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RESEARCH NOTE

REBUTTAL TO WUFFLE AND COLLET'S SUPPOSEDLY IRREFUTABLE EVIDENCE THAT HIGHER TURNOUT BENEFITS REPUBLICANS

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If Wuffle and Collet (1997) had deliberately written 'Why Democrats Shouldn't Vote' *as a homework exercise for a graduate methodology course* to be used to see if students could recognize causal and ecological fallacies at work, they could not have designed the essay better as a textbook-worthy example of how ecological confounding can given rise to nonsensical causal claims. In particular, their work demonstrates the truth of the old saw that 'correlation is not causation',[1] and it also shows that we must be very careful not to try to test a theory which implicitly requires longitudinal analysis with cross-sectional data.

Why were the claimed results of the Wuffle and Collet analysis, that higher turnout helps Republicans, so unexpected?[2] Well, we expect that the electorate can be stratified in SES term such that, *ceteris paribus*:

(a) SES is positively correlated with propensity to vote (i.e. negatively correlated with turnout), and
(b) SES is negatively correlated with propensity to vote Democratic.

Thus, it would seem that we ought to expect that, *at the aggregate level*, higher turnout would be positively correlated with Democratic vote share. In other words, we would expect to get higher turnout when a higher proportion of low SES voters

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1. Consider the well known story of lice in the New Hebrides. Lice are found in the hair of healthy people, but tend not to be found on the heads of the sick. It would be a big mistake, however, to assume that putting lice in someone's hair would make them healthy. While the lice in the New Hebrides example is not an ecological fallacy it does show the fallacy of confusing correlation with causation. Indeed, in this example, the true causal arrows are in the opposite direction from what is asserted.

2. Controversy persists over the link between turnout and the likelihood of success of Democratic candidates (e.g., DeNardo, 1980, 1986; Zimmer, 1985; Tucker and Vedlitz, 1986; Piven and Cloward, 1988; Texeira, 1992; Radcliff, 1994, 1995; Erikson, 1995a, b; Grofman et al., forthcoming b), but, as far as I am aware, no one other than Wuffle and Collet has ever claimed that higher turnout benefits Republicans.

came to the polls and thus we would expect higher turnout to be linked to higher vote shares for Democratic candidates, given the propensities of lower SES voters to vote Democratic. But we must be very careful. There are three different ways to go wrong.

First, we are shifting from individual level propensities to statements about the characteristics of aggregate units (e.g. voting tabulation units or whole constituencies). Thus we may be guilty of some type of ecological fallacy (see Robinson, 1950; Grofman, 1995; King, 1997).

Second, we must be very careful in what types of data we use to test the expectation that turnout and Democratic vote share are positively correlated. Grofman et al. (forthcoming b) argue that the authors who have tried to determine the impact of turnout on Democratic success have largely been talking past one another because of a failure to distinguish three quite different questions: 'Are low turnout voters more likely to vote Democratic than high turnout voters?' 'Should we expect that elections in which turnout is higher are ones in which we can expect Democrats to have done better?' and 'If turnout were to have increased in some given election, would Democrats have done better?' When we take assumptions (a) and (b) and apply them to cross-sectional data, because of an ecological effect, we get the implication that higher turnout will be found in the districts with few Democrats (and concomitantly higher turnout).[3] Yet, when we apply these assumptions to longitudinal data (e.g. by tracking turnout in a given district over a sequence of elections) then we might expect the correlation between Democratic vote share and turnout to be positive, not negative. Thus, as Nicholas Miller (personal communication, 30 July 1997) observes, *under identical assumptions, the expected correlation between two variables can have opposite signs depending upon whether the data are analyzed longitudinally or cross-sectionally.*

Third, we must be careful about what theory we use to model the link between competition and turnout. If, for example, the main factor impacting on turnout is degree of competitveness in the contest and turnout rises when an incumbent gets very unpopular, thus drawing a well-financed challenger who will mount an active campaign, then we will get the longitudinal correlation that high turnout hurts incumbents (Grofman et al., 1995). Under these assumptions, only if incumbents are disproportionately Republican will high turnout be linked to Democratic success.

Wuffle and Collet (1997) are simply not sensitive to these issues.[4] They misinterpret the negative correlations obtained from various cross-sectional regres-

3. The exact nature of this ecological confound is spelled out in the Appendix.

4. Of course, as noted earlier, it is possible that their article was intended to be used as *the basis for an exercise for graduate students to help them detect and understand ecological and causal fallacies*. The plausibility of this theory is enhanced by the fact that Christian Collet, a co-author of the Wuffle piece in *JTP*, is also a co-author with me of an article seeking to expose causal fallacies in using cross-sectional data to test longitudinal claims (Grofman et al., forthcoming b) and is also co-author of another article (also with me) warning about ecological fallacies involving turnout (Grofman et al., forthcoming a). Moreover, there are those, like myself, who have long suspected that articles by Wuffle are tongue-in-cheek, something which he/she/they/it has/have always denied. (On the other hand, why would a serious journal such as *JTP* have published the essay if they thought its claims were only being offered tongue-in-cheek?)

sions of Democratic vote share versus turnout across individual districts as evidence that higher turnout hurts Democrats. The fact that they find such strong negative correlations between Republican success and turnout in no way should be taken to mean that expanding the electorate would ipso facto change outcomes and make things worse for Democrats. As we show in the appendix, the negative correlations reported in Wuffle and Collet (1997) are *generated by an ecological effect in which high turnout units are disproportionately Republican in character.* Thus, when we correlate turnout with Democratic success using data from multiple constituencies in a cross-sectional design, we find that, on average, ceteris paribus, Democrats do worst in those political units that have the highest turnout. Such negative correlations are irrelevant to the truth or falsity of any claim that Democrats are actually likely to undermine their chances by championing efforts to get more voters to the polls or seeking to register more low-income voters.

APPENDIX

If we neglect independents to simplify the exposition, to see the fallacy in Wuffle and Collet (1997), consider the following tautology:

In any given constituency, the vote for the Democratic candidate, V_d, is given by the following identity:

$$\begin{aligned} V_d &= T_d * L_d * D + T_r * (1 - L_r) * (1 - D) \\ &= (T_d * L_d - T_r * (1 - L_r) * D + T_r * (1 - L_r) \end{aligned}$$

where T_d is the turnout rate among Democrats; T_r, the turnout rate among Republicans; L_d, the loyalty rate among Democrats, i.e., the proportion of Democrats who vote for the Democratic candidate; L_r, the loyalty rate among Republicans, i.e., the proportion of Republicans who vote for the Republican candidate; D, the proportion of the eligible electorate that is Democratic; $R = (1 - D)$, the proportion of the eligible electorate that is Republican;[5] T = turnout = $T_d * D + T_r * (1 - D) = (T_d - T_r) * D + T_r$

Note that if $T_d - T_r < 0$, an inequality which we expect to be true, then T is a negative function of D, since the linear equation relating turnout and D would have a negative coefficient.

However, if

$$T_d * L_d > T_r * (1 - L_r)$$

an inequality which (given that $T_d - T_r < 0$) we also expect to be true except when Republicans are a lot more disloyal than Democrats, then V_d is a positive function of D, since the linear equation relating Democratic vote share and D would have a positive coefficient.

5. Recall that, to simplify the exposition, we neglected independents.

Thus, in general, for cross-sectional analyses across multiple constituencies, T and V_d should be negatively correlated except under circumstances where Republican voters are defecting in much greater proportions than Democrats.[6]

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6. Note that to get this result we have not needed any assumptions about a causal connection between loyalty rates and turnout, nor have we distinguished between frequent and occasional voters, per se.

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