Reflections on a Formal Theory of Power — Brian Barry

Addendum

The statement in the text that the exact figures for counties are not in print is incorrect. They are in the Report of the Civil Rights Commission, 1961, Book One. I have now computed for each of the eleven states dealt with in the rest of the analysis the median Negro registration for counties with 0-1, 1.1-10, 10.1-20, 20.1-30, 30.1-40, 40.1-50, 50.1-60, 60.1-70, 70.1-80, and 80.1-90% Negroes. These percentages, with the number of counties in brackets, are given in the cells of the table. (Note that returns for Georgia and South Carolina are too sketchy to be of any use.)

It becomes apparent that a large part of the correlation between the proportion of Negroes registered is a sort of artifact. (Only a sort of because it is not accidental.) Mississippi Negro registration in counties with all the proportions of Negroes found in Mississippi is so low that the proportion of total cases constituted by Mississippi has a big effect on the average for that band of counties. Thus, of the counties looked at here with more than 1% of Negroes we can see that Mississippi counties constitute two-thirds of those with 70-80% Negro, one third of those with 60-70% Negro, one fifth of those with 50-60% Negro, one ninth of those with 40-50% Negro, one twelfth of those with 20-40% Negro, one thirteenth of those 10-20% Negro and only one hundredth of those 1-10% Negro. (There are only three cases altogether in the 80-90% band, in Alabama, and the median registration is only 3%. Matthews and Prothro do not give the numbers of cases on which their graph of counties is based, but for 80-90% it can hardly be more than these three.)

No clear and simple pattern emerges as we move from the top left hand corner of the table to the bottom right hand corner. If we take the five states with the smallest proportions of Negroes, however, we may notice that there is relatively little decline in Negro registrations as the proportion of Negroes in a county rises. (We may also note that the state with poll tax and literacy tests (Virginia) runs noticeably below the others in Negro registrations followed by one with poll taxes only (Texas) followed by one with poll taxes and one with neither (Arkansas, Florida) followed finally by Tennessee with neither.

At the other extreme, in Mississippi, with the most Negroes, registration levels are almost equally low in counties with varying proportions of Negroes. This of course indicates massive discrimination throughout the state. In between, we have North Carolina, Alabama and Louisiana. (We may surmise that Georgia would be rather like this group. South Carolina is probably a cross between Louisiana and Mississippi - some variation but all at rather low absolute levels of registration.) In these three states we have what the Civil Rights Commission charmingly calls "local option" in discrimination. Louisiana, with the most Negroes in the group, shows this with almost uncanny clarity, ranging from the second highest registration level for 10-20% Negro (0, based on four cases), but Alabama and North Carolina show a regular and quite sharp decline as the proportion of Negroes rises above 20%. It is worth noting that all three states have literacy tests, and Louisiana has an "understanding the constitution" test which in practice gives total discretion to the registration officer.

The conclusion we might draw is that discrimination at the local level requires some combination of Negroes in the state and the county. At the Mississippi level (42%) the threshold is reached purely as a result of the proportion of Negroes in the state; at the other end (the five states below 22% Negro) no observed proportion of Negroes in a county pushes local hostility over the threshold; between 25% and 32% (we don't know about the one case between 32% and 42%, namely South Carolina) the local threshold is crossed when the proportion of Negroes rises above 20% and hostility increases steadily beyond that. This is of course highly schematic, but it seems broadly reasonable all the same.

One final remark: Blalock remarks somewhere in his book that one would normally expect a group to be more solid the larger the proportion of the population they form (the so-called "breakage effect"); he then points out that the Matthews and Prothro data contradict such an expectation. But for a season never made public, Matthews and Prothro

excluded counties with less than 1% of Negroes. If we examine these separately we note that in most states precisely what tends to happen is that of the few hundred Negroes in a county none at all registers. The point is simply that this effect of numbers giving confidence increasing the probability of the groups containing someone with leadership potential, etc., apparently starts operating at about 1% of Negroes in the population.

% Negroes [illegible] (8 u)

% Negroes in county

State	% Negro	0-1	1.1-10	10.1-20	20.1-30	30.1-40	40.1-50	50.1-60	60.1-70	70.1-80	80.1-90	
Tex	12	15(53)*	34 (76)*	28(22)	33(30)	38(12)	- (1)	33(3)	- (0)	- (0)	- (0)	
Tenn	17	0(10)	88 (31)	68(14)	54(3)	60(3)	-(0)	-(0)	- (2)			
Fla	18	-(0)	49(7)	42(25)	53(22)	38(8)	37(3)	- (2)	- (0)	- (0)	- (0)	
Va	21	13(7)	24(38)	27(18)	26(22)	18(14)	19(12)	25(10)	18(4)	- (0)	- (0)	
Ark	22	0 (19)	42(17)	49(6)	41(9)	45(12)	36(7)	27(3)	- (1)	- (0)	-(0)	
NC	25	67(5)	54(20)	56(16)	37(16)	33(15)	22(18)	14(8)	- (2)	- (0)	- (0)	
Ga	29	0 (4)	- (1)	-(0)	- (1)	- (1)	- (1)	- (2)	- (2)	- (1)	- (0)	
Ala	30	- (1)	25(8)	28(17)	20(8)	17(12)	7 (9)	4 (3)	- (2)	1 (4)	3 (3)	
La	32	- (0)	- (2)	64(7)	46(17)	23(15)	12(13)	21(6)	0 (4)	- (0)	- (0)	
SC	35	- (0)	- (0)	- (0)	- (0)	- (0)	- (0)	- (1)	2 (3)	- (0)	- (0)	
Miss	42	- (0)	- (2)	2.6(10)	1.8(12)	1.5(16)	1.8(13)	0.2(10)	0.4(10)	0.5(8)	- (0)	
		(99)	(202)	(135)	(141)	(209)	(77)	(50)	(30)	(13)	(3)	(959)

* sample taken

7	0.70716E-01	0.67594E-01	-0.59532E-01	0.56951E-01	%
22	-0.92638E 00	0.[illegible]E 01	-0.19460E-01	0.25397E-01	AC
27	-0.48164E 00	0.[illegible]E-01	-0.43941E 00	0.72625E-01	I.I
28	0.63262E 01	0.[illegible]E 01	0.61314E-01	0.30056E-01	AL
29	-0.64501E 01	0.33485E 01	-0.65975E-01	0.34208E-01	AR
30	0.10172E 02	0.35974E 01	0.98637E-01	0.34866E-01	FL
31	0.15935E 02	0.24384E 01	0.22691E 00	0.34804E-01	GE
32	0.18009E 02	0.[illegible]E 01	0.17082E 00	0.29722E-01	LO
33	-0.[illegible]E 01	0.[illegible]E 01	-0.73358E-01	0.34765E-01	MI
34	0.20174E 02	0.[illegible]E 01	0.23434E 00	0.31572E-01	M.
35	0.[illegible]E 01	0.[illegible]E 01	0.30282E-01	0.29444E-01	S.
36	0.24501E 02	0.[illegible]E 01	0.27927E 00	0.34121E-01	TE
37	0.[illegible]E 01	0.[illegible]E 01	0.12545E 00	0.43032E-01	TE
			0		V

Table B

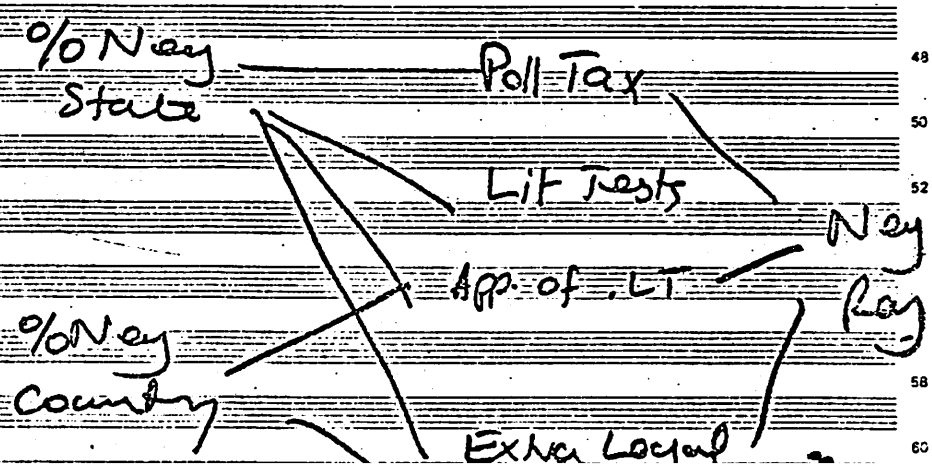
State	State Dummy ordering, (High = over reg.)	Poll Tax	% Ne
Tenn.	1	0	10
N. Car.	2	0	6
Georgia	3	0	5
Louis.	4	0	3
Texas	5	1	11
Florida	6	0	9
Alabama	7	1	4
S Car.	8	0	2
Virginia	9	1	8
Ark.	10	1	7
Miss.	11	1	1

TABLE 'A'

SIGMA(BETA)			
0.56951E-01	% POP NEGRO 50	← (X_1)	*
0.25397E-01	ACTS OF VIOLENCE	← (X_3)	
0.72625E-01	INTERACT	← $(X_1 X_2)$ Neg/Lit	*
0.30056E-01	ALABAMA	7 S_1	
0.34208E-01	ARKANSAS	10	
0.34866E-01	FLORIDA	6	
0.34804E-01	GEORGIA	3	
0.29722E-01	LOUSIANA	4	
0.31765E-01	MISSISSIPI	11	
0.31572E-01	N. CAROLINA	2	
0.29444E-01	S. CAROLINA	8	
0.34121E-01	TENNESSEE	1	
0.43032E-01	TEXAS	5 S_{10}	
	Vwg	9	

l Tax	% Neg.
0	10
0	6
0	5
0	3
1	11
0	9
1	4
0	2
1	8
1	7
1	1

State	Poll Tax	State Dummy Ordering (Highest most repress.)	Lit Test
Alab.	1	7	1
Ark	1	10	0
Flor	0	6	0
Georg.	0	3	1
Lou	0	4	1
Miss	1	11	1
N.Car.	0	2	1
S.Car.	0	8	1
Ten.	0	1	0
Tex.	1	5	0
Vwg.	1	9	1

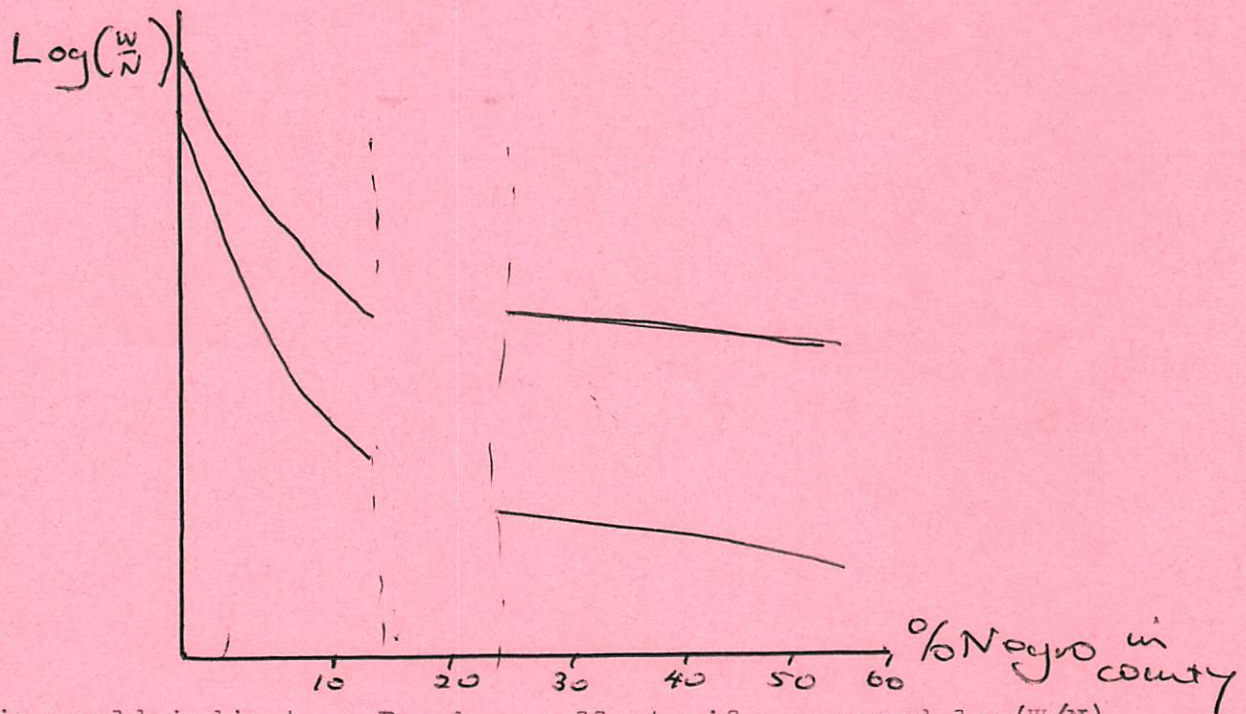


Notes on the Use of the Matthews and Prothro Data in 'Reflections on a Formal Treatment of Power'.

Page 9.

If this graph is repeated for county level data, we get the graph shown in the printout, which is once more clearely non-linear.

However, as with the State-level graph, it can be split into two halves, a division ocurring at 15 - 25% Negro. For figures higher than this we get a very weak negative relationship which looks linear, if anything; below this a stronger non-linear negative relationship, to give an overall picture :-



This would indicate a Breakage effect, if we regard log(W/N) as a valid indicator of discrimination.

Note also that scatter occurs more on the upperside of the curve....which would be consistent with the hypothesis that whites do not nearly exploit all of the potential that is open to them to exploit this relationship, while blacks are working much nearer their limit. Thus their capacity to improve thier "score" is in some senses bounded, leading to the consistent shape of the lower side of the curve.

(1) The only operationalisation of the variable 'Extra-legal pressures' in the M&P data is the variable 'Acts of Violence'. This, however, is not much good as only a total of 162 of these were noted for all of the 1136 counties over a period not stipulated in the code book. None of the correlations or other work involving this variable are at all impressive, but of course it is impossible to tell if this because it is zero for nearly every county or because the theory or (more likely) its operationalisation were wrong.

(2). If we regard Poll Tax and Literacy Tests as binary variables, we can use product moment correlations involving them, remembering that the values which can be regarded as significant will tend to be lower.

(3). While there is a strong correlation between %Negros in the state and Literacy tests (0.72), that with Poll Tax is weak and negative (-0.25)....This can easily be senn from the table on p13. There does <u>not</u> seem to be a link between Poll Tax and %Negros in the state.

(4). The other relationships in the model can be tested with a simple multivariate regression, the equation of which is:-

$$Y = b_0 + b_1X_1 + b_2X_1X_2 + b_3X_3 + b_4S_1 + b_5S_2 + \ldots\ldots\ldots + b_{13}S_{10}$$

Where ;-

Y - % Negro Population of Voting Age Registered

X_1 - % Negro in the county

X_2 - Literacy test dummy variable. (The interaction term $b_2 X_1 X_2$ thus shows the difference in the relationship between X_1 & Y between counties where there is a literacy test, and those where there isn't.)

X_3 - Acts of violence

$S_1 - S_{10}$ - Dummy (binary) variables to indicate which state the county belonged to. (These are needed because the inclusion of any variables operating at a purely State level, such as Poll Tax and % Negro in the State, along with county data could easily let the state variables act merely as "tags" for inter state cultural differences.) Regression coeficients $b_4 - b_{13}$ will give us the size of the overall influence of the different states on the relationship, relative to the state which left out (Virginia), and we can then compare the ordering achieved by this with the ordering on the state level variables.

(5) The standardised regression coeficients are used (Betas), as is usual, and these can be seen in Table A in the printout.

(6). Interpretation of the Regression Coefficients (Betas)

b_1 - Not significant (Other variables in the model are absorbing nearly all of the "raw" effect of this variable.

b_2 - Highly significant, both in itself, and relative to b_1 , ... thus the effect of literacy tests on the relationship between % Negro and negro voting registration at county is pretty conclusively proved.

b_3 - Not significant....(Bad variable??...see (1) above)

b_4 to b_{13} - Gives an ordering of total State effect shown in Table B in the printout. When we compare this with the two state-level variables we see :-

(i) That Poll Tax fits this ordering very well, from which we can infer that this makes up a considerable part of the variation.

(ii) That % Negro dosn't, i.e. our intervening variables seem to be doing their job effectively.

(7) This regression model would thus seem to furnish evidence in support of all parts of the model, except those involving "extra-legal pressures".

@@@@@@@@@@@@@@@@@@@@@@@@@@@@

Mik Lanes.