APPENDICES FOR

RACIAL, EDUCATIONAL, AND RELIGIOUS ENDOGAMY

IN THE UNITED STATES:

A COMPARATIVE HISTORICAL PERSPECTIVE

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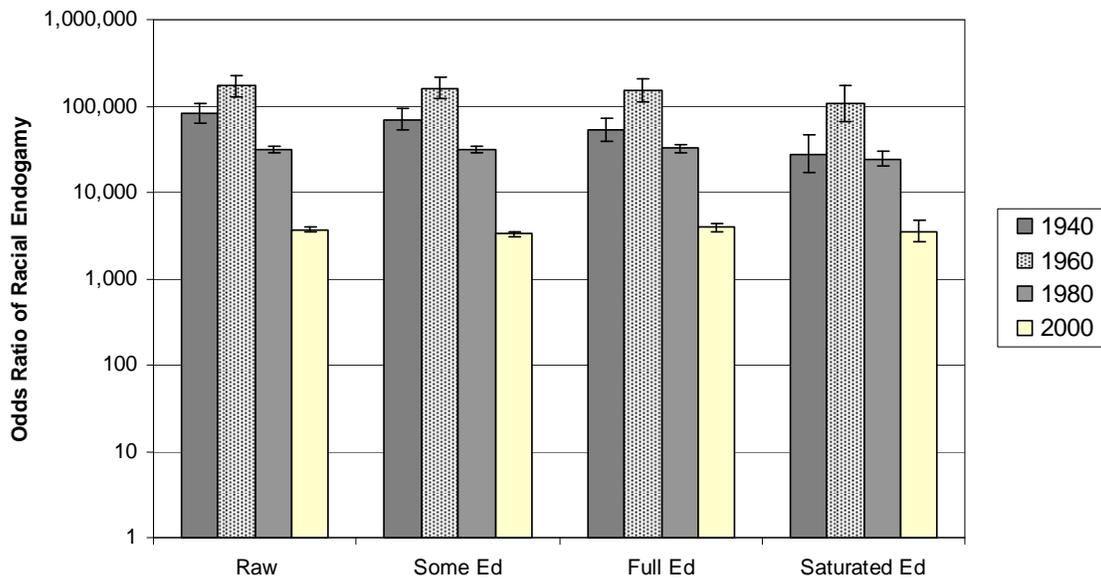
November 20, 2007

Appendix One: The Similarity Between 'Raw' and 'Adjusted' Racial Endogamy.

In this appendix I use a dataset of young married couples, age 20-39, U.S. born, from the 1940, 1960, 1980 and 2000 U.S. censuses (via IPUMS) to examine how educational compositional changes and educational intermarriage affects the calculation of the odds ratio for racial endogamy over time. The racial categories are two (black and white, all others excluded), the educational categories are five (<9th grade, 9th-11th, high school degree, some college, B.A. or more). The dataset has five variables: census year, husband's race, wife's race, husband's education, wife's education. There are 400 cells, and the unweighted sample size is 1,643,520.[1]

Appendix Figure A1:
Similarities in Racial Endogamy Regardless of Educational Controls,
With 95% CI, for Young Black and White Couples 1940-2000

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[1] This sample size is slightly smaller than the sample size used in the educational intermarriage example in the text, because couples with a spouse that is neither black nor white (Asian, for instance) are excluded from this sample.

Appendix Figure A1 shows that the strength and pattern of racial endogamy over time for blacks and whites is quite similar regardless of which educational controls are applied. The models can be described as follows:

Raw:

$Log(U)=HusbRace{\times}WifeRace{\times}Year$

Some Ed:

$Log(U)= HusbRace{\times}WifeRace{\times}Year, HusbEd{\times}WifeEd{\times}Year,$

$HusbRace{\times}HusbEd{\times}Year, WifeRace{\times}WifeEd{\times}Year$

Full Ed:

$Log (U)= HusbRace{\times}WifeRace{\times}Year, HusbRace{\times}WifeRace{\times}HusbEd,$

$HusbRace{\times}WifeRace{\times}WifeEd, HusbEd{\times}WifeEd{\times}HusbRace{\times}Year,$

$HusbEd{\times}WifeEd{\times}WifeRace{\times}Year$

Saturated:

$Log(U)= HusbRace{\times}WifeRace{\times}HusbEd{\times}WifeEd{\times}Year$

Where U are the predicted values of the model. The first model, "Raw," applies no educational controls, and therefore corresponds to the raw odds ratios for racial endogamy in Figure one and used throughout this paper. The second model, "Some Ed," controls for the educational homogamy and for the changing educational distribution of racial groups. The third model, "Full Ed" controls for racial differences in educational
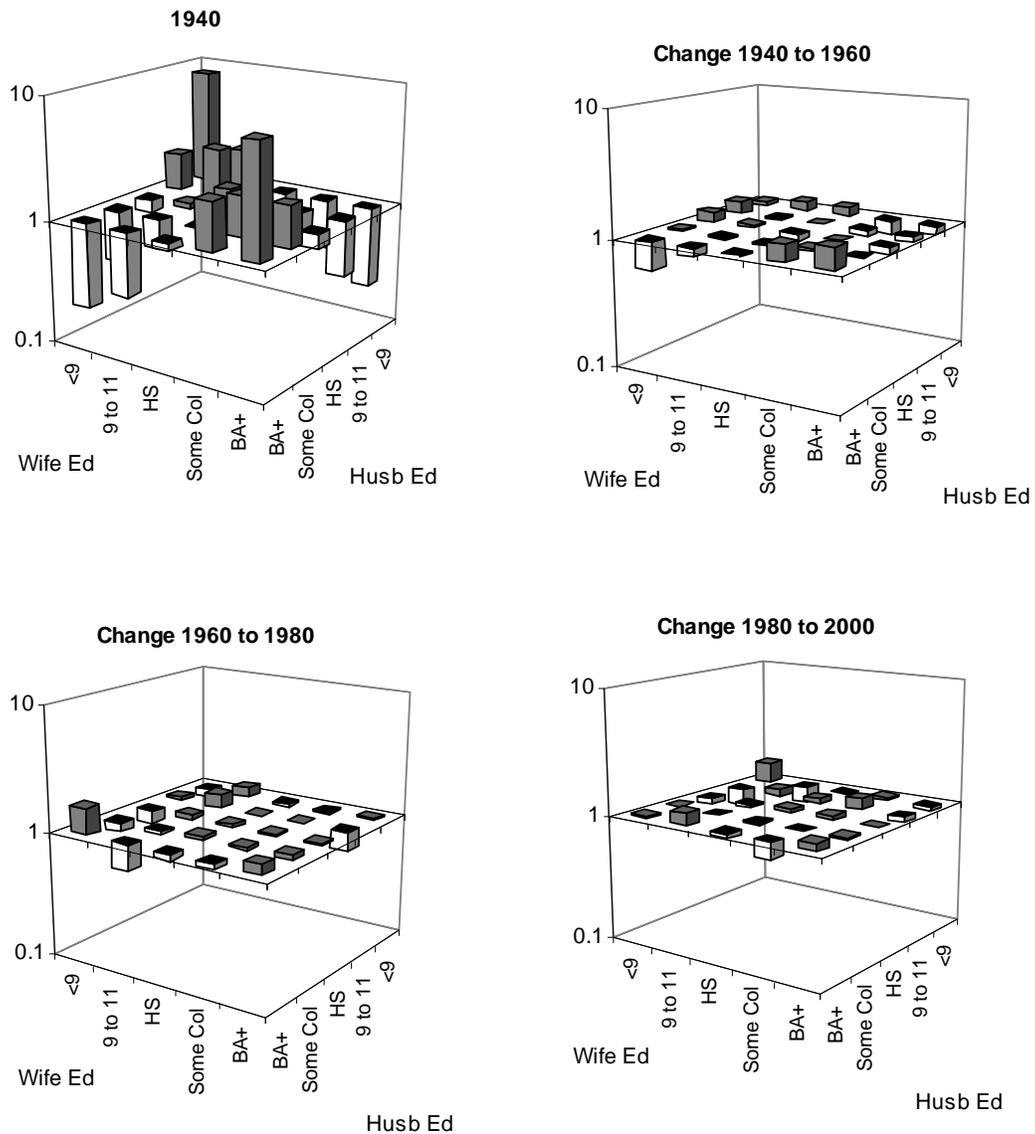
homogamy, and educational differences in racial endogamy. The fourth model is the

saturated model, which fits the data exactly by accounting for every interaction between

the variables. Raw racial endogamy is quite similar to racial endogamy net of educational

effects, regardless of how educational effects are accounted for. In order to achieve

consistent measures of racial endogamy across models, the educational categories are

modeled with deviation (sums to zero) coding, so that the residual category is the average

educational value, and so that racial endogamy in the saturated model is racial endogamy

for the average educational combination. Coefficients are estimated with household

weighted data, while standard errors are calculated using unweighted data (Clogg and

Eliason 1987).

Even though the difference in goodness of fit between these models is dramatic,

the odds ratio for racial endogamy is nearly the same across all the models, which

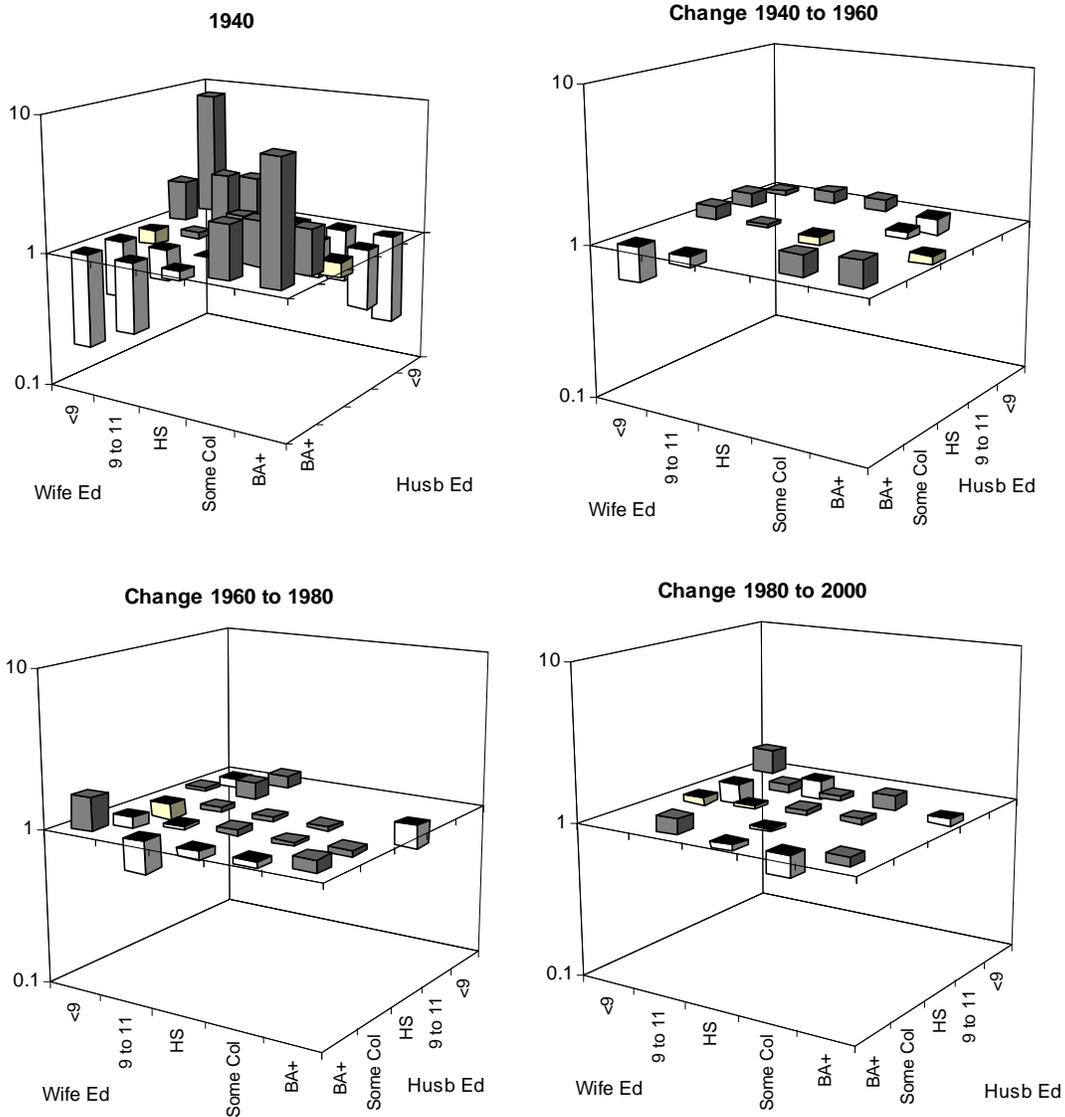indicates how little the various educational controls affect racial endogamy. [2]

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[2] Fit statistics for the models are as follows: "Raw," 384 residual df, L^2 of 2,502,458; "Some Ed," 256 df, L^2 of 1,625; "Full Ed," df 88, L^2 174.

Appendix Figure A2: Consistency in the Pattern of Educational Assortative Mating for

Young Couples Over Time

Appendix Figure A3: Consistency in the Pattern of Educational Assortative Mating for Young Couples Over Time, Includes Only Statistically Significant Changes.

1940

Change 1940 to 1960
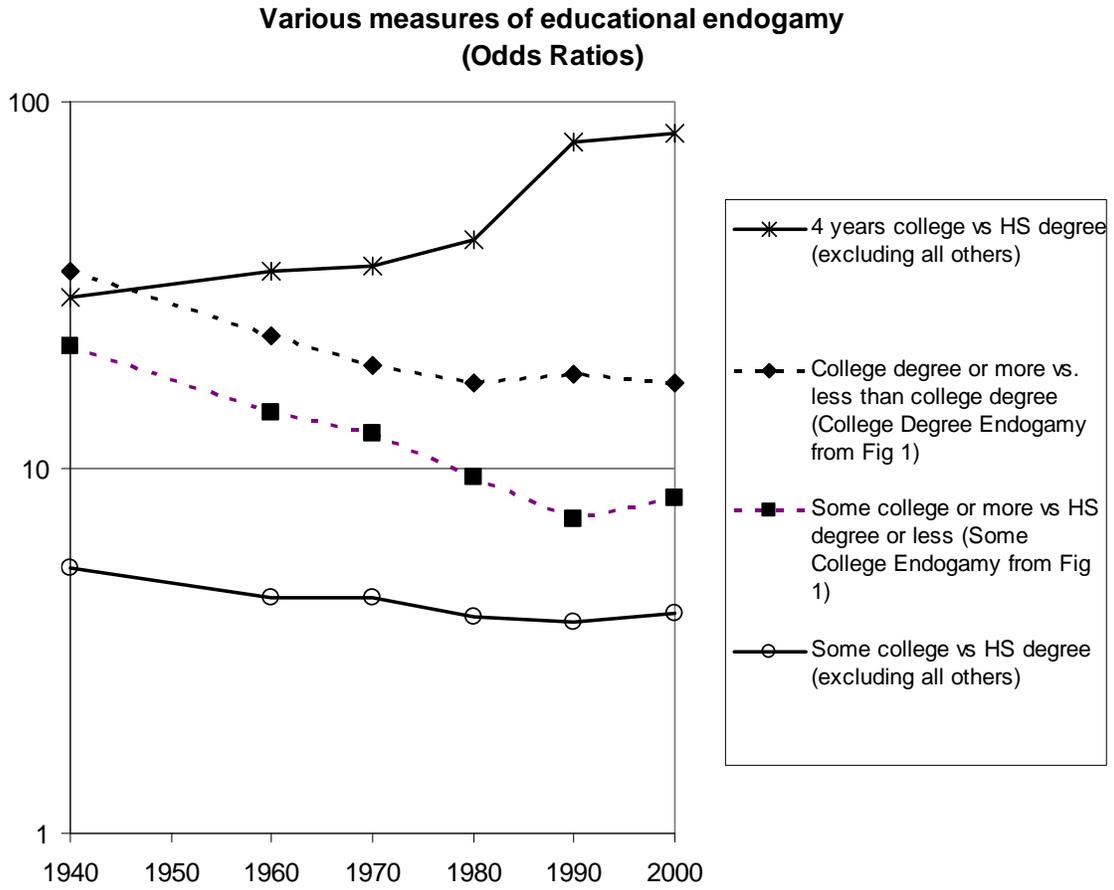
Change 1960 to 1980

Change 1980 to 2000

Source: Weighted census 1% files from 1940 and 1960, and 5% files from 1980, and 2000 censuses, via IPUMS. Individuals were all U.S. born and age 20-39 at the time of the census. Changes from census to census are multiplicative.

Figure A4:

**Various measures of educational endogamy
(Odds Ratios)**

Source: Census microdata from IPUMS

Table A1: Historical Profile of Race, Education, and Religion of Adults in the U.S. (Percentage by Year)

Race

	1880	1940		1960	1970	1980	1990	2000
White	87.7	89.9		88.3	85.8	82.3	78.6	72.3
Black	11.5	8.8		9.3	9.4	10.1	10.6	11.0
Hispanic	0.4	1.0		1.6	3.7	5.4	7.5	10.8
Asian	0.4	0.2		0.5	0.7	1.5	2.7	3.8
Native American	0.1	0.2		0.2	0.3	0.5	0.7	0.7
Other Race				0.1	0.1	0.1	0.1	0.1
Two or More								1.4
Total	100	100		100	100	100	100	100

Education

	1940		1960	1970	1980	1990	2000
0-4 yrs	12.8		7.8	5.1	3.2	2.6	2.1
5-8 yrs	44.1		29.5	20.7	13.1	7.3	5.4
9-11 yrs	16.2		19.5	18.7	15.0	10.7	8.7
12 yrs	16.4		26.1	32.3	35.7	33.9	33.5
1-3 yrs college	6.0		9.7	12.7	17.7	26.4	28.2
BA or more	4.5		7.5	10.5	15.2	19.1	22.0
Total	100		100	100	100	100	100

Religion

	1955	1957		1970s	1980s	1990s	2000-2002
Mainline Protestant	31.6	26.7		28.4	24.5	21.8	18.0
Other Protestant	35.0	39.6		36.8	39.1	38.3	36.5
Catholic	29.2	25.7		24.2	24.9	23.5	23.5
Jew	2.8	3.2		2.5	2.2	2.1	2.2
Other	0.5	1.3		1.1	1.9	3.6	5.9
None	0.8	3.6		7.0	7.5	10.7	14.0
Total	100	100		100	100	100	100

Source: race and education from census microdata via IPUMS, weighted 1% files. Religion from the General Social Survey, except 1995 from Growth of American Families survey, and 1957 data from (U.S. Bureau of the Census 1958), based on the March 1957 Current Population Survey, respondents 14 years old and older.
Sample includes all individuals over the age of 19, regardless of national origin.
Hispanicity is by Spanish Surname post- enumeration identification for 1880-1960, and by self identification 1970-2000. Black and white exclude Hispanics.

Table A2: Percentage Endogamy by Race, Education, and Religion for US born men

Race, Ethnic, and Educational Endogamy from the US Census:

	1880	1900	1910	1920	1930	1940	1950	1960	1970	1980	1990	2000	2005
white endogamy		99.9	99.9	99.9		99.9	99.9	99.8	99.7	99.2	99.0	97.0	96.6
black endogamy		99.9	99.2	99.8		99.1	99.1	99.4	98.3	95.5	92.0	83.8	82.3
Hispanic endogamy									76.5	67.1	64.1	66.4	64.8
Asian endogamy							92.0	83.8	67.9	52.1	47.0	40.3	48.2
some college endogamy						47.7		49.9	59.0	64.5	75.3	81.7	85.4
college degree endogamy						30.0		33.0	44.0	50.3	59.9	67.2	73.8
literacy endogamy	92.7	94.2	95.4	98.0	99.1								

Religious Endogamy from GSS and GAF:

	1955	1970s	1980s	1990s
Protestant endogamy	87.0	80.7	77.8	74.3
Catholic endogamy	74.6	56.7	57,1	56.1
Jewish endogamy	87.5	66†	69	57†
no religious preference endogamy	11	9†	12	17†

Sources same as for Figure 1. For educational, racial and ancestral endogamy: Weighted census microdata and weighted data from the ACS 2005, both partners U.S. born and age 20-29.
Source for religious endogamy: the General Social Survey,1978-1994, and the 1955 Growth of American Family survey. For Protestant and Catholic endogamy, respondents were US born and age 20-29. For the smaller samples of Jewish endogamy and no religious preference endogamy, respondents were US born all ages.
† N<50
Black and White categories include Hispanics for consistency with pre-1970 data.

Table A3: Percentage Endogamy by Race, Education, and Religion for US born women

Race, Ethnic, and Educational Endogamy from the US Census:

	1880	1900	1910	1920	1930	1940	1950	1960	1970	1980	1990	2000	2005
white endogamy		99.9	99.7	99.9		99.9	99.9	99.9	99.6	99.0	98.7	96.2	96.0
black endogamy		99.9	99.9	99.9		99.2	99.4	99.5	99.1	98.7	96.8	94.1	90.2
Hispanic endogamy									77.6	68.7	63.2	66.6	61.1
Asian endogamy				90.3		81.3	89.4	76.2	59.6	45.6	41.3	32.9	41.6
some college endogamy						60.0		72.7	76.3	73.5	72.0	74.9	73.1
college degree endogamy						56.2		69.3	70.4	66.7	63.7	61.8	62.6
literacy endogamy	93.9	93.9	94.0	96.3	97.4								

Religious Endogamy from GSS and GAF:

	1955	1970s	1980s	1990s
Protestant endogamy	87.8	81.2	76.1	74.7
Catholic endogamy	67.0	53.6	54.3	53.8
Jewish endogamy	84	78†	70	62†
no religious preference endogamy	39	13†	20	22

Sources same as for Figure 1. For educational, racial and ancestral endogamy: Weighted census microdata and weighted data from the ACS 2005, both partners U.S. born and age 20-29.

Source for religious endogamy: the General Social Survey,1978-1994, and the 1955 Growth of American Family survey. For Protestant and Catholic endogamy, respondents were US born and age 20-29. For the smaller samples of Jewish endogamy and no religious preference endogamy, respondents were US born all ages.

Black and White categories include Hispanics for consistency with pre-1970 data.

† N<50

Table A4: Various Measures of Educational Assortative Mating 1940-2000

All Ages

Year	Pct with Same Education	Cramer's V	gamma	tau-b
1940	0.491	0.348	0.704	0.566
1950				
1960	0.396	0.321	0.639	0.532
1970	0.399	0.312	0.635	0.523
1980	0.433	0.328	0.663	0.537
1990	0.460	0.333	0.666	0.526
2000	0.489	0.320	0.666	0.521

Ages 20-29

Year	Pct with Same Education	Cramer's V	gamma	tau-b
1940	0.427	0.342	0.661	0.545
1950				
1960	0.400	0.282	0.623	0.490
1970	0.461	0.285	0.687	0.523
1980	0.500	0.272	0.688	0.514
1990	0.526	0.315	0.688	0.510
2000	0.542	0.294	0.705	0.528

Source: US Census microdata via IPUMS, using educational variable EDUCREC, a 9 level categorical variable. Subpopulation of married couples age 20-29 both spouses are US born, the all ages sample includes persons of all national origins.

Table A5: Exponentiated Coefficients from a loglinear model fitting educational endogamy only

Educational category:	1940	1960	1980	2000
<9	7.67	7.12	10.71	33.65
9 to 11	1.25	1.75	3.51	5.98
HS	2.49	1.79	2.12	2.80
Some Col	3.60	2.41	1.43	1.15
BA+	15.91	15.64	10.72	9.86