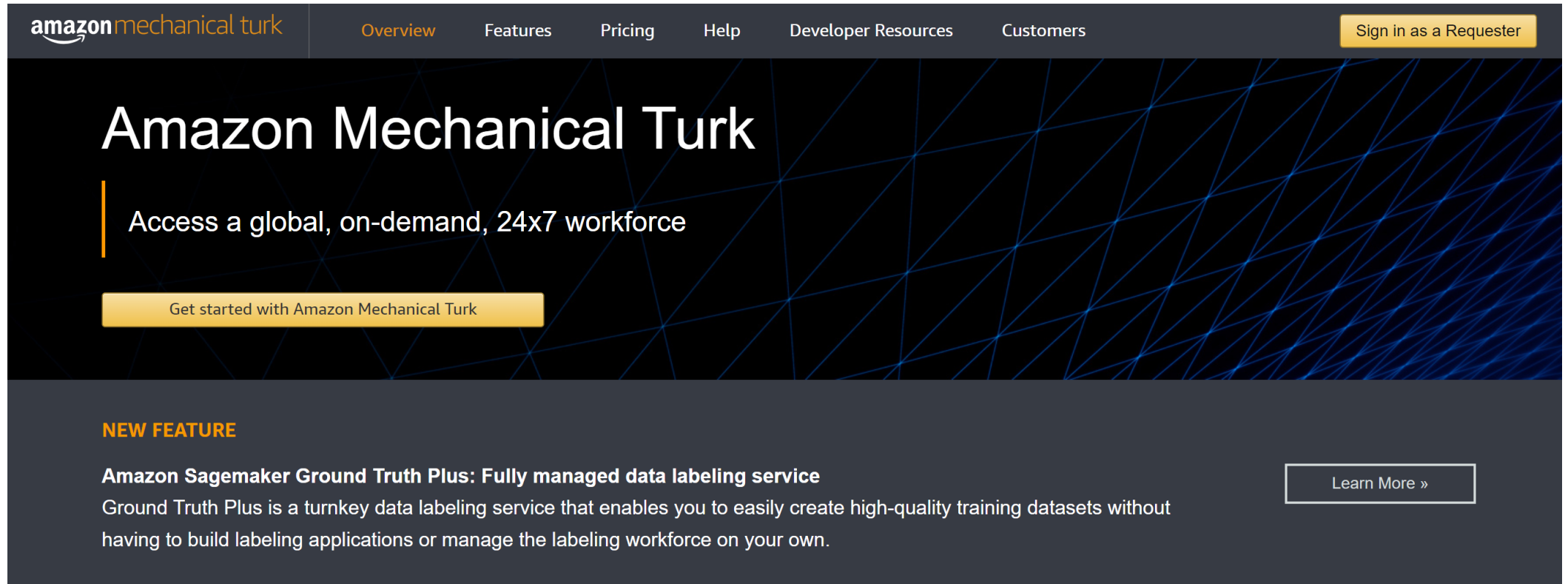# Convenience Samples

POLSCI 4SS3

Winter 2024

Course so far

- Representative surveys as the gold standard

- Other research design help us learn more but tend to use non-representative samples

- **Today:** Talk about *convenience* samples

We are seeing less of this

CES EEC

Canadian Election Study | Étude électorale canadienne

And more of this

amazon mechanical turk

Overview Features Pricing Help Developer Resources Customers

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Amazon Mechanical Turk

Access a global, on-demand, 24x7 workforce

Get started with Amazon Mechanical Turk

NEW FEATURE

**Amazon Sagemaker Ground Truth Plus: Fully managed data labeling service**
Ground Truth Plus is a turnkey data labeling service that enables you to easily create high-quality training datasets without having to build labeling applications or manage the labeling workforce on your own.

Learn More »

Amazon Mechanical Turk (MTurk) is a crowdsourcing marketplace that makes it easier for individuals and businesses to outsource their processes and jobs to a distributed workforce who can perform these tasks virtually. This could include anything from conducting simple data validation and research to more subjective tasks like survey participation, content moderation, and more. MTurk enables companies to harness the collective intelligence, skills, and insights from a global workforce to streamline business processes, augment data collection and analysis, and accelerate machine learning development.

https://www.mturk.com/

Or this
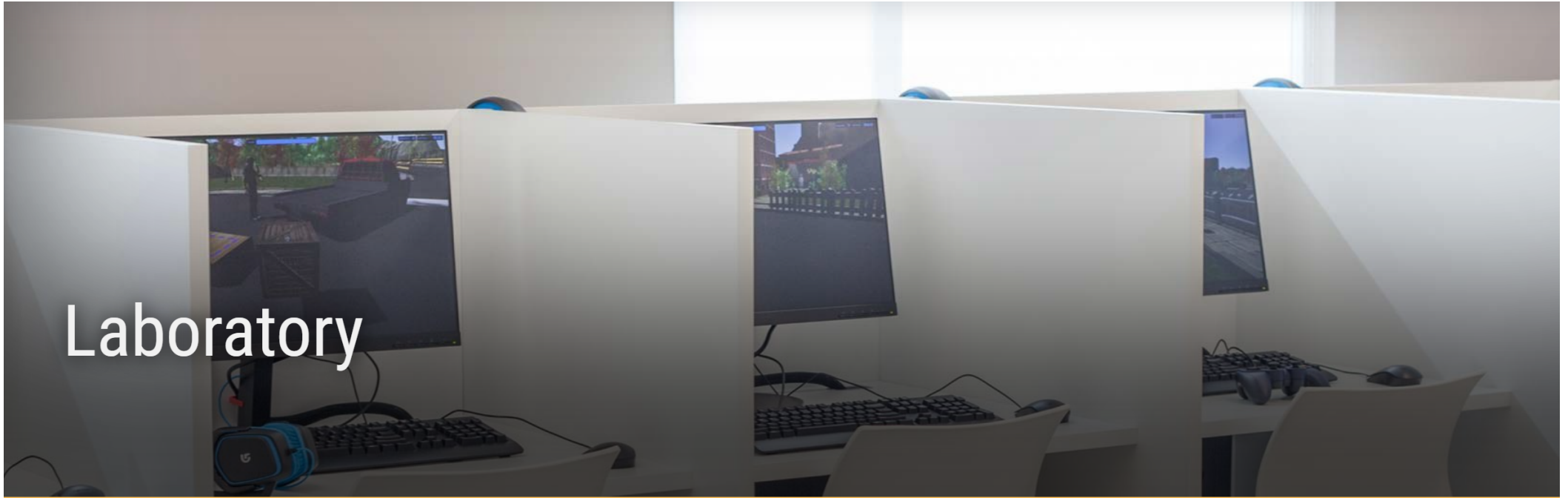
Laboratory

McMaster Decision Science Laboratory

McDSL is located in Suite 5803 of LR Wilson Hall on McMaster University campus in Hamilton, Ontario, Canada. McDSL consists of several different research spaces available for use by academic and industry researchers interested in using laboratory-based, computerized experimental and observational methods to explore decision-making. Emerging expertise additionally includes research into Virtual Reality.

https://mcdsl.mcmaster.ca/laboratory

Do we want surveys to be representative?

- Pros?

- Cons?

- We always want them!

- But when do we **need** them?

- Rather, when can we **get away** with not having them?

Internal an external validity

- **Validity:** Approximate truth or usefulness of an *inference*

- **Inference:** How we interpret the results of a study

- **Internal validity:** Whether inferences from a single study *cannot* be explained by other factors

- **External validity:** Whether inferences from a single study apply to a broader population or other target populations

- Convenience samples make it *easier* to achieve *internal validity* at the *expense* of *external validity*

Types of internal validity

1. X-validity (endogenous variables)

2. T-validity (treatments, conditions)

3. Y-validity (outcome variables)

4. C-validity (context)

X-validity

- Is the sample comparable to the target population?

- If not, can we claim that the differences can be ignored?

- To do that, we have to convince ourselves that:

1. Effects are the same across units

OR

2. We observe all the variables that may explain discrepancies in effects

T-validity

- Do treatments `(conditions)` reflect what participants would encounter in the real world?

- **Example:** Is thinking about *hypothetical* countries a good reflection to how people would think about *real* countries?

- Can we claim that there are no different versions of the same *treatment*?

- To do that, we need to convince ourselves that everyone would interpret vignettes in the same way

- Either because it is **realistic** enough or abstract yet **believable**

Y-validity

- Do the outcomes we measure in surveys reflect the outcomes we want to learn about in the real world?

- **Example:** Are self-reported vote intentions a good replacement for actual voting behavior?

- Can we claim that there are no different versions of the same *outcome*?

- Need to convince ourselves that measured outcomes are sufficiently valid and reliable

C-validity

- Do results generalize from other contexts?

- **Example:** If it worked with students in Sweden, will it work with students in Canada?

- Can we claim that the same units would react in the same way if the study was conducted elsewhere?

- Need to convince ourselves that **context is irrelevant** for *similar people* in *different places*

Discussion

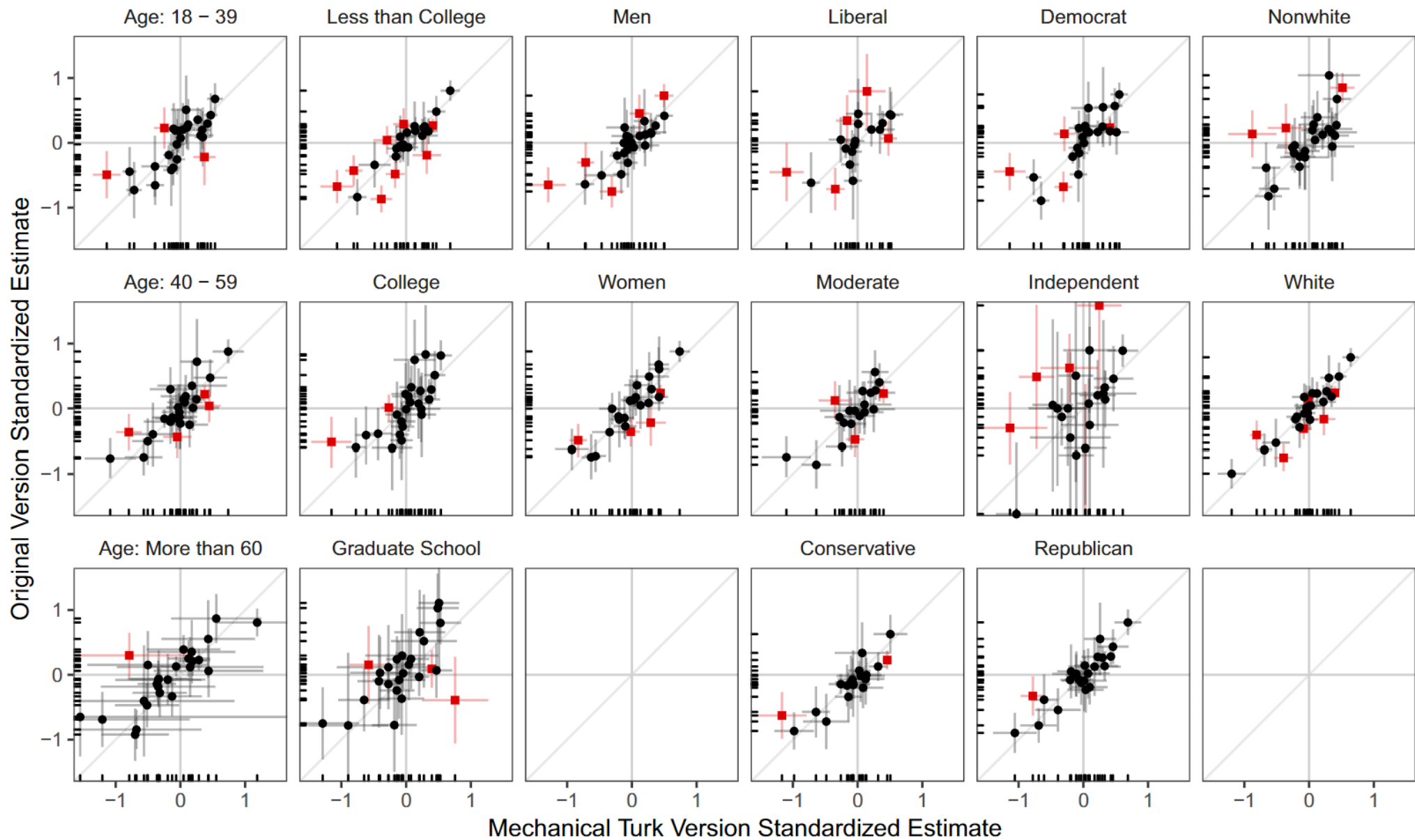# Munger et al (2021): Accessibility and generalizability

- Replicate 3 convenience sample survey experiments with representative sample

1. Social commentary and news source credibility

2. Facebook shares and news consumption

3. Issue framing and support for gun control

- **Argument:** Effects vary considerably by age and digital literacy

Findings

- **Replication 1:** Participants low on digital literacy did not respond differently to vignettes

- **Replication 2:** Older people clicked on whatever headline came first

- **Replication 3:** No differences because issue had nothing to do with digital literacy

- What kind of validity is this about?

Coppock et al (2018): Generalizability of heterogeneous treatment effect estimates across samples

- Replicate 27 studies from nationally-representative samples with convenience samples

- Compare how effects vary across 16 demographic characteristics

Figure. Panels by subgroup comparing Mechanical Turk Version Standardized Estimate (x-axis) against Original Version Standardized Estimate (y-axis). Subgroups: Age: 18 − 39, Less than College, Men, Liberal, Democrat, Nonwhite, Age: 40 − 59, College, Women, Moderate, Independent, White, Age: More than 60, Graduate School, Conservative, Republican.

Difference in CATES — ■ Significant — ● Not Significant

Explanation

- Different samples yield similar results when:

1. Treatment effects are mostly homogeneous
2. Effect heterogeneity is **orthogonal** to sample selection

- What type of validity is this about?

After Recess

Evidence-Informed Policy

Focus on: New topic!

Break time!