

ONLINE SUPPLEMENT to article in

AMERICAN SOCIOLOGICAL REVIEW, 2009, VOL. 74 (AUGUST: 594–614)

What Do These Memories Do? Civil Rights Remembrance and Racial Attitudes

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MULTIPLE IMPUTATION ANALYSIS

We were concerned that our use of listwise deletion of respondents with missing values on any of the variables in Table 2 could have biased our estimates. We used Multiple Imputation (MI) procedures (Little and Rubin 2002) and imputed 10 data sets using Proc MI in SAS to check for this possibility.¹ The missing data literature distinguishes between Missing Completely at Random (MCAR) versus Missing at Random (MAR). MCAR assumes that the probability of a value being missing depends neither on the variables observed nor on the unobserved values. MAR is less restrictive and permits the observed value of variables to predict missingness. MI permits data that are MAR or MCAR, whereas the listwise deletion procedure assumes MCAR.

We reestimated only those equations where civil rights memories were statistically significant in Table 2 (see Table S1). Note that our imputed data sets use the full set of variables previously described, but we dropped cases as missing if the value of the dependent variable was missing (von Hippel 2007).² When the number of cases for the same equations with listwise deletion versus MI are compared, we see the expected increase in the number of cases. We find only slight differences in the estimates and statistical significance across all dependent variables in Tables 2 and S1. Thus, it does not appear that the use of listwise deletion had any substantial impact on our findings.

¹ The variables used to create the imputed data sets are those listed in Table 2, including the control variables, plus the respondent's marital status, number of children at home, socioeconomic index, number of words respondent answered correctly in a 10-word vocabulary test, number of retrospective variables for which respondent had missing data, and dummy variables for ages 42 to 64, age 65 and older, live in the Deep South, respondent employed in a white collar occupation, and the interactions of live in South and live in South at age 16, live in Deep South and age 42 to 64, live in Deep South and age 65 and older, live in South and age 42 to 64, and live in South and age 65 and older.

² As an additional check, we repeated the analyses leaving the imputed values of dependent variables in the analysis. Our conclusions remained unchanged.

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Table S1. Effects of Civil Rights Memory on Racial Attitudes/Norms (1993 GSS) Using Multiple Imputation for Missing Data

	Total Sample	(N)	Whites	(N)	Estimation Technique
Stratification Beliefs					
Liberal attribution for racial inequality (4-item scale)	.37***	934	.37**	785	OLS
Principles of Equal Treatment					
Whites (do not) have right to keep neighborhood segregated	.47*	1050	.56*	878	Ordinal
SD that whites have right to keep neighborhood segregated	1.79**	1050	1.92**	878	LR
Implementation of Equality Principles					
Support law barring housing discrimination	1.40†	1034	1.63*	867	LR
Social Distance					
Would not object if child's school is mostly other races	1.65*	824	1.60*	674	LR
Would try to change rules of segregated club	1.79**	993	2.18**	837	LR
Remedial Government Action					
Government has special obligation to help blacks	.15	1020	.33*	858	Ordinal

Note: SD = Strongly Disagree.

† $p \leq .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$ (one-tailed tests).

TESTS OF ENDOGENEITY AND RECIPROCAL EFFECTS

In the main text, we raised the possibility of a reciprocal relation between the civil rights memories and the racial attitudes variables. If this is true, then the disturbances from each of our equations that predict the racial attitudes will correlate with the civil rights memories variable. These arguments are sufficient to justify testing if civil rights memories are endogenous rather than exogenous, as we have been treating them. To implement this test, we regress civil rights memories on all control variables listed in Table 2, along with several other exogenous variables that we use as instruments. We retained only those variables with a statistically significant effect on civil rights memories in generating the residuals.³ We use the 10 multiple imputed data sets described above for this analysis. We then entered the residuals from this regression into the regression equations from Table 2 with statistically significant recall effects. A significant coefficient for the residual is evidence of endogeneity (see, e.g., Wooldridge 2002:18–22). Roughly half of the equations show evidence of the endogeneity of civil rights memories; that is, civil rights memory may have been influenced by preexisting racial opinions (see Table S2).

Table S2. Endogeneity Tests for Civil Rights Memories Variable in Racial Attitude/Norms Equations

	Total Sample		Whites	
	Est (SE)	Sig	Est (SE)	Sig
Stratification Beliefs				
Liberal attribution for racial inequality (4-item scale)	-1.33 (.78)	.09	-1.66 (.90)	.07
Principles of Equal Treatment				
Whites (do not) have right to keep neighborhood segregated	-4.33 (1.57)	.01	-4.95 (1.80)	.01
SD that whites have right to keep neighborhood segregated	-4.13 (1.76)	.02	-4.72 (2.14)	.03
Implementation of Equality Principles				
Support law barring housing discrimination	-2.39 (1.50)	.11	-2.31 (1.70)	.18
Social Distance				
Would not object if child's school is mostly other races	-.25 (1.42)	.86	-.52 (1.60)	.75
Would try to change rules of segregated club	-3.65 (1.49)	.02	-3.70 (1.74)	.04
Remedial Government Action				
Government has special obligation to help blacks	.30 (1.17)	.80	.43 (1.32)	.74

Note: SD = Strongly Disagree.

Endogeneity might be caused by several factors, one of which is the reciprocal effect hypothesis that we mentioned above. We investigate this possibility further by specifying and estimating a series of equations posting the reciprocal relationship between civil rights memory and its putative attitudinal consequences. Identification of these models requires a subset of variables to have a direct influence on civil rights memories, but to be uncorrelated with the disturbances of the racial liberalism variables. For the instrumental variables, we used number of words correct in

³ These variables are age of respondent (R), age squared, R's sex (female = 1), black, other race, lives in south, lives in deep south, lives in West, rural, total family income, highest year of schooling, lower/working class, liberal, Democrat, number of words correct in vocabulary test, in south at age 16, rural residence at age 16, number of retrospective variables for which R had missing data, R has member of opposite race in neighborhood but not close, R does not have member of opposite race in neighborhood, and interaction of deep south and 65 or older.

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vocabulary test, retrospective variables for which respondents (R) had missing data (e.g., father’s occupation when R was age 16), whether R lived in the deep south, an interaction of deep south and being age 42 to 64, and an interaction of deep south and age 65 or older. We also need variables that directly impact the racial liberalism variables but that are uncorrelated with the disturbance of the civil rights memory variable. For this, we used rural residence, total family income, lower/working class, and rural residence at age 16 as instruments for racial liberalism.

Table S3 contains the results of the MI analysis using the software package Mplus.⁴ What is most striking about the results is that none of the racial liberalism variables significantly stimulate civil rights memory. Beliefs about stratification do register one significant effect, but it is negative—opposite of what we should observe if such attributions induced civil rights recall. By contrast, five of the seven attitudinal effects of civil rights memories are statistically significant at *p*-values of .07 or better (one-tail tests) for both the total and white samples. Overall, the evidence is against a feedback relationship between memory and racial attitudes.

Table S3. Reciprocal Effects of Civil Rights Memories and Racial Attitudes/Norms

	Total Sample (N = 1,606)		Whites (N = 1,347)	
	Est (SE)	Sig	Est (SE)	Sig
Stratification Beliefs				
Civil rights memories on liberal attribution for racial inequality (4-item scale)	-.10 (.06)	.05	-.06 (.05)	.12
Liberal attribution for racial inequality (4-item scale) on civil rights memories	2.94 (1.94)	.07	4.42 (2.71)	.05
Principles of Equal Treatment				
Civil rights memories on whites (do not) have right to keep neighborhood segregated	-.05 (.11)	.32	-.09 (.13)	.24
Whites (do not) have right to keep neighborhood segregated on civil rights memories	2.92 (1.65)	.04	4.27 (2.36)	.04
Civil rights memories on SD that whites have right to keep neighborhood segregated	-.18 (1.17)	.25	-.24 (1.89)	.23
SD that whites have right to keep neighborhood segregated on civil rights memories	1.17 (.65)	.04	1.89 (1.04)	.04
Implementation of Equality Principles				
Civil rights memories on support law barring housing discrimination	-.42 (.30)	.08	-.34 (.29)	.12
Support law barring housing discrimination on civil rights memories	.56 (.36)	.06	.98 (.64)	.06
Social Distance				
Civil rights memories on would not object if child’s school is mostly other races	-.25 (.27)	.19	-.13 (.18)	.24
Would not object if child’s school is mostly other races on civil rights memories	.23 (.26)	.20	.52 (.44)	.12
Civil rights memories on would try to change rules of segregated club	-1.13 (1.67)	.25	-.60 (.74)	.21
Would try to change rules of segregated club on civil rights memories	.99 (.33)	.001	1.42 (.61)	.01
Remedial Government Action				
Civil rights memories on government has special obligation to help blacks	-.14 (.09)	.06	-.10 (.09)	.14
Government has special obligation to help blacks on civil rights memories	-.18 (.71)	.10	-.11 (1.02)	.04

Note: SD = Strongly Disagree. Significance level based on one-tailed test.

One should not make too much, though, of these estimates. The civil rights memories effects are not universal for all racial attitudes, but are, instead, more focused and limited in their impact on racial liberalism. To the extent that these nonrecursive models have utility, it rests mostly with the fact that they do not contradict the inferences that we drew from our previous analyses assuming recursivity, namely that spontaneous recall of the fight for civil rights in the 1950s and 1960s does not merely reflect preexisting racial liberalism but rather pushes racial attitudes and policy preferences in a generally liberal direction.

References

Little, Roderick J. A. and Donald B. Rubin. 2002. *Statistical Analysis with Missing Data*. 2nd ed. New York: Wiley.

von Hippel, Paul T. 2007. “Regression with Missing Ys: An Improved Strategy For Analyzing Multiply Imputed Data.” *Sociological Methodology* 37:83–117.

Wooldridge, Jeffrey M. 2002. *Econometric Analysis of Cross Section and Panel Data*. Cambridge, MA: MIT Press.

⁴ In this model of reciprocal relations we included all imputed values of the variables. The imputed values led the dependent variables to have a range of values, so in our Mplus runs we treated these variables as continuous and applied the maximum likelihood fitting function.

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SYNTAX FOR GRIFFIN/BOLLEN ASR, "WHAT DO THESE MEMORIES DO?"

SPSS WAS USED TO TRANSFORM ALL VARIABLES AND IN THE ANALYSIS OF TABLES 1, 2, and 3.

- A. VARIABLES and TRANSFORMATIONS FOR CIVIL RIGHTS MEMORY AND ALL DEPENDENT VARIABLES ARE LISTED BELOW.
- B.
- C. THE CONTROL VARIABLES, EITHER THE ORIGINAL GSS VARIABLES OR SIMPLE TRANSFORMATIONS OF THEM, ARE NOT LISTED BELOW.

[* = Original GSS variable; ^ = reverse coded]

1. CIVIL RIGHTS MEMORY

```
compute crmem1=*mostimp1.  
recode crmem1 (32,34,43=1)(else=0).  
if (missing(mostimp1)) crmem1=99.  
missing values crmem1 (99).  
compute crmem2=*mostimp2.  
recode crmem2 (32,34,43=1)(else=0).  
if (missing(mostimp1)) crmem2=99.  
missing values crmem2 (99).  
compute crmem3=*mostimp3.  
recode crmem3 (32,34,43=1)(else=0).  
if (missing(mostimp1)) crmem3=99.  
missing values crmem3 (99).  
compute crmem4=*mostimp4.  
recode crmem4 (32,34,43=1)(else=0).  
if (missing(mostimp1)) crmem4=99.  
missing values crmem4 (99).  
compute crmembig=0.  
if (crmem1 eq 1 or crmem2 eq 1 or crmem3 eq 1 or crmem4 eq 1) crmembig=1.  
if (missing(crmem1)) crmembig=99.  
missing values crmembig (99).
```

FOR ALL VARIABLES THAT FOLLOW, ALL NAP, DK, AND NA RESPONSES ARE TREATED AS MISSING DATA

2. STRATIFICATION BELIEFS

```
compute rdifsc14=*^racdif1+*^racdif2+*^racdif3+ *^racdif4.
```

3. WHITES DO HAVE RIGHT TO KEEP NEIGHBORHOOD SEGREGATED (racseg, dracseg2)

```
a. *racseg  
b. SD that whites do not have right to keep neighborhood segregated  
compute dracseg2=*racseg.  
recode dracseg2 (1,2,3=0)(4=1).
```

4. WOULD VOTE FOR A BLACK PRESIDENT (racorslg)

```
*^racpres reverse recoded to racprslg.
```

5. AGAINST LAW BARRING INTERRACIAL MARRIAGE

```
*racmar.
```

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6. FAVOR BUSING TO ACHIEVE INTEGRATION

*^busing reverse recoded to buslg.

7. SUPPORT LAW BARRING HOUSING DISCRIMINATION

compute racopn2=*racopen.
recode racopn2 (1,3=0)(2=1).

8. WOULD NOT OBJECT IF CHILD'S SCHOOL IS MOSTLY OTHER RACES

*racmost.

9. WOULD TRY TO CHANGE RULES OF SEGREGATED CLUB

*^racchn2 reverse recoded to rchn2lg.

10. HOW MUCH TO SPEND TO IMPROVE CONDITIONS OF BLACKS

*^natrace reverse recoded to natrcelg.

11. TOO LITTLE \$ SPENT TO IMPROVE BLACK CONDITIONS

compute dnatrcel=*natrace.
recode dnatrcel (1=1)(2,3=0).

12. HOW MUCH TO ASSIST BLACKS

*^natracey reverse recoded to natrcylg.

13. TOO LITTLE \$ SPENT TO ASSIST BLACKS

compute dnatrcyl=*natracey.
recode dnatrcyl (1=1)(2,3=0).

14. GOVERNMENT HAS SPECIAL OBLIGATION TO HELP BLACKS

*^helpblk reverse recoded to hlpblklg.

15. SA/A GOVERNMENT HAS SPECIAL OBLIGATION TO HELP BLACKS

compute dhelpblk=*helpblk.
recode dhelpblk (1,2=1)(3,4,5=0).

B. ANALYSIS

COMMENT: TABLE 1

CROSSTABS

/TABLES=racdif2 racdif4 racdif3 racdif1 dracseg2 racprslg racmar buslg racopn2 racmost rchn2lg dnatrcel
dnatrcyl dhelpblk by crmembig by blwhite

/FORMAT= AVALUE TABLES

/STATISTIC=chisq

/CELLS= COUNT COLUMN.

COMMENT: TABLE2, TOTAL SAMPLE

REGRESSION

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/STATISTICS COEFF OUTS R ANOVA

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/NOORIGIN

/DEPENDENT rdifsc14

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south16 sthsth16 black racother notclose notatall.

PLUM

racseg BY rural rural16 sex demo liberal clslowwk crmembig south south16 west sthsth16 black racother

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howclose with educ age agesq income91
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SINGULAR(1.0E-8)
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/PRINT = FIT PARAMETER SUMMARY .
LOGISTIC REGRESSION dracseg2
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LOGISTIC REGRESSION racprslg
/METHOD = ENTER rural rural16 sex age agesq demo liberal educ clslowwk income91 crmembig south
south16 west sthsth16 black racother notclose notatall
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .
LOGISTIC REGRESSION racmar
/METHOD = ENTER rural rural16 sex age agesq demo liberal educ clslowwk income91 crmembig south
south16 west sthsth16 black racother notclose notatall
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .
LOGISTIC REGRESSION buslg
/METHOD = ENTER rural rural16 sex age agesq demo liberal educ clslowwk income91 crmembig south16 west
sthsth16 black racother notclose notatall
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .
LOGISTIC REGRESSION racopn2
/METHOD = ENTER rural rural16 sex age agesq demo liberal educ clslowwk income91 crmembig south
south16 west sthsth16 black racother notclose notatall
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .
LOGISTIC REGRESSION racmost
/METHOD = ENTER rural rural16 sex age agesq demo liberal educ clslowwk income91 crmembig south
south16 west sthsth16 black racother notclose notatall
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .
LOGISTIC REGRESSION rchnlg
/METHOD = ENTER rural rural16 sex age agesq demo liberal educ clslowwk income91 crmembig south
south16 west sthsth16 black racother notclose notatall
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .
PLUM
natrcelg BY rural rural16 sex demo liberal clslowwk crmembig south south16 west sthsth16 black racother
notclose notatall with age agesq educ income91
/CRITERIA = CIN(95) DELTA(0) LCONVERGE(0) MXITER(100) MXSTEP(5) PCONVERGE(1.0E-6)
SINGULAR(1.0E-8)
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/PRINT = FIT PARAMETER SUMMARY .
LOGISTIC REGRESSION dnatrce
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south16 west sthsth16 black racother notclose notatall
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .
PLUM
natrcylg BY rural rural16 sex demo liberal clslowwk crmembig south south16 west sthsth16 black racother
notclose notatall with age agesq educ income91
/CRITERIA = CIN(95) DELTA(0) LCONVERGE(0) MXITER(100) MXSTEP(5) PCONVERGE(1.0E-6)
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LOGISTIC REGRESSION dnatrcey
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south16 west sthsth16 black racother notclose notatall
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .

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PLUM

hlpblklg BY rural rural16 sex demo liberal clslowwk crmembig south south16 west sthsth16 black racother
notclose notatall with age agesq income91 educ

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LOGISTIC REGRESSION dhlpblk

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COMMENT: TABLE2, WHITE SAMPLE

temporary.

SELECT IF (race eq 1).

REGRESSION

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/STATISTICS COEFF OUTS R ANOVA

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/DEPENDENT rdifsc14

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PLUM

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howclose with educ age agesq income91

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/PRINT = FIT PARAMETER SUMMARY .

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LOGISTIC REGRESSION racprslg

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LOGISTIC REGRESSION racmar

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/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .

LOGISTIC REGRESSION buslg

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/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .

LOGISTIC REGRESSION racopn2

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/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .

LOGISTIC REGRESSION racmost

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south16 west sthsth16 black racother notclose notatall

/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .

LOGISTIC REGRESSION rchnlg

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/METHOD = ENTER rural rural16 sex age agesq demo liberal educ clslowwk income91 crmembig south south16 west sthsth16 black racother notclose notatall

/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .

PLUM

natrcelg BY rural rural16 sex demo liberal clslowwk crmembig south south16 west sthsth16 black racother notclose notatall with age agesq educ income91

/CRITERIA = CIN(95) DELTA(0) LCONVERGE(0) MXITER(100) MXSTEP(5) PCONVERGE(1.0E-6) SINGULAR(1.0E-8)

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/PRINT = FIT PARAMETER SUMMARY .

LOGISTIC REGRESSION dnatrce

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/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .

PLUM

natrcylg BY rural rural16 sex demo liberal clslowwk crmembig south south16 west sthsth16 black racother notclose notatall with age agesq educ income91

/CRITERIA = CIN(95) DELTA(0) LCONVERGE(0) MXITER(100) MXSTEP(5) PCONVERGE(1.0E-6) SINGULAR(1.0E-8)

/LINK = LOGIT

/PRINT = FIT PARAMETER SUMMARY .

LOGISTIC REGRESSION dnatrcyey

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/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .

PLUM

hlpblklg BY rural rural16 sex demo liberal clslowwk crmembig south south16 west sthsth16 black racother notclose notatall with age agesq income91 educ

/CRITERIA = CIN(95) DELTA(0) LCONVERGE(0) MXITER(100) MXSTEP(5) PCONVERGE(1.0E-6) SINGULAR(1.0E-8)

/LINK = LOGIT

/PRINT = FIT PARAMETER SUMMARY .

LOGISTIC REGRESSION dhlpblk

/METHOD = ENTER rural rural16 sex age agesq demo liberal educ clslowwk income91 crmembig south south16 west sthsth16 black racother notclose notatall

/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .

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