Fundamentals of Econometrics Models
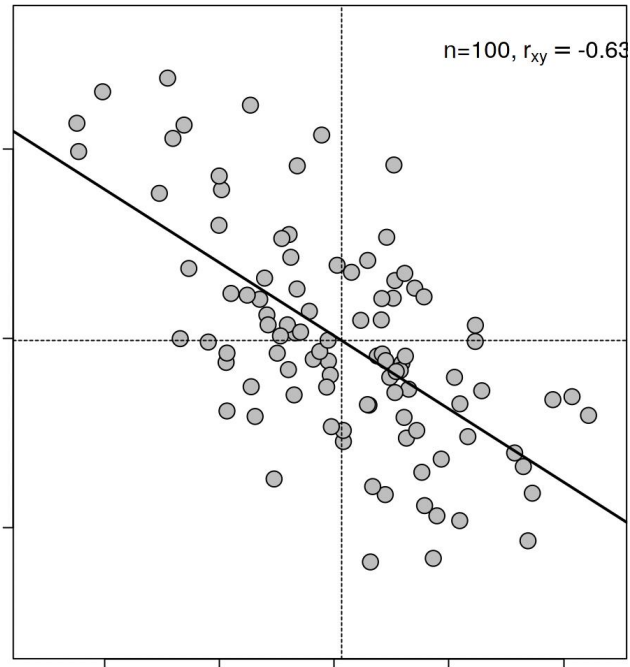
Vicenç Soler

v.soler@tbs-education.org

vincent.soler@tbs-education.org
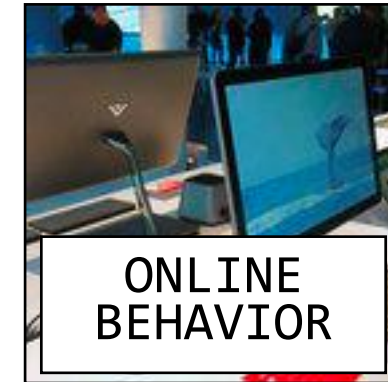
n=100, r$_{xy}$ = -0.63

n=100, r$_{xy}$ = 0.77

AI – Every action leaves a digital trail

| BROWSING ONLINE | CREDIT CARD TRANSACTION | TAKING A PHOTOGRAPH | WALKING DOWN THE STREET |

Data Brokerage and Consumers

The profiles that data brokers have on individuals include :
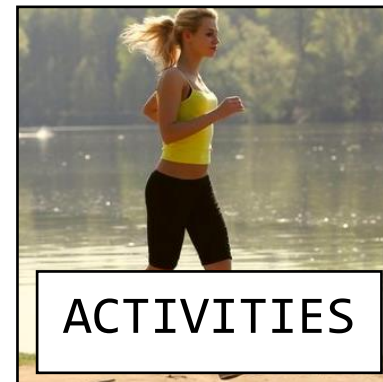
EDUCATION

OCCUPATION

CHILDREN

RELIGION

POLITICAL VIEWS

INTERESTS

ACTIVITIES

ONLINE BEHAVIOR

WHAT GOOGLE KNOWS ABOUT YOU?

https://adssettings.google.com

WHAT GOOGLE KNOWS ABOUT YOU?

These are the topics they target you with

These are specific companies targetting you

WHAT GOOGLE KNOWS ABOUT YOU?

These are some demographics

These are specific things they know

Big Data – Data Brokerage and Consumers

This huge amount of information let us know (almost) everything about people.

Even when they lie.

OkCupid – Love is blind… or should be

OkCupid – Love is blind… or should be

To celebrate the app's 10th aniversary, they removed all the pictures from OkCupid.

They called it:

"Love Is Blind"

OkCupid – Love is blind… or should be

Can you guess what happened when OkCupid turned down all photographs?

OkCupid – Love is blind… or should be

All their site metrics were way down during the "celebration", for example:
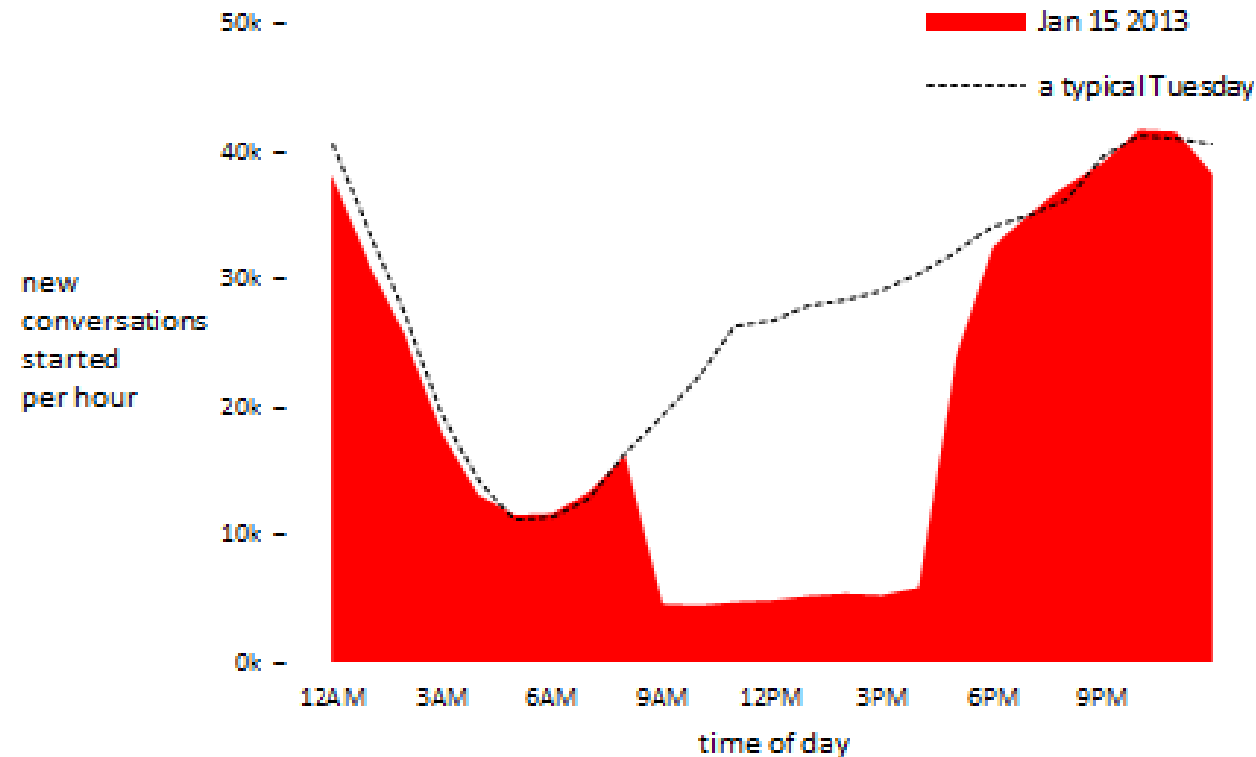
OkCupid – Love is blind… or should be

But by comparing Love Is Blind Day to a normal Tuesday, they learned some very interesting things. In those 7 hours without photos:

- people responded to first messages 44% more often

- conversations went deeper

- contact details (phone numbers, emails) were exchanged more quickly

- in short, OkCupid worked better

OkCupid – Love is blind… or should be

And it wasn't that "looks weren't important" to the users who'd chosen to stick around.

When the photos were restored at 4PM, 2,200 people were in the middle of conversations that had started "blind"

What happened with these conversations when the photos came back at 4pm?

OkCupid – Love is blind… or should be

Those conversations melted away:

What happened to conversations in progress at the end of Love Is Blind Day

conversation life expectancy vs. normal

	35%
	25%
	15%
	5%
	-5%
	-15%
	-25%
	-35%

after msg 1, after msg 2, after msg 3, after msg 4, after msg 5, after msg 6, after msg 7, after msg 8, after msg 9, after msg 10, after msg 11, after msg 12

where in the thread the photos came back on
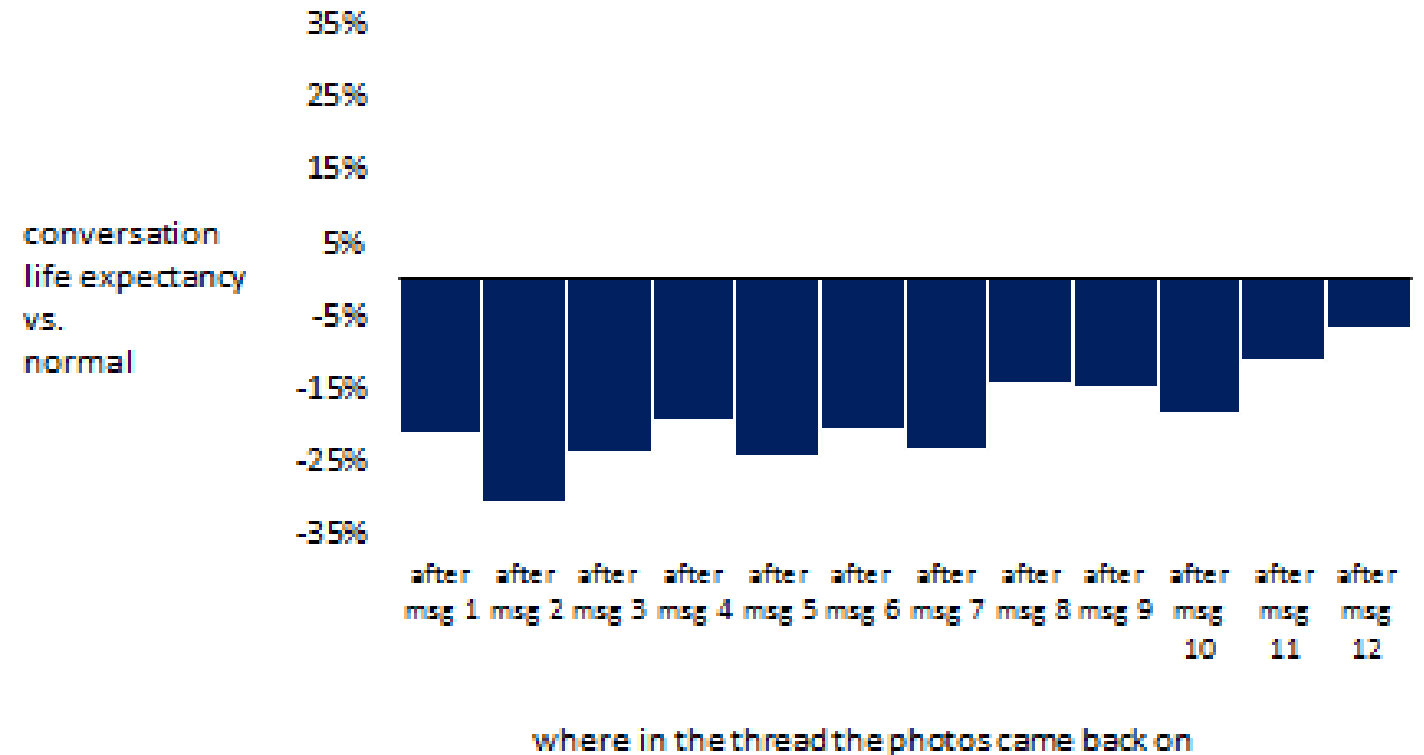
OkCupid – Love is blind… or should be

It was like turning on the bright lights at the disco at 3am.
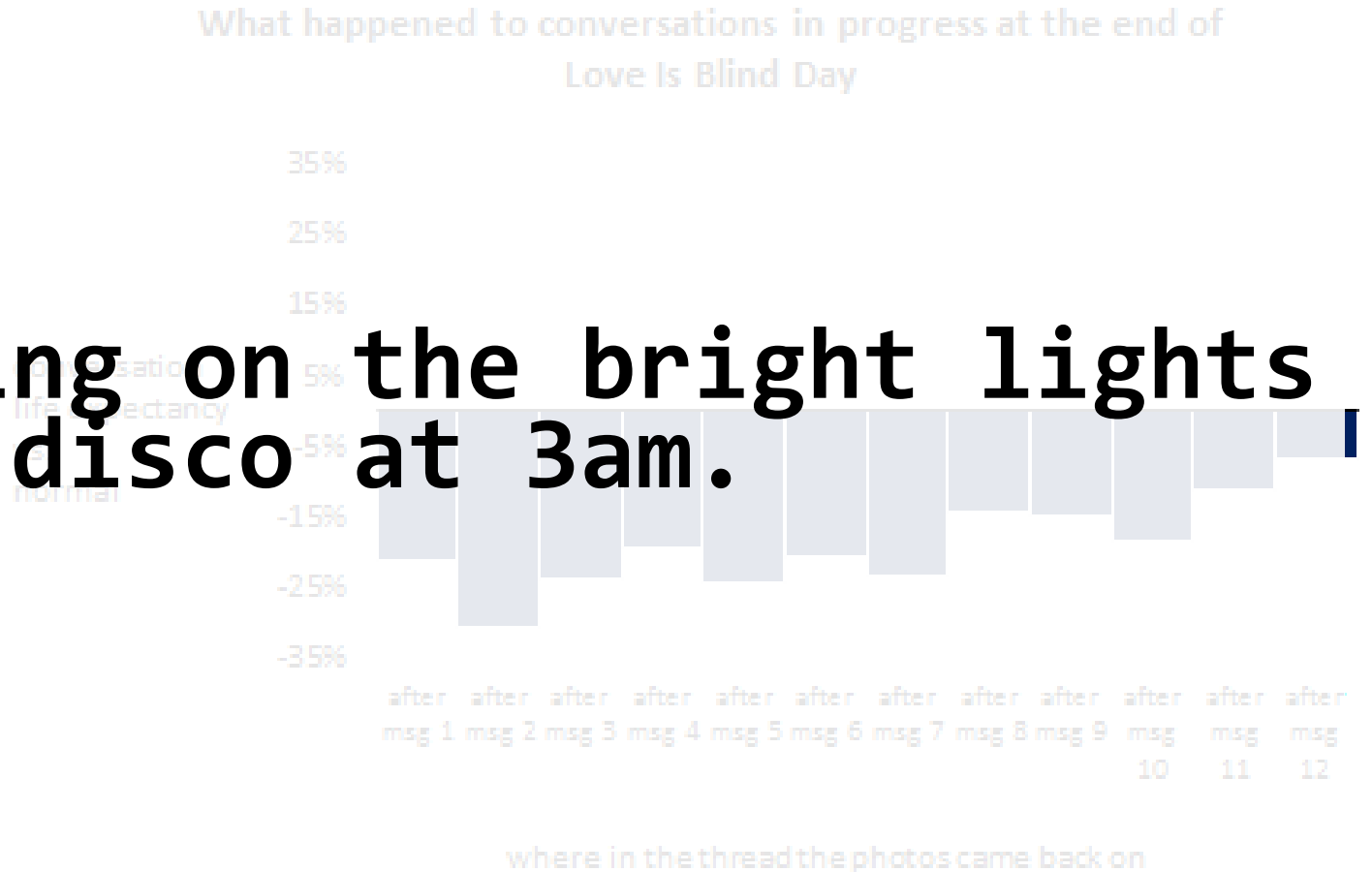
OkCupid – Love is blind… or should be

And what about women who actually used the blind date app? Any guess?

Women's <u>Offline</u> Reaction
(via feedback after a blind date)

100%
90%   89%   92%
80%   79% 84%   82%   83%
                75% 75% 76%   74% 74%
70%   72%   69%
60%
50%
40%   ⋯⋯⋯⋯⋯ odds she reported
30%   having a good time
20%   on the date
10%
0% ◀───▶
      she's   they're   he's
      much   even   much
      hotter   hotter
                    how the daters' looks compared
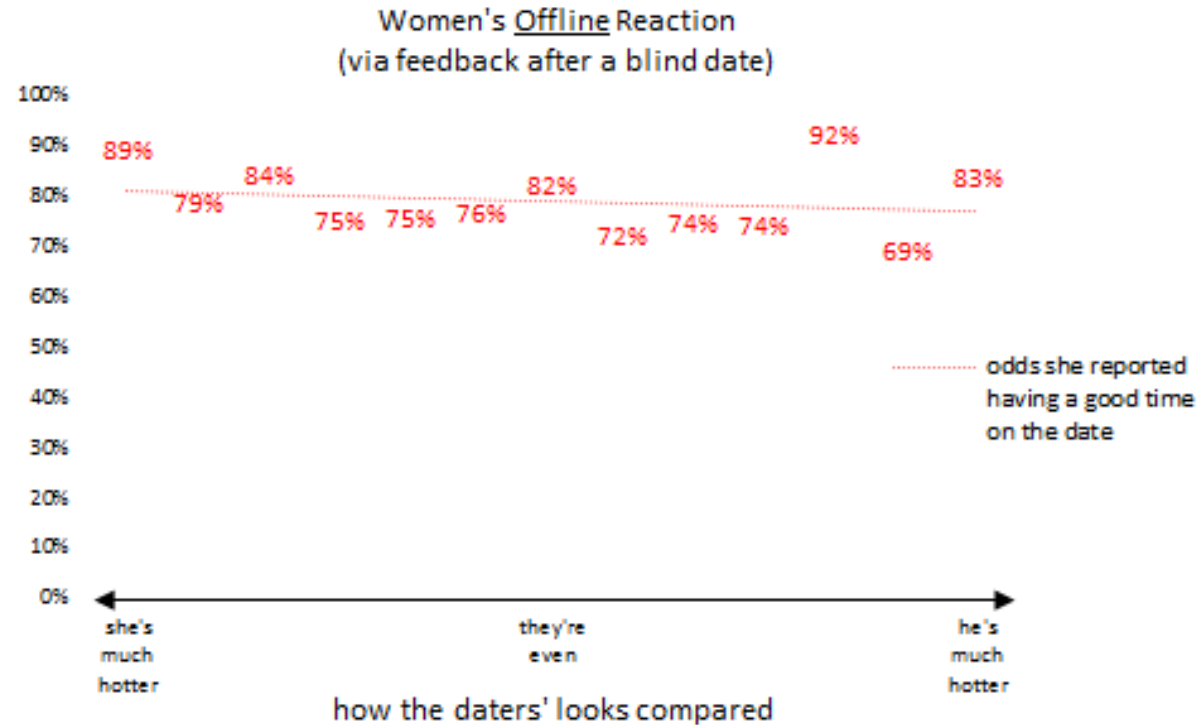
Once they got to the date, they had a good time more or less regardless of how good-looking their partner was.

OkCupid – Love is blind… or should be

But, what happened to women when OkCupid "turned on the lights" (gave back the photographs)?

Online Reaction
(via OkCupid messaging)

how the daters' looks compared
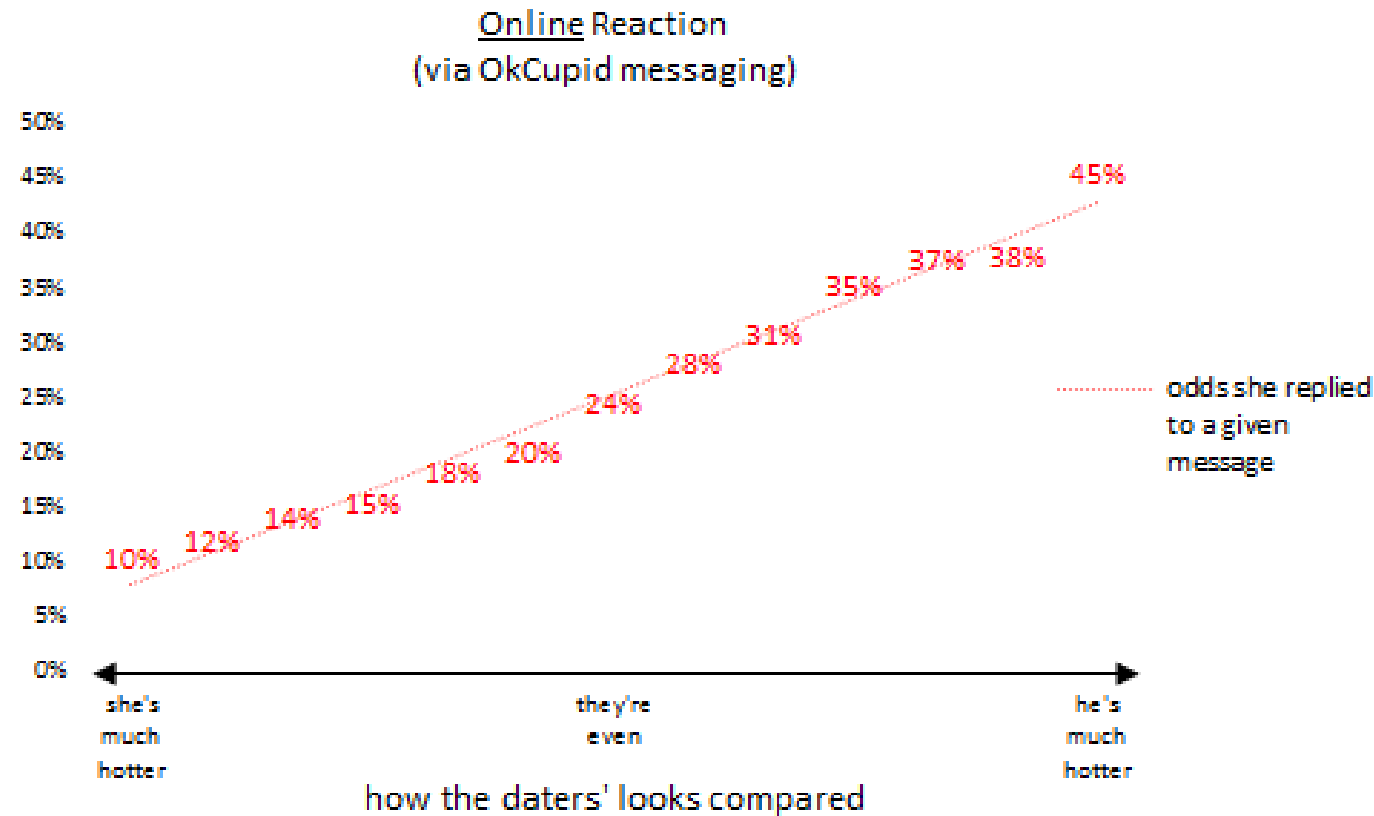
OkCupid – Love is blind… or should be

Basically, people are exactly as superficial as their technology allows them to be.

OkCupid – Love is blind… or should be

RATING SYSTEMS
AT
OkCupid

OkCupid – What's a picture worth?

All dating sites let users rate profiles, and OkCupid's original system gave people two separate scales for judging each other, "personality" and "looks."
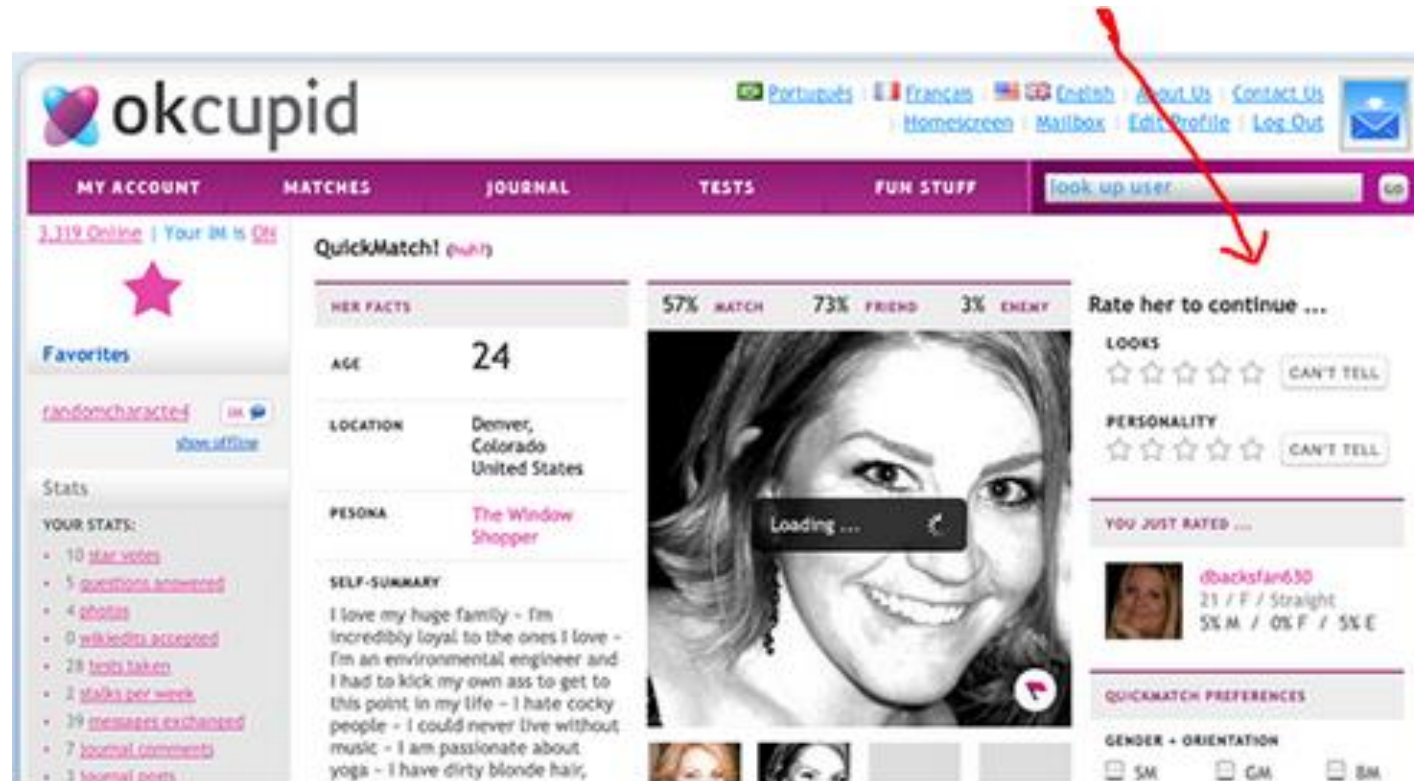
OkCupid – What's a picture worth?

The idea was that a person might not be classically gorgeous or handsome but could still be cool.

DO YOU THINK IT WORKED?

OkCupid – What's a picture worth?

The two scores are within a half point of each other for 92% of the sample after just 25 votes (and that percentage approaches 100% as vote totals get higher).

OkCupid ratings back when we let people score "looks" and "personality" separately

"personality" score

"looks" score
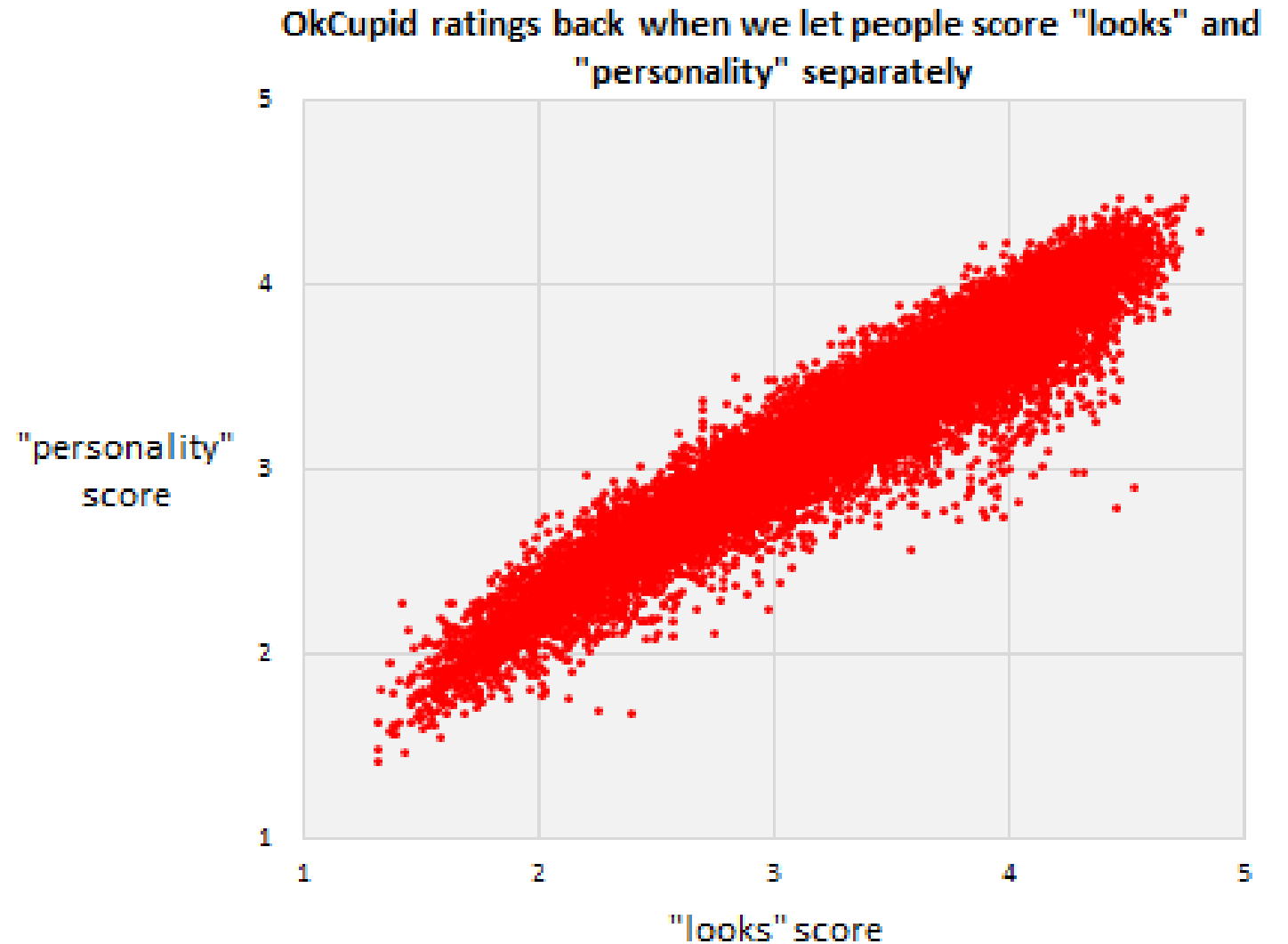
OkCupid – What's a picture worth?

In short, according to OkCupid data, "looks" and "personality" were the same thing, which of course makes perfect sense because, you know, this young female account holder, had a 99% positive rates in personality.

OkCupid – What's a picture worth?

CAN YOU GUESS THE DESCRIPTION, HOBBIES OR INFORMATION IN THE PROFILE PAGE?

NOTHING

So, your picture is worth thousand words…

but your words are worth almost nothing.

OkCupid – The Big Lies People Tell

In online dating, where the whole goal is to eventually meet other people in person, creating a false impression is a problem.

Do you think that situation prevents people from lying in dating websites?

Lets talk about...

TINDER

Tinder – The Big Lies People Tell

People do everything they can in their Tinder profiles to make themselves seem awesome.

With behind-the-scenes perspective (data), we're able to shed some light on some typical claims and the likely realities behind them.

Tinder – The Big Lies People Tell

"I'm 1.9 meters tall."

REALITY?

Tinder – The Big Lies People Tell

Do taller guys have more sex?

The answer, to a degree...

Almost universally guys like to add a couple centimeters.

but in this case what was more interesting than the sex was the (supposed) tallness of the guys.

Male Height Distribution On Tinder

Legend: USA men, Tinder men
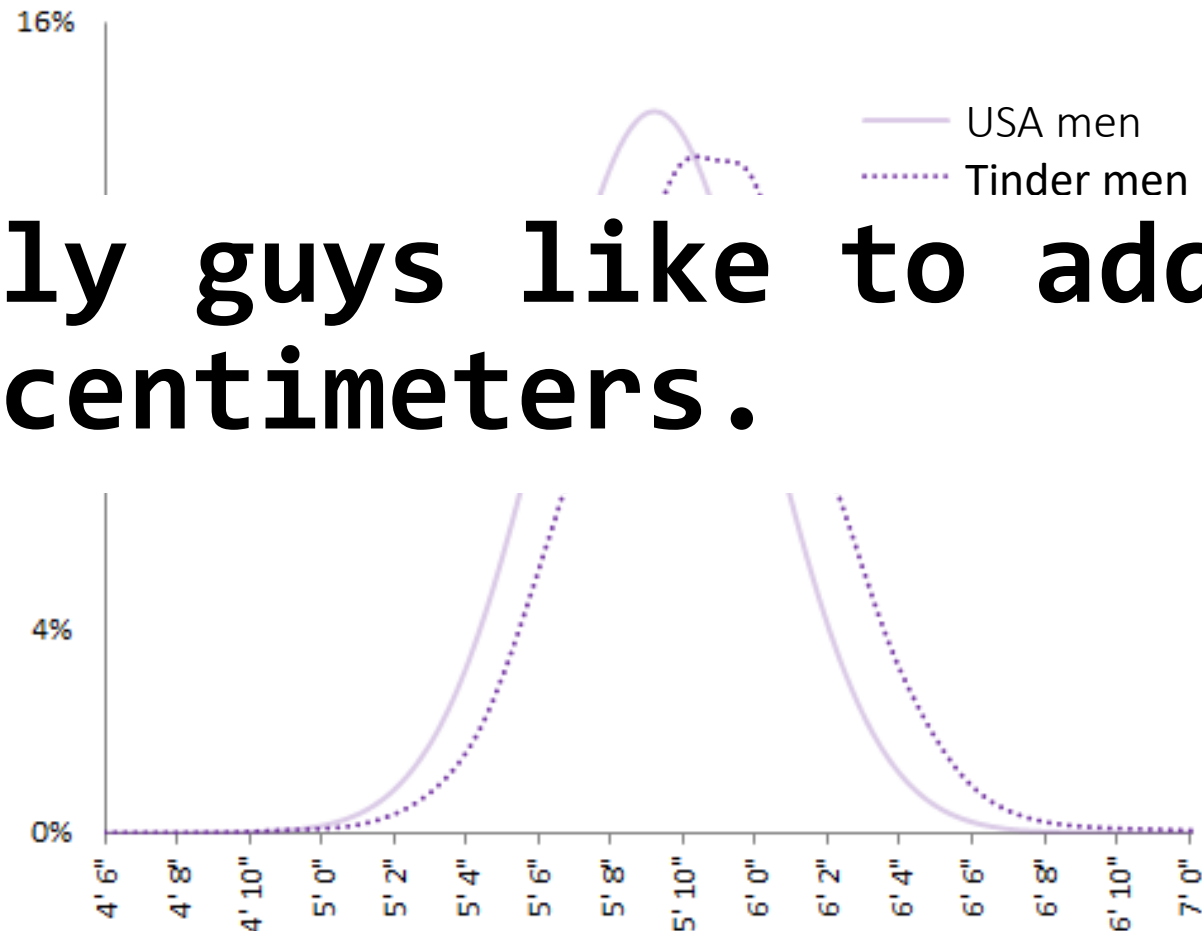
Tinder – The Big Lies People Tell

What about looking at women data? Height exaggeration is just as widespread?

YES

Female Height Distribution On Tinder

USA women

Tinder women
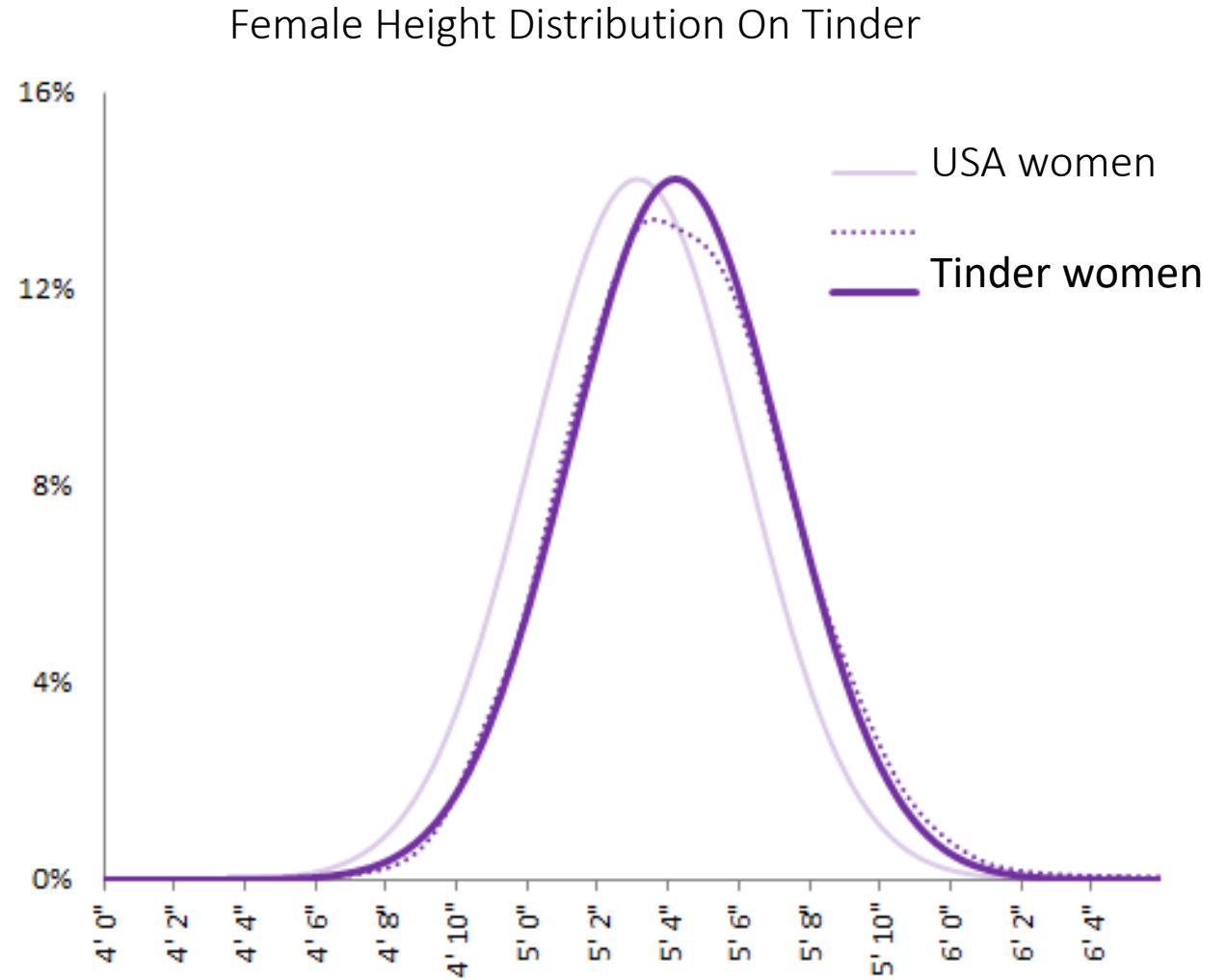
Tinder – The Big Lies People Tell

"I'm 1.9 meters tall."

REALITY: People are 10 centimeters shorter in real life.

Tinder – The Big Lies People Tell

"I make $100,000 a year."

REALITY?

Tinder – The Big Lies People Tell

Here's what people are saying on Tinder, versus what their incomes should be:

Expected vs Reported Income Distributions

age 18

Legend: Reported, Expected, Likely Exaggerators

X-axis: yearly income ($) — -20K, 30K, 40K, 50K, 60K, 70k, 80K, 100K, 100K+

age: 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56
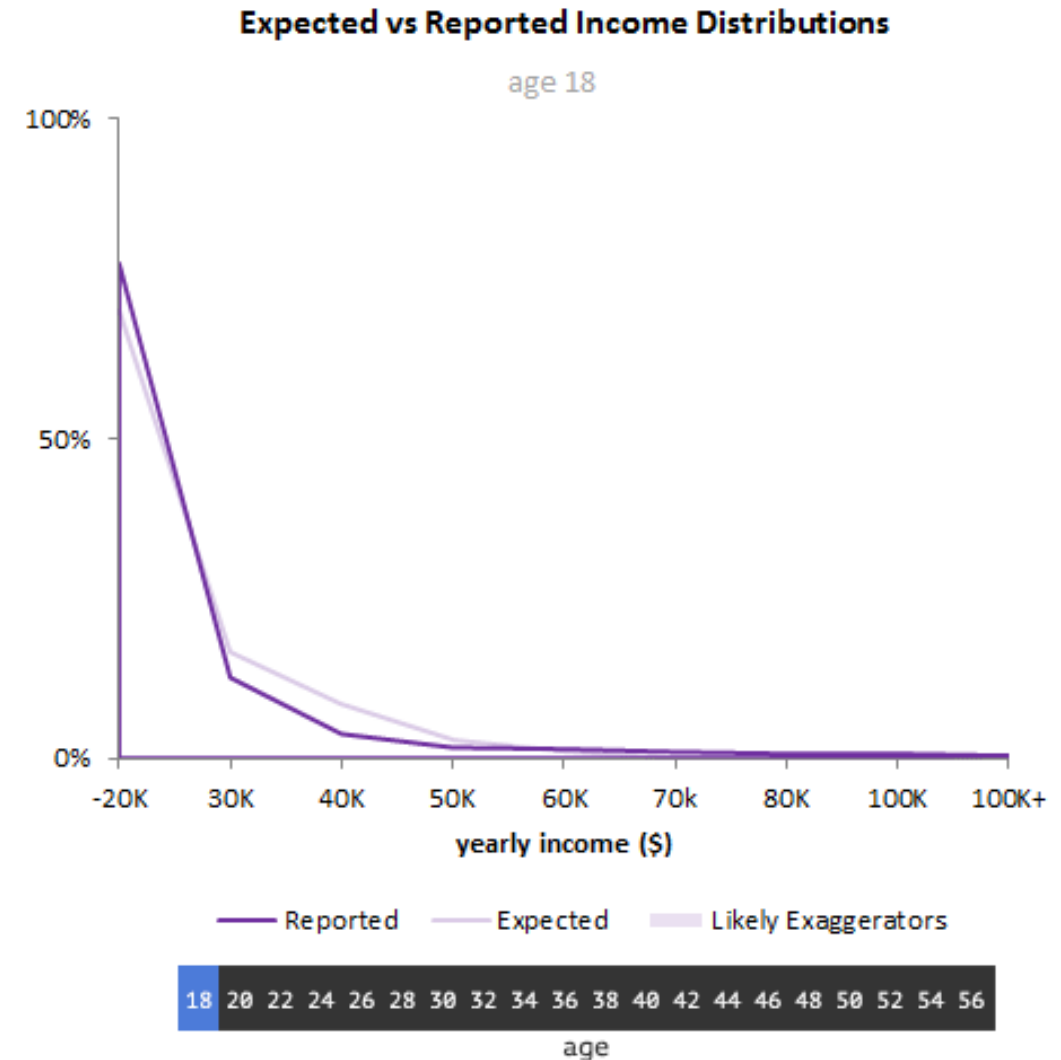
Tinder – The Big Lies People Tell

Look at the graph to watch as people exaggerate more as they get older.

As you can see, people advertise disproportionately high salaries for themselves.

Expected vs Reported Income Distributions

age 18
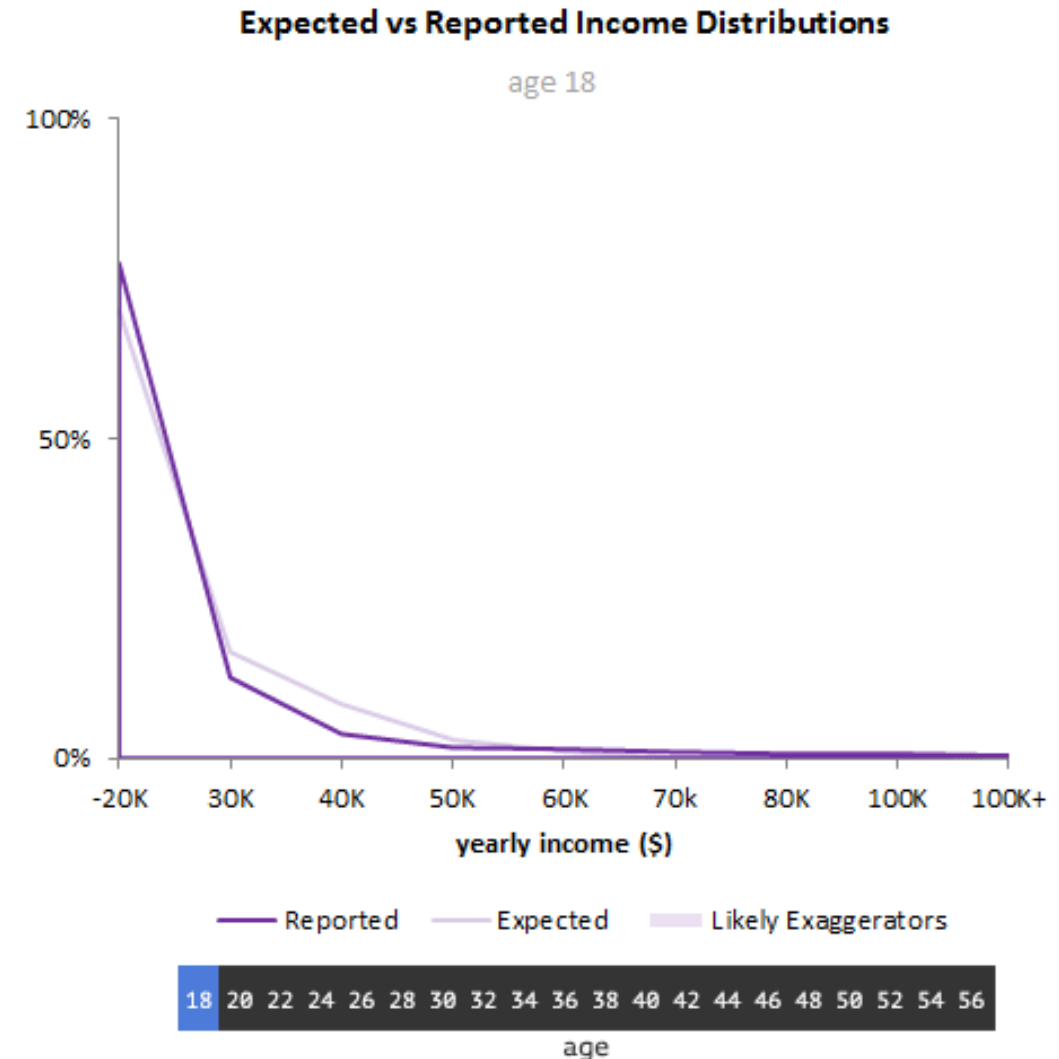
Tinder — The Big Lies People Tell

Do you think that a person's stated income has any real effect on his or her online dating?

It matters a lot, particularly for men.

This is a by-age messaging distribution.

Can you spot an interesting age pattern?

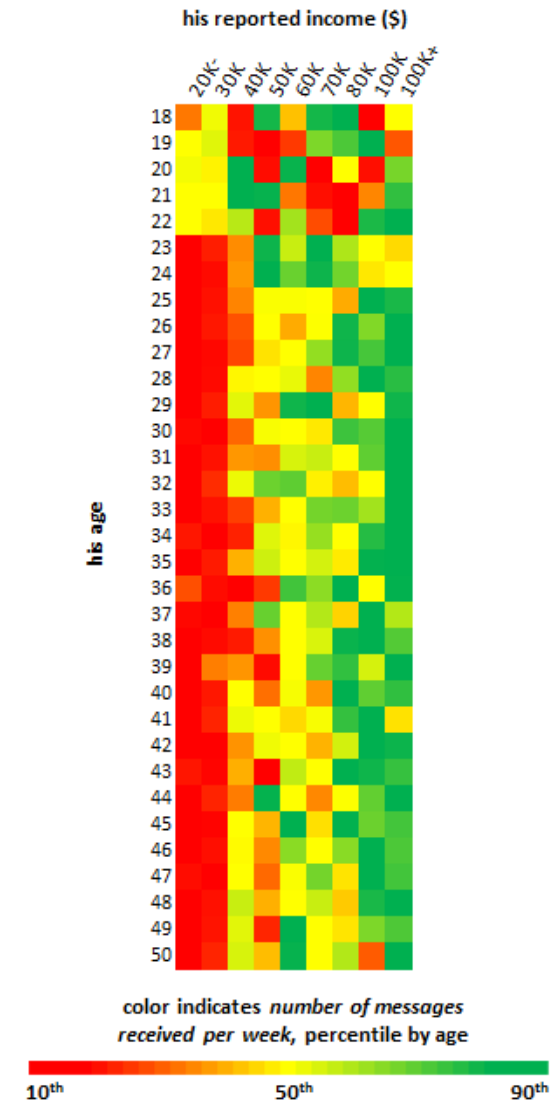**How Many Messages a Man Gets, By Age & Income**

color indicates *number of messages received per week*, percentile by age

Tinder – The Big Lies People Tell

If you're a young guy and don't make much money, cool.

If you're 23 or older and don't make much money, go die in a fire.

It's not hard to see where the incentive to exaggerate comes from.

How Many Messages a Man Gets, By Age & Income

his reported income ($)

20K- 30K 40K 50K 60K 70K 80K 100K 100K+

his age

color indicates *number of messages received per week, percentile by age*

10th   50th   90th
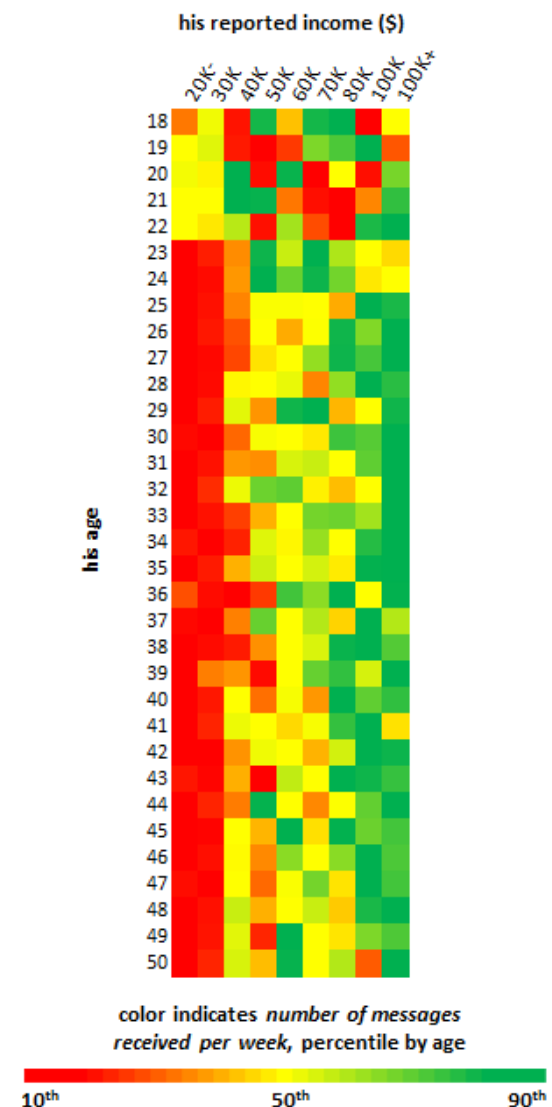
Tinder – The Big Lies People Tell

"I make $100,000 a year."

REALITY: People are 20% poorer than they say they are.

Tinder – The Big Lies People Tell

"Here's a recent pic."

REALITY?

Tinder – The Big Lies People Tell

The below picture, for example, was over two years old when it was uploaded. How do they know?

Most modern cameras append text tags to the jpgs they take. These tags, called EXIF metadata, specify things like the exposure and f-stop settings, gps information if your camera has it, and, of course, the time and date the photo was taken.

Tinder – The Big Lies People Tell

Analyzing this stuff, they can find out that most of the pictures on Tinder were of recent vintage; site-wide the median photo age at upload was just 92 days.

However, **hotter photos were much more likely to be outdated than normal ones.**

Portion of Pictures At Least _m_ Months Old

_m_ (months)

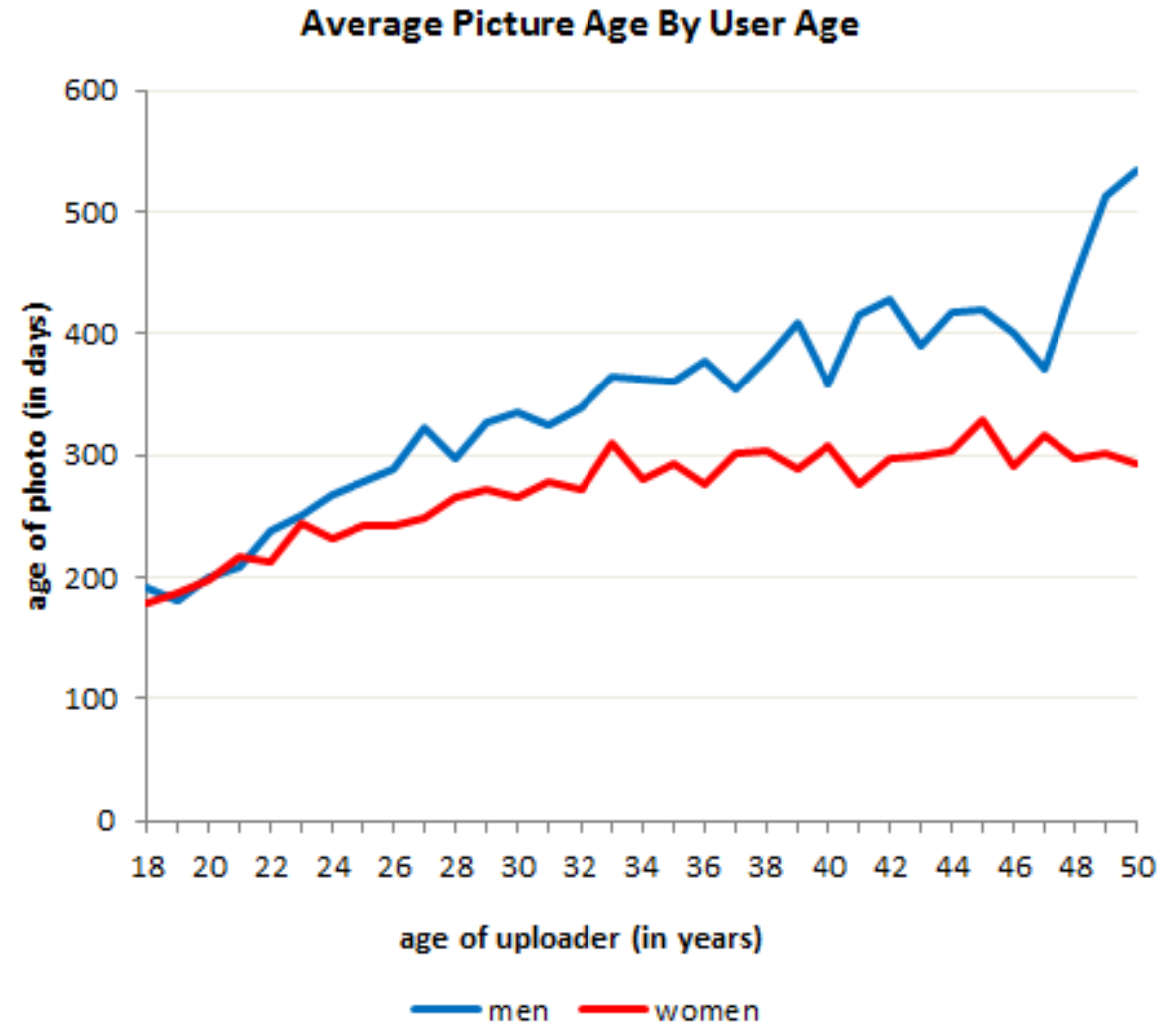—— hot pics   —— average-looking pics
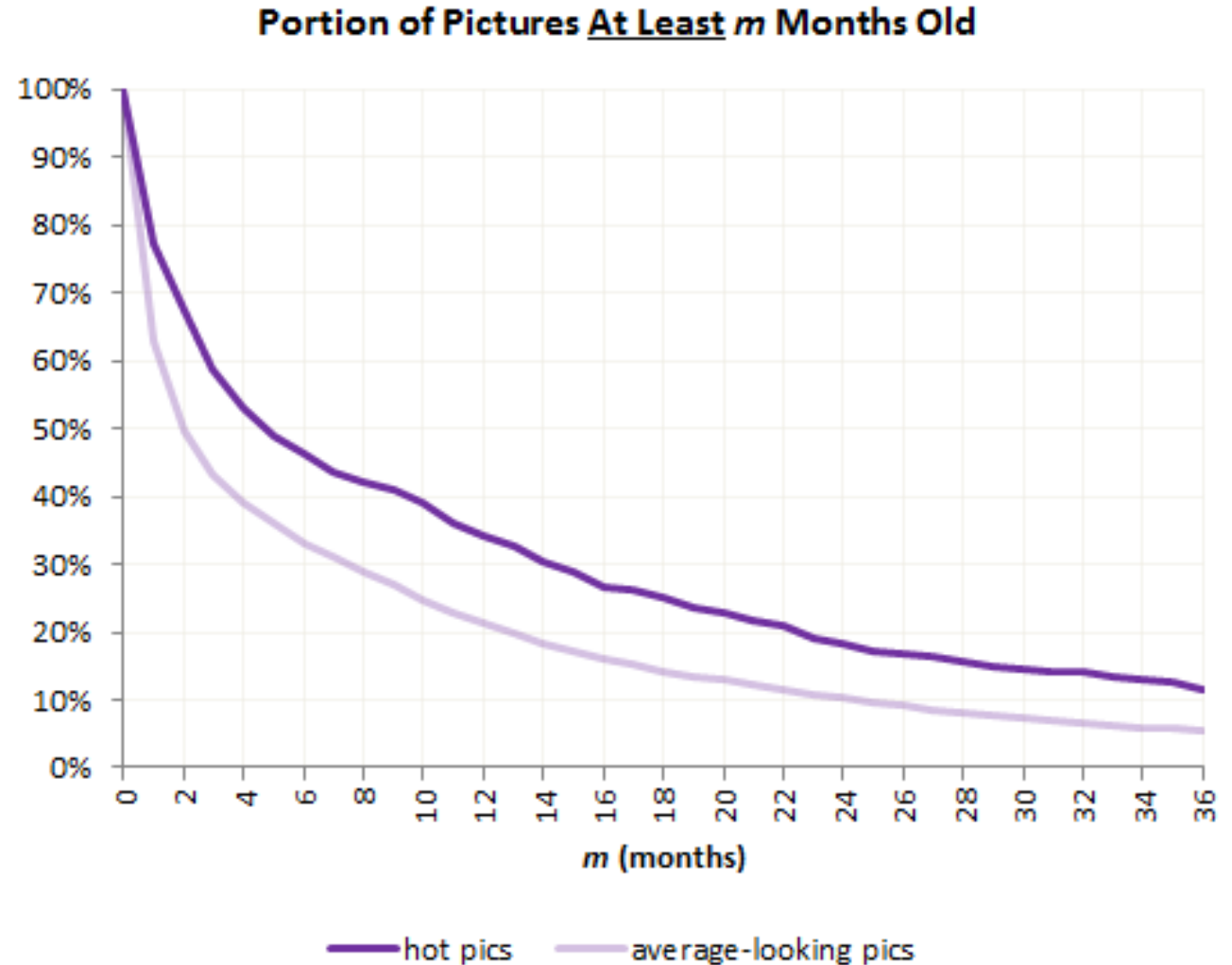
Tinder – The Big Lies People Tell

What is the effect of age on uploading new/old photos?

It also turns out that older people also upload older photos.

The upshot here is, if you see a good-looking picture of a man over 30, that photo is very likely to be out-of-date.

Average Picture Age By User Age

Tinder – The Big Lies People Tell

"Here's a recent pic."

REALITY: The more attractive the picture, the more likely it is to be out-of-date.

ALWAYS REMEMBER:

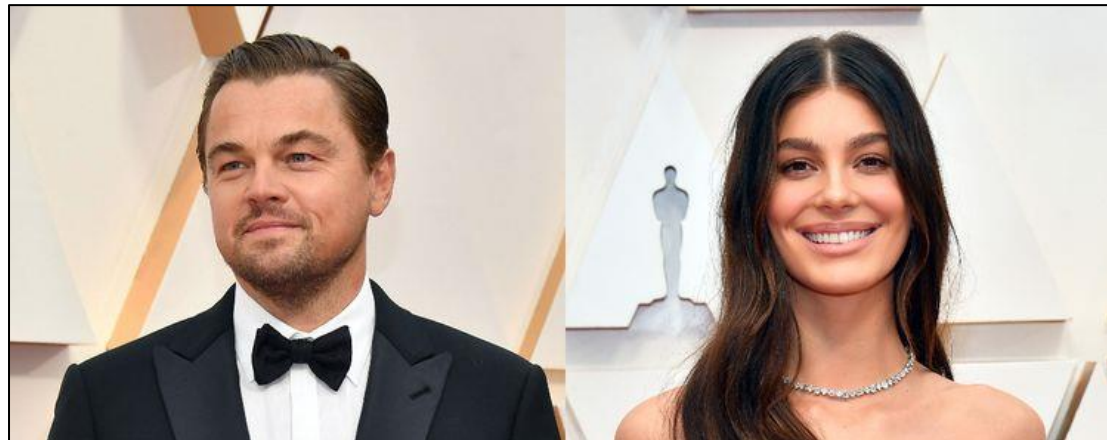# COMPANIES TRUST IN YOUR DATA
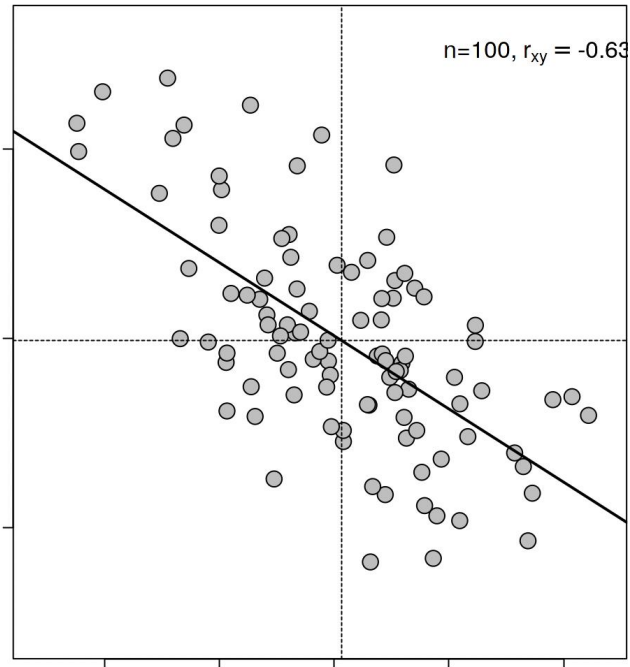# NOT ON WHAT YOU SAY

TODAY WE WILL PRACTICE WITH

TODAY WE WILL PRACTICE WITH

AND

Fundamentals of Econometrics Models

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vincent.soler@tbs-education.org