Controlling Human Perception of Basic User Traits

Daniel Preotiuc-Pietro, Sharath Chandra Guntuku, Lyle Ungar

PENN — UNIVERSITY OF PENNSYLVANIA

Predict Gender/Age
(Sap et al. EMNLP 2014)
Linear SVM Models

amazon mechanical turk beta
3 ratings/setup

PredictAgeGender @alteration - Nov 21
The problem contains the fucking solution.

PredictAgeGender @alteration - Nov 20
You are my muse.   You are my distraction. My rhythm and blues.

PredictAgeGender @alteration - Nov 17
A woman's intuition is a magical thing.

PredictAgeGender @alteration - Oct 31
Time you enjoy wasting is not wasted time.

PredictAgeGender @alteration - Oct 17
I hustle hard in any hustle that you pitch. <URL>

PredictAgeGender @alteration - Oct 13
Ran into tha homie. Such an amazing day.

PredictAgeGender @alteration - Mar 13
The part where I literally was going to tweet that same exact thing just now

PredictAgeGender @alteration - Mar 10
Grateful for this beautiful life... <URL>

PredictAgeGender @alteration - Feb 28
Bout to set it off. Weekend gon be poppin. <URL>

PredictAgeGender @alteration - Jan 18
ItYou always manage to remind me that I did the right thing. For that I should be grateful.

- **Random 20 Tweets**
- **Predicted Same** Gender (20 Tweets)
- **Predicted Opposite** Gender (20 Tweets)
- **Youngest** Predicted Age (20 Tweets)
- **Oldest** Predicted Age (20 Tweets)

* 200 different users for each experiment
- For gender, equal male/female
- For age, stratified in 15-35 age interval
All tweets from 2015 only
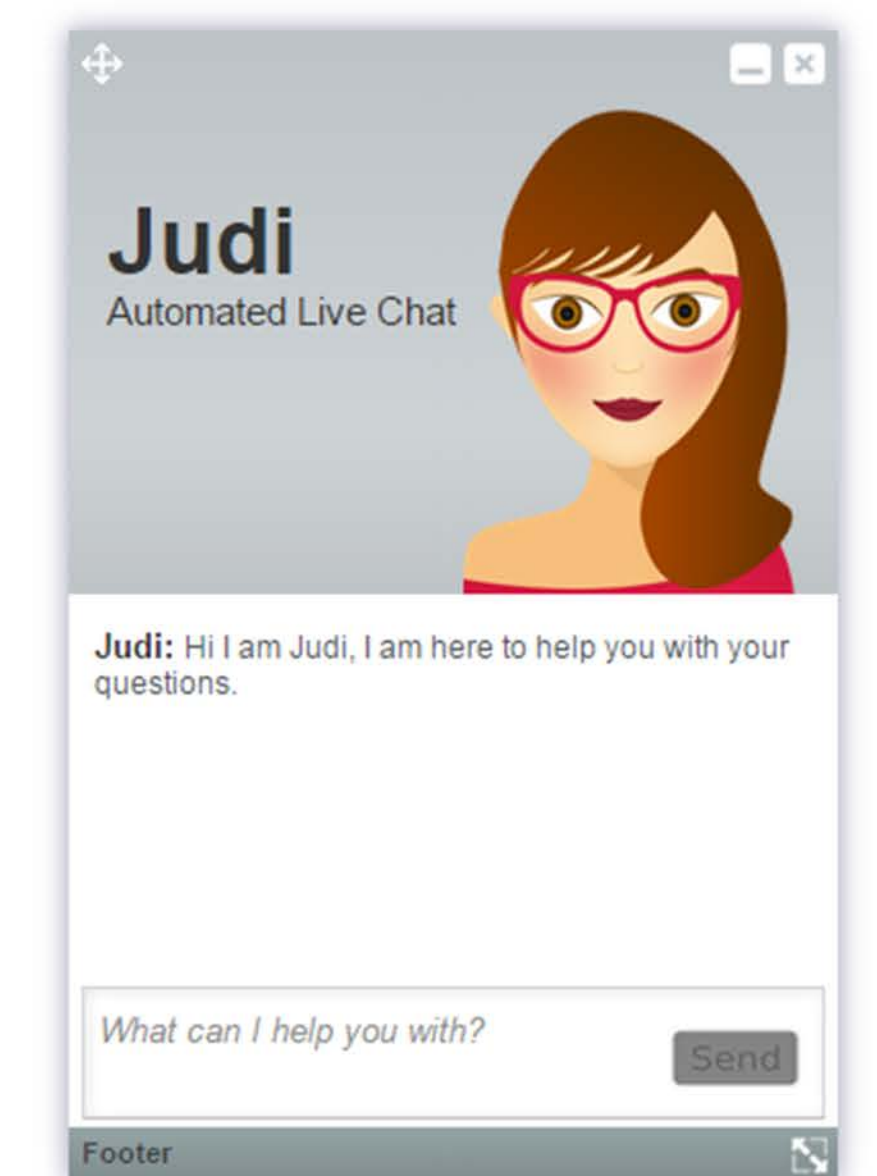Self-reported gender and survey-asssessed age (in 2015)

Motivation

Can we make automated agents more likeable, effective and usable?

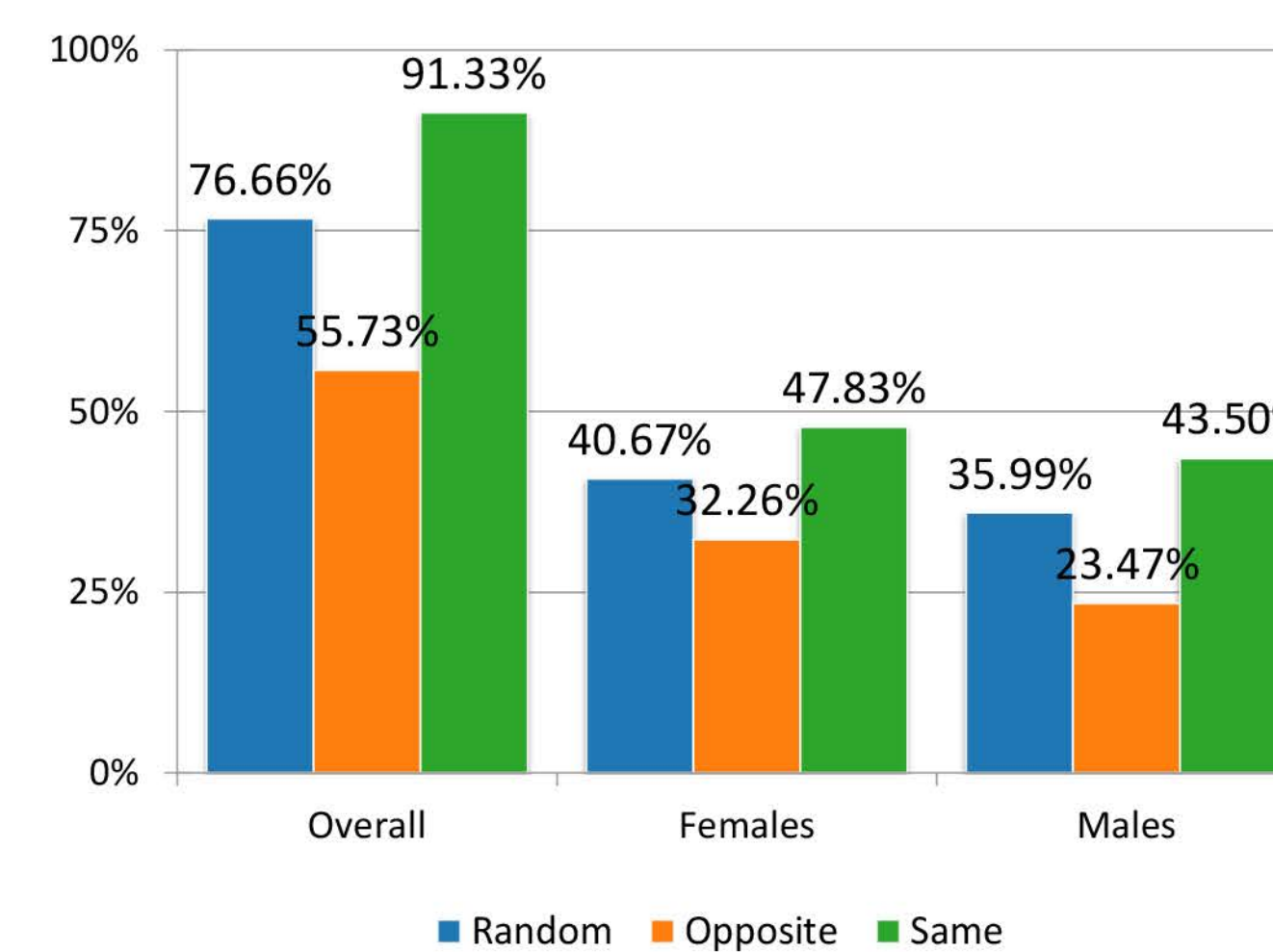**- Can we use automated methods to affect human perception of basic traits?**

- Can we adapt text-generation methods to the person they are interacting with?
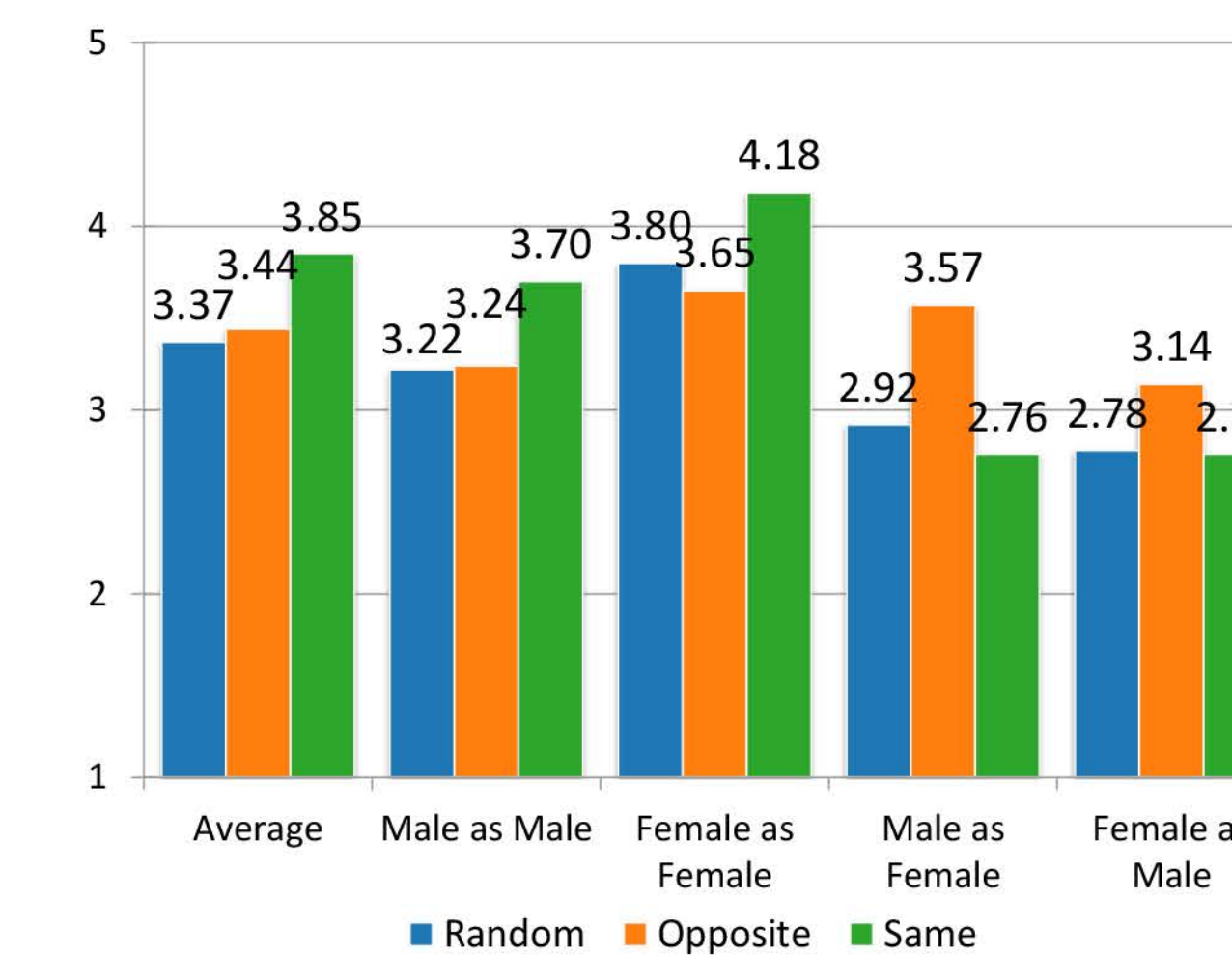
Judi
Automated Live Chat
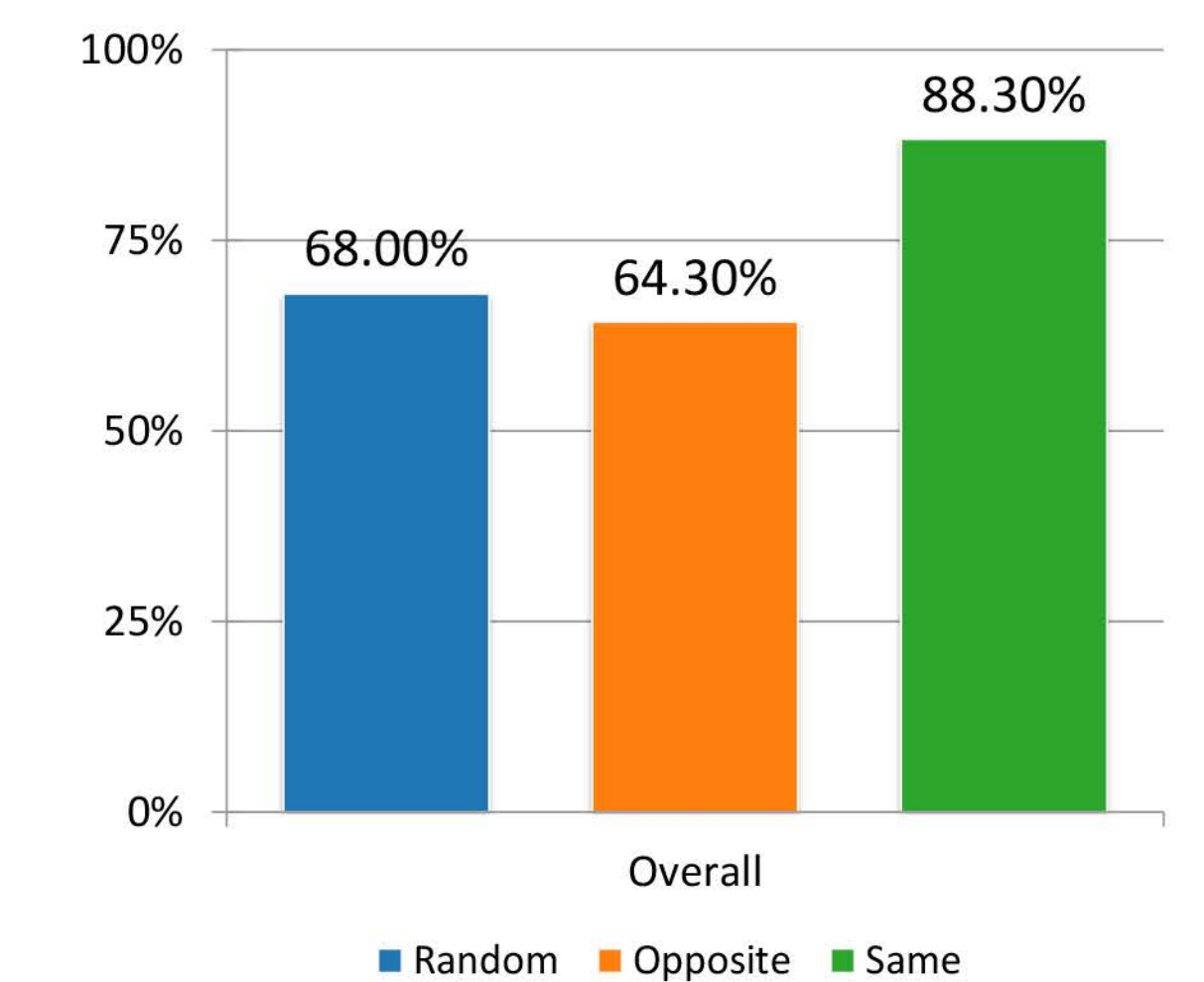**Judi:** Hi I am Judi, I am here to help you with your questions.
What can I help you with?
Footer

Source: CodeProject

Gender

Accuracy

	Overall	Females	Males
Random	76.66%	40.67%	35.99%
Opposite	55.73%	32.26%	23.47%
Same	91.33%	47.83%	43.50%

Confidence

	Average	Male as Male	Female as Female	Male as Female	Female as Male
Random	3.37	3.22	3.80	2.92	2.78
Opposite	3.44	3.24	3.65	3.57	3.14
Same	3.85	3.70	4.18	2.76	2.76

Inter-Annotator Agreement

	Overall
Random	68.00%
Opposite	64.30%
Same	88.30%

Age

Accuracy

	Correct	Younger	Older
Baseline	5.00%	40.00%	45.00%
Random	7.10%	53.50%	39.30%
Youngest	7.60%	62.20%	30.10%
Oldest	7.50%	36.20%	56.20%

Predictions

Younger / Random / Older — Predicted Age vs Real Age
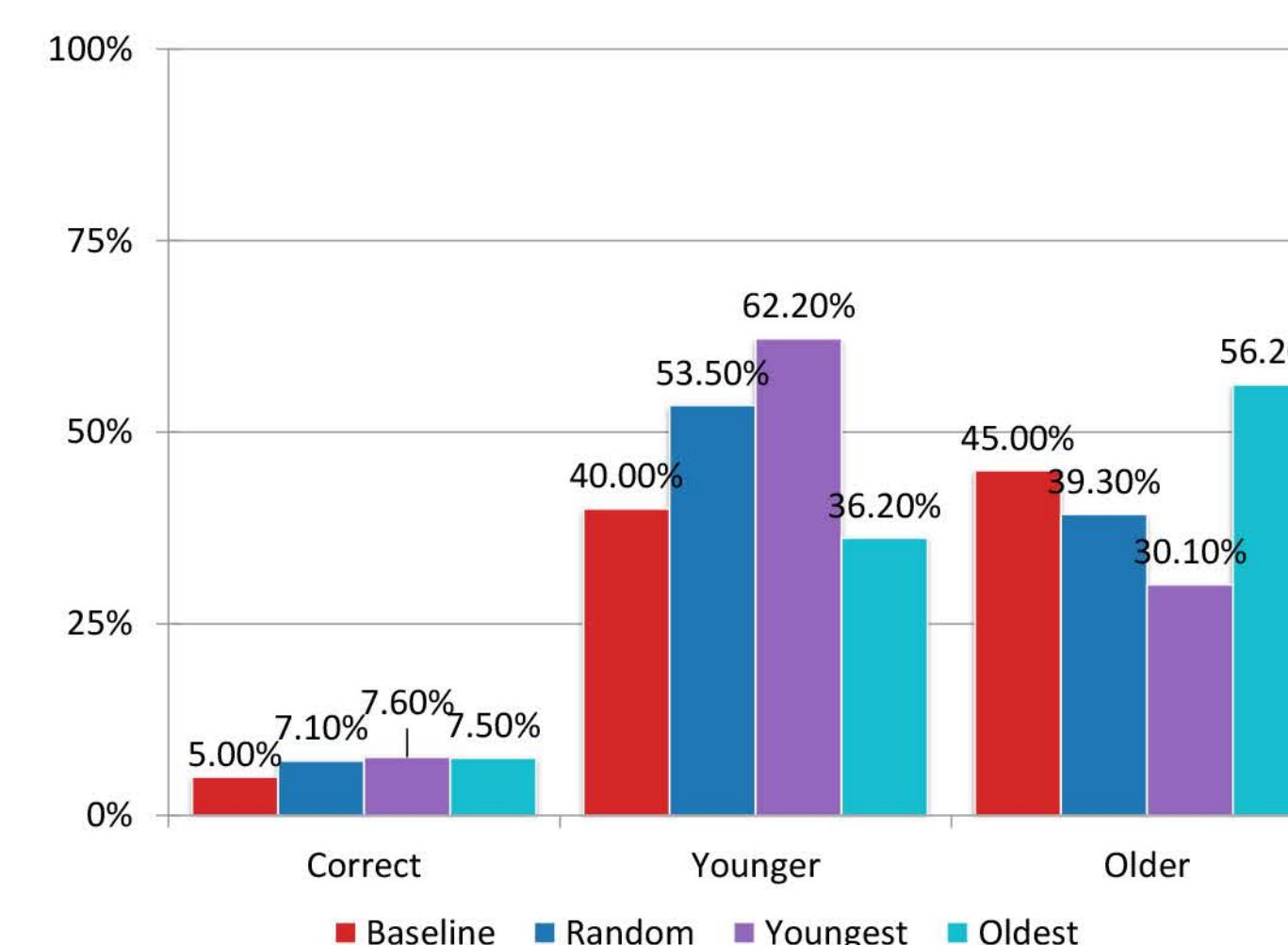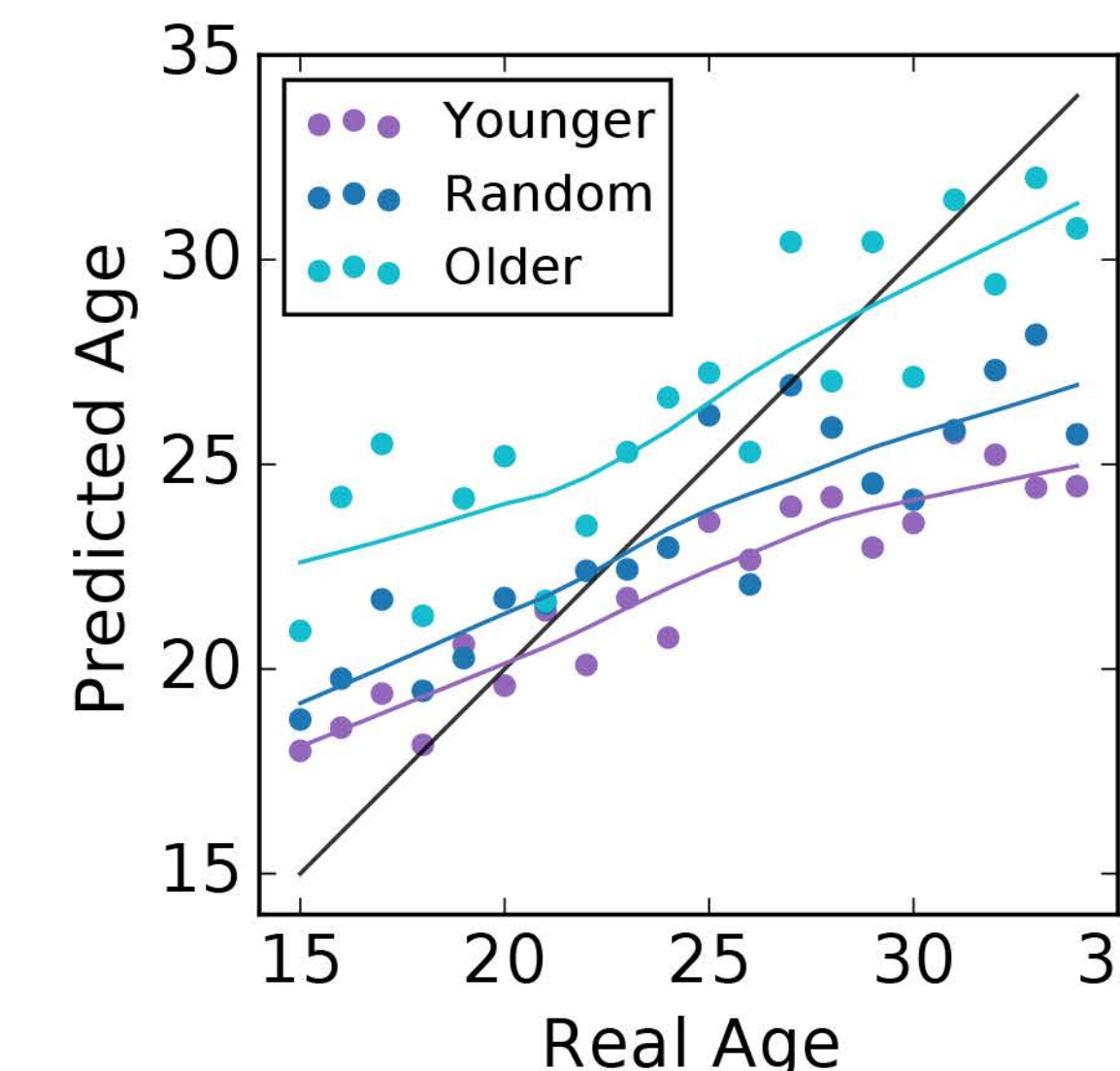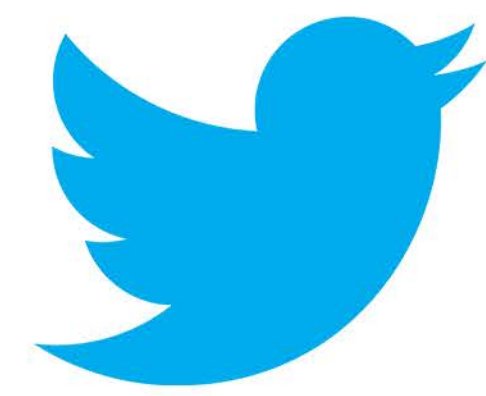
Misleading Features*

Youngest
literally	- that's literally living the dream
so	- im laughing so hard
though	- You cute though
excited	- IM SO EXCITED URL
guys	- you guys killed it USER

Oldest
daughter	- USER makes my 2-month-ol daughter stop fussing :)
years	- i love [...] regretting everything from like three years ago
via	- Christmas is almost here! Let's party! URL via USER
ago	- One year ago today URL URL
ok	- I'm OK with that. URL

* regression/classification weight with the user-normalized average frequency of the feature in the displayed tweets