

# Evidence shows that, in love, opposites don't actually attract

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Despite some conventional wisdom to the contrary, opposites don't actually attract.

That's the takeaway from a sweeping CU Boulder analysis of more than 130 traits and including millions of couples over more than a century.

"Our findings demonstrate that birds of a feather are indeed more likely to flock together," said first author Tanya Horwitz, a doctoral candidate in the Department of Psychology and Neuroscience and the Institute for Behavioral Genetics (IBG).

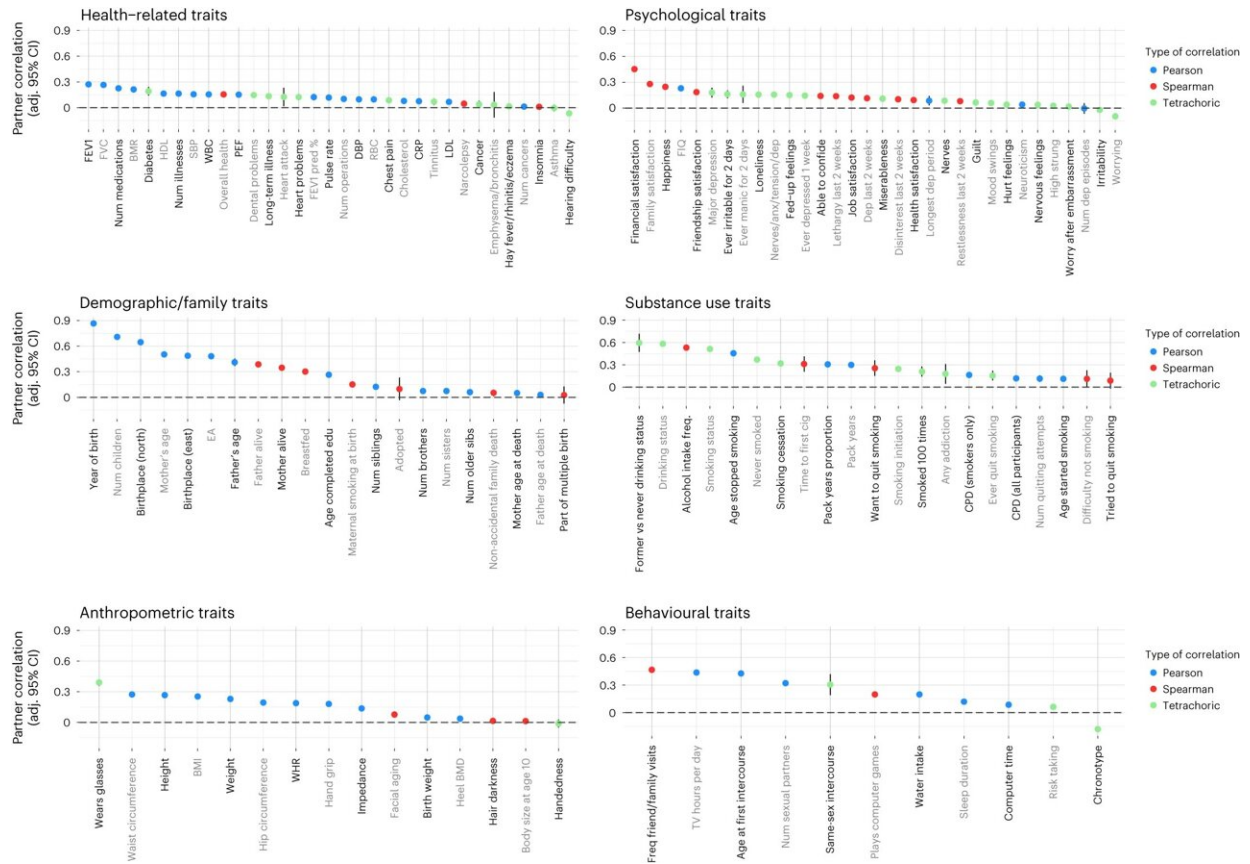
The study, published today in the journal *Nature Human Behaviour*, confirms what individual studies have hinted at for decades, defying the age-old adage that "opposites attract."

It found that for between 82% and 89% of traits analyzed—ranging from [political leanings](#) to age of first intercourse to [substance use](#) habits—partners were more likely than not to be similar.

For only 3% of traits, and only in one part of their analysis, did individuals tend to partner with those who were different than them.

Aside from shedding light on unseen forces that may shape [human relationships](#), the research has important implications for the field of genetic research.

"A lot of models in genetics assume that human mating is random. This study shows this assumption is probably wrong," said senior author and IBG Director Matt Keller, noting that what is known as "assortative mating"—when individuals with similar traits couple up—can skew findings of genetic studies.



The UKB partner correlation point estimates for 133 traits grouped by category. The point estimates on the y axis represent the estimated partner correlation, along with Bonferroni-adjusted 95% CIs (adjusting for 133 traits), for the corresponding trait on the x axis. Estimates are based on up to 79,074 pairs; Supplementary Table 4 includes the precise sample size/point estimate for each trait along with the Bonferroni-adjusted *P* values associated with the adjusted 95% CIs depicted in this figure. Traits are grouped into six categories: health-related, psychological, demographic/family, substance use, anthropometric and behavioral. Points representing partner correlations for continuous traits (Pearson correlations) are blue; points representing partner correlations for ordinally coded traits (Spearman correlations) are red; points representing partner correlations for dichotomously coded traits (tetrachoric correlations) are light green. Num Dep Episodes, number of depressive episodes; Heel BMD, heel bone mineral density (in the form of a *t*-score); LDL, direct low-density lipoprotein cholesterol; CRP, C-reactive protein; RBC, red blood cell (erythrocyte) count; DBP, diastolic blood pressure; CPD (all participants),

cigarettes per day (includes current, former and never smokers); FEV1 pred %, forced expiratory volume in 1 second (FEV1), predicted percentage; PEF, peak expiratory flow; WBC, white blood cell (leucocyte) count; SBP, systolic blood pressure; HDL, high-density lipoprotein cholesterol; CPD (smokers only), cigarettes per day (restricted to current or former smokers); WHR, waist-to-hip ratio; BMR, basal metabolic rate; FIQ, fluid intelligence quotient; FVC, forced vital capacity; Time to First Cig, time to first cigarette. Credit: *Nature Human Behavior* (2023). DOI: 10.1038/s41562-023-01672-z

## **Looking back more than a century**

For the new paper, the authors conducted both a review, or [meta-analysis](#), of previous research and their own original data analysis.

For the meta-analysis, they looked at 22 traits across 199 studies including millions of male-female co-parents, engaged pairs, married pairs or cohabitating pairs. The oldest study was conducted in 1903.

In addition, they used a dataset called the UK Biobank to study 133 traits, including many that are seldom studied, across almost 80,000 opposite-sex pairs in the United Kingdom.

Same sex couples were not included in the research. Because the patterns there may differ significantly, the authors are now exploring those separately.

Across both analyses, traits like political and religious attitudes, level of education, and certain measures of IQ showed particularly high correlations.

For instance, on a scale in which zero means there is no correlation and 1 means couples always share the trait, the correlation for political values

was .58.

Traits around substance use also showed high correlations, with heavy smokers, heavy drinkers and teetotalers tending strongly to partner up with those with similar habits.

Meanwhile, traits like height and weight, [medical conditions](#) and [personality traits](#) showed far lower but still positive correlations. For instance, the correlation for neuroticism was .11.

For some traits, like extroversion, there was not much of a correlation at all.

"People have all these theories that extroverts like introverts or extroverts like other extroverts, but the fact of the matter is that it's about like flipping a coin: Extroverts are similarly likely to end up with extroverts as with introverts," said Horwitz.

## **Rarely, opposites may attract**

In the meta-analysis, the researchers found "no compelling evidence" on any trait that opposites attract. In the UK Biobank sample, they did find a handful of traits in which there seemed to be a negative correlation, albeit small.

Those included: chronotype (whether someone is a "morning lark" or "night owl"), tendency to worry and hearing difficulty.

More research must be done to unpack those findings, they said.

The trait for which couples were most likely to be similar was, not surprisingly, birth year.

But even seldom-studied traits, like how many sexual partners a person had had or whether they had been breastfed as a child, showed some correlation.

"These findings suggest that even in situations where we feel like we have a choice about our relationships, there may be mechanisms happening behind the scenes of which we aren't fully aware," said Horwitz.

## **Next-generation implications**

The authors note that couples share traits for a variety of reasons: Some grow up in the same area. Some are attracted to people who are similar to them. Some grow more similar the longer they are together.

Depending on the cause, there could be downstream consequences.

For example, Horwitz explains, if short people are more likely to produce offspring with short people and tall people with tall people, there could be more people at the height extremes in the next generation. The same goes for psychiatric, medical or other traits.

There could also be social implications.

For instance, some [small previous studies](#) have suggested that people in the U.S. are growing more likely to couple up with people with similar educational backgrounds—a trend that, some theorize, could widen the socioeconomic divide.

Notably, the new study also showed that the strength of correlations for traits differed across populations. They likely also change over time, they suspect.

The researchers caution that the correlations they found were fairly modest and should not be overstated or misused to promote an agenda (Horwitz points out that assortative mating research was, tragically, co-opted by the eugenics movement).

They do hope the study will spark more research across disciplines, from economics to sociology to anthropology and psychology.

"We're hoping people can use this data to do their own analyses and learn more about how and why people end up in the relationships they do," she said.

**More information:** Horwitz, T.B. et al, Evidence of correlations between human partners based on systematic reviews and meta-analyses of 22 traits and UK Biobank analysis of 133 traits. *Nature Human Behavior* (2023). [DOI: 10.1038/s41562-023-01672-z](https://doi.org/10.1038/s41562-023-01672-z)  
[www.nature.com/articles/s41562-023-01672-z](https://www.nature.com/articles/s41562-023-01672-z)

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