

TO SWIPE OR NOT TO SWIPE?

ONLINE DATING AND DATA SCIENCE

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BACKGROUND

- 1 in 5 new relationships begins online
- Data science plays a big role in online dating industry
 - Use algorithms to “match” potential couples together



okcupid

match.com



eHarmony



SOME FUN RESEARCH FACTS ON ONLINE DATING PROFILES

- Instead of weighing every factor carefully to decide if a partner will be a good match, we look for “**deal breakers**”
 - Especially in early stages of dating
- **Some deal breakers:**
 - No profile pictures
 - Smoking
 - Age*



FLAWS OF ONLINE DATING

- Majority still on heterosexual, straight people
- Over-reliance on **profile browsing**
(Finkel et al. 2009)
- People lack insight regarding which characteristics in a potential partner will be attractive without first meeting him or her face-to-face.



FLAWS OF ONLINE DATING

- Over-reliance on **matching algorithms**
 - The algorithms are no better than matching people at random (controlling for age, gender, SES etc)
- Algorithms are not supported by peer-reviewed evidence.
 - Little research on the psychometric properties of its measures



RELIABILITY AND VALIDITY: QUICK NOTE ON PSYCHOMETRICS

- **Reliability**: produces consistent results under similar conditions
- **Validity**: measure what it is supposed to measure
 - Reliability is necessary but not sufficient
- A measure can be **RELIABLE** but **NOT VALID**
- A measure can *never* be VALID and NOT RELIABLE



FLAWS OF ONLINE DATING EXAMPLE- EHARMONY

- No empirical research on its “**29 Dimension**” questionnaire of compatibility (Epstein, 2007)
 - Validity?
 - Reliability?
- Control group?
- How long do these relationships last?



IT'S ALL ABOUT THE PERSONALITY



- Majority of “personality tests” used by dating sites are not scientifically validated.
- Humans are complex and cannot be neatly categorized!
- **The Big Five** as one of the most psychometrically strong and validated personality measures
 - <http://www.outofservice.com/bigfive/>

FLAWS OF ONLINE DATING

- **Underlying problems with theory and assumptions**
 - Similarity and complementarity are not significantly associated with long-term relationship satisfaction
(Dyrenforth et al., 2010; Montoya et al., 2008)



FLAWS OF ONLINE DATING

- Which data points should an algorithm **privilege or prioritize** when calculating your “match” scores?
 - Even if you ask people to rate importance, people are notoriously unreliable and bad at rating these things



FLAWS OF ONLINE DATING

- **How to define and measure “match” or “success”?**
 - Is it a 1st date?
 - Is it a long-term relationship?
 - Is it marriage?
 - Is it a marriage that lasts > 5 years? 10 years?
 - Is it relationship satisfaction?

FLAWS OF ONLINE DATING

- **Algorithms cannot accurately and reliably capture factors associated with relationship success**
 - Personality and individual characteristics
 - Quality of interaction (face-to-face)
 - Future circumstances and life events
- Algorithms might attempt to model those things, but there's not enough input data to account for all the diverse possible outcomes.

CONCLUSION

- Online dating apps are good at letting people meet other people.
- But it remains to be seen whether these apps are truly successful at connecting people together and fostering long-term, satisfying relationships.



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