GENETICS

NO ETERNAL LIFE

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Seven years ago we published a 15% heritability of life span from data in South Tyrol. The heritability of longevity increased from 0.20 to 0.35 as the longevity threshold increased.

A new study now finds that we have been exaggerating

> true heritability of human longevity for birth cohorts across the 1800s and early 1900s was well below 10%, and that it has been generally overestimated due to the effect of assortative mating. … Spouse life spans correlate as much or more than those of genetic relatives, raising the possibility that correlated environments and/or assortative mating have confounded those estimates.

I think there is a misunderstanding of assortative mating (AM). AM is a form of sexual selection in which individuals with similar phenotypes mate with one another more frequently than would be expected under chance conditions. BUT the phenotype longevity is not known to anyone at mating. Instead there seems to be a simple "environmental" interaction: We know that elderly couples frequently die together, also known as broken hearts phenomenon.

Adjusting any regression model for any AM will therefore seriously reduces the heritability of longevity, which is exactly what the authors describe in their new paper.

> Spousal correlation is expected on two grounds: shared-household environment during adulthood and/or assortative mating. The two can be distinguished by definition: the effects of shared-household environment are nontransferable through inheritance, whereas the factors correlated by assortative mating are transferable, allowing them to also generate correlations with family members of the spouse

This is not very convincing as A) shared-household environment can be transmitted by epi-

genetic factors and B) it is a myth there is any AM for lifespan.