both explicit measure of political preference and the Political IAT will predict how people actually voted in the 2000 election, and finally, (d) when self-reported affiliation is ambiguous (i.e., Independents), the political attitude IAT will predict voting behavior.

IAT scores

Total population. Overall scores on the Political IAT showed a distinct preference for Democrat relative to Republican. On average, subjects responded with a correct answer faster under instructions to pair pleasant and Democrat stimuli, which includes unpleasant and Republican stimuli ($M = 884$ ms, $SD = 196$ ms), than when the instructions asked them to pair pleasant and Republican stimuli, which includes unpleasant and Democrat stimuli ($M = 961$, $SD = 200$; $t(137) = -4.49$, $p = 10^{-6}$, $d = .38$). The Democratic preference observed in this sample is not likely the result of both Democrats and Republicans preference for Democratic stimuli. More likely, the larger number of Democrats ($N = 46$) relative to Republicans ($N = 14$) gave more weight to individuals who claim a Democratic affiliation, resulting in an overall preference for Democrat. A closer analysis of the IAT effect by political affiliation will help clarify this result.

IAT scores by political affiliation. The relationship between IAT scores and self-reported affiliation was strong and positive ($r = .52$, $p = 10^{-12}$, $N = 138$)^{iv}. Subjects who identified themselves as Republicans tended to show a preference for Republican stimuli (mean IAT effect for Republicans = 128 ms, $SD = 122$ ms), whereas those who reported Democratic affiliations tended to show a preference for Democratic stimuli (mean IAT effect for Democrats = -200 ms, $SD = 141$ ms; see Figure 1). Further, those individuals reporting an Independent affiliation had an average IAT score that was slightly below

zero, indicating a small preference for Democratic stimuli (mean IAT effect for Independents = -39 ms, $SD = 209$ ms). In addition, an examination of mean IAT effects for all possible comparisons using a Tukey's HSD test found that each comparison was significant (Rep vs. Dem = 328, $t(135) = 6.49$, $p = 10^{-10}$; Rep vs. Ind = 168, $t(135) = 3.65$, $p = .001$; Dem vs. Ind = -161, $t(135) = -5.09$, $p = 10^{-7}$). The high degree of correspondence between self-identified political affiliation and IAT scores supports previous findings on the relationship between self-report measures and implicit measure in the political domain (ref).

Explicit political preference measures & the IAT

In addition to self-identified political affiliation, three other explicit measures of political preference were collected: attitudes toward political issues, conservatism, and an alternative political affiliation measure. Each measure was positively correlated with the Political IAT (see Table 1). In ascending order, the attitude toward political issues was least correlated with the IAT ($r = .39$, $p =$), followed by the conservatism measure ($r = .48$, $p =$), and then the political affiliation measure ($r = .66$, $p =$). Again, these results attest to the fact that the IAT is indeed measuring a similar construct to that of explicit political preference measures. Moreover, the pattern of correlations shows a degree of differentiation by the Political IAT. That is, as the face validity of the explicit measures increase in similarity with the IAT, the correlations increase as well. The measure that is least similar to the IAT, the political issue measure, has the smallest correlation with the IAT. Likewise, the measure that is most similar to the IAT, the political affiliation measure, has the largest correlation with the IAT. In fact, the political affiliation measure is so similar that in many cases it would be considered redundant with the IAT.

Predicting self-reported voting behavior (averaged over four political elections)

We regressed average voting behavior over four separate elections on the political IAT, political issues, conservatism, and an alternative political affiliation measure in four separate steps using a hierarchical linear regression procedure. The political IAT was always entered during step 1, after which the political issues measure was entered. Then, on step 3 we added the conservatism measure. Finally, on step 4 we added the alternative political affiliation measure. The variables were entered in this order because our first hypothesis concerned whether or not the IAT could predict a conscious behavioral decision such as voting. The remaining variables were entered in separate according to degree of correlation with the Political IAT. It was expected that the Political IAT would continue to contribute to the prediction of the voting behavior after steps two and three because the degree of correlation with political issues and conservatism, although strong, still would allow some degree prediction by the IAT. After entering the political affiliation measure at step four, however, it was expected that the IAT would show little unique predictive power because of the high degree of similarity between the political affiliation measure and the Political IAT.

Total population. As predicted, the Political IAT was a significant predictor of average voting behavior at step 1 of the regression ($\beta = .53$, $R^2 = .29$; see Table 2). The Political

IAT remained a significant predictor of average voting behavior at both steps 2 and 3 ($\beta = .38$, $\beta = .24$, respectively). However, at step 4 of the regression the predictive power of the Political IAT was eliminated ($\beta = .01$, ns). The only remaining significant predictors of the average voting behavior were political affiliation ($\beta = .62$) followed by political conservatism ($\beta = .19$). It appears that the similarity of the IAT to our alternative political affiliation measure was too great, eliminating its predictive power. In addition to the eliminating the predictive power of the Political IAT, the political affiliation measure also eliminated the predictive power of the political issues measure. The ineffectiveness of other measures when compared to the political affiliation is not completely surprising. An examination of the relationship between average voting behavior and political affiliation yielded an extremely large and positive relationship ($\beta = .81$), accounting for 65 percent of the variance in average voting behavior. Naturally, this leaves little room for other predictors to help explain variance. What is most surprising is that after adding affiliation at step 4, the political conservatism measure remained a significant contributor to the regression model. All in all, the Political IAT performed up to expectations. Even after adding explicit measures of political preference, attitudes toward political issues and political conservatism, the IAT explained a significant amount of the variance in average voting behavior. Only when we added political affiliation, a highly related measure with the IAT and voting behavior, did the Political IAT fail to explain a significant portion of the variance.

Our last hypothesis concerns the prediction of average voting behavior when self-identified political party is ambiguous. That is, can the IAT predict voting behavior for those individuals who identified themselves as Independents? Figure 2 illustrates the relationship between average voting behavior and Political IAT scores separated out for the two political parties as well as for Independents. You will notice that the best fit line for Democrats is virtually flat (the slope of the line is virtually zero), whereas the best fit lines for Republicans and Independents (as well as the total population) are sloped. This indicates that the IAT may be an adequate predictor of voting behavior for Republicans and Independents, but not Democrats.

A closer examination of the relationship between voting behavior and the Political IAT reveals that inadequacy of the IAT to predict voting behavior for Democrats may be due to the lack of variability voting behavior (see Figures 3-5). Notice that nearly every Democrat voted exclusively for Democratic candidates. Without sufficient variability in the dependent variable it is impossible for any measure to show a significant relationship. The lack of variability also applies for Republicans. With a couple exceptions, Republicans voted exclusively for Republican candidates. The few outliers produce some variability, at least enough to produce a sloped regression line. However, because of the minimal number of observations, conclusions about the predictive power of any measure could be dramatically different if one data point is subtracted or added. Thus, we will exclusively focus on the voting behavior of Independents.

Independents. We performed a hierarchical linear regression analysis using the same procedure as before except that we restricted the sample to self-identified Independents. The Political IAT was a significant predictor of average voting behavior at step 1 of the

regression ($\beta = .36$, $R^2 = .13$; see Table 2). The Political IAT remained a significant predictor of average voting behavior at both steps 2 and 3 ($\beta = .27$, $\beta = .20$, respectively). Similar to the regression that included the total population, step 4 eliminated the predictive power of the Political IAT ($\beta = .02$, ns). The only remaining significant predictors of the average voting behavior were political affiliation ($\beta = .47$) followed by political conservatism ($\beta = .22$). As with the total population, the Political IAT explained a significant proportion of variance after adding explicit measures of political preference, attitudes toward political issues and political conservatism. Only when an alternative measure of political affiliation was added to the regression model did the IAT fail to contribute to the prediction of average voting behavior.

It is not surprising that the regression analyses of voting behavior for the total population and Independents yielded similar results. Referring back to the Figures 3-5, you will recall that the variability in the voting behavior for both Democrats and Republicans was small. Therefore, the majority of the variation measured in voting behavior for the total population was primarily a result of the voting pattern of the Independents. By this logic, an examination of Independents should result in an almost identical pattern. This is precisely what was found.

Predicting self-reported voting behavior (elections for federal government representatives only)

We performed same hierarchical linear regression procedure as before. The only change to the procedure was the dependent variable. Instead of using an average of all four elections, we used the average of the three elections for representation in the federal government: President, Senate and House of Representatives. Due to the similarity in findings between total population sample and Independent only sample, we report analysis for the total population only (results for Independents can be found in Table 3).

Total population. The Political IAT was a significant predictor of national voting behavior at step 1 of the regression ($\beta = .53$, $R^2 = .29$; see Table 3). The Political IAT remained a significant predictor of average national behavior at both steps 2 and 3 ($\beta = .40$, $\beta = .26$, respectively). Similar to the other regression analyses, step 4 eliminated the predictive power of the Political IAT ($\beta = .04$, ns). The only remaining significant predictors of the national voting behavior were political affiliation ($\beta = .59$) followed by political conservatism ($\beta = .20$).

Results using the alternative dependent variable replicate the previous analyses. The Political IAT explained a significant proportion of variance in voting behavior. Only when an alternative measure of political affiliation was added to the regression model did the IAT fail to contribute to the prediction of national voting behavior. What is noticeably different from the previous regression analyses is that the Political IAT explains more variance than the political issues measure. In previous analyses, this was not the case. Eliminating the election for Washington state governor seemed to reduce the ability of the political issue measure to predict voting and increased the explanatory value of the IAT. It may be the case that in local elections voters are more likely to use a

candidate's stance on political issues as a determinant of voting behavior rather than strict political affiliation. Thus, in local elections it may be more advisable to use an attitude measure of political issues rather than a Political attitude IAT.

Discussion

This report sought to confirm that (a) the IAT as a valid measure of implicit political preference as well as (b) demonstrate that the IAT can provide a unique contribution to the prediction of a deliberate behavioral decision, voting. The Political IAT successfully discriminated between self-reported Democrats, Republicans, and Independents. Further, the Political IAT showed strong, positive correlations with several self-reported measures of political preference (attitudes toward policy issues, conservatism, and an alternative political affiliation measure). The IAT also showed a consistent and positive unique contribution to the prediction of voting behavior. This was the case when the Political IAT was the sole predictor as well as when it was paired with other self-reported measures of political preference. Only when the alternative political affiliation measure was added to the model, which was highly correlated with the criterion measure and the Political IAT, did the Political IAT fail to significantly predict voting behavior.

The Validity of the IAT as a Political Preference measure

Contrary to the majority of the IAT literature assessing attitudes toward social sensitive subjects (), IAT scores in this report are expected to show a high degree of similarity to self-reported measures. That is, when impression management concerns are minimal, it is predicted that implicit measures (the IAT) should show positive correlations with self-report measure; essentially, providing evidence for convergent validity. Nosek and Greenwald (2001) provided the initial examination of implicit political preference and found a high degree of similarity between IAT scores and individuals self-reported political preference. Our results strengthen their conclusion that the IAT is a valid measure of political preference. First, individuals who reported a strong political affiliation showed a greater implicit preference for that political party. And those individuals who reported weaker political preferences showed IAT effects that were slightly negative, indicating a weak preference for the Democratic Party. Further, the IAT was able to significantly differentiate subjects' reactions based on their self-reported political affiliation.

What was somewhat puzzling is that Independents showed a slight, but distinct, preference for the Democratic Party. Ideally, if Independents were void of any political preference or allegiance, then IAT effects should result in an average score of zero. This was not the case. There are several possible reasons for this result. The most reasonable is that our operationalization of Independent was somewhat biased. Recall that we defined Independents as those individuals rating themselves as one of the middle three points (points 3-5) of a seven-point Likert scale for political affiliation (anchored with labels of strong Democrat and Strong Republican). Frequency analysis of this Independent category found that there was more individuals who rated themselves toward the Democrat anchor of the scale (3; N = 32) than the Republican side (5; N = 18). Thus, we might expect IAT scores to show a slight preference for the Democratic Party because

of the greater number of observations in this cell. If we limit our analysis to the middlemost point, four ($N = 29$), the mean IAT score for this group is still negative or favoring the Democratic Party ($M = -51$ ms, $SD = 129$ ms). Obviously, the biased sample size can not account for this result. However, it does help explain the preference for Democrat.

Another possibility is the source of our sample. The political views of college students are well known to have a liberal/democratic leaning. Further, the campus (Western Washington University) at which this particular sample was taken is well regarded as one of the most liberal universities in the state of Washington. If by chance our sample of Independents is representative of this bias, we might expect to see a slight preference for the Democratic Party. One way to test this hypothesis is to examine the voting behavior of our Independents in the four political elections. We again limited our sample to those subjects who chose the middle-most point of the political affiliation scale. We found that there was a definite bias to vote for Democratic candidates (Presidential = 17/24 voted Democrat; Congressional = 15/22 voted Democrat; House = 12/16 voted Democrat; Gubernatorial = 23/24). Thus, the slight preference for Democrat is understandable in light of the particular sample.

Alternatively, the contemporary understanding of an Independent may not strictly stand for an individual who is independent of the predominant political parties. Instead, it maybe more of a catch all label for those people wanting to avoid the traditional party labels. Further research into the contemporary meaning of Independent as well as the voting behavior of Independents may shed some light on how to interpret this trend.

Second, the Political IAT showed strong and positive correlations with explicit ratings of political preference (attitudes toward policy issues, conservatism, and an alternative political affiliation measure). What is even more impressive is that as the content of the measures increased in similarity to the IAT, the correlations grew stronger as well. Thus, the IAT not only correlated with self-reported political preferences, but displayed a degree of sensitivity within the political domain. For example, the attitudes toward government policy issues were the least related to the IAT. This measure examined issues that typically discriminate the platforms of the Democratic and Republican Parties. However, to be a Democrat or prefer Democrats does not mean you agree with every political issue the party supports. Therefore, this measure might be considered the one most likely to differ from a Political IAT. The next measure was the conservatism scale. It examined one's identification with the terms liberal and conservative. Although it did not directly address political affiliation, views of liberal and conservative are widely applied to Democrats and Republicans, respectively. However, this scale is an identification scale rather than an attitude scale. Thus, the Political IAT, which is an implicit attitude measure of political party preference, is less likely overlap as much as a measure that captures the trust and similarity an individual feels for Democrats and Republicans. The IAT showed the strongest relationship with this measure of trust and similarity.

Results of this study suggest that the Political IAT does not indiscriminately correlate with political preference measure. Instead, it has the ability to discriminate between measures. In this case, the Political IAT was an attitude measure toward political parties and as expected correlated that strongest with another type of attitude measure toward political parties. Overall, these results suggest that the IAT is an extremely useful measure in evaluating individual's political preferences. Not only did it show strong convergent validity with self-reported measures of political preference, but the Political IAT also showed signs of being able to discriminate different types of political preference measures and affiliations.

Hierarchical Linear Regression Analysis

Results of the hierarchical linear regression analyses predicting average voting behavior from the Political IAT and self-reported political preference measures consistently revealed significant independent contributions of both the Political IAT measure and self-report measures. Most importantly, however, the Political IAT made a unique contribution to the prediction of voting behavior when self-reports were included in the same step of the regression. The only instance in which the Political IAT did not contribute unique variance to the model is when the alternative political affiliation measure was added in the final step of the regression. However, the IAT remained a significant predictor of voting behavior despite controlling for two other highly correlated self-reported measures of political preference.

The IAT ability to predict voting behavior for the total population as well as self-identified Independents is interesting for variety of reasons. However, three reasons will be discussed here. First, this result speaks to several recent findings by IAT researchers concerning unique predictions of behavior despite a high degree of similarity between implicit and explicit measures (e.g., Egloff & Schmukle, 2002; Maison, Greenwald, and Bruin, in press; McConnell & Leibold, 2001). For example, Maison et al. (in press) found that the IAT made an independent contribution to the prediction of consumer behavior despite strong correlations between the IAT and self-reported attitudes. Overall, our results support Maison et al.'s (in press) findings. The high degree of correlation observed between the IAT and self-report measure did not automatically eliminate the IAT's unique contribution to the prediction of voting behavior. However, it should be noted that the beta weight for the IAT were almost always equal to or smaller than beta weight's for the self-report measures. Further, when an extremely strong correlation between the IAT and an affiliation measure ($r = .65$) was added to the model it did eliminate the predictive power of the IAT. Consequently, the IAT may prove to be an effective predictor behavior up to a certain point of similarity with explicit measures. After which, the IAT may lose its efficacy to predict unique variance. The correlations reported in Maison et al. (in press) ranged from .34 to .43. Similarly, we found that the Political IAT continued to contribute unique variance to the prediction of voting behavior when correlations were as high as .48. Further research may help answer the question of whether there is a set correlation value between the IAT and an explicit measure that nullifies the predictive power of the IAT.

Second, our findings suggest that deliberate and consciously controllable actions can be predicted by the IAT. One of the primary reasons we chose voting behavior as a criterion measure was because in almost all cases it is considered to be unambiguously deliberate and controllable. Typically, a person's decision about who to vote for involves considerable deliberate and reasoned thought. If a deliberate and controllable behavior could be predicted by an implicit measure, then, the strict dual-process models of the attitude-behavior relationship () may need to be reconsidered. Specifically, statements to the effect that explicitly endorsed attitudes determine controlled behaviors can not be entirely accurate. The inference from this last statement is that if explicit attitudes determine controlled behavior then implicit attitudes do not. The results of our study are in direct opposition to this inference. The Political IAT did in fact predict a deliberate and controlled behavior, voting. It did so even after controlling for two self-report measures. In fact, an extensive review of IAT effects by Poehlman, Uhlmann, Greenwald, and Banaji (submitted) found that the IAT predicted automatic behaviors as well as controlled behaviors. Poehlmann et al. (submitted) state that explicit measures were better predictors of controlled behaviors, but that it was clear that the IAT was a valid measure of a wide variety of behaviors, including controlled types.

Considering work reviewed by Poehlman et al. () along with our results, we believe it is conceivable that controlled behavior may be somewhat influenced by implicit attitudes, but obscured for the most part by the fact that learned explicit attitudes are redundant with our implicit attitudes. Bem () argues in his Self-Perception theory that an individual automatically performs actions and that it is only after the fact that the individual assigns meaning to the action. For example, say I voted for a Republican in the past (possibly due to some implicit preference I developed for Republicans). After reflecting on my actions, I would make some sort of deduction about how the behavior relates to me: I voted for a Republican, so I must like Republicans. Of course this deduction will be continually modified with future action. What is important to note is that implicit attitudes may actually provide useful information about controlled behavior, especially when the explicit attitude is not present (or has yet to be learned). If we assume explicit attitudes are developed from some sort of initial action (and a direct decedent of the implicit attitude), the implicit attitude may not always be useful in tandem with the explicit attitude because it is redundant. However, implicit attitudes may be especially useful in areas where one is forced to make a decision about a novel behavior (i.e., those that do not have explicit attitudes yet attached to them) or cases in which explicit attitudes are not accessible.

In the absence of explicit information, implicit attitudes may provide useful information in the prediction of behavior. This maybe the case for no other reason than implicit measures rarely provide neutral feedback. In the case of the web attitude IATs, approximately 1% of people received feedback indicating they held no implicit preference for the target category (). Whether this information is useful in predicting behavior is another question entirely. In the case of Independents, those individuals displaying a weak or neutral response on a political affiliation measure, the prediction of voting behavior followed a similar pattern as that of the total population. The Political IAT did indeed predict voting behavior for those individuals with weak to ambiguous

political affiliation responses. This was the case when both policy issues and political conservatism was added to the model. However, like before, when the alternative political affiliation measure was added to the model, the beta weight for the IAT was reduced to an insignificant term in the model. What is different about the research context is that we usually collect ample and varying predictors. Enough so, that we are rarely in a situation in which self-report measures are thoroughly ambiguous or neutral. In this case, although we reduced our sample to Independents, we still had ample self-report measures to choose from. If we were to try to increase our sample ambiguity to even greater lengths, by choosing those middle-point Independents again, would the results differ? A similar hierarchical linear regression model was run on this very specific population. Only after the additions of the political issues measure ($\beta = .34$, $p = .08$) and the conservatism measure ($\beta = .36$, $p = .054$) approached significance. However, after entering the alternative political affiliation measure, all beta weights were insignificant. The lack of predictive validity by all of the measure may be due to the inability to predict behavior for these individuals. However, it is more likely due to the insufficient variance in the dependent measure. A frequency analysis found that 16 of the 28 individuals voted exclusively for Democratic candidates. Given this result, future research in this area should aim for a larger and more diverse subject sample. That is, it maybe prudent to sample subjects from places other than college campuses. A web based study in which subjects from across the nation are asked to fill out explicit measures, perform an IAT, and are contacted later for actual voting behavior maybe ideal. With a greater sample size, researchers maybe able choose a more ambiguous sample. For example, researchers may choose to select subjects who not only respond in a neutral manner on a political affiliation measure, but are also undecided about who to vote for in an upcoming election. That is, it is not necessarily the case that just because someone is Independent they are undecided. It is conceivable as the level of ambiguity increases, and the ability to rely on explicit opinions decreases, that one of the remaining influences in the decision process are implicit cognitions.

Researchers interested in predicting behavior when no self-report is available should also be aware of the potential impact of environment influences. In the absence of any self-report measure to depend upon (lack of introspective insight), subtle environmental influences may be weighed to a greater degree. Understanding that implicit measures are equally affected by environmental influences (), we may have to consider the context in which we gather implicit as well as the considering the environment under which people typically vote. That is, gathering political preference in the laboratory maybe sufficiently different (i.e., includes different environmental cues) than the context in which most people vote. Therefore, it might be ideal to match the two environments as much as possible in order to increase the predictive power of the implicit measures.

The ability of the Political IAT to predict behavior, especially the controlled actions of a somewhat ambiguous sample of subjects, seems to beg the question about the application of the IAT to the natural world. What we know is that the Political IAT (a) discriminated between self-reported Democrats, Republicans, and Independents, (b) demonstrated strong, positive correlations with several self-reported measures of political preference (attitudes toward policy issues, conservatism, and an alternative political affiliation measure), (c) was sensitive to differences in self-report measures such that as the content of the measures increased in similarity to the IAT, correlations grew stronger, and (d) the

Political IAT showed a consistent and unique contribution to the prediction of voting behavior. If we were limited by time, money, and the motivation of the participant, like in the natural world, and we could only choose one measure of political preference, what would it be? The initial exploration into this question suggests that the IAT would be a strong candidate.

References

ⁱ The data presented here is a subset of a larger experiment collected for Tyler Baines Master's Thesis. Subjects originally filled out a total of 13 explicit measures in Phase 1.

ⁱⁱ Subjects rated the following governmental policies: (1) Greater assistance for the poor, (2) Increased taxation of the rich, (3) Universal healthcare, (4) Reduced public support for the homeless, (5) Reduced benefits for the unemployed, (6) Equal rights for women, (7) The U.S. military, (8) Gay and lesbian rights, (9) Government support for businesses, (10) Death penalty, (11) Affirmative action, and (12) Public day care.

ⁱⁱⁱ Subjects completed a racial attitude IAT as well as two Go/No-go Association Tasks (GNAT; Nosek, 2001). In all cases the political attitude IAT was administered prior to race attitude IAT. The GNATS always followed the IATs.

^{iv} Political affiliation was dummy coded such that Republicans were coded as a 1, Independents were coded as 0 and Democrats were coded as -1. This structure mirrored the format of the IAT in that positive scores indicated a stronger preference for Republicans, whereas a negative score indicated a preference for Democrats. Likewise, an IAT score ranging around zero indicates no preference for either Democrat or Republican.

Table 1. Correlation matrix for the IAT, Political Issues, Conservatism, and Political Affiliation.

Zero-order correlations			
	IAT	Issues	Con
IAT	--		
Issues	.39**	--	
Conservatism	.48**	.56**	--
Affiliation	.66**	.59**	.72**
--			

Notes: * $p < .05$; ** $p < .001$. N = 138 IAT log latencies.

Table 2. Average self-reported voting behavior in the 2000 election for all political parties regressed on the IAT and explicit measures of political preference.

Hierarchical Linear Regression				
Dependent variable	Step 1 β	Step 2 β	Step 3 β	Step 4 β
Self-reported voting behavior averaged over all elections (president, senate, house, gov).				
IAT	.53**	.38**	.24**	.01
Issues	--	.39**	.20*	.08
Conservatism	--	--	.45**	.19*
Affiliation	--	--	--	.62**
	$R^2 = .29**$	$\Delta R^2 = .13**$	$\Delta R^2 = .13**$	$\Delta R^2 = .13**$
Self-reported voting behavior averaged over federal elections (president, senate, house).				
IAT	.53**	.40**	.26**	.04
Beliefs	--	.34**	.16*	.04
Conservatism	--	--	.45**	.20*
Affiliation	--	--	--	.59**
	$R^2 = .29**$	$\Delta R^2 = .10**$	$\Delta R^2 = .13**$	$\Delta R^2 = .12**$

Notes: * $p < .05$; ** $p < .001$. N=135 IAT log latencies

Table 3. Average self-reported voting behavior in 2000 election for Independents regressed on the IAT and explicit measures of political preference.

Hierarchical Linear Regression				
Dependent variable	Step 1 β	Step 2 β	Step 3 β	Step 4 β
Self-reported voting behavior averaged over all elections (president, senate, house, gov).				
IAT	.36**	.27*	.20*	.02
Issues	--	.40**	.29*	.16
Conservatism	--	--	.35**	.22*
Affiliation	--	--	--	.47**
$R^2 = .13^{**}$ $\Delta R^2 = .15^{**}$ $\Delta R^2 = .10^{**}$ $\Delta R^2 = .13^{**}$				
Self-reported voting behavior averaged over federal elections (president, senate, house).				
IAT	.37**	.30*	.23*	.05
Beliefs	--	.30*	.18	.05
Conservatism	--	--	.36**	.23*
Affiliation	--	--	--	.48**
$R^2 = .13^{**}$ $\Delta R^2 = .09^*$ $\Delta R^2 = .11^{**}$ $\Delta R^2 = .13^{**}$				
Notes: * $p < .05$; ** $p < .001$. N=76 IAT log latencies				

Figure 1. Mean Political IAT latency by Political Party

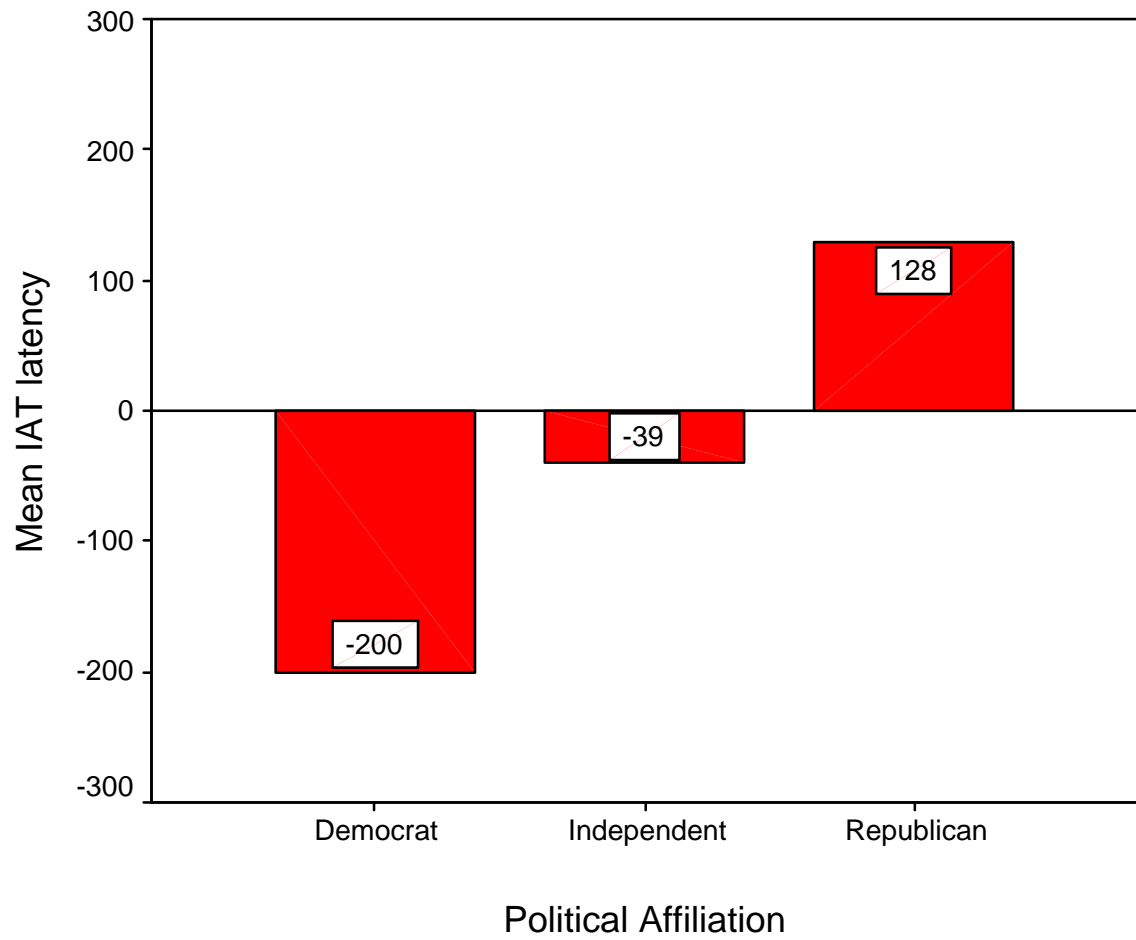


Figure 2. Scatterplot of Average voting Behavior by Mean IAT Latency (separated by political affiliation).

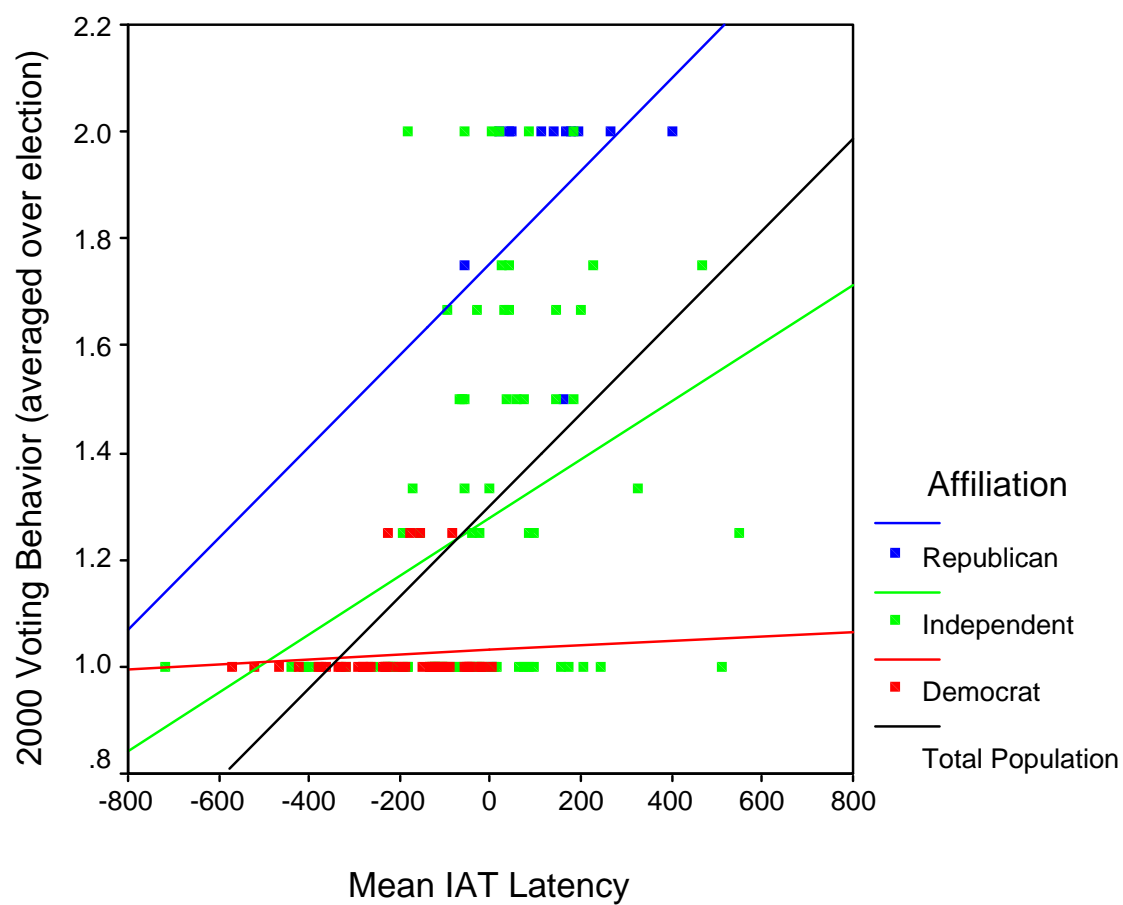


Figure 3.

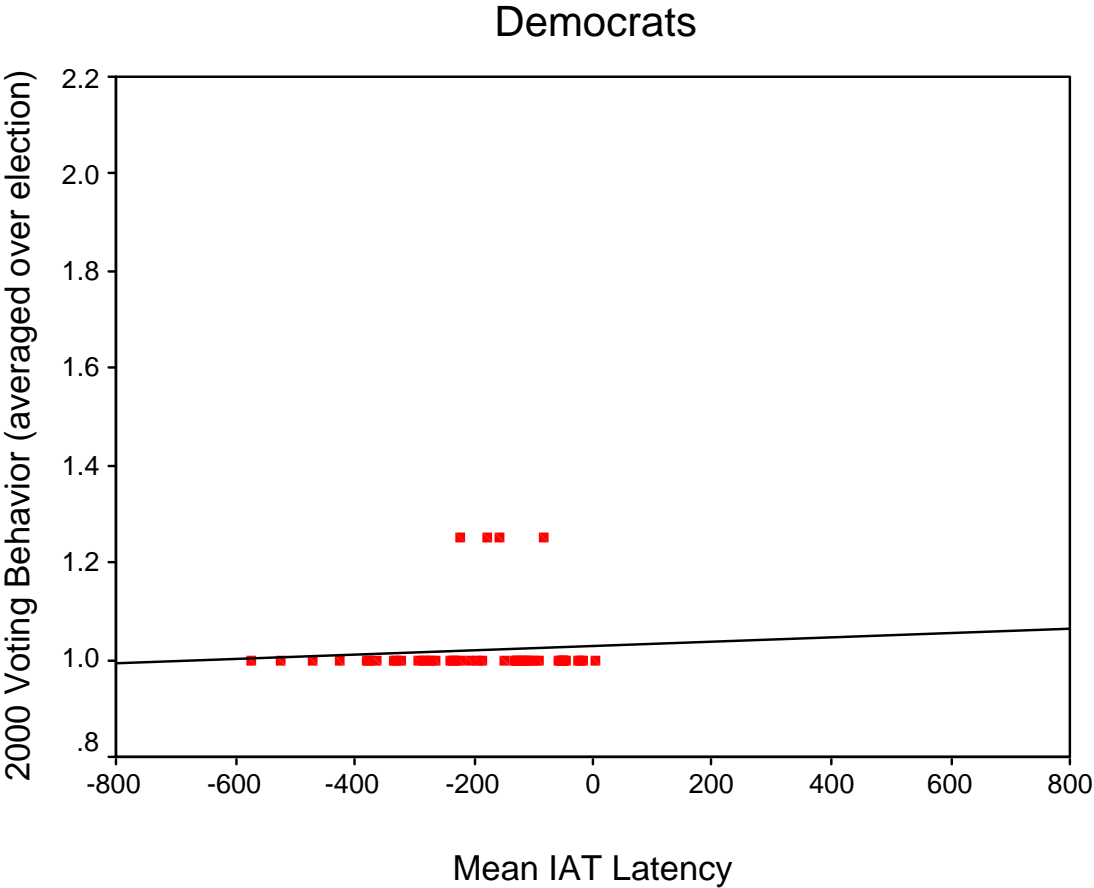


Figure 4.

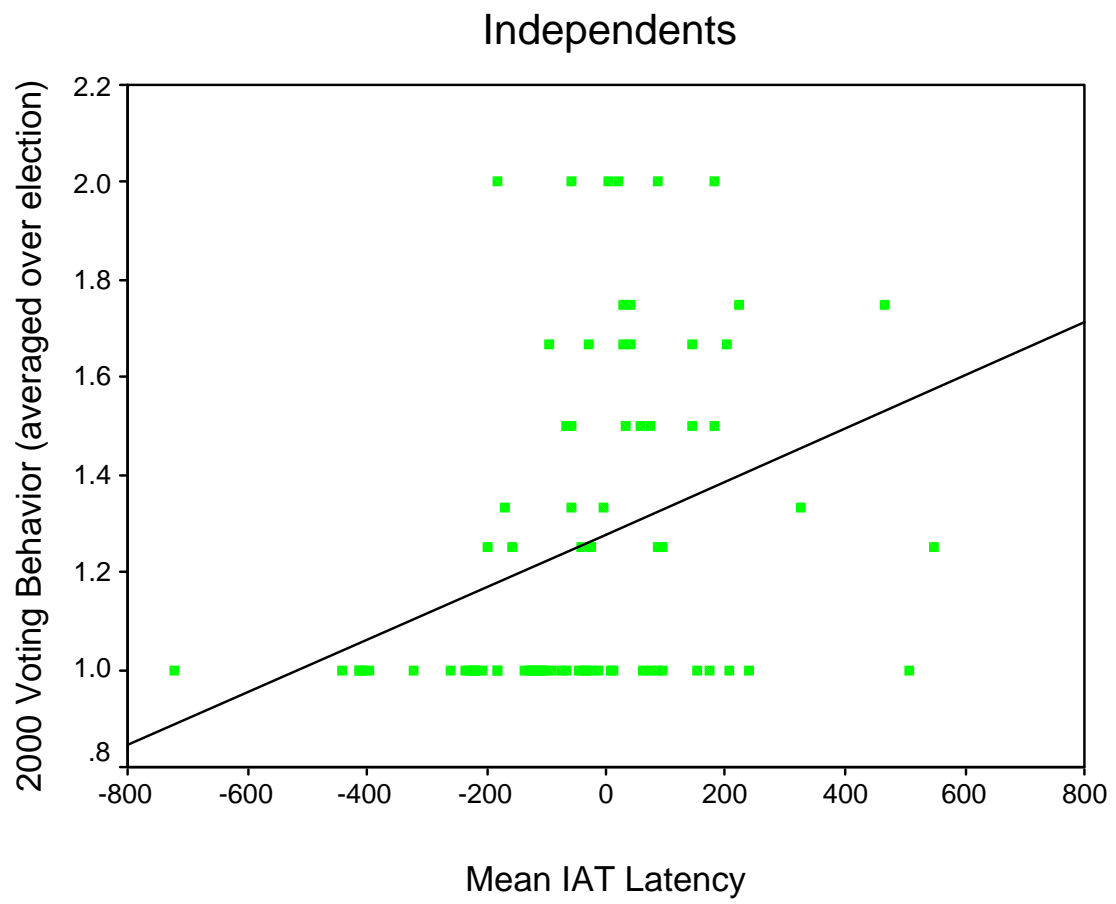


Figure 5.

