

**INTERRACIAL MARRIAGE AND AGE AT MARRIAGE
(A RESEARCH NOTE)**

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Abstract:

This paper examines whether the chance of interracial marriage varies by age at marriage, and whether the relationship between age at marriage and interraciality has changed over time. For first marriages in the 1970s, marriage records from the National Center for Health Statistics show that age at marriage was a strong predictor of interraciality. The dominant pattern was an inverted 'U', with the odds of interraciality peaking for individuals who married in their late 30s. The inverse 'U' pattern of interraciality as a function of age at first marriage was robust in the 1970s, but went into decline after the 1970s and was barely measurable in 1990.

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Is interracial marriage associated with later age of marriage, and if so why? A substantial body of scholarship demonstrates that interracial marriage is associated with historical time, that is the number of interracial marriages and the percentage of all marriages that are interracial has risen in the U.S. in recent decades (Kalmijn 1993; Lieberman and Waters 1988; Qian 1997). Researchers have only just begun to examine the relationship between life course and interracial unions (Joyner and Kao 2005).

Using U.S. survey data gathered after 1990, Joyner and Kao (2005) found that the likelihood of being in an interracial relationship declined steadily with the age of the respondent. The decline, however, was due in part to the lower rate of interraciality for marriage as compared the higher rate of interraciality among the presumably more casual relationships of 12 and 13 year olds. Among married respondents in Add Health and in the National Health and Social Life Survey, Joyner and Kao (2005 p.576) found no significant relationship between age at marriage and interraciality. In this paper I show results consistent with Joyner and Kao (i.e. no relationship between age at marriage and interraciality) for recent marriages, but in earlier marriage cohorts I show that there was a very distinctive inverse 'U' relationship between age at marriage and interraciality.

There are several social theories that could imply a relationship between age at marriage and interracial marriage. One reason later age at first marriage might be associated with higher rates of interracial unions is that progress through young adulthood gives individuals more opportunity to have traveled away from their community of origin and therefore more opportunity to be exposed to different and potentially more diverse populations. More diversity of social contexts means more diversity of potential mates, and should lead to higher rates of interracial marriage (Blau and Schwartz 1984; Feld 1981). If parental influence tends to suppress interracial marriages, then greater independence from parents (such as marriage later in the life course) might lead to higher rates of interracial marriage.

There are also several theoretical reasons why younger age at marriage might be associated with a greater propensity to marry someone of a different race, even controlling for historical time, that is even for marriages taking place in the same calendar year (Lieberman and Waters 1988). One possible reason why earlier age at

marriage might be associated with a greater propensity to marry someone of another race is the association between birth cohort and racial attitudes. The literature on racial attitudes in the U.S. demonstrates a strong birth cohort effect (Firebaugh and Davis 1988; Schuman et al. 1997). In other words, more recent birth cohorts, especially more recent birth cohorts of whites in the U.S. are more open to the idea of social mixing with people of other races. Individuals born in earlier times, especially individuals born before 1940 might be substantially more resistant to social mixing with people of different races.

The passage of historical time may dampen the predicted interactions between age at marriage and interracial marriage. Independence from parents only increases the likelihood of interracial marriage to the extent that the parents hold a negative view of interracial marriage. Whereas the marriage cohorts of the 1970s would have come into adulthood after the civil rights movement in the U.S., their parents would have come of age before civil rights. The generation gap, to use parlance of the 1960s (Gitlin 1993), would have been especially wide for the marriage cohorts of the 1970s and their parents, because the two generations would have come of age on opposite sides of the enormous social changes of the 1960s. A generation later, for the marriage cohort of 1990, the generation gap between young adults and their parents (especially over issues of race) may not have been as wide. Surveys of racial attitudes in the U.S. show that white resistance to the legality of interracial marriage has dropped off dramatically since the 1960s (Schuman et al. 1997).

Data, Definitions, and Preliminary Analysis:

In this paper I use marriage records from 1970, 1979, and 1990 from the National Center for Health Statistics (NCHS). Unfortunately, not all states are sampled in the NCHS, and the states that do participate collect different kinds of data. The list of states that report the race of married persons to the NCHS is particularly suspect- several of the most important states (California and New York) do not report race. Race in the remaining states is recorded in three categories: white, black, and other; any marriage across the three categories is considered interracial. The results have been confirmed using other data sources, including the 1980 US census (the last census to record age at marriage), as noted below.

Table 1 presents data on the relationship between age at first marriage and interraciality, from U.S. states who reported race of marriage licenses to the NCHS, for 1970, 1979, and 1990. Several trends are worth noting. First, as other scholars have

found, the rate of interracial marriages climbed steadily during this period from 0.81% for first married men in 1970 to 1.49% in 1979, to 3.04% in 1990. Second, the mean age at first marriage also rose for men and women. In all three marriage cohorts, the rate of interraciality peaked for individuals who married substantially after the mean age at first marriage. In 1970 and 1979, the rate of interraciality peaked for men who married for the first time in their late 30s, whereas the mean age at first marriage (regardless of the race of men or their wives) was 23.0 in 1970 and 23.8 in 1979. The marriage records of women from the NCHS show a similar pattern, and the census records for first marriages for men and women in the 1970s also show a similar pattern (available from the author).

[Table 1 here]

The odds ratios are calculated directly from the probabilities, $OR = \frac{P_2(1-P_1)}{P_1(1-P_2)}$ and the standard errors are a function of the unweighted counts in each category (Agresti 1990; Clogg and Eliason 1987). Odds ratios significantly greater than 1 indicate that the probability of interracial marriage was significantly higher for men in that age category compared to men age 20-24 (the reference category). Odds ratios significantly less than 1 indicate that the probability of interracial marriage was significantly lower than for the reference age group. The odds ratios control for the general (same-race) marriage rate by age. If the probability of marrying interracially were the same at every age group, the odds ratios of interraciality would be equal to one in each age group. When the odds ratios of interraciality significantly differ from one, it means that the age pattern of interracial marriage differs significantly from the age pattern of same-race marriage.

[Figure 1 here]

Figure 1 provides another perspective on the inverted 'U' relationship between age at first marriage and interraciality. Figure 1 shows the odds ratios of interraciality (compared to same-race marriage) for men and women from the NCHS. The odds ratios compare each age group to the reference category, age 20-24 for the same year, and thereby control away the changing overall rate of interracial marriage and allow the

shape of the plots from the three different years to be compared on the same scale. Because the age group 20-24 is the reference category, all three plots reach an odds ratio of 1 in the 20-24 age category. The key point of Figure 1 is that while the inverted 'U' shape is in evidence in all three years, the inverted 'U' is substantially flattened in 1990 marriages compared to 1970 or 1979. In 1970 and 1979, the odds of interracial marriage were more than 2.5 higher in the late 30s compared to the early 20s, whereas in 1990 the peak odds of racial intermarriage (compared to same-race marriage) barely exceeded 1.5 times the odds of interracial marriage of persons married in their early 20s. In 1970 and 1979 persons who married as teenagers were significantly less likely to be interracially married than people who married in their early 20s, whereas in 1990 persons who married in their teen years were not significantly less likely to marry someone of another race (see Table 1). Figure 1 shows the dampening over time of the relationship between age at first marriage and interraciality. Census data for first marriages in the 1970s confirm the inverse 'U' relationship between age at first marriage and interraciality even when education and income are taken into account, and the inverse 'U' shape applied to all racial and ethnic groups except Asians (tables available from the author).

Multivariate Tests of the Dampening of the Inverse 'U' Relationship Over Time:

In this section I use multivariate logistic regression with NCHS data to determine whether the dampening of the life course effect on interracial racial marriage (see Table 1 and Figure 1) is robust. As in Table 1 and Figure 1, I use the marriage records of the NCHS for men married for the first time in 1970, 1979 and 1990. The full model can be written:

$$\text{Log} \left(\frac{p}{1-p} \right) = \text{Const} + \text{region} + \text{type} + \text{husb_race} + \text{year} \\ + \text{age} + \text{age_sq} + \text{age} \times 1990 + \text{age_sq} \times 1990$$

where p is the predicted probability of being married to someone of another race, *region* is a categorical variable for geographical region of the U.S., *type* distinguishes between civil weddings, religious ceremonies, and weddings whose religious or civil status was not reported, *husb_race* is husband's race (white, black, or other), *year* is the year the

wedding took place, *age* is the husband's age at marriage, and *age_sq* is the husband's age at marriage squared.

[Table 2 here]

Aside from the effects of age at marriage, several other effects are worth noting. The odds of racial intermarriage were consistently lowest in the South, and highest in the West. Religious wedding ceremonies were less likely to be interracial. Whites and blacks had much lower odds of racial intermarriage than the residual 'other' category, because the 'others' include Asians, Hispanics, and Native Americans whose odds of marrying interracially were comparatively high.

Model 2 introduces the *age* and *age_sq* terms. Both age at marriage terms are statistically significant in Model 2, and Model 2 improves the fit significantly. The difference of the likelihood ratio chi-squares Models 1 and 2 is 67 ($15,522-15,455=67$); an improvement in the likelihood ratio chi-square of 67 on 2 degrees of freedom is much better than could have been expected by chance ($P < 0.001$). The BIC also indicates that Model 2 fits better than Model 1 (Raftery 1986; Weakliem 1999). The linear *age* term is positive in Model 2, while the quadratic *age_sq* term is negative, indicating the now familiar inverse 'U' shape.

Model 3 adds *age* and *age_sq* interactions with the 1990 marriage cohort. Model 3 improves the fit compared to Model 2 by both criteria (an improvement of the likelihood ratio chi-square of 48 on 2 degrees of freedom). Model 3 shows that the associations between age at marriage and interraciality which were strongest in the marriage cohorts of 1970 and 1979 were nearly perfectly flattened out in 1990. In 1970 and 1979 the linear association of age at marriage with interraciality was 0.103, in 1990 the association was not significantly different from zero ($.103-.109=-.006$). Similarly, the quadratic association of age at marriage was $-.00132$ in 1970 and 1979, but was reduced essentially to zero in 1990 ($.00134-.00132=.00002$). Table 3 provides statistical confirmation that the association between age at marriage and interraciality was significant in the 1970s, but had become essentially flat by 1990.

Discussion:

NCHS data demonstrate that age had a significant effect on the propensity to form interracial marriages in the 1970s. The inverse 'U' pattern of interraciality by age at

first marriage suggests that up to a certain age (usually the late 30s), later age at first marriage increased the chance of interraciality.

Even though surveys of racial attitudes in the U.S. show that young people are the most liberal on issues of race (Firebaugh and Davis 1988; Schuman et al. 1997), people in the U.S. who married in their teenage years were *not* the most likely to be interracial. I hypothesize that later age at first marriage resulted in higher rates of interracial marriage because young adults in the post-1960 period have been increasingly independent from their parents and from their communities of origin (Author cite). Travel away from the parental nest exposes young adults to greater diversity of potential mates and reduces the parental surveillance which may have prevented transgressive unions such as interracial marriages in the past. Eventually young adults reached a stage of maximum independence from their communities of origin, and eventually the pool of potential mates became as diverse as it ever would be. From that age forward, later age at first marriage tended to reduce interracial marriage because individuals who married later came from earlier birth cohorts whose attitudes about interracial unions were less tolerant.

Age at marriage was an important determinant of interracial marriage in the past, but has become much less important. In the 1990 marriage cohort, and in more recent marriages of young adults recorded in Add Health, age at first marriage was no longer a significant predictor of interraciality. As long as the generation gap in racial attitudes was a factor in American life, as it was in the 1970s, young adults increased their chances of marrying interracially if they married after having the chance to live away from the parental nest. The more recent dampening of the effect of age at marriage on interraciality suggests that some of the age-specific barriers to racial interracial marriage have disappeared.

References:

- Agresti, Alan. 1990. *Categorical Data Analysis*. New York: John Wiley.
- Blau, Peter M., and Joseph E. Schwartz. 1984. *Crosscutting Social Circles: Testing a Macrostructural Theory of Intergroup Relations*. Orlando, FL: Academic Press.
- Clogg, Clifford C., and Scott R. Eliason. 1987. "Some Common Problems in Log-Linear Analysis." *Sociological Methods and Research* 16:8-44.
- Feld, Scott L. 1981. "The Focused Organization of Social Ties." *American Journal of Sociology* 86:1015-1035.
- Firebaugh, Glenn, and Kenneth E. Davis. 1988. "Trends in Antiblack Prejudice, 1972-1984: Region and Cohort Effects." *American Journal of Sociology* 94:251-272.
- Gitlin, Todd. 1993. *The Sixties: Years of Hope, Days of Rage*. Revised Edition. New York: Bantam.
- Joyner, Kara, and Grace Kao. 2005. "Interracial Relationships and the Transition to Adulthood." *American Sociological Review* 70:563-581.
- Kalmijn, Matthijs. 1993. "Trends in Black/White Intermarriage." *Social Forces* 72:119-146.
- . 1998. "Intermarriage and Homogamy: Causes, Patterns, Trends." *Annual Review of Sociology* 24:395-421.
- Liebersohn, Stanley, and Mary C. Waters. 1988. *From Many Strands: Ethnic and Racial Groups in Contemporary America*. New York: Russell Sage Foundation.
- Qian, Zhenchao. 1997. "Breaking the Racial Barriers: Variations in Interracial Marriage between 1980 and 1990." *Demography* 34:263-276.
- Raftery, Adrian. 1986. "Choosing Models for Cross-Classifications." *American Sociological Review* 51:145-146.
- Schuman, Howard, Charlotte Steeh, Lawrence Bobo, and Maria Krysan. 1997. *Racial Attitudes in America: Trends and Interpretations*. Revised Edition. Cambridge, Mass.: Harvard University Press.
- Weakliem, David L. 1999. "A Critique of the Bayesian Information Criterion for Model Selection." *Sociological Methods and Research* 27:359-397.

Table 1: Probability of Interracial Marriage by Age at First Marriage, from NCHS

When Married		1970		1979		1990	
N		121,799		323,890		91,475	
		% Interracial	odds ratio	% Interracial	odds ratio	% Interracial	odds ratio
<i>Husbands</i>							
Age at first marriage:							
<20		0.52	0.75*	0.96	0.76***	3.13	0.91
(comparison category)		0.70		1.26		3.00	
20-24							
25-29		1.22	1.76***	1.79	1.42***	3.32	1.14**
30-34		1.72	2.49***	2.63	2.11***	3.67	1.22**
35-39		1.87	2.70***	3.56	2.88***	4.33	1.51***
40-49		1.38	2.00**	3.12	2.51***	5.04	1.58***
50+		1.67	2.41**	1.73	1.38	4.19	1.33
% Interracial, All First Marriages		0.81		1.49		3.04	
Mean Age First Marriage		23.0		23.8		26.0	
<i>Wives</i>							
Age at first marriage:							
<20		0.57	0.70***	0.94	0.65***	2.8	0.96
(comparison category)							
20-24		0.81		1.43		2.9	
25-29		1.59	1.98***	2.42	1.70***	3.81	1.33***
30-34		2.18	2.72***	3.19	2.27***	4.13	1.44***
35-39		2.15	2.69***	2.84	2.01***	4.96	1.75***
40-49		1.62	2.02*	3	2.13***	4.66	1.64***
50+		0.41	0.50	0.8	0.55	1.93	0.66
% Interracial, All First Marriages		0.79		1.46		3.30	
Mean Age First Marriage		21.2		22.1		24.5	

Source: Weighted data from the vital statistics reports of the National Center for Health Statistics for 1970, 1979 and 1990, for states which reported race of married persons to the NCHS. NCHS divides race into three groups, White/Black/Other. Inter-marriage is any marriage across racial categories.
 * P<0.05 **P<0.01 *** P<0.001, two tailed tests.

Table 2: Interraciality and Age at First Marriage: Coefficients from Logistic Regressions Predicting Interracial Marriage For Men Using NCHS 1970, 1979, and 1990.

	Model 1	Model 2	Model 3
Region			
New England	.411***	.407***	.407***
Mid Atlantic (comparison category)			
E. North Central	-.111***	-.096	-.096
W. North Central	.385***	.413***	.414***
South Atlantic	-.182***	-.159***	-.158***
E. South Central	-.852***	-.814***	-.814***
W. South. Central	-.813***	-.776***	-.777***
Mountain	.746***	.788***	.784***
Pacific	1.304***	1.322***	1.320***
Type of Ceremony			
Civil	-.058	-.065	-.081
Religious	-.803***	-.808***	-.819***
Not Reported (comparison)			
Husband's Race			
White	-3.34***	-3.30***	-3.30***
Black	-1.25***	-1.25***	-1.25***
Other (Comparison category)			
Year			
1970 (comparison category)			
1979	1.11***	1.092***	1.09***
1990	1.29***	1.218***	3.10***
Age at Marriage			
Age at Marriage Squared		.068***	.103***
		-.00089***	-.00132***
Age at Marriage×1990			
Age at Marriage Squared×1990			-.109***
			.00134***
Constant			
	-2.25***	-3.38***	-3.96***
Likelihood Ratio Chisquare			
df	15,455	15,522	15,570
BIC	14	16	18
	-15,272	-15,314	-15,336

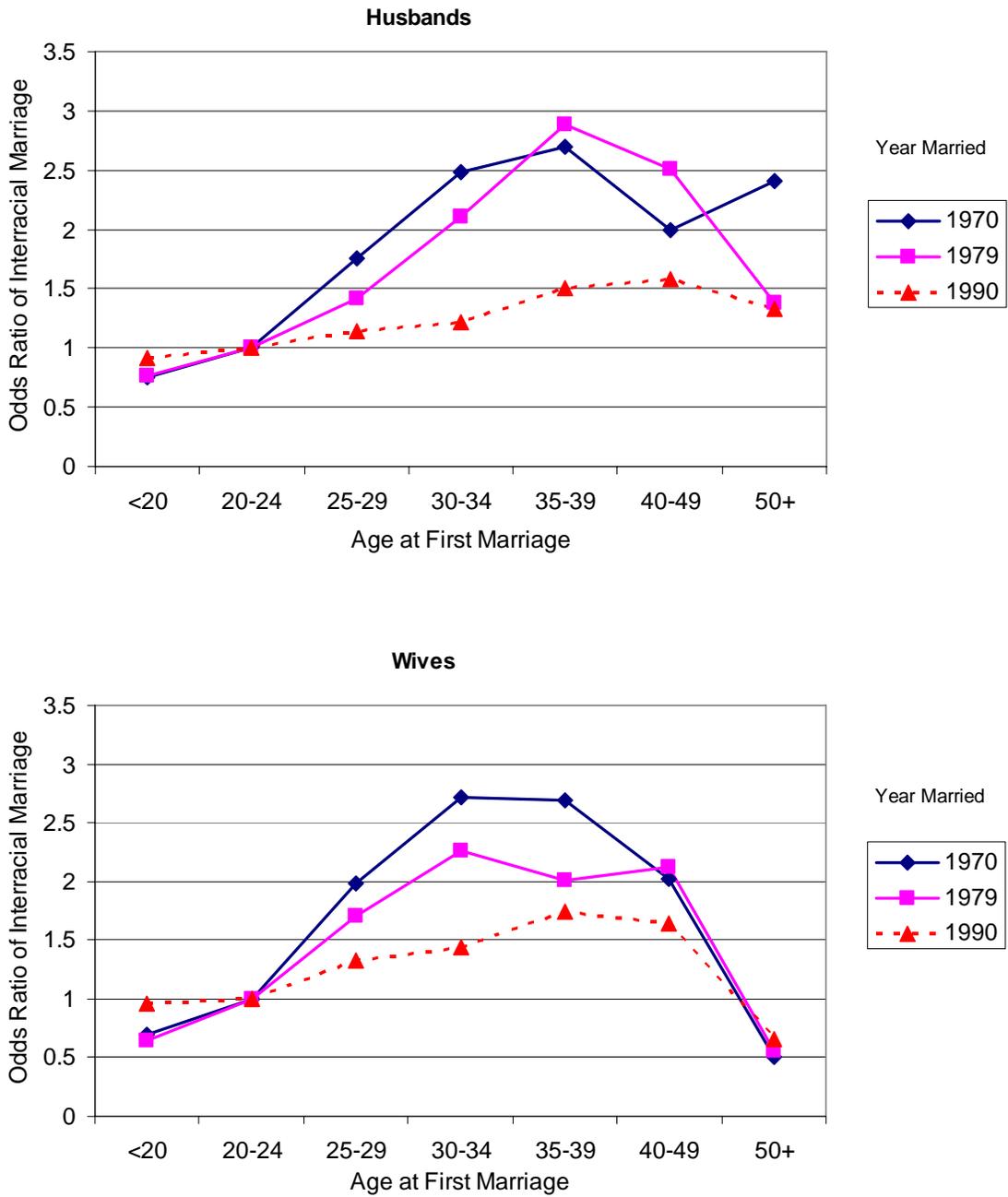
Source: Weighted data from the vital statistics reports of the National Center for Health Statistics for 1970, 1979 and 1990, for states which reported race of married persons to the NCHS. Husbands are marrying for the first time. NCHS divides race into three groups, White/Black/Other. Inter-marriage is any marriage across racial categories.

* P<.05

** P<.01

*** P<.001, two tailed tests.

Figure 1: The Declining Relationship Between Age at First Marriage and Interraciality by Year of Marriage



Source: National Center for Health Statistics marriage records for 1970, 1979, and 1990, see Table 1.