

## Out of your league? Study shows most online daters seek more desirable mates

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The notion that an attractive person is "out of your league" doesn't often dissuade dating hopefuls—at least online. In fact, the majority of online daters seek out partners who are more desirable than themselves,



suggests a new large-scale analysis published in Science Advances.

The analysis reveals that hierarchies of desirability—or "leagues"—emerge in anonymized data from online dating networks in four major U.S. cities. The majority of people in these dating networks contact prospects who are ~25 percent more desirable than themselves. They also tend to tailor their messaging strategies, sending relatively longer messages to contacts who are further up the hierarchy.

"We have so many folk theories about how dating works that have not been scientifically tested," says Elizabeth Bruch, a sociologist and the study's lead author. "Data from online dating gives us a window on the strategies that people use to find partners." Both Bruch and her co-author Mark Newman study complex systems at the University of Michigan, Ann Arbor and belong to the external faculty of the Santa Fe Institute.

To rate users' desirability, the researchers used a ranking algorithm based on the number of messages a person receives and the desirability of the senders. "If you are contacted by people who are themselves desirable, then you are presumably more desirable yourself," they write in the paper.

"Rather than relying on guesses about what people find attractive, this approach allows us to define desirability in terms of who is receiving the most attention and from whom," says Newman.

The researchers applied the algorithm to data from users of a dating website in New York, Boston, Chicago, and Seattle. The study is the first large-scale analysis to focus on hierarchies of desirability in online dating data. Among other things, it reveals how people behave strategically during online courtship by altering the length and number of messages they send to individuals at different levels of desirability.



Because most users send the majority of their messages "up" the hierarchy—out of their league—a lot of messages go unanswered.

"I think a common complaint when people use online dating websites is they feel like they never get any replies," Bruch says. "This can be dispiriting. But even though the response rate is low, our analysis shows that 21 percent of people who engage in this aspirational behavior do get replies from a mate who is out of their league, so perseverance pays off."

Bruch says the study also shows that sending longer messages to more desirable prospects may not be particularly helpful, though it's a common strategy. Of the four cities analyzed, the notable exception was the Seattle, where the researchers did observe a payoff for writing longer messages. In other locations, longer messages did not appear to increase a person's chances of receiving a reply.

So if messages are the measure of desire, what prompts people to hit the 'send' button? When the researchers compared desirability scores against user attributes, they found correlations between age, education level, and ethnicity. For example—up to the age of 50, older men tended to have higher desirability scores than younger men, while women's desirability scores tended to decline from ages 18 to 60.

Though the study affirms that many people are making choices that align with popular stereotypes, Bruch stresses that this is not a rule that holds for all individuals.

"There can be a lot of heterogeneity in terms of who is desirable to whom. Our scores reflect the overall desirability rankings given online dating site users' diverse preferences, and there may be sub-markets in which people who would not necessarily score as high by our measures could still have an awesome and fulfilling dating life."



She also emphasizes that this is just the first, and perhaps shallowest, phase of courtship. Previous dating research has shown that as people spend time together, their unique character traits become more important relative to other attributes.

**More information:** E.E. Bruch el al., "Aspirational pursuit of mates in online dating markets," *Science Advances* (2018). DOI: 10.1126/sciadv.aap9815, advances.sciencemag.org/content/4/8/eaap9815

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