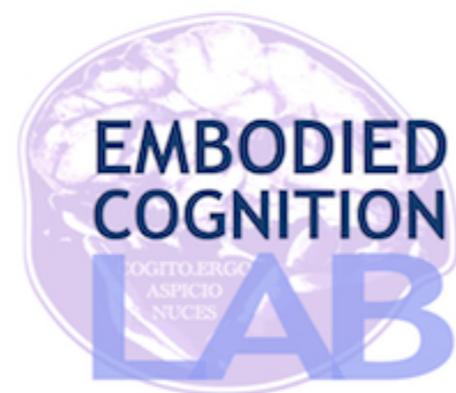


Using Amazon's Mechanical Turk for online data collection

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Collaborators/Architects



James Carney



Louise Connell



Dermot Lynott



The Leverhulme Trust

Part I

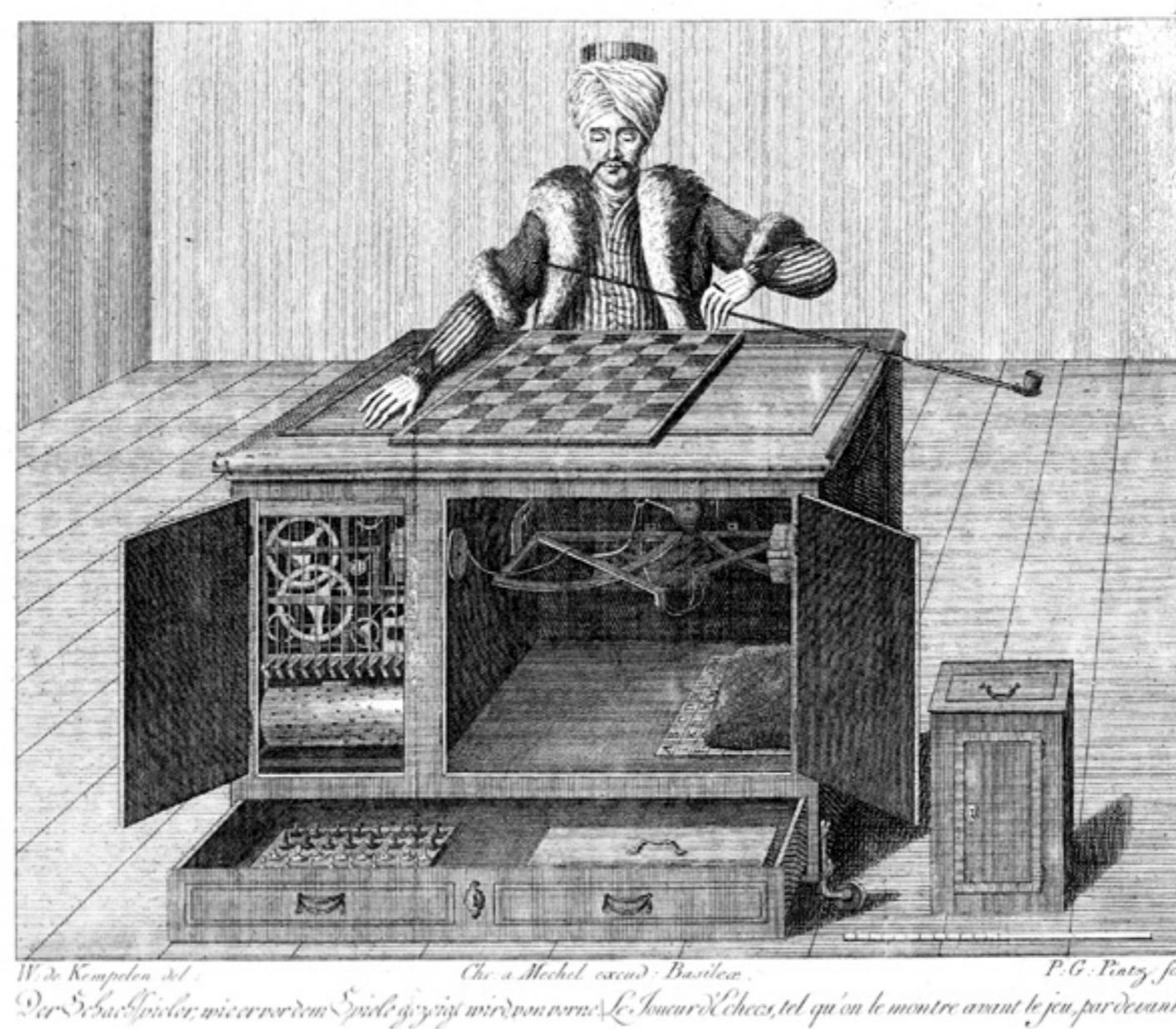
Introduction to

Amazon Mechanical Turk



Part I: Amazon Mechanical Turk

What?



Img: https://en.wikipedia.org/wiki/The_Turk

Part I: Amazon Mechanical Turk

What?



Img: <http://moneyconnexion.com/wp-content/uploads/2017/03/makemoneymturk.jpg>

Part I: Amazon Mechanical Turk

What?

MTurk

Amazon Mechanical Turk

HIT

Human Intelligence Task (experiments)

Worker

Participant

Requester

Researcher

Sandbox

An area to test out HITs for free

Bonus

Additional payment (optional, normally for good work)

PandA

Preview and Accept (what workers say when they accept your HIT)

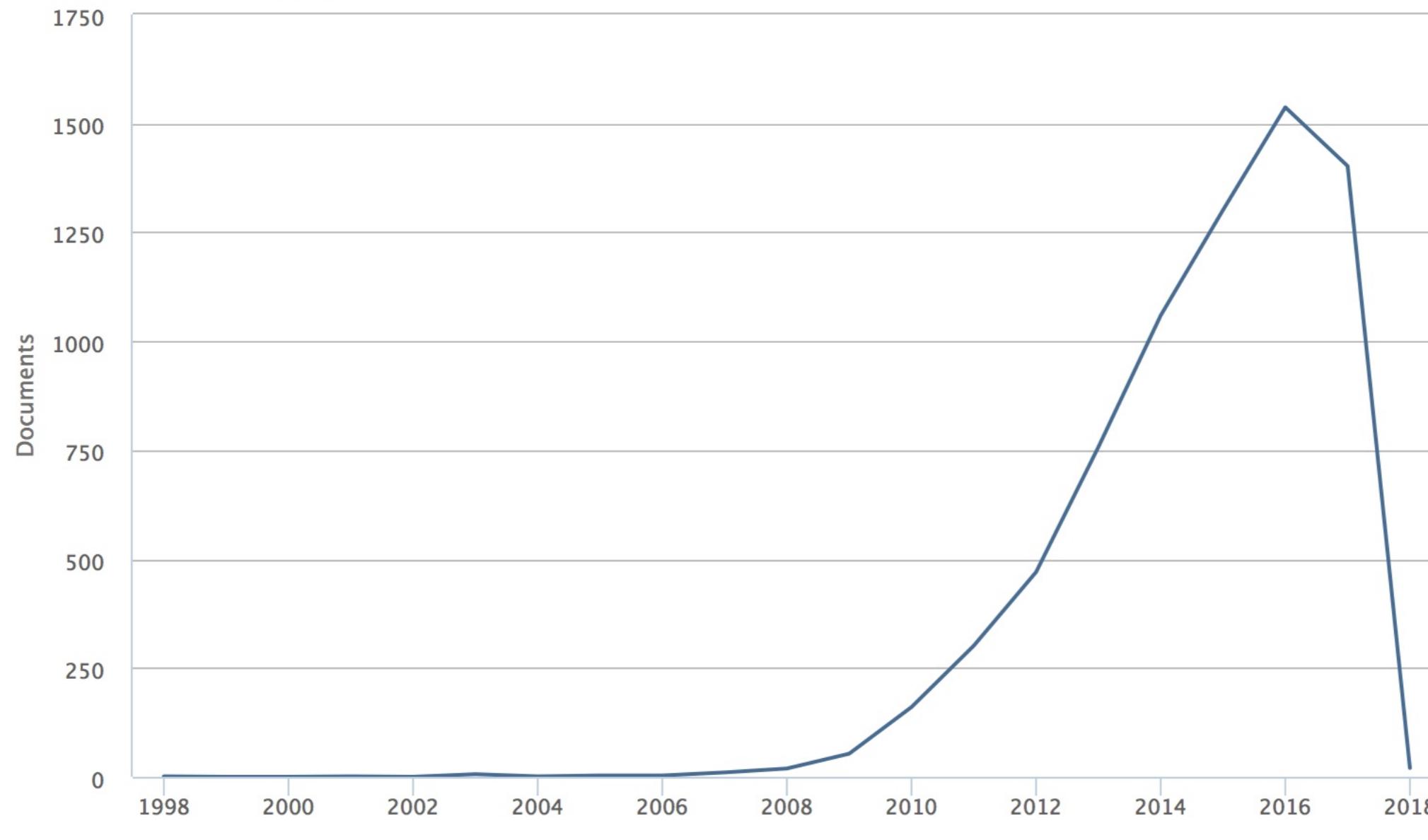
Qualifications

MTurk criteria which allows/prevents workers from taking part in HITs

Part I: Amazon Mechanical Turk

Why?

Documents by year

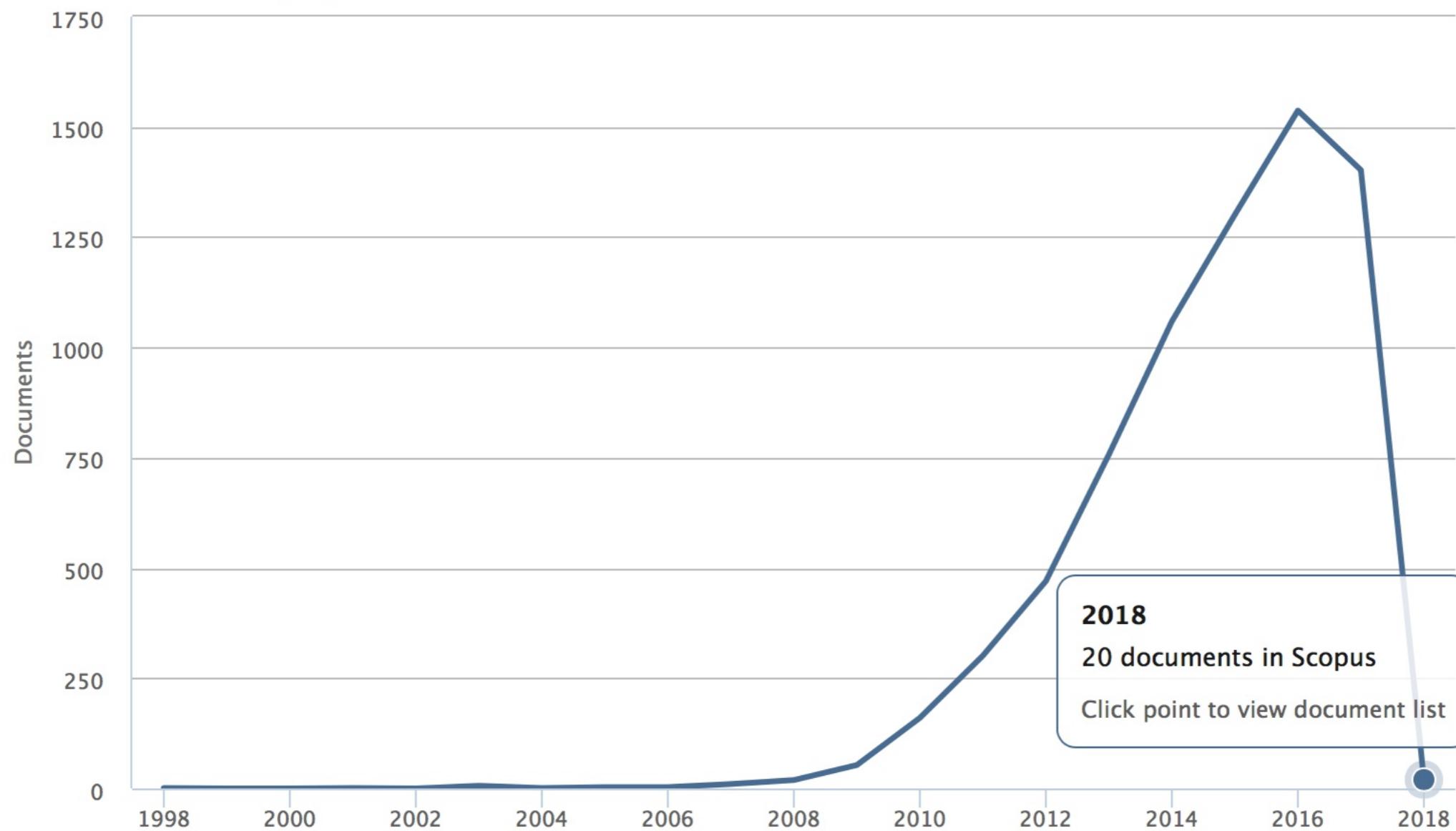


<https://www.scopus.com> search = ‘Amazon Turk’

Part I: Amazon Mechanical Turk

Why?

Documents by year

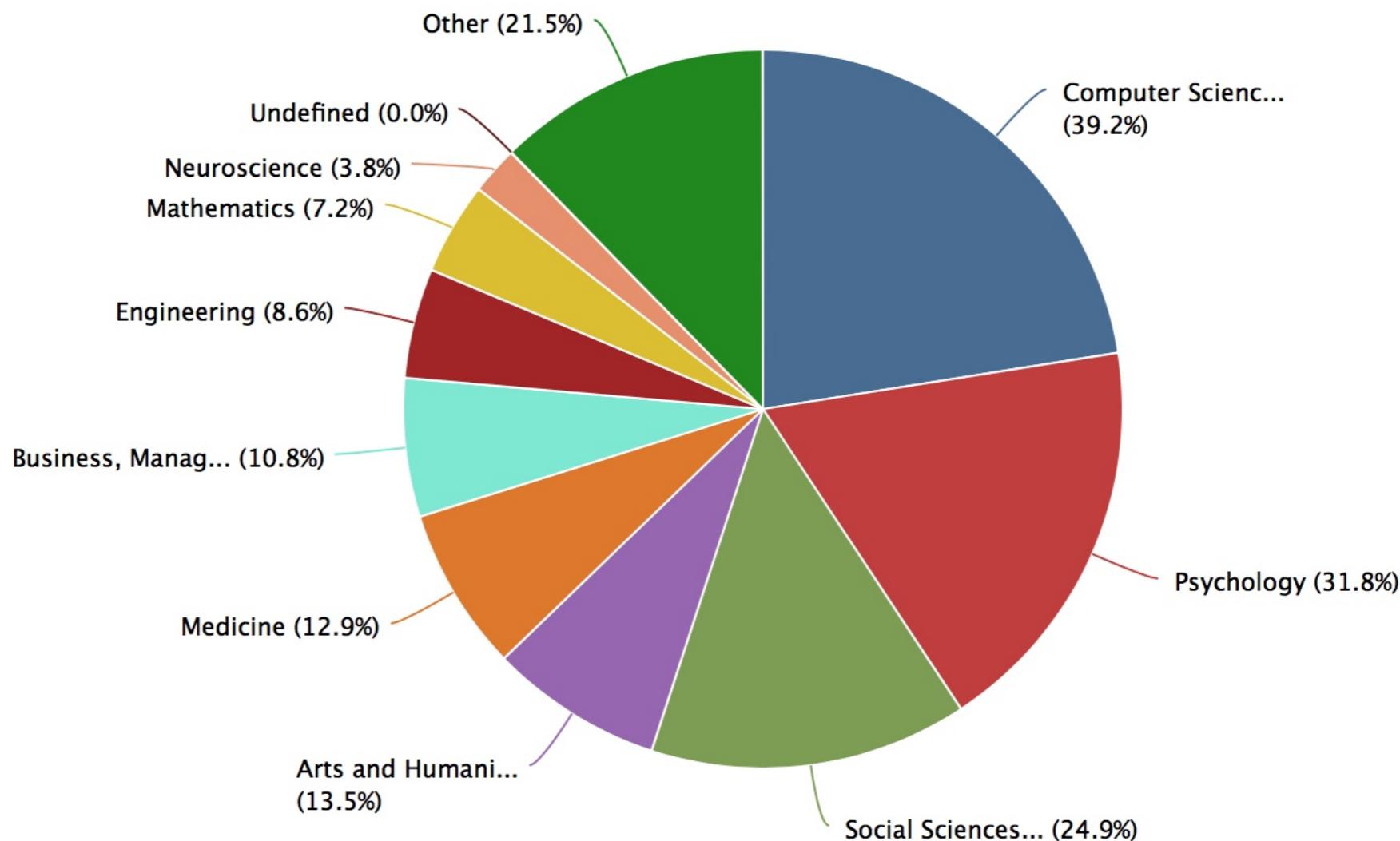


<https://www.scopus.com> search = ‘Amazon Turk’

Part I: Amazon Mechanical Turk

Why?

Documents by subject area



<https://www.scopus.com> search = 'Amazon Turk'

Why?

N = 13,400

in

4 months

Our research!!

Why?

N = 13,400

in

4 months*



The Leverhulme Trust

*for a ~17 minute HIT

costing \$2.70 per participant



The Leverhulme Trust

Our research!!

Part I: Amazon Mechanical Turk

Who?

Service Highlights

On-Demand, Scalable Workforce

Amazon Mechanical Turk provides access to a global marketplace of Workers whenever your business needs them. You can dynamically scale your workforce as your business demands.

- ✓ Access more than 500,000 Workers from 190 countries
- ✓ Connect with Workers who have a variety of skill sets and capabilities
- ✓ Scale up and down in minutes

<https://requester.mturk.com/tour>

Part I: Amazon Mechanical Turk

Who?

Service Highlights

On-Demand

Amazon Mechanical Turk allows you to access a large pool of workers on demand. You can create a labora-

-  Access research
-  Connect with others
-  Scale up your work

Judgment and Decision Making, Vol. 10, No. 5, September 2015, pp. 479–491

The average laboratory samples a population of 7,300 Amazon Mechanical Turk workers

Neil Stewart* Christoph Uengemach† Adam J. L. Harris‡ Daniel M. Bartels§ Ben R. Newell¶
Gabriele Paolacci|| Jesse Chandler**

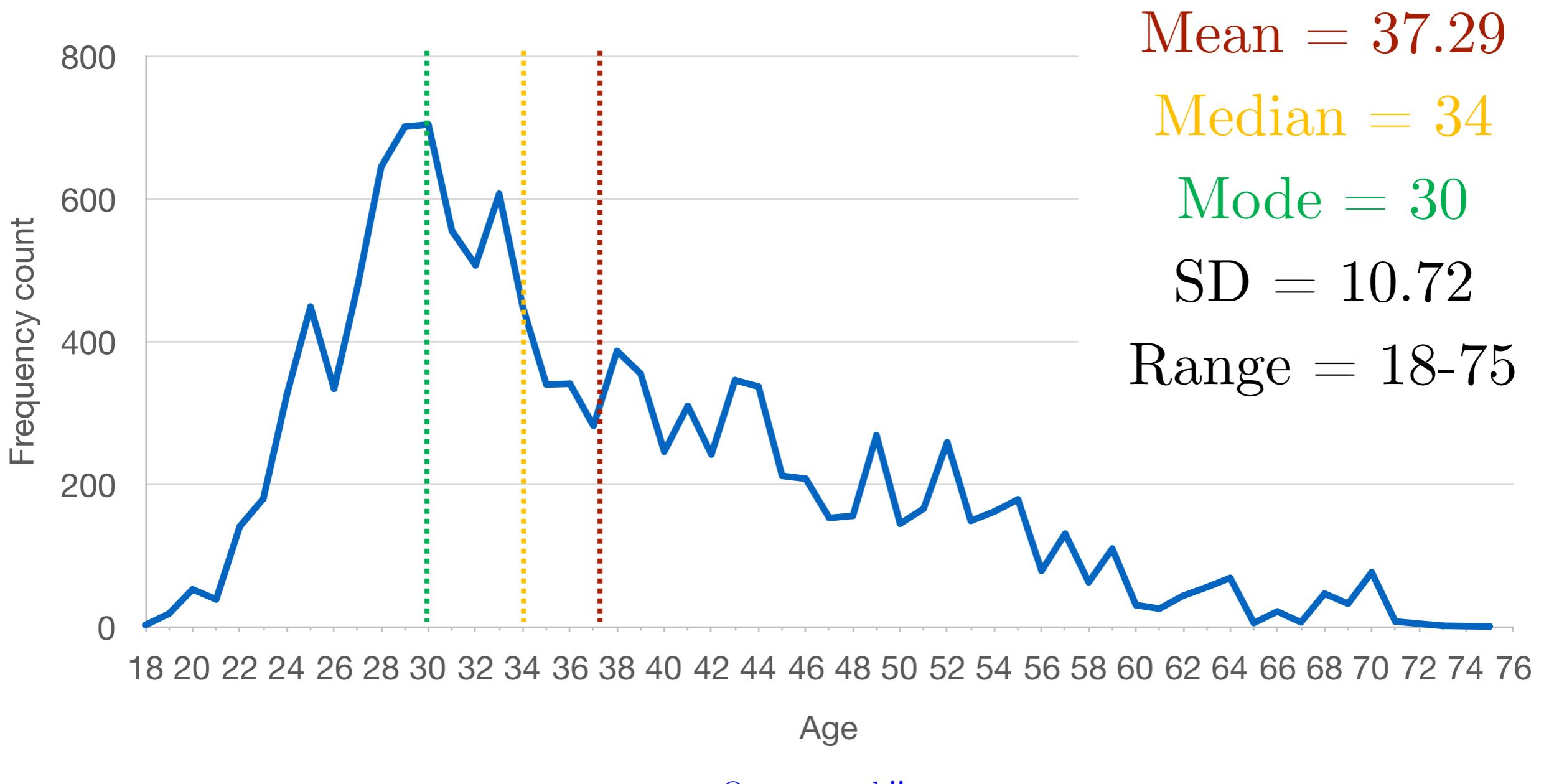
Abstract

Using capture-recapture analysis we estimate the effective size of the active Amazon Mechanical Turk (MTurk) population that a typical laboratory can access to be about 7,300 workers. We also estimate that the time taken for half of the workers to leave the MTurk pool and be replaced is about 7 months. Each laboratory has its own population pool which overlaps, often extensively, with the hundreds of other laboratories using MTurk. Our estimate is based on a sample of 114,460 completed sessions from 33,408 unique participants and 689 sessions across seven laboratories in the US, Europe, and Australia from January 2012 to March 2015.

[Stewart et al., \(2015\)](#)

Part I: Amazon Mechanical Turk

Who?



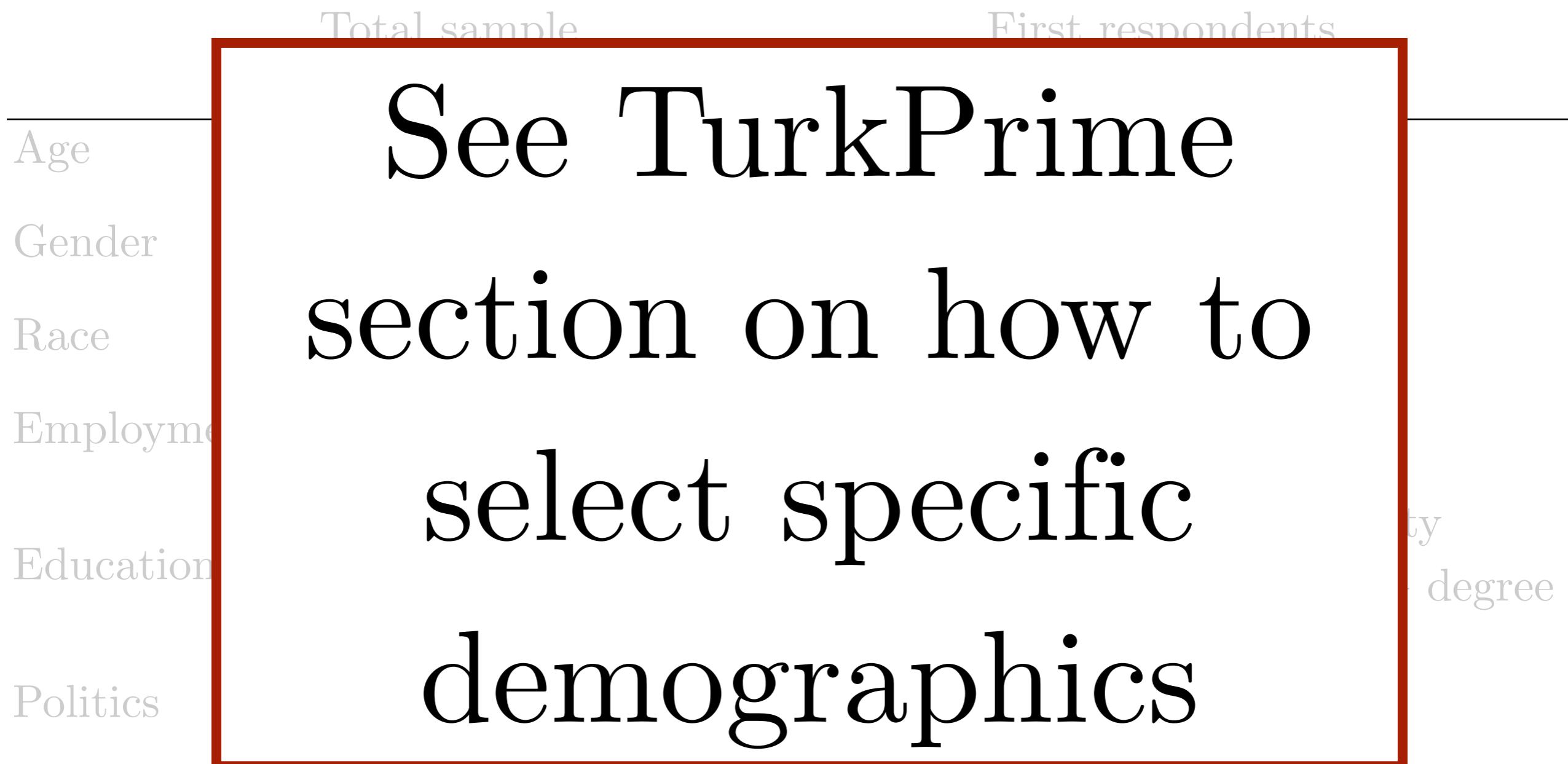
Part I: Amazon Mechanical Turk

Who?

	Total sample N = 9,770	First respondents N = 438
Age	33.51	33.59
Gender	51.7% female	46.8% female
Race	82.9% Caucasian	79.5% Caucasian
Employment	48.5% full time	55.3% full time
Education	31.4% some University 34.8% completed UG degree	22.4% some University 44.5% completed UG degree
Politics	17.9% Republican 41.3% Democrat	18.3% Republican 47% Democrat

Casey et al., (2017)Live stats!! check <http://www.mturk-tracker.com/#/general>

Who?



Casey et al., (2017) SAGE Open

Live stats!! check <http://demographics.mturk-tracker.com/#/gender/all>

Part I: Amazon Mechanical Turk

How (much)?

Worker Reward

You decide how much to pay Workers for each assignment.

Mechanical Turk Fee

20% fee on the reward and bonus amount (if any) you pay Workers. HITs with 10 or more assignments will be charged an additional 20% fee on the reward you pay Workers. The minimum fee is \$0.01 per assignment or bonus payment.

Additional Fee for using the Masters Qualification [\(What are Masters?\)](#)

5% of the reward you pay Workers.

See TurkPrime section
of tutorial to avoid
this

<https://requester.mturk.com/pricing>

Part I: Amazon Mechanical Turk

How (much)?

Worker Reward

You decide how much to pay Workers for each assignment.

Mecha

$$\begin{array}{l} \$1.00 \text{ pay to worker} \\ \$0.20 \text{ to Amazon} \end{array} = \$1.20$$

Additio**Master****(What a**

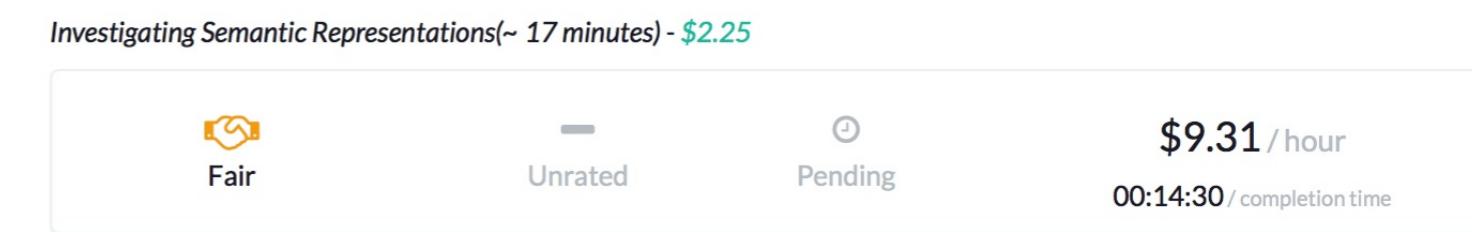
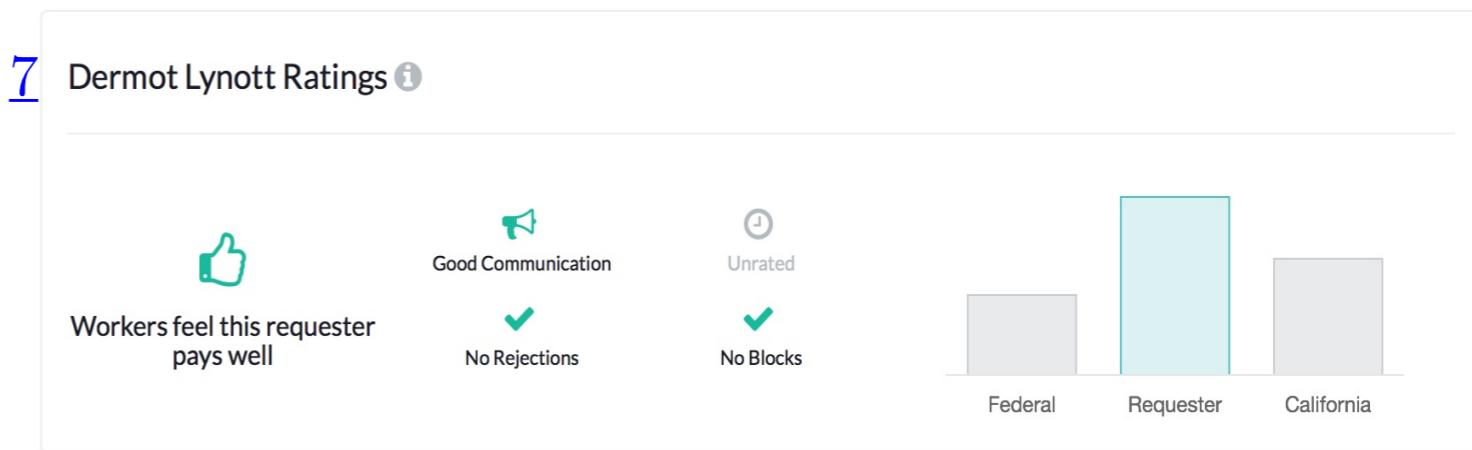
of tutorial to avoid
this

<https://requester.mturk.com/pricing>

Part I: Amazon Mechanical Turk

How (much)?

- Higher pay = faster data completion¹
- But consider ethical considerations²
- US federal pay = \$7.25 ph
- Forums spread the word of good/bad requesters^{3,4}
- So do rating websites^{5,6}
- GBP - USD 

**Pros**

Simple survey with acceptable pay.

Cons

Tedious, repetitive, and subjective.

Advice to Requester

Perhaps give the worker a progress marker, such as numbering the questions (current)/(total), so that we have an idea of how far along we are. It makes the task feel much less tedious.

¹[Berskinsky et al., \(2012\)](#), ²[Fort et al., \(2011\)](#)

³[www.mturkcrowd.com](#) ⁴[https://tukerhub.com](#) ⁵[https://turkopticon.info](#) ⁶[https://turkerview.com](#)

⁷[https://turkerview.com/requesters/?id=A325L0H6Q5L71I](#)



Part I: Amazon Mechanical Turk

How?

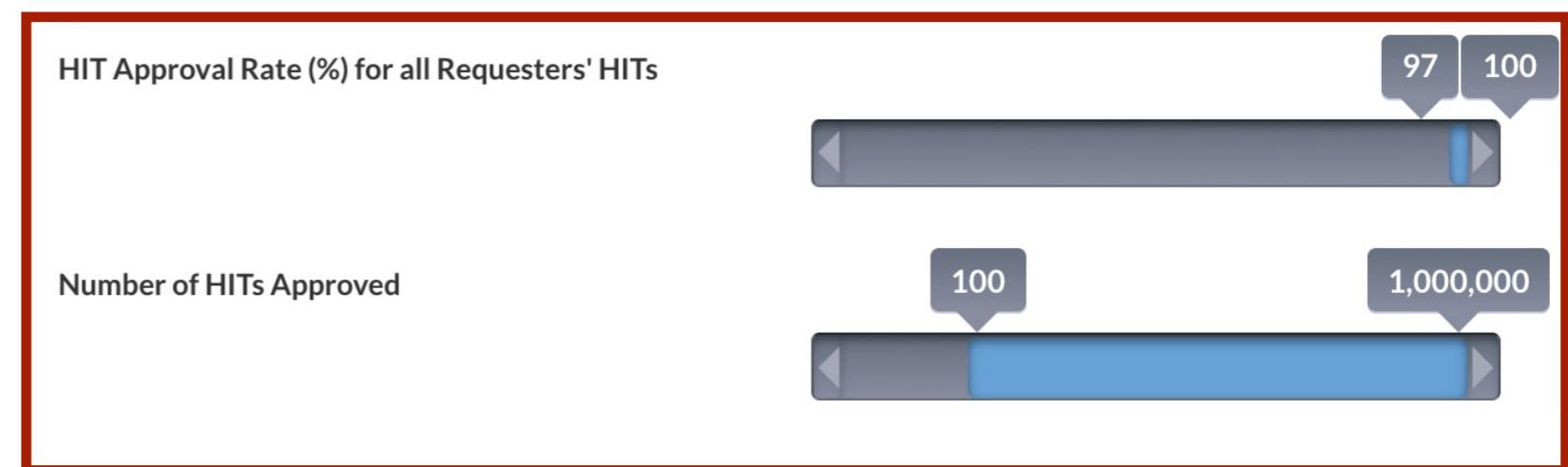
The screenshot shows the Amazon Mechanical Turk Requester interface. At the top, there's a navigation bar with links for Home, Create, Manage, Developer, Help, and a 'We're Hiring! Learn More' button. Below the navigation bar, there are links for My Account, Purchase Prepaid HITs (which is underlined), and Transaction History. The main content area has a large heading 'Purchase Prepaid HITs'. Below the heading, a text block explains: 'Purchase prepaid HITs to cover Worker payments and Mechanical Turk fees. When you approve HITs or grant bonuses, Worker payments and Mechanical Turk fees are deducted from your prepaid HIT balance.' There's a form field labeled 'Amount to purchase:' with a placeholder '\$ Enter an amount...' and a note '(Your available balance: \$ [REDACTED])'. At the bottom of the form is an orange 'Continue' button.

<https://requester.mturk.com>

Part I: Amazon Mechanical Turk

How?

- Choose experienced workers
- Keep it clear and simple
- Workers tend to complete a number of HITs a day - length? cognitive demand?
- PILOT!!!



<https://www.turkprime.com/>

How?

Ethical guidance

- Outline terms in information/consent form
- Requester has the right to reject work (and reverse rejections, but not reverse approvals)¹
- When possible have fair quality checks incorporated into design² again... PILOT
- Make sure ethics application states these criteria, UREC have accepted non-payment clauses for poor quality data
- ~0.5% of workers rejected in our samples³
- NOTE: Worker IDs are not anonymous⁴

Will I be paid for participating in the research?
You will be paid US \$2.25 for participation on condition that (a) you complete the study, and (b) your performance is of sufficient quality. Among the list of words you will be asked to rate, we have mixed a set of control words where we already know the ratings people usually give. If your ratings for the control words are broadly consistent with these existing ratings, we will consider your performance to be of good quality and pay you in full.

¹[Amazon](#) ²[Necka et al., \(2016\)](#) ³[Our research!!](#) ⁴[UMass Ahmerst Ethics](#)

Part I: Amazon Mechanical Turk

How?



Be organised!

Img: <http://www.independent.co.uk/news/uk/politics/uk-brexit-chaos-eu-diplomats-talks-too-chaotic-to-be-true-bluff-cunning-plan-theresa-may-government-a7876366.html>

How?

Set up an account

http://psiturk.readthedocs.io/en/latest/amt_setup.html

No, you don't have to be a US citizen to get an account

https://requester.mturk.com/help/faq#can_requesters_outside_us_use_mturk



Part II

TurkPrime



See our paper "TurkPrime.com: A versatile crowdsourcing data ..." in
Behavior Research Methods

Recruit Online Participants

Simple • Affordable • Powerful Crowd|Research

Toolkit for Amazon Mechanical Turk

- Basic Toolkit Free for Academic Users
- MTurk Panels on Your Own Requester Account

Lab Service: Mechanical Turk Panels

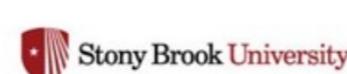
- Target MTurk Workers by Ethnicity, Age and Custom Traits

Lab Service: Prime Panels

- Recruit from 10 Million Participants by any Demographic

[Sign Up](#)

Over 5000 Labs and Researchers Worldwide Use TurkPrime



<https://www.turkprime.com/>



TurkPrime Introduction

- *Web based platform that makes MTurk workflow incredibly simple*
- *FREE for academics*
- *Made by academics*
- *Cost saving features*
- *Worker selection features*

[Litman, Robinson & Abberbock \(2017\) Behavior Research Methods](#)



TurkPrime Demo

Live demo... Covering:

Study set up

Demographics selection

Qualtrics integration

MicroBatching

Data processing

Worker payment and rejection



TurkPrime Demo

Live demo... 10 minutes

I will have a prerecorded version just in case...

TurkPrime Demo

Live demo... Covering:

- Study set up 
- Demographics selection 
- Qualtrics integration 
- MicroBatching 
- Data processing 
- Worker payment and rejection 



TurkPrime Demo

Set up account tutorial

<https://youtu.be/6Tl1Gao3FnI>

FAQs

[https://www.turkprime.com/Home/
FrequentlyAskedQuestions](https://www.turkprime.com/Home/FrequentlyAskedQuestions)



Part III

Future directions and considerations



Part III: Future directions and considerations

Future directions



PsychoJS (PsychoPy)

[https://github.com/
psychopy/psychojs](https://github.com/psychopy/psychojs)



jsPsych

<http://www.jspsych.org>



PsiTurk

<https://psiturk.org>



Future directions

Open source and replicable!!

See Molly Lewis' site for excellent examples

<https://mllewis.github.io/projects/xtSamp/>
[xtSampindex.html](#)



Part III: Future directions and considerations

Future directions

Eye tracking¹

Infancy research^{2,3}

Field work⁴

Longitudinal studies⁵

Transcription⁶

Interactive games^{7,8}

¹[Lebreton et al. \(2015\)](#) ²[Scott & Schulz \(2017\)](#) ³[Scott et al., \(2017\)](#) ⁴[Meier et al., \(2011\)](#)

⁵[Boynton & Richman \(2014\)](#) ⁶[Marge et al., \(2010\)](#) ⁷[Arechar et al., \(2017\)](#) ⁸[Balietti \(2016\)](#)



Part III: Future directions and considerations

Considerations

Tragedy of the commons¹

Non-naïveté², but also see ³

Cost increases⁴

Anonymity (workers and yours)⁵

¹[Stewart et al., \(2017\)](#) ²[Chandler et al., \(2015\)](#) ³[Zwaan et al., \(2017\)](#)

⁴[mturk4academics.wordpress.com](#) ⁵[UMass Amherst Ethics](#)



Part III: Future directions and considerations

Resources

Todd Gurekis (videos) [link](#)

Gary Lupyan (online class) [link](#)

Michael Frank (online class) [link](#)

Thanks

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