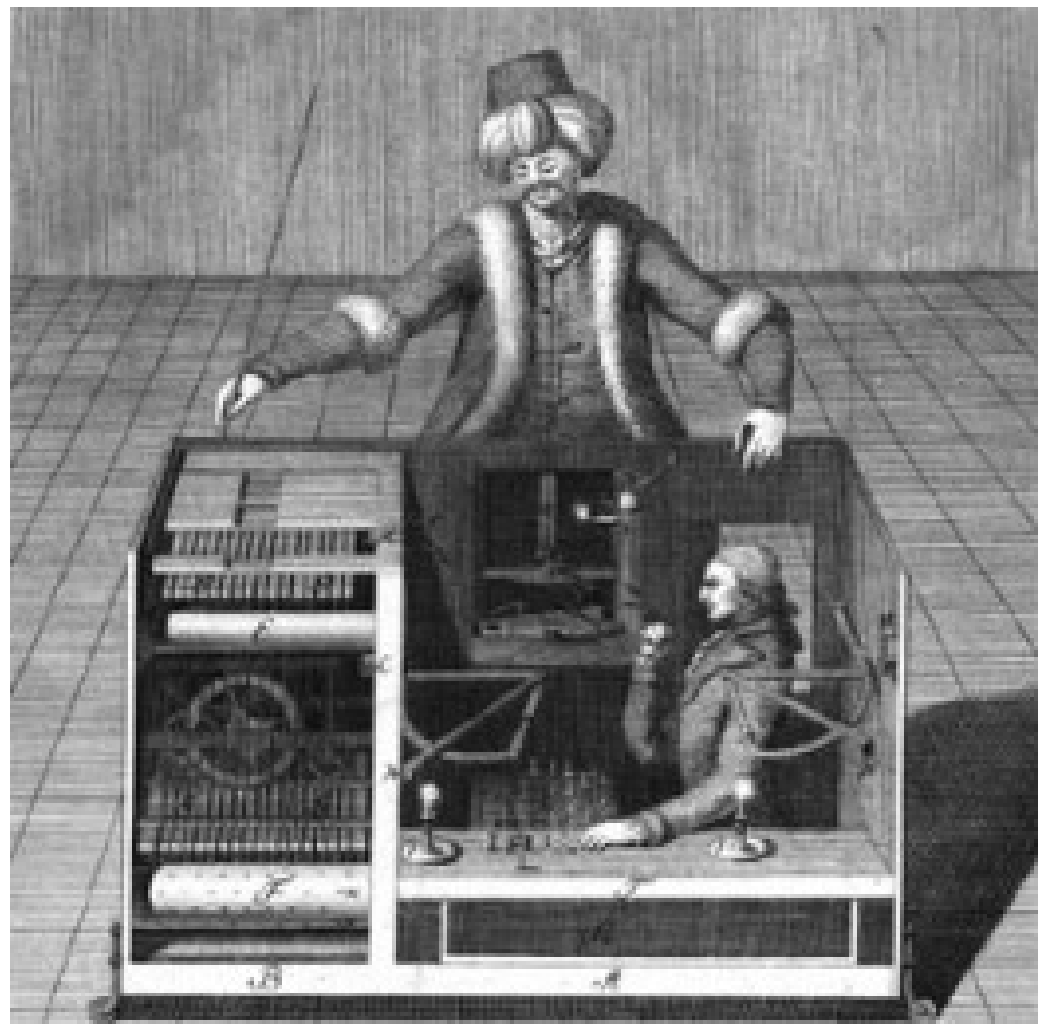**MATHEMATICA**
Policy Research

A Penny for Your Thoughts:

Research opportunities presented by Amazon Mechanical Turk

April 18, 2018

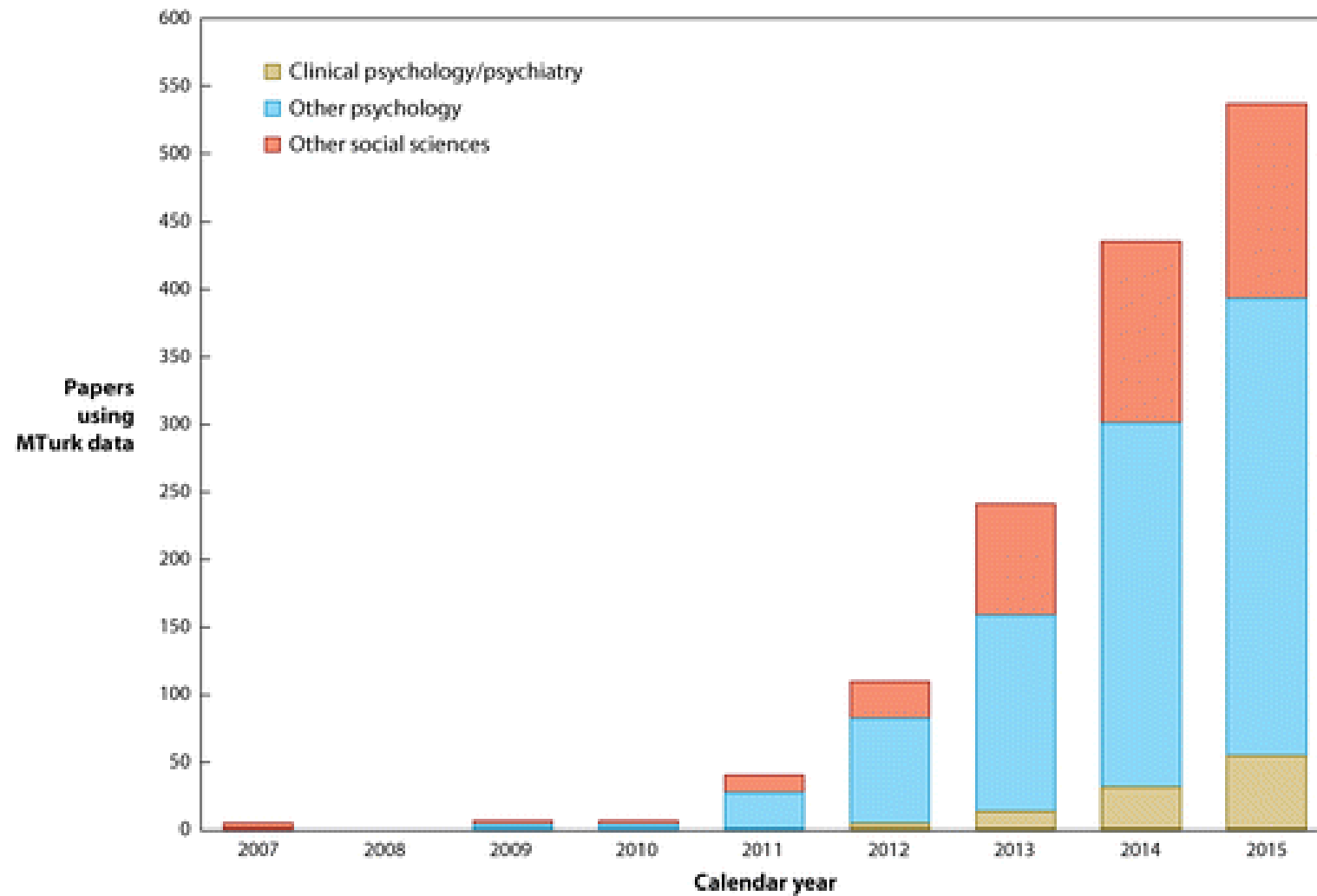Jesse Chandler

What is Mechanical Turk?

Mechanical Turk is a labor market

Practical advantages of MTurk

- **Simple.** Security, recruitment, identity verification and payment handled by Amazon
- **Fast.** Hundreds of responses per day
- **Elastic.** Scales up and down quickly
- **Cost Effective.** ~$0.14 per respondent minute (with fee)

Mechanical Turk is popular

Chandler & Shapiro, 2016

Limitation 1: Samples are not representative

	US Pop.	Mechanical Turk
Population Size	323m	500k (15k active)
Age	47.1	33.5
White	74%	83%
4 year degree	19%	35%
Republican	29%	18%
Democrat	35%	41%
LG(B)	1.7%(1.8%)	3.8%(6.9%)
Atheist	3%	21%
Has children	~54%	~30%
Working age with disability	11%	~5%

Casey, Chandler, Levine,
Strolovich & Procter, 2017

Limitation 1: Samples are not representative

- Sample composition varies over time of day

Variable	Response	10am	10pm
Time Zone	EST	**57%**	**49%**
	PST	**11%**	**19%**
Race	Asian	**6%**	**9%**
Relationship Status	Single	**29%**	**35%**
Device	Mobile devices	**4%**	**6%**
Worker Experience	Previously completed HITs	**3.6**	**2.7**
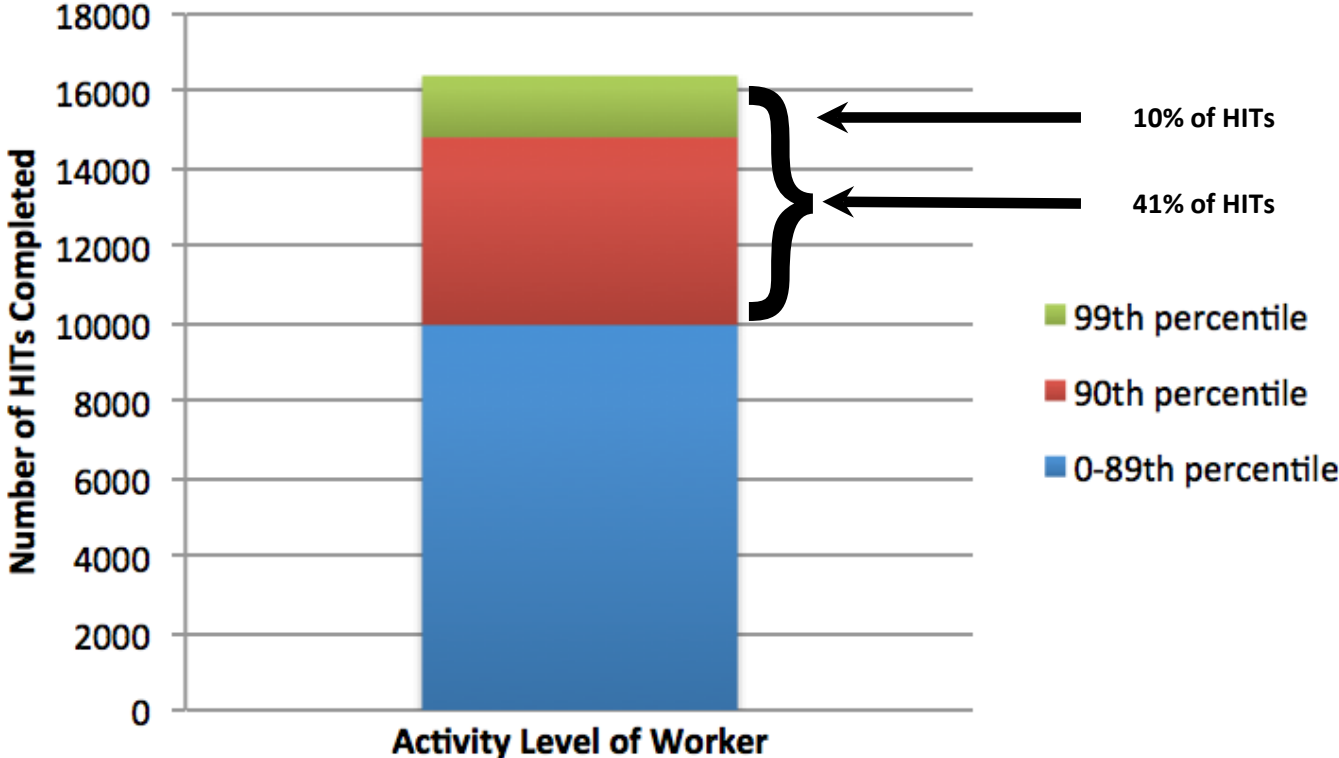
Limitation 2: Very experienced participants

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Rand et al., 2014
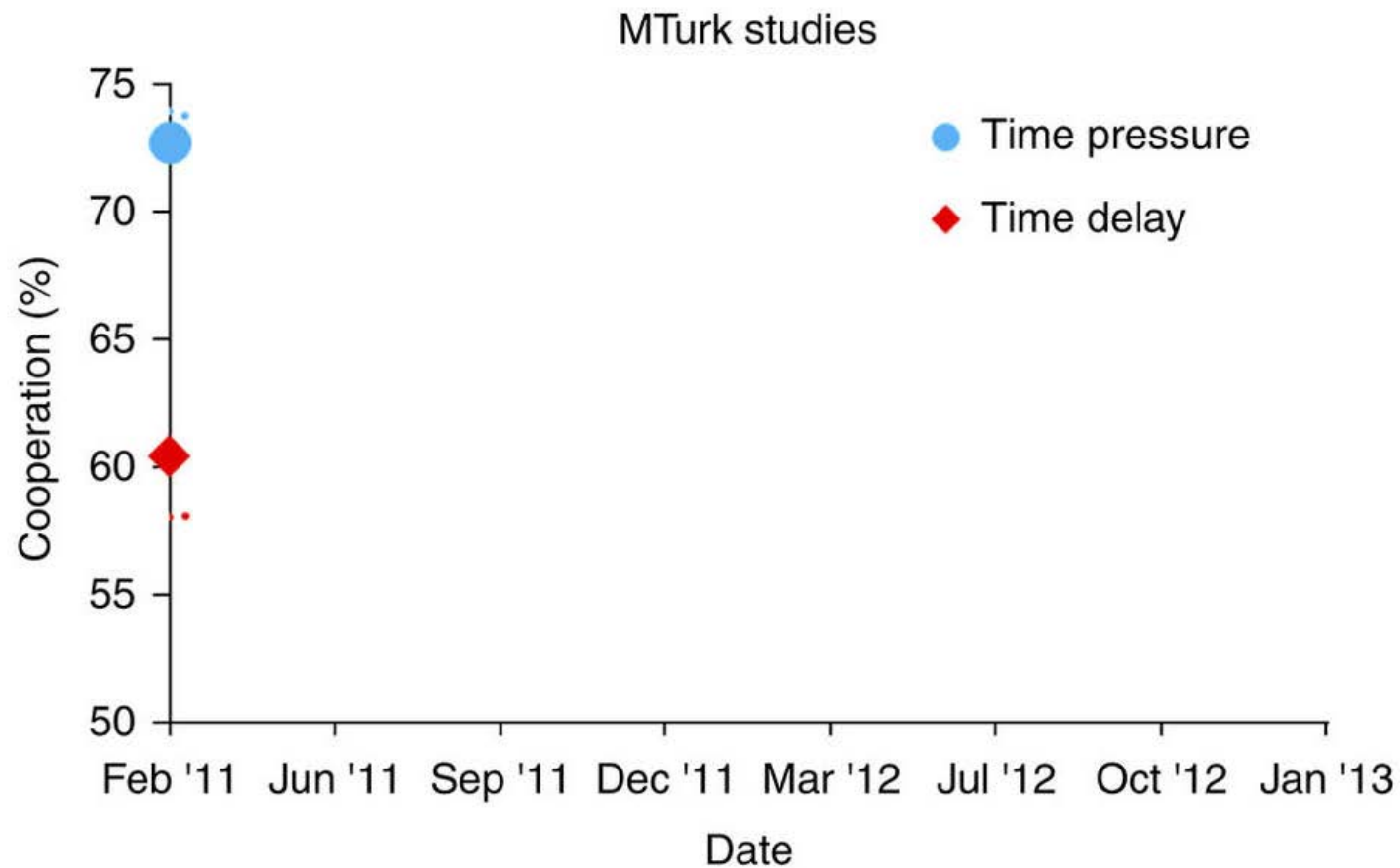
Limitation 3: Worker Fraud

Parents needed for study on eating and weight   View a HIT in this group

Requester: Janet Lydecker   **HIT Expiration Date:** May 23, 2015 (2 days 22 hours)   **Reward:** $0.50
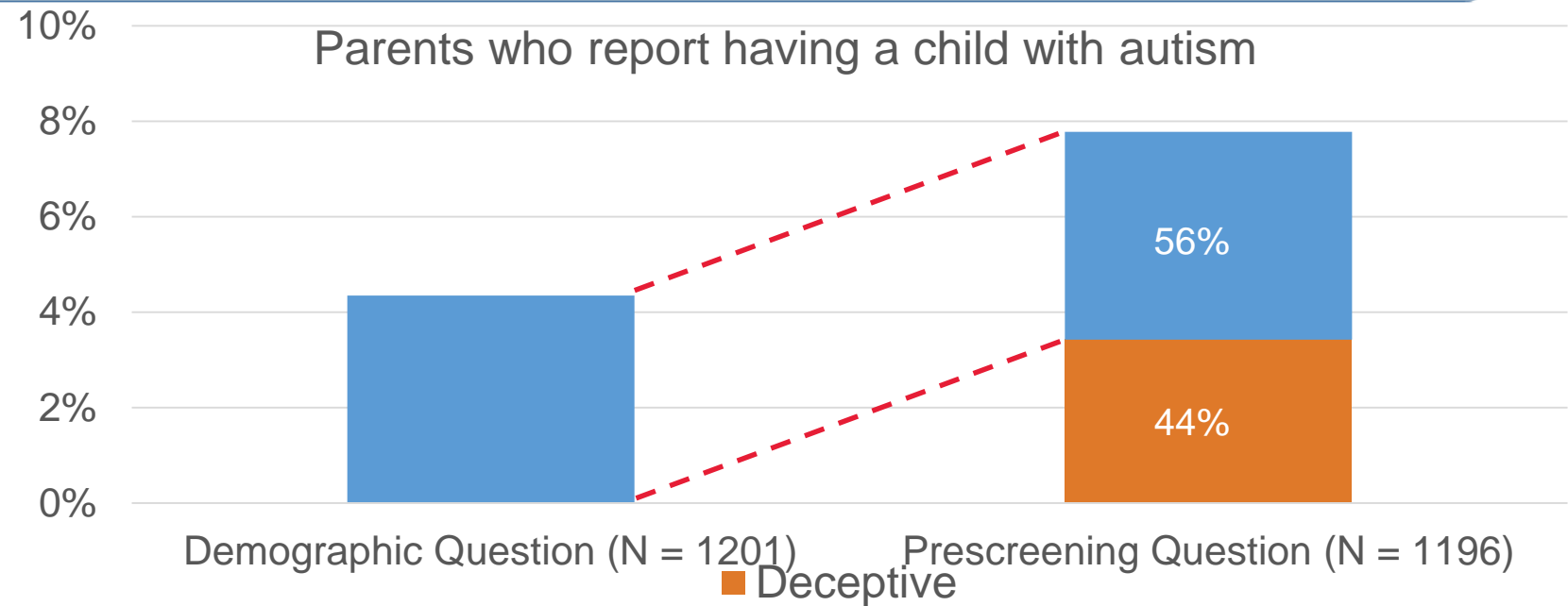
Time Allotted: 60 minutes   **HITs Available:** 1

Description: Parent Survey on Weight and Eating – Yale School of Medicine. Help science by completing ANONYMOUS online questionnaires. We are interested in the opinions of parents who have a child between 6 years old and 15 years old.

Keywords: survey, parenting, parent, psychology, eating, eating disorder, weight, obesity, overweight, mother, father, child, yale, social, cognitive, questionnaire
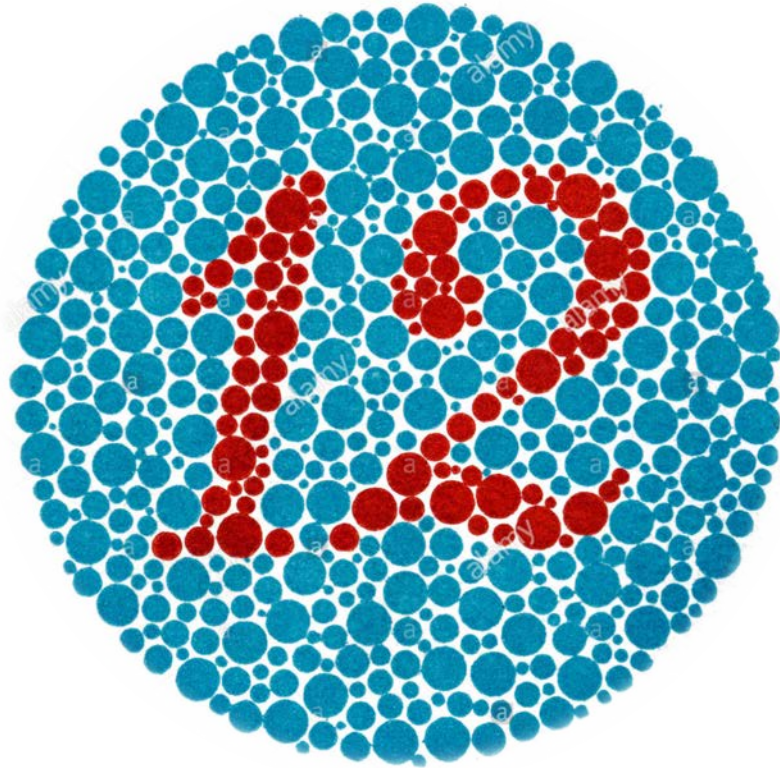
Qualifications Required:

HIT approval rate (%) is not less than 85

Location is US

Parents who report having a child with autism

Chandler & Paolacci, 2017

Limitation 3: Worker Fraud

Kan & Drummey, 2018; Wessling-Sharpe, Huber & Netzer, 2017

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Policy Research
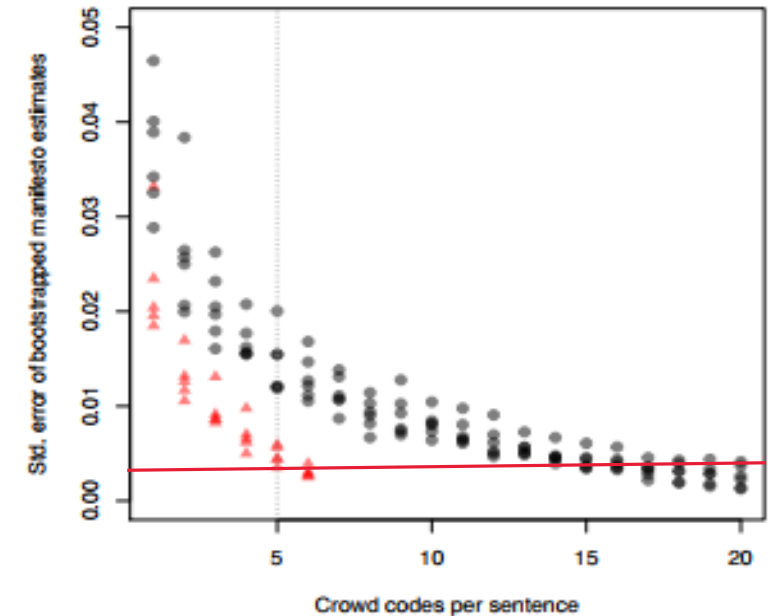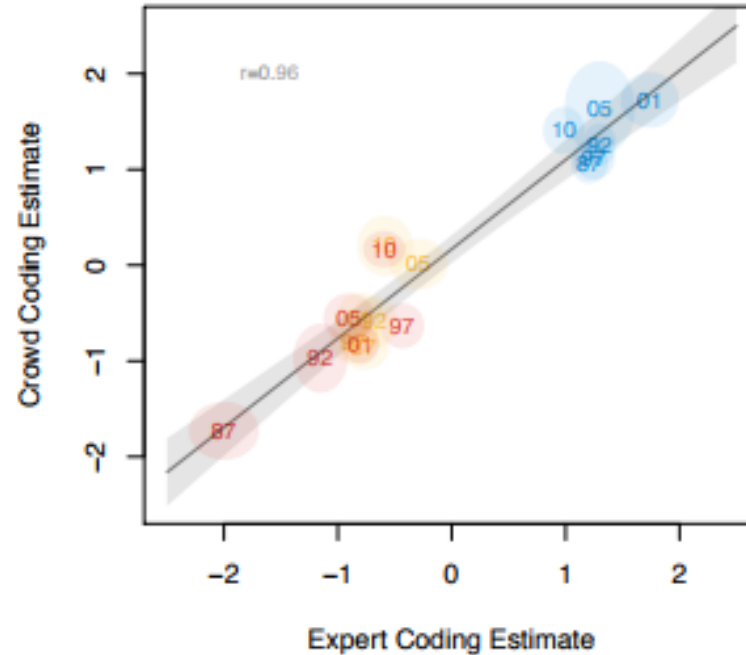
MTurk Uses 1: Workers as content coders

- **Accurate:**
  - 15 workers as good as 5 experts
  - Worker and expert ratings, r = .96
- **Fast:** 22,000 statements in 5 hours
- **Cost Effective:** Total cost of $1080
- **DIY:** Anybody can replicate it

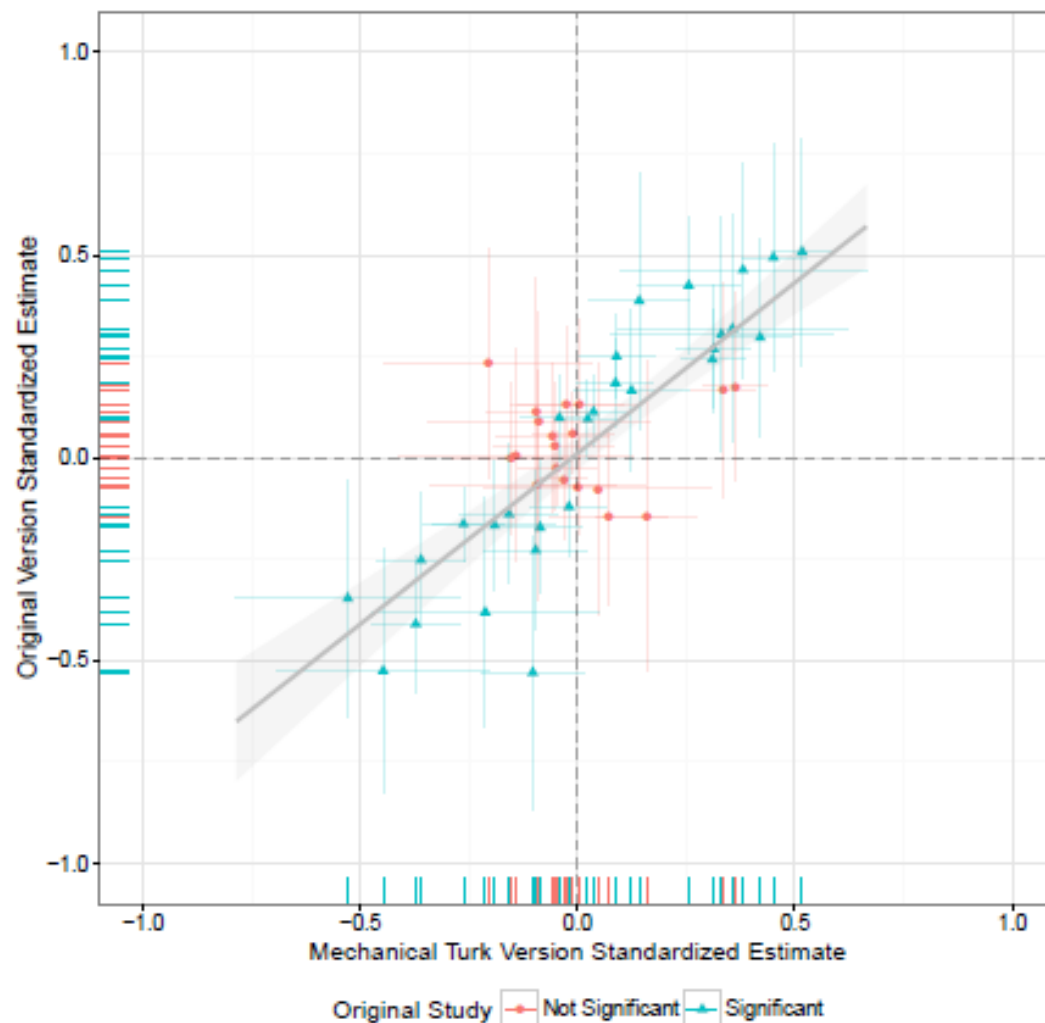Benoit et al., 2015

MTurk Uses 2: Survey pilot testing

- ## Text based
  - BLS (Edgar, Murphy & Keating, 2016)
  - Census (Childs, Fobia, Holzberg, Morales, 2016)
  - NCI (Fowler, Willis, Moser, Ferrer & Berrigan, 2015)
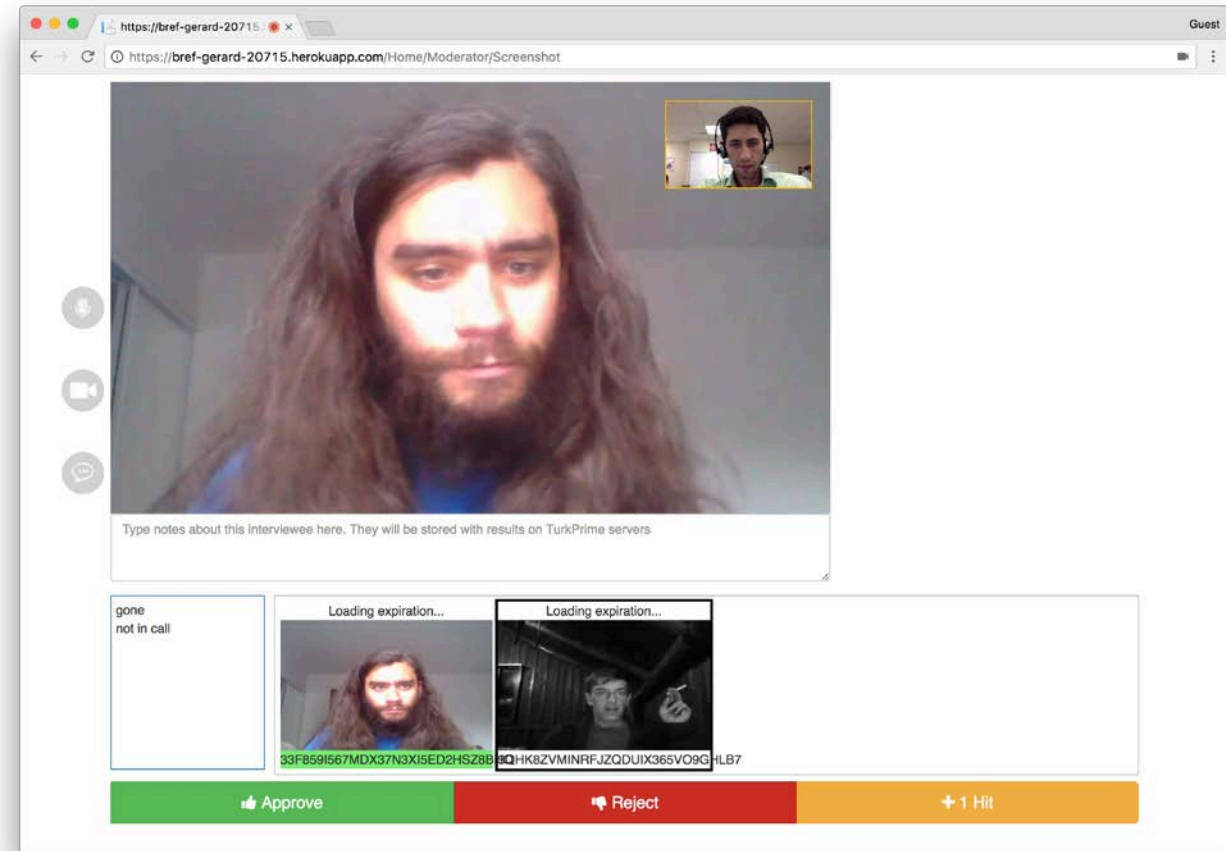
MTurk Uses 3: Survey experiments

Coppock, 2017; see also Clifford Jewell & Waggoner, 2015; Mullinix Lepeer & Druckman, 2015

Closing Thoughts

- MTurk has lots of problems
  - Problems are well-understood
  - Succeeds at many tasks despite these problems
- Good enough is often enough
  - Prioritizing what to field on a representative sample
  - Learn if there is "something" to an idea with minimal investment
- Provides a window into a very specific population of workers that may be helpful in understanding the "gig economy"

Thank-you!

Resources:

Stewart, N., Chandler, J., & Paolacci, G. (2017). Crowdsourcing samples in cognitive science. *Trends in Cognitive Sciences*

Chandler, J., & Shapiro, D. (2016). Conducting clinical research using crowdsourced convenience samples. *Annual Review of Clinical Psychology*

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