

Advantages and disadvantages of DAS

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"On the Internet, nobody knows you're a dog."

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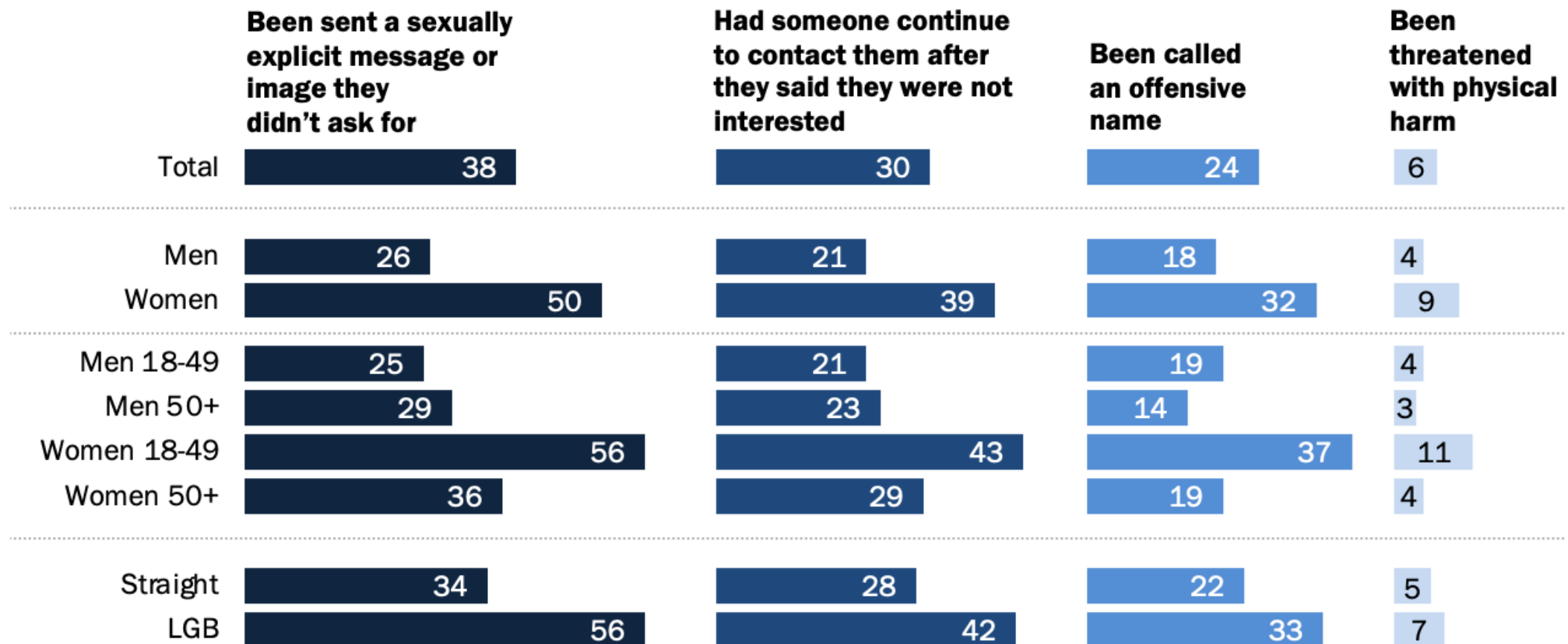
- Advantages
 - Lower search costs
 - Significant increase in the number of available partners
 - DAS break through social “bubbles”
 - Profiling and dedication (Jswipe, Grindr)
- Disadvantages / Challenges
 - Those typical for social platforms: Harmful behaviors, fraud, and fake profiles
 - Criminal behaviors
 - Monopoly of a few companies
 - Conflict of interest from the perspective of companies
 - Lack of context in online dating (initially, it is “uphill”)

Criminal behaviors on DAS

- Technology-facilitated sexual violence
 - Victims are accessible to a wider group of „predators”
 - Victims share sensitive data and/or photos with „predators”
- Stalking
 - Geolocation, especially the type that informs about „passing by” (e.g., Happn)
 - Geoslavery
- Revenge pornography: victims send intimate photos because
 - It is meant to confirm their identity
 - If I want to see someone else's, I must first send my own
- Doxing, i.e., publicly sharing sensitive information about the victim
- Slightly more than half (52%) of DAS users and significantly more men (59%) than women (44%) admitted that they encountered someone who tried to deceive them (Pew Research Center 2022)

Pew Research Center (2022)

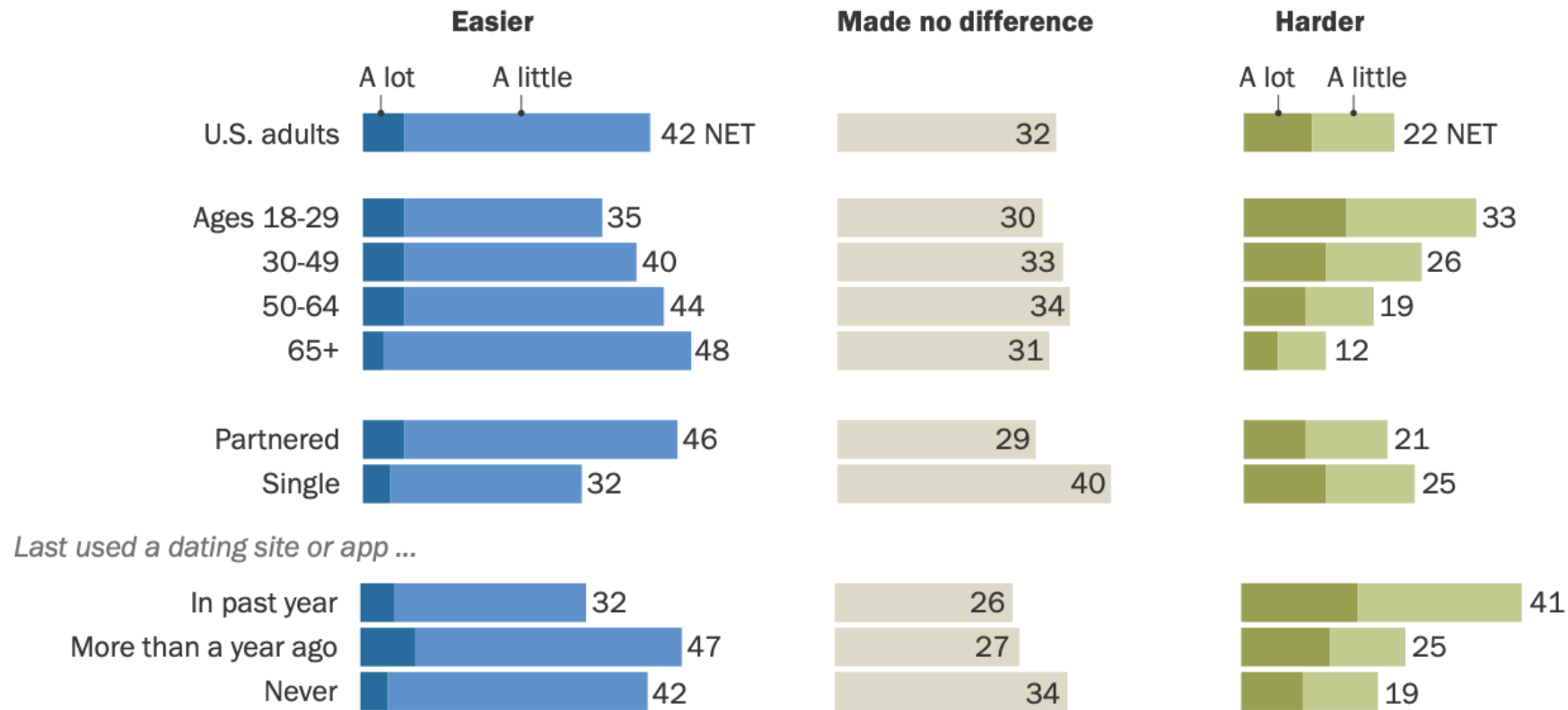
Percentage of DAS users who



Pew Research Center (2022)

Whom DAS helped, whom DAS harmed?

The percentage of DAS users, who claimed that finding a partner via DAS is



Whom DAS helped, whom DAS harmed?

- Among Tinder users, men swipe right almost 3x more often than women (46% vs 14%); *The New York Times* (2014)
- Among Tantan users (China) the gap is larger (60% vs 6%); 5% of men do not get any matches; *The Economist* (2018)

Assortative matching

1. Becker (1973)
2. Belot and Fidrmuc (2010)
3. Chiappori, Oreffice and Quintana-Domeque (2012)

Becker (1973): Assortative matching

- **Positive (negative) assortative mating** – when partners match according to **similarities (differences)**
- *Question: For which of the following variables one should expect positive mating, and for which one should expect negative mating?*
 - Age
 - Earnings
 - Intelligence
 - Protectiveness
- Market characteristics
 - Earning capacity – negative mating
 - Capital – positive mating
- Non-market characteristics
 - Age, intelligence, education, height, race, etc. Positive mating
 - Domination, protectiveness, etc. – negative mating

What is the cause of assortative matching?

- Preferences
 - Matching hypothesis (people are drawn by similarities)
 - Competition hypothesis (hypergamy)
- Search frictions (segregation)

Belot and Fidrmuc (2010) „Anthropometry of love: Height and gender asymmetries in interethnic marriages”, *Economics and Human Biology* 8, 361-372.

- Belot and Fidrmuc (2010) made an attempt to answer why in the UK and in the US we observe among ethnically mixed married couples that:
 - Black men more often than black women match with white persons
 - Chinese twice less often than Chinese women match with white persons
- Assumptions / stylized facts:
 - Black people are on average taller than white people
 - The opposite applies to Chinese - they are on average shorter than white people
 - There is a preference for a husband to be taller than his wife

Hypothesis: Black women are too tall for white men, and Chinese men are too short for white women.

Chiappori, Oreffice and Quintana-Domeque (2012) „Fatter Attraction: Anthropometric and Socioeconomic Matching on the Marriage Market”, *Journal of Political Economy* 120(4), 659-695.

- Chiappori, Oreffice and Quintana-Domeque (2012) built a matching model, in which
 - A potential partner's traits (appearance and socio-economic characteristics) determine his or her attractiveness – multidimensional evaluation
 - All traits can be „compressed” into a single attractiveness index
- The model allows to identify the coefficients that measure willingness to exchange one characteristic of a prospective partner for another (a qui pro quo trade-off)
- Results of the empirical analysis indicate that
 - A man can compensate 1.3 points of his BMI with 1 percent increase in his income
 - A woman can compensate 2 points of her BMI for additional year of education

Assortative matching
on DAS vs offline

Patterns: similar or different?

- Overall, research findings are mixed
 - Some studies indicate exogamy based on race (Thomas 2020, Qian & Hu 2024), religion (Potarca 2017, Thomas 2020), and education (Thomas 2020, Qian & Hu 2024)
 - Some studies indicate endogamy (Thomas 2020, Qian & Hu 2024) or exogamy based on age (Dutton et al. 2009)
- Couples who met through dating apps tend to marry sooner (Rosenfeld 2017)
- Relationship and life satisfaction are similar between couples who met through dating apps and those who met offline (Potarca 2020)

Assortative matching on DAS: Thomas (2020)

- Dating on DAS increases the pool of potential partners and their diversity, which **intuitively should increase exogamy** because
 - APR do not have a natural tendency to create subgroups/subnetworks
 - Limited influence of third parties
 - Even those DAS that target a narrow audience (e.g., Jswipe) are characterized by greater diversity than our social circle
- However, if there is a preference for homogamy, the widespread use of DAS may lead to an increase in endogamy because
 - In a small network, a minority (e.g., ethnic) has to match with the majority group, whereas in a larger network, this is not necessarily the case
 - In a larger network, selection can be made based on a greater number of characteristics
- What if there is a preference for hypergamy?
 - A larger network may lead to increased competition, thus promoting endogamy
 - There may be a "status exchange" in different categories, thus leading to exogamy

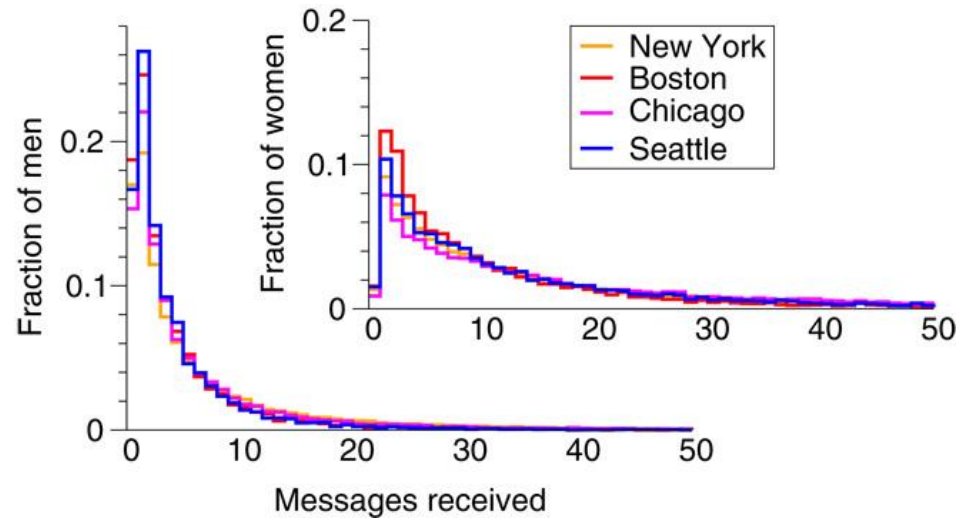
Assortative matching on DAS: Thomas (2020)

- **The problem of self-selection** may lead to identifying a **spurious relationship** between APR and exogamy. On the other hand, even with self-selection, APR can be seen as a technological enhancement for fulfilling personal preferences.
- Individual preferences are shaped by social norms and third parties.
- Self-selection, as a source of exogamy, also occurs in thin markets due to:
 - Demographic factors (e.g., among LGBT communities, middle-aged individuals, divorced people)
 - Non-demographic factors (e.g., uncommon preferences)
- The hypothesis of self-selection from „those who failed in offline dating,” which may have once been valid, is no longer convincing (too many people date online today).

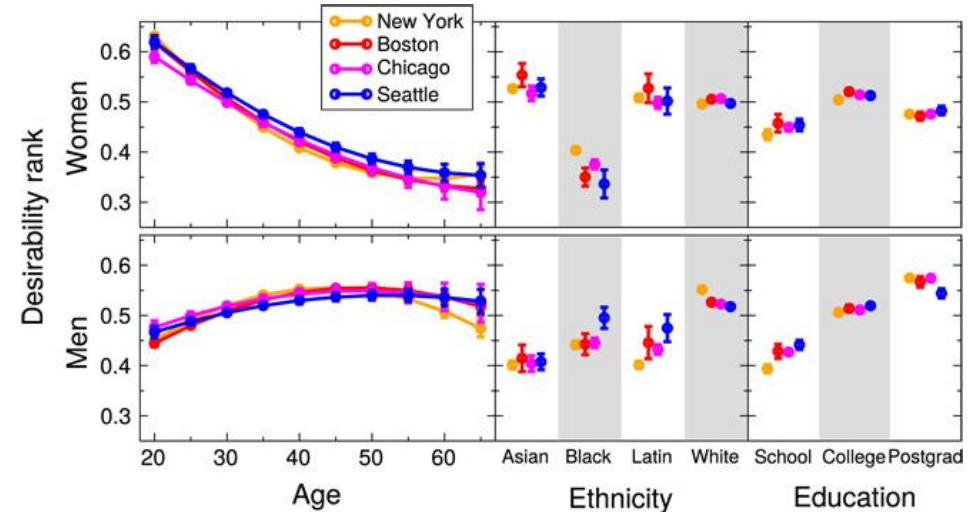
Assortative matching on DAS: Bruch i Newman (2018)

- Objective: To examine whether we initiate contact with people of similar attractiveness levels or aim „upward.”
- Problem: How to measure attractiveness?
 - The more initiating messages you receive, the higher your attractiveness.
 - The more attractive the people initiating contact with you, the higher your attractiveness.
- A network is created with connections between nodes (people), with an arrow pointing toward the node that received the initiating message and a possible return arrow if the message was responded to
- A matrix A is formed, where element $a_{ij} = 1$ if there is an arrow from j to i ; 0 otherwise
- Attractiveness is calculated from the following set of equations
$$x_i = 1 + \alpha \sum_{j=1}^n \frac{a_{ij}x_j}{\sum_{k=1}^n a_{kj}}$$
- The construction of the attractiveness index **enforces hypergamy**

Assortative matching on DAS: Bruch i Newman (2018)



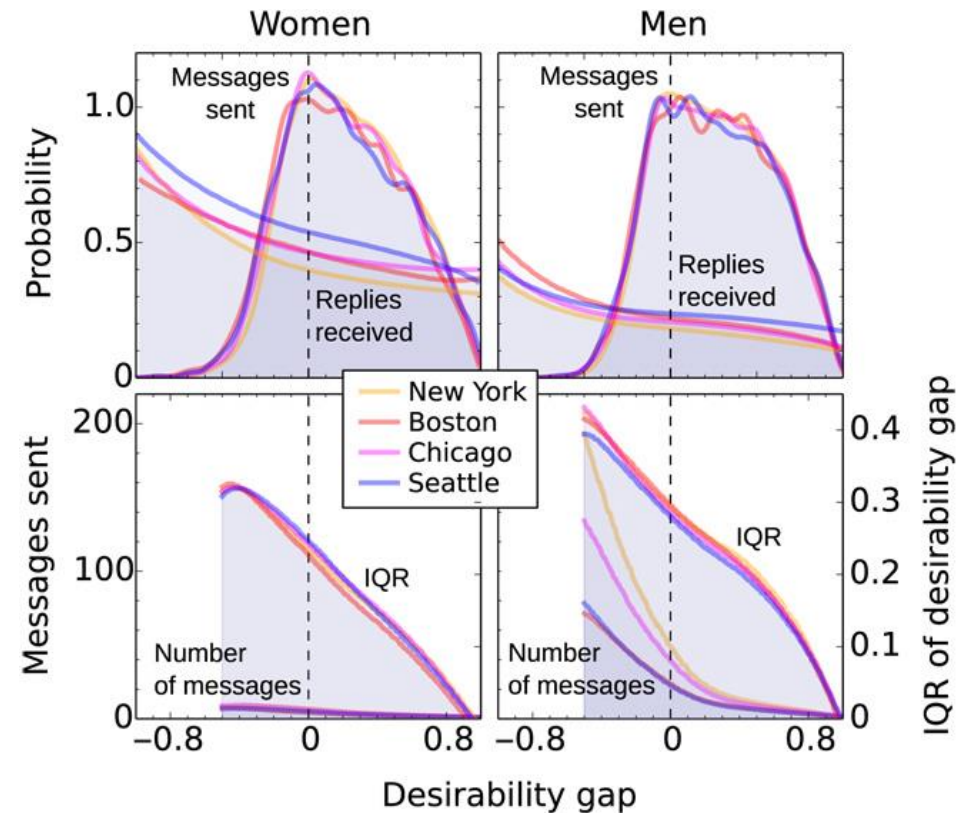
- Women receive more messages than men
- The majority of people of both genders receive very few messages
- Men send over 80% of the first messages



- Women's attractiveness decreases monotonically with age, while men's attractiveness peaks around the age of 50
- Black women exhibit significantly lower attractiveness

Assortative matching on DAS: Bruch i Newman (2018)

- Desirability is measured on a scale from $[0,1]$
- Desirability gap ranges from $[-1,1]$
- The most common messages are sent to people of similar attractiveness...
- ...but messages are more frequently sent to more attractive individuals (on average 23–26% higher in ranking)
- Women receive replies to their initiating messages more often
- The probability of receiving a reply decreases as the desirability gap increases



Age difference between partners

1. Bergsrtom and Bagnoli (1993)
2. Mansour and McKinnish (2014)

Bergstrom and Bagnoli (1993) „Courtship as a waiting game”, *Journal of Political Economy* 101(1), 185-202

- It is widely observed that women tend to marry older men, and the age differential is higher in traditional societies than in modern societies
- Bergstrom and Bagnoli (1993) made an attempt to unravel the mystery behind this phenomenon
- They built a model of asymmetric information with the following assumptions
 - In traditional societies, women are valued for their capacity to raise children and housekeeping
 - Men are valued for economic reasons (capacity to earn money / support a family)
 - The information on a women's attractiveness becomes revealed relatively early
 - The information about a man's earnings capacity becomes verified by the labor market relatively late
- A dilemma: a man should propose and marry relatively early or relatively late?

Bergstrom and Bagnoli (1993) „Courtship as a waiting game”, *Journal of Political Economy* 101(1), 185-202

- Men who expect **low earnings**, will try to marry relatively **early**
- Men who expect **high earnings**, will try to wait until their earning capacity becomes revealed, therefore they will try to marry relatively **late**
- All women marry relatively early, while more attractive women marry men with high earnings, whereas less attractive women marry those men who want to marry early (whose earnings capacity has not been revealed yet)
- Men who wish to marry early signal that they expect low earnings in the future; whereas more attractive women will not want to marry those men, less attractive women have no other alternative

Conclusion: Less „attractive” couples are characterized by similar partners’ age, whereas in more „attractive” marriages the husband is older than his wife. Thus, on average, in the overall population, the husband is older than his wife.

Bergstrom and Bagnoli (1993) „Courtship as a waiting game”, *Journal of Political Economy* 101(1), 185-202

- The theory developed by Bergstrom and Bagnoli predicts not only that men have the tendency to postpone marriage, but also that those who postpone marriage should prosper better than those who married relatively early
- Bergstrom and Schoeni (1992) studied the relations between age at first marriage and earnings of men in the US in 1980
- According to their research, earnings of men who married in their late 20s is highest; those who married at the age of 28-29 earned on average 20% more than men who married at the age of 18

Mansour and McKinnish (2014) „Who Marries Differently Aged Spouses? Ability, Education, Occupation, Earnings, and Appearance”, *Review of Economics and Statistics* 96(3), 577-580.

- It is common view that age difference in marriage requires financial success of the older partner
- Mansour and McKinnish (2014), based on US census data, show that it is exactly the opposite
- As compared to men and women in marriages where partners are of similar age, men and women in marriages where there is age difference are characterized by
 - Lower education
 - Lower earnings (after controlling for the impact of education on earnings)
 - Lower cognitive skills
 - Lower physical attractiveness
- These effects are stronger for men than for women
- Explanation?

Mansour and McKinnish (2014) „Who Marries Differently Aged Spouses? Ability, Education, Occupation, Earnings, and Appearance”, *Review of Economics and Statistics* 96(3), 577-580.

- These observations appear quite easily explained by the **differential search cost model**
- Consider the following two groups of individuals:
 - Those who continue their formal education after high school and take up jobs with upwardly mobile occupations
 - Those who do not continue their formal education after high school and take up upwardly immobile occupations
 - The first group **interacts more** than the second group **with persons of similar age** and has less diversified by age social networks

Hypothesis: Who you meet is who you get.