

## Appendix Tables and Figures

### The Role of Kinship in Racial Differences in Exposure to Unemployment

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**Table A1.** Data Sources for Female Kinship Estimates

Data Source	Type	Year	Age Range
(1) Mortality, $q_x$			
National Vital Statistics Reports 2017	By race	2017	0–100
National Vital Statistics Reports 2016	By race	2016	0–100
National Vital Statistics Reports 2015	By race	2015	0–100
National Vital Statistics Reports 2014	By race	2014	0–100
National Vital Statistics Reports 2013	By race	2013	0–100
National Vital Statistics Reports 2012	By race	2012	0–100
National Vital Statistics Reports 2011	By race	2011	0–100
National Vital Statistics Reports 2010	By race	2010	0–100
National Vital Statistics Reports 2009	By race	2009	0–100
National Vital Statistics Reports 2008	By race	2008	0–100
National Vital Statistics Reports 2007	By race	2007	0–100
National Vital Statistics Reports 2006	By race	2006	0–100
National Vital Statistics Reports 2005	By race	2005	0–100
National Vital Statistics Reports 2004	By race	2004	0–100
National Vital Statistics Reports 2003	By race	2003	0–100
National Vital Statistics Reports 2002	By race	2002	0–100
National Vital Statistics Reports 2001	By race	2001	0–100
National Vital Statistics Reports 2000	By race	2000	0–100
National Vital Statistics Reports 1999	By race	1999	0–100
National Vital Statistics Reports 1998	By race	1998	0–100
National Vital Statistics Reports 1997	By race	1997	0–100
National Vital Statistics Reports 1996	By race	1996	0–85
Vital Statistics of the United States 1995	By race	1995	0–85
Vital Statistics of the United States 1994	By race	1994	0–85
Vital Statistics of the United States 1993	By race	1993	0–85
Vital Statistics of the United States 1992	By race	1992	0–85
Vital Statistics of the United States 1991	By race	1991	0–85
Vital Statistics of the United States 1990	By race	1990	0–85
Vital Statistics of the United States 1989	By race	1989	0–85
Vital Statistics of the United States 1988	By race	1988	0–85
Vital Statistics of the United States 1987	By race	1987	0–85
Vital Statistics of the United States 1986	By race	1986	0–85
Vital Statistics of the United States 1985	By race	1985	0–85
Vital Statistics of the United States 1984	By race	1984	0–85
Vital Statistics of the United States 1983	By race	1983	0–85
Vital Statistics of the United States 1982	By race	1982	0–85
Vital Statistics of the United States 1981	By race	1981	0–85
Vital Statistics of the United States 1980	By race	1980	0–85
Vital Statistics of the United States 1979	By race	1979	0–85
Vital Statistics of the United States 1978	By race	1978	0–85
Vital Statistics of the United States 1977	By race	1977	0–85
Vital Statistics of the United States 1976	By race	1976	0–85
Vital Statistics of the United States 1975	By race	1975	0–85
Vital Statistics of the United States 1974	By race	1974	0–85

Vital Statistics of the United States 1973	By race	1973	0–85
Vital Statistics of the United States 1972	By race	1972	0–85
Vital Statistics of the United States 1971	By race	1971	0–85
Vital Statistics of the United States 1970	By race	1970	0–85
Vital Statistics of the United States 1969	By race	1969	0–85
Vital Statistics of the United States 1968	By race	1968	0–85
Vital Statistics of the United States 1967	By race	1967	0–85
Vital Statistics of the United States 1966	By race	1966	0–85
Vital Statistics of the United States 1965	By race	1965	0–85
Vital Statistics of the United States 1964	By race	1964	0–85
Vital Statistics of the United States 1963	By race	1963	0–85
Vital Statistics of the United States 1962	By race	1962	0–85
Vital Statistics of the United States 1961	By race	1961	0–85
Vital Statistics of the United States 1960	By race	1960	0–85
Vital Statistics of the United States 1959 (Abridged Life Table)	By race	1959	0–85
Vital Statistics of the United States 1958 (Abridged Life Table)	By race	1958	0–85
Vital Statistics of the United States 1957 (Abridged Life Table)	By race	1957	0–85
Vital Statistics of the United States 1956 (Abridged Life Table)	By race	1956	0–85
Vital Statistics of the United States 1955 (Abridged Life Table)	By race	1955	0–85
Vital Statistics of the United States 1954 (Abridged Life Table)	By race	1954	0–85
Vital Statistics of the United States 1953 (Abridged Life Table)	By race	1953	0–85
Vital Statistics of the United States 1952 (Abridged Life Table)	By race	1952	0–85
Vital Statistics of the United States 1951 (Abridged Life Table)	By race	1951	0–85
Vital Statistics of the United States 1950 (Abridged Life Table)	By race	1950	0–85
Vital Statistics of the United States 1949 (Abridged Life Table)	By race	1949	0–85
Vital Statistics of the United States 1948 (Abridged Life Table)	By race	1948	0–85
Vital Statistics of the United States 1947 (Abridged Life Table)	By race	1947	0–85
Vital Statistics of the United States 1946 (Abridged Life Table)	By race	1946	0–75
United States Life Tables and Actuarial Tables 1939-1941	By race	1941	0–108
Continental U.S. Life Tables 1929 to 1931, 1920 to 1929, 1919 to 1921, 1909 to 1911, 1901 to 1910, 1900 to 1902	By race	1902, 1911, 1921,	0–105 1929, 1931
(2) Fertility, $f_x$			
Human Fertility Database (April 2020)	All races	1933–2017	12–54
U.S. Cohort and Period Fertility Tables, 1917-1980 (Heuser)	All races	1917-1932	14–49
National Vital Statistics Reports: Birth 2018 (5-yr age grps)	By race	2016–2018	10–49
National Vital Statistics Reports: Birth 2015 (5-yr age grps)	By race	1981–2015	10–49
U.S. Cohort and Period Fertility Tables, 1917-1980 (Heuser)	By race	1917-1980	14–49
(3) Unemployment			
Current Population Survey (Monthly)	By race	Jan1976–May2020	16–85

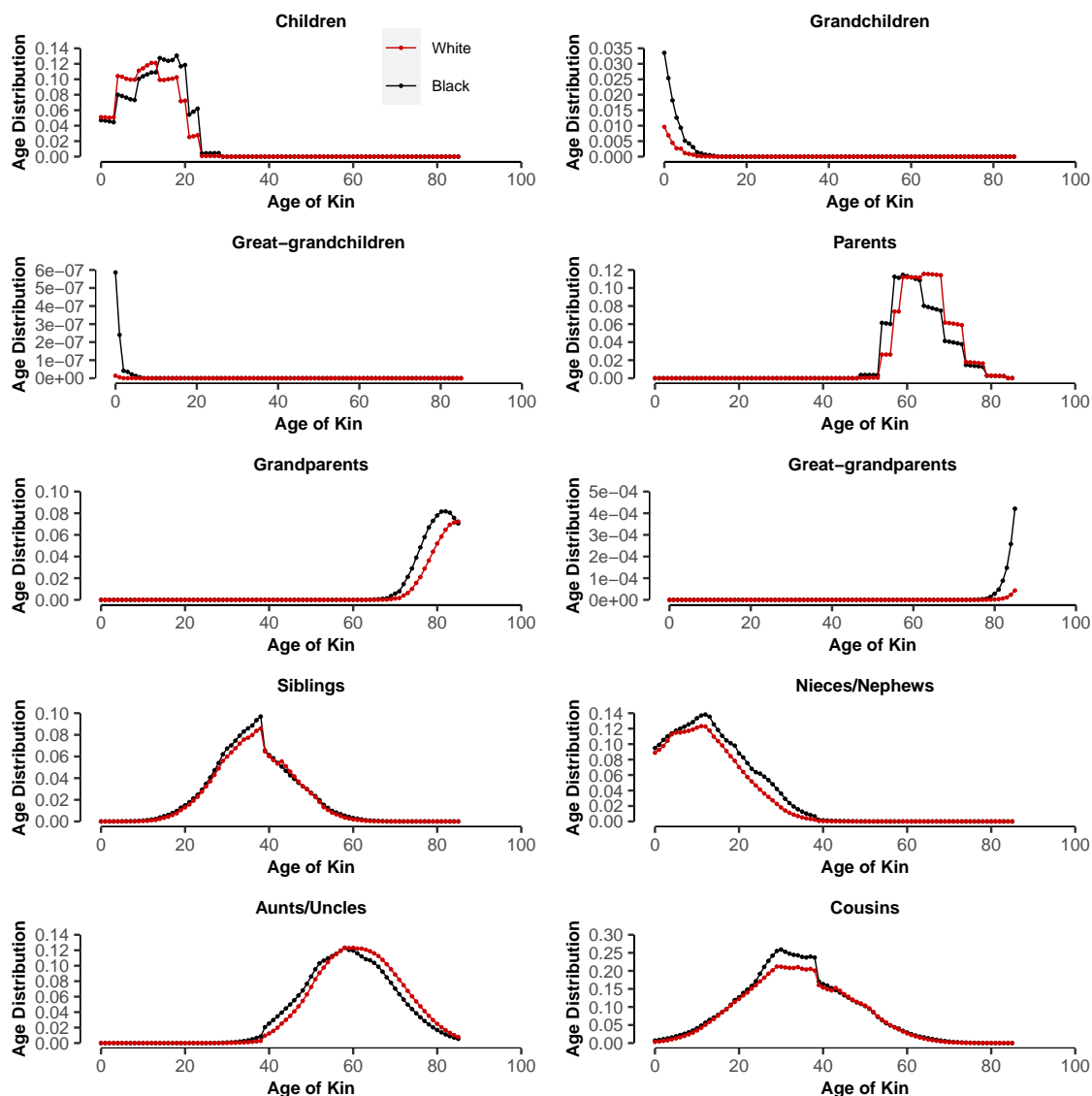
*Notes:* For abridged life tables, linear interpolation is used to impute  $l_x$ , which is then converted to  $q_x$ . Although most fertility statistics provide both male and female rates, only age-specific rates of females are used due to possible inaccuracy in age-specific male birth rates. For example, the 1938 vital statistics show that the category of births with unknown ages of father accounts for almost 30% of all births for years 1934 to 1938.

**Table A2.** Survey Estimates of Unemployed Men and Women Aged 16–85 and  
Unemployed Kin

	Unemployment rate	% w/ Unemployed kin	# Unemployed kin	Correlation in unemployment status between self and kin	N
White men	12.65	42.30	0.94	0.05	696
White women	14.52	40.13	1.36	0.14	673
Black men	19.36	42.73	1.08	0.15	65
Black women	7.27	53.88	1.50	0.00	79

*Data sources:* COVID-19 Survey Data Wave 1 (May 2020) and Wave 2 (August 2020).

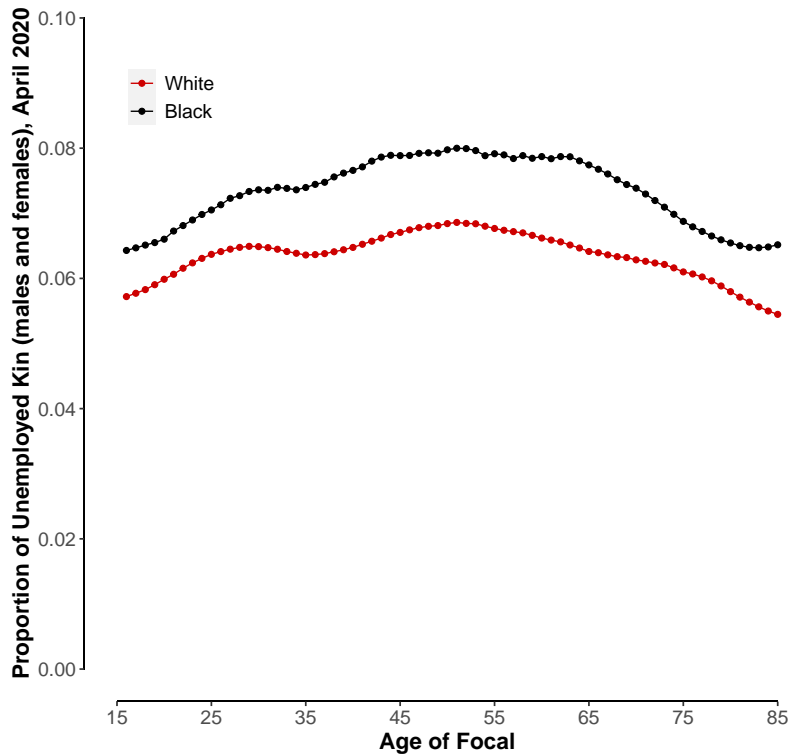
*Notes:* Survey respondents were asked to report their current work arrangement in Wave 1 and the number of unemployed relatives in April 2020 in Wave 2. The correlation in unemployment status is estimated using individuals' employment status and whether they have any unemployed kin.



**Fig. A1. Estimated Age Distribution of Kin of Various Kinds, Focal at Age 40 in 2020**

*Data sources:* National Vital Statistics Reports 1996–2017; Vital Statistics of the United States 1960–1995; Vital Statistics of the United States (Abridged Life Table) 1946–1959; United States Life Tables and Actuarial Tables 1939–1941; Continental U.S. Life Tables 1929 to 1931, 1920 to 1929, 1919 to 1921, 1909 to 1911, 1901 to 1910, 1900 to 1902; Fertility Tables for Birth Cohorts by Color: United States, 1917–80 (Heuser 1976); National Vital Statistics Reports 2015, 2018.

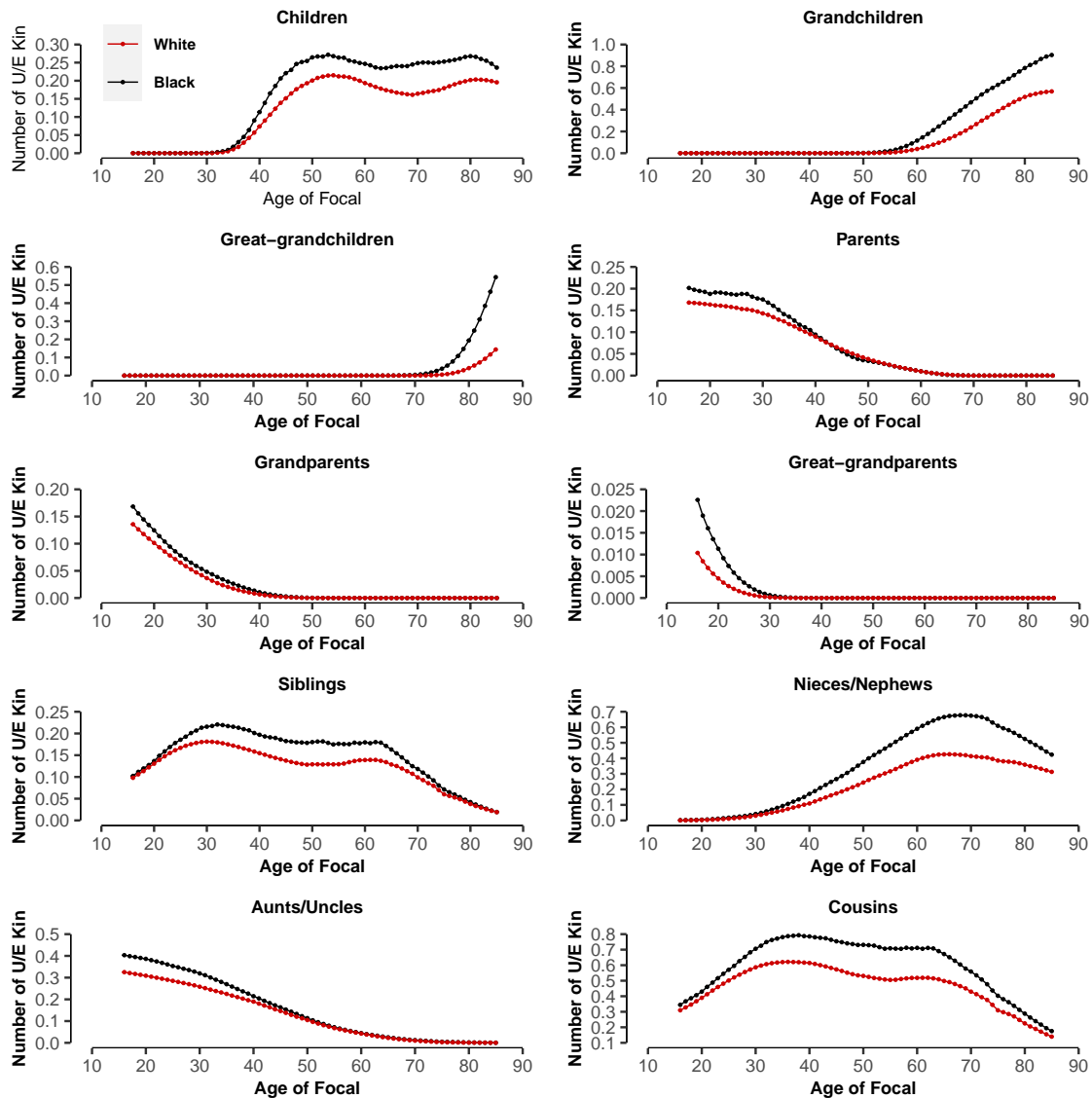
*Notes:* The figure plots the estimated age distribution of kin of individuals at age 40 living in 2020. Vital rates of 2018–2020 are assumed to be the same as the year 2017. The estimation details are described in the Methods section. We focus on living kin between ages 0 and 85 as the unemployment statistics shown in Figure 1 are estimated for adults at ages 16 to 85.



**Fig. A2. The Proportion of Unemployed Kin of Adults Aged 16–85 in April 2020**

*Data sources:* National Vital Statistics Reports 1996–2017; Vital Statistics of the United States 1960–1995; Vital Statistics of the United States (Abridged Life Table) 1946–1959; United States Life Tables and Actuarial Tables 1939–1941; Continental U.S. Life Tables 1929 to 1931, 1920 to 1929, 1919 to 1921, 1909 to 1911, 1901 to 1910, 1900 to 1902; Fertility Tables for Birth Cohorts by Color: United States, 1917–80 (Heuser 1976); National Vital Statistics Reports 2015, 2018; Current Population Survey April 2020.

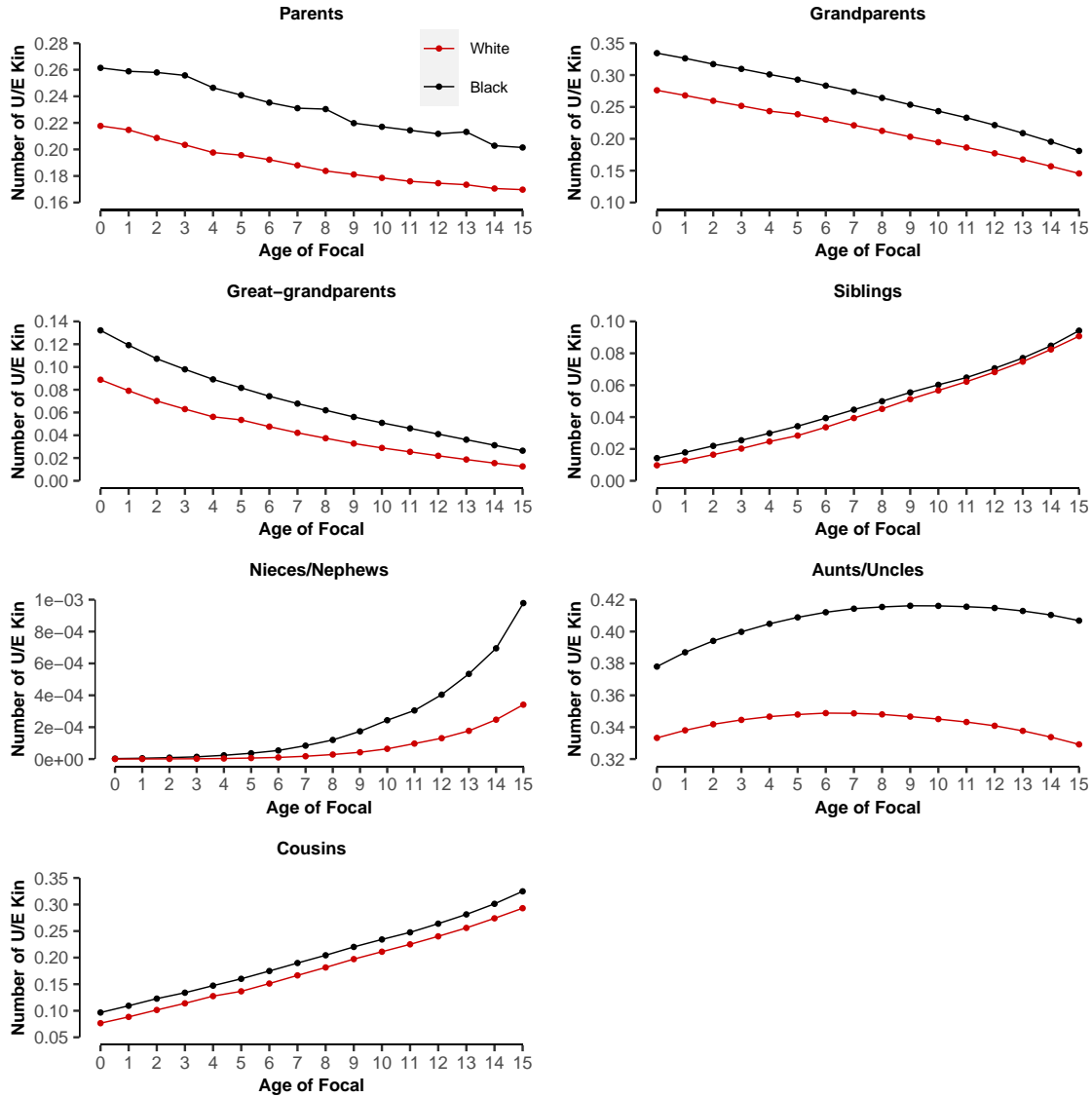
*Notes:* The age of focal ranges between 16 and 85. To estimate the number of all kinds of kin from both paternal and maternal ancestry, we assume that the numbers of female and male kin are equal. Our main analyses show the level of unemployment in kinship networks. The measure reflects racial differences in both unemployment rates among kin and kinship network size. In this graph, we remove the effect of kinship size by using the proportion of unemployed kin for individuals of different ages and racial groups. This prevalence measure is similar to the measure of unemployment rates, except that it shows the proportion of unemployed individuals in Focal’s kinship network rather than in the whole labor force.



**Fig. A3. Estimated Number of Unemployed Kin of Various Kinds, as a Function of the Age of Focal (16–85) in April 2020.**

*Data sources:* National Vital Statistics Reports 1996–2017; Vital Statistics of the United States 1960–1995; Vital Statistics of the United States (Abridged Life Table) 1946–1959; United States Life Tables and Actuarial Tables 1939–1941; Continental U.S. Life Tables 1929 to 1931, 1920 to 1929, 1919 to 1921, 1909 to 1911, 1901 to 1910, 1900 to 1902; Fertility Tables for Birth Cohorts by Color: United States, 1917–80 (Heuser 1976); National Vital Statistics Reports 2015, 2018.

*Notes:* The figure shows the expected numbers of unemployed kin of individuals in April 2020. The estimation details are described in the Methods section. Given that individuals can only have one mother, the number of unemployed mothers suggests the probability of mother’s unemployment.

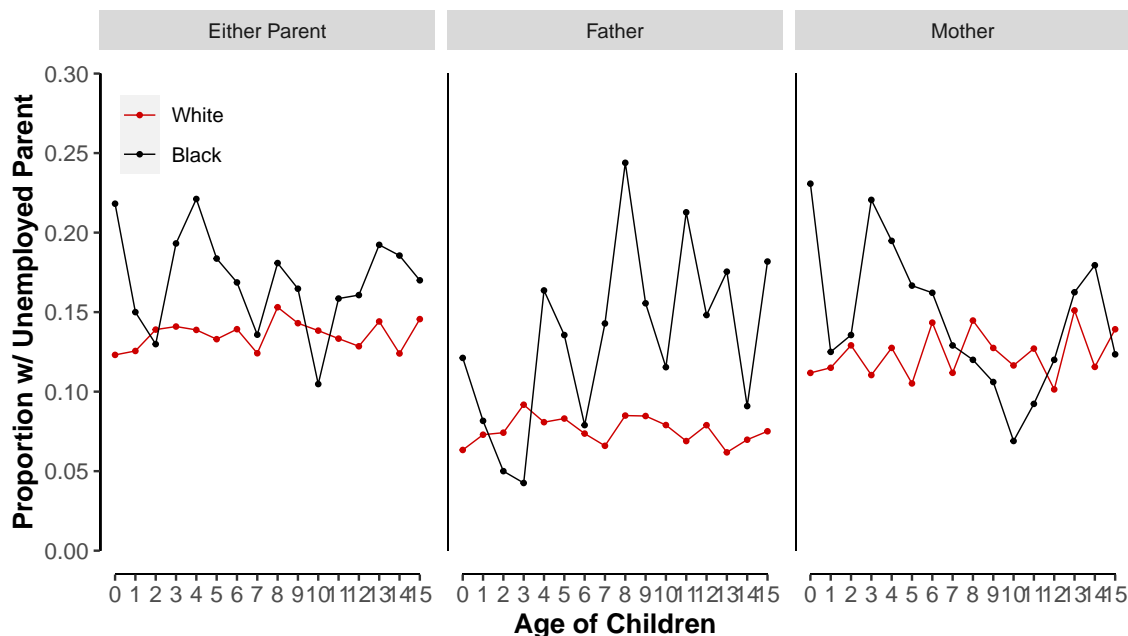


**Fig. A4. Estimated Number of Unemployed Kin of Various Kinds, as a Function of the Age of Focal (0–15).**

*Data sources:* National Vital Statistics Reports 1996–2017; Vital Statistics of the United States 1960–1995; Vital Statistics of the United States (Abridged Life Table) 1946–1959; United States Life Tables and Actuarial Tables 1939–1941; Continental U.S. Life Tables 1929 to 1931, 1920 to 1929, 1919 to 1921, 1909 to 1911, 1901 to 1910, 1900 to 1902; Fertility Tables for Birth Cohorts by Color: United States, 1917–80 (Heuser 1976); National Vital Statistics Reports 2015, 2018.

*Notes:* The figure shows the expected numbers of unemployed kin of individuals in April 2020. The estimation details are described in the Methods section.





**Fig. A5. Estimated Proportions of Children (0–15) with Unemployed Father, Mother, or Parent.**

*Data sources:* Current Population Survey April 2020

*Notes:* The figure shows the proportions of children aged 0–15 with unemployed father, mother, or either parent in April 2020. Parents who live in the same household with the child are counted. The percent of children living with at least one unemployed parent varies between 10–23 percent for blacks and between 12–15 percent for whites. As shown in Table 3, the estimates for white children living with unemployed mothers are higher than those for children living with unemployed fathers. However, there is no significant pattern by age. For black children, the difference between the percentage of unemployed mothers and unemployed fathers is small. The higher percentage of unemployed fathers for children at ages 9–11 than other ages corresponds with a lower percentage of unemployed mothers for children in the same age range. The greater fluctuation of the age-specific estimates for black children may be caused by small sample sizes for some age groups.