Public Response to Government Use of AI-technology in Emergencies - Evidence Covid-19

Shir Raviv
Tel-Aviv University

Can an Algorithm Tell When Kids Are in Danger?

Child protective agencies are haunted when they fail to save kids. Pittsburgh officials believe a new data analysis program is helping make better judgment calls.

By DAN HURLEY JAN. 2, 2018

Computers and criminal justice

Are programs better than people at predicting reoffending?

The short answer is that there

VIRGINIA EUBANKS BUSINESS 01.15.18 08:00 AM

A CHILD ABUSE PREDICTION MODEL FAILS POOR FAMILIES

DemocracyPost • Opinion

Why your AI might be raci

The Broken Promises of Choice in New York City Schools

The city's high school admissions process was a real chance to attend a good school. But 14

Algorithms Designed to Fight Poverty Can Actually Make It Worse

Sent to Prison by a Software Program's Secret Algorithms

Can technology plan economies and destroy democracy?

TECHNOLOGY

SLAVES TO THE ALGO

More and more of modern life is steered by algorithms. But what are the

TOM WHIPPLE | MAY/JUNE 2013

How algorithms could someday be used to optimise the ballot box

Could an algorithm help find the right place to resettle refugees?

Researchers are experimenting with machine learning to find the best place for refugees to get a job

An Algorithm That Grants Freedom, or Takes It Away

Across the United States and Europe, software is mak

ECONOMIC VIEW

Biased Algorithms Are Eas to Fix Than Biased People

Racial discrimination by a but that's where the simila

Sweden: Rogue algorithm stops welfare payments for u to 70,000 unemployed

Q Search

Bloomberg Opinion

Technology & Ideas

A Secret Algorithm Is Deciding Who Will Die in America

Decisions on reopening should involve public data and debate.

How do citizens perceive the use of ADSs, as they become aware of AI algorithms' role in informing or shaping public policies?

UK ditches exam results generated by biased algorithm after student protests

Protesters chanted 'Fuck the algorithm' outside the country's Department for Education

By Jon Porter | @JonPorty | Aug 17, 2020, 12:16pm EDT

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OVERVIEW

AI algorithms play an important role in many aspects of the COVID-19 crisis response.

How A.I. Steered Doctors Toward a Possible Coronavirus Treatment

Specialists at the London start-up BenevolentAI helped ident the arthritis drug baricitinib, which is now part of a clinical tri

How hospitals use algorithms to prioritize COVID-19 vaccine distribution

Laura Dyrda (Twitter) - Monday, December 28th, 2020 Print | Email

A.I. Versus the Coronavirus

A new consortium of top scientists will be able to use some of the world's most advanced supercomputers to look for solutions.

Robots Welcome to Take Over, as Pandemic Accelerates Automation

Broad unease about losing jobs to machines could dissipate as people focus on the benefits of minimizing close human conta

87

A.I. VERSUS M.D.

What happens when diagnosis is automated?

Algorithms Can Help Fight COVID-19. But at What Cost?

Algorithms are taking control of our lives. Will we ever be able to understand how they work?

Using artificial intelligence to detect, respond and recover from COVID-19

Health

Artificial intelligence and covid-19: Can the machines save us?

TECHNOLOGY

How Artificial Intelligence Can Slow the Spread of COVID-19

Yuval Noah Harari on COVID-19: 'The biggest danger is not the virus itself'

A crisis can be a turning point for a society. Which way will we go now? Professor Yuval Noah Harari, whose company donated $1 million to WHO, explains how the decisions we make today on COVID-19 will change our future.

## Algorithm spots 'Covid cough' inaudible to humans

By Zoe Kleinman
Technology reporter

OVERVIEW

A debate over the potential implications of AI usage in the context of COVID-19

- Proponents contend that algorithms may help deploy government resources and deliver public services more efficiently and objectively (Lepri et al., 2018; Miller, 2018).

- Research highlights a range of ethical concerns about the use of ADSs, such as bias and discrimination; a lack of transparency and accountability; and privacy violations (Eubanks, 2018; O'neil, 2016; Barocas and Selbst, 2016;).

- There are concerns that the pandemic may normalize the use of AI and might lead to the permanent implementation of what should be short-term emergency measures (Noah Harari, 2020).

The discussion rests on an untested assumption that people naively perceive algorithms as an attractive solution.
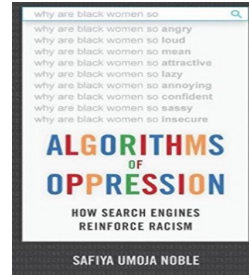

" ...the reason why thinking that predicting technology, risk assessment score is more fair, is that people believe that algorithms and math are unbiased and objective and fair. So there's a very easy logic to understand why the public would get behind this, right?"

(Noble, 2018).
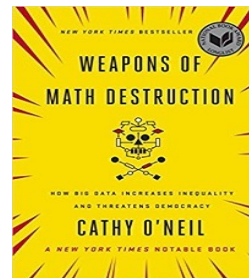
"...Algorithms are opinions embedded in code. It's really different from what most people think of algorithms. They think algorithms are objective and true and scientific. That's a marketing trick [...] A lot can go wrong when we put blind faith in big data"

(O'Neil 2017)
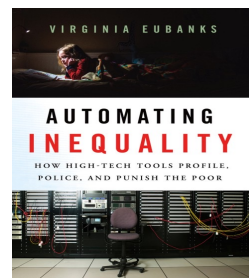
"One of the great benefits of these tools for governments is it allows them to portray the decisions they are making as neutral and objective, as opposed to moral decisions"

(Eubanks 2018)

This paper examines :

1. EXPLICIT PREFERENCES: Which type of decision-maker - an algorithm or a human - people tend to prefer to make decisions in managing the COVID-19 crisis.

2. IMPLICIT ATTITUDES: How the use of ADSs affects - if at all – people's evaluation of policy proposals for combating the pandemic.
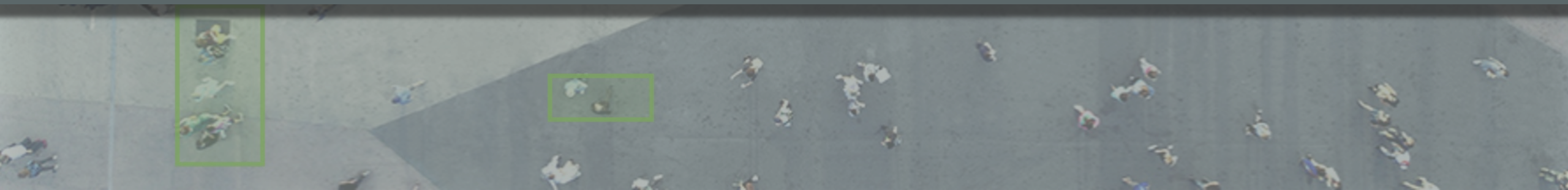
Citizens trust humans significantly more than algorithms to make high-stakes decisions in managing the pandemic.
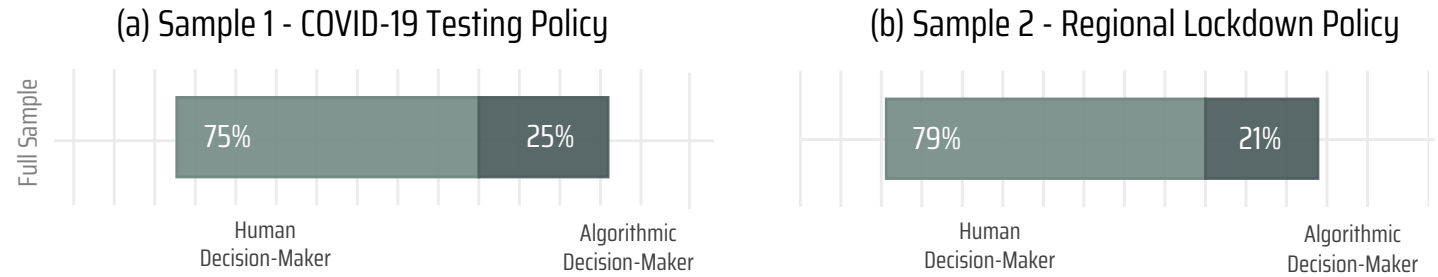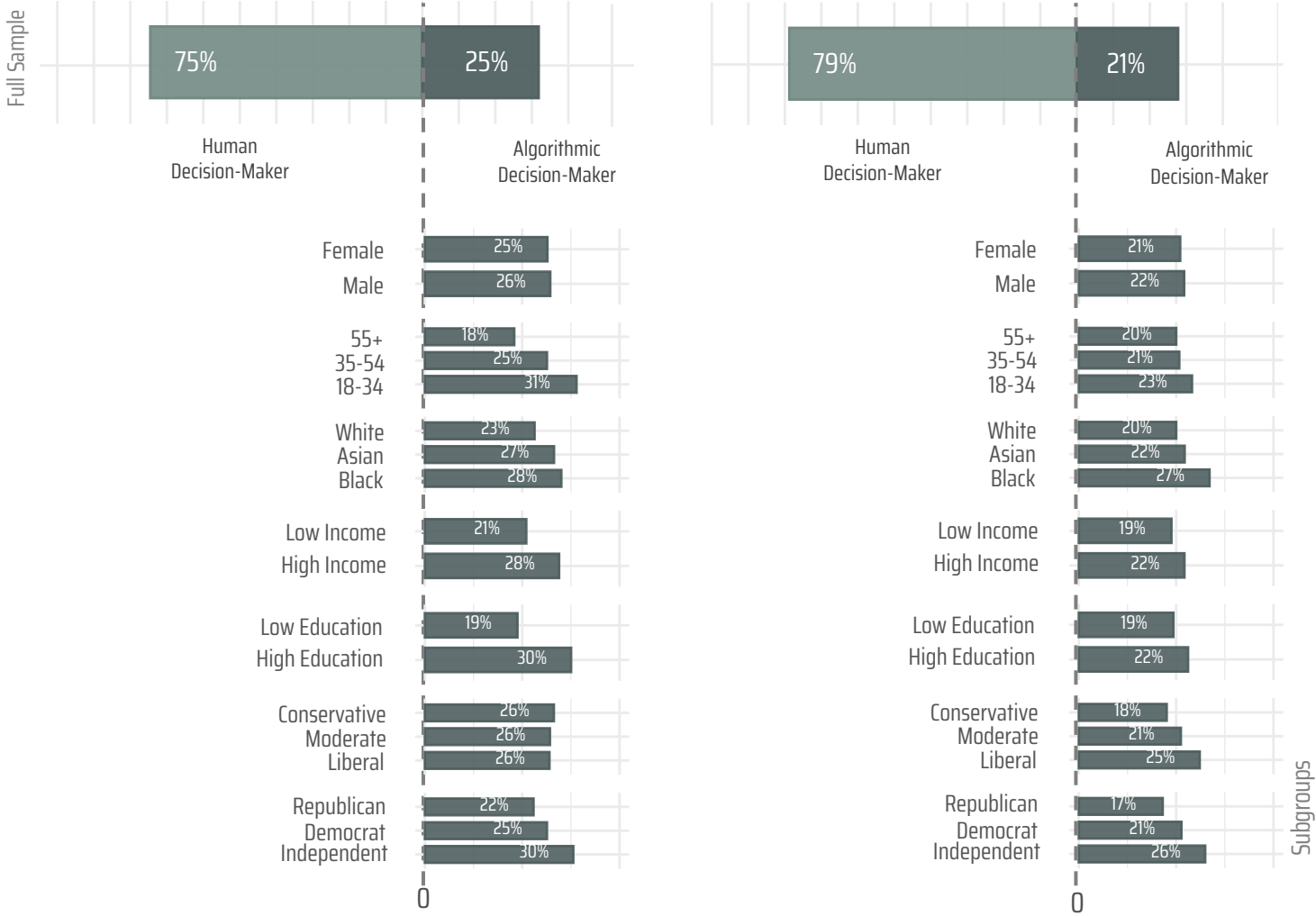
Preference for Algorithmic Decision-Making by Policy Context

(a) Sample 1 - COVID-19 Testing Policy

Full Sample

75%   25%

Human
Decision-Maker

Algorithmic
Decision-Maker

(b) Sample 2 - Regional Lockdown Policy

79%   21%

Human
Decision-Maker

Algorithmic
Decision-Maker

Preference for Algorithmic Decision-Making by Policy Context

This strong preference crosses demographic, ideological, and party lines

How does the use of AI algorithms affect the willingness to support policies proposed to contain the covid-19 pandemic?

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1. Algorithmic decision making elicits a negative reaction and decreases support for the proposed policies.

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2. People will not express significant opposition to algorithmic DM in times of emergency, despite their clear preference for human DM.

"Many short-term emergency measures will become a fixture of life. That is the nature of emergencies. They fast-forward historical processes. Decisions that in normal times could take years of deliberation are passed in a matter of hours" (Noah Harari 2021),

How does the use of AI algorithms affect the willingness to support policies proposed to contain The COVID-19 pandemic?

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3. The effect of using ADM depends on the decision context.

   - In ASSISTING DECISIONS, algorithms are not expected to provoke significant opposition from the public.

   - In SANCTIONING DECISIONS, algorithms are expected to generate a negative reaction that would decrease support for the policy.

EXPERIMENTAL DESIGN

A 2x2 factorial design embedded in a representative survey

The survey experiment manipulates:

- THE DECISION MAKER
  - HDM - Public health officials
  - ADM - A predictive algorithm
- THE DECISION CONTEXT
  - TESTING - Deciding which individuals receive tests for COVID-19
  - LOCKDOWN - Deciding which regions to lock down in response to COVID-19

|		Decision Context	
		Sanctioning	Assisting
Decision Maker	A Human	1. Lockdown Public health officials	2.Testing Public health officials
	An Algorithm	3. Lockdown A predictive algorithm	4.Testing A predictive algorithm

Outcomes: Willingness to SUPPORT

As part of the effort to slow down the spread of the coronavirus pandemic, many countries are implementing full lockdowns on the entire population. However, such a policy has heavy economic costs. To minimize these costs, some propose that [T1: senior public health officials; T2: a predictive computer algorithm] will decide which areas need to have a lockdown and which areas do not, based on their assessment of the risk of a coronavirus outbreak in the area.

# People are INDIFFERENT to the use of ADSs when evaluating the proposal of prioritizing COVID-19 TESTING.

Average Policy Support by Decision Maker and Decision Type
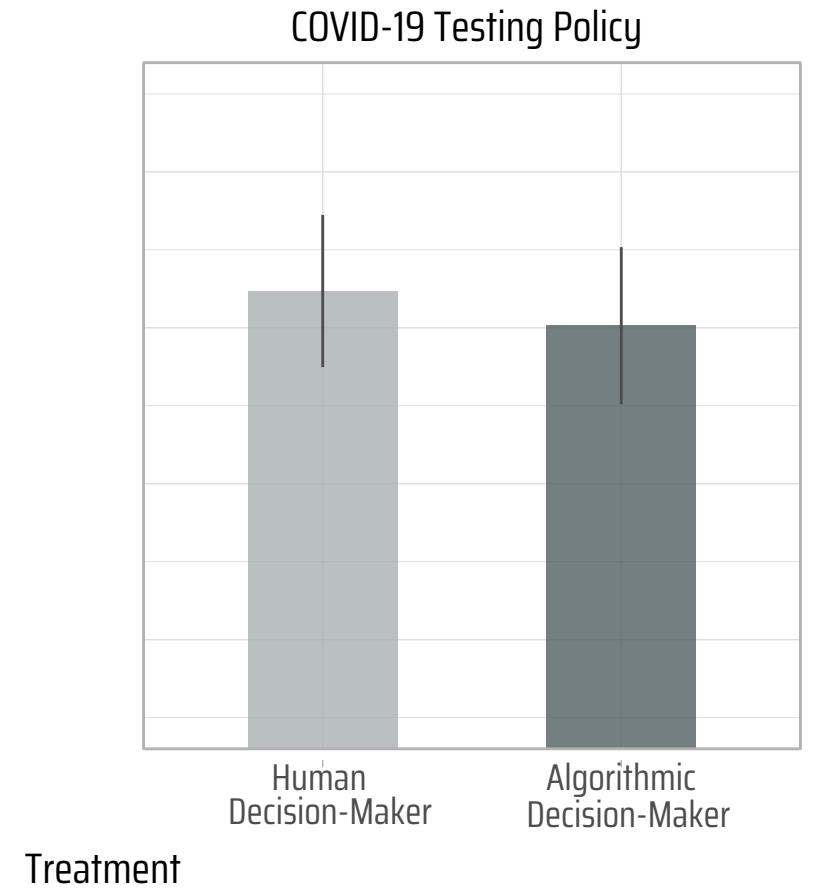
COVID-19 Testing Policy

Human Decision-Maker

Algorithmic Decision-Maker

Treatment

People are INDIFFERENT to the use of ADSs when evaluating the proposal of prioritizing COVID-19 TESTING.

The same algorithmic system DECREASE SUPPORT for regional lockdown policy by 13 percentage points from 57% to less than 45%

Average Policy Support by Decision Maker and Decision Type
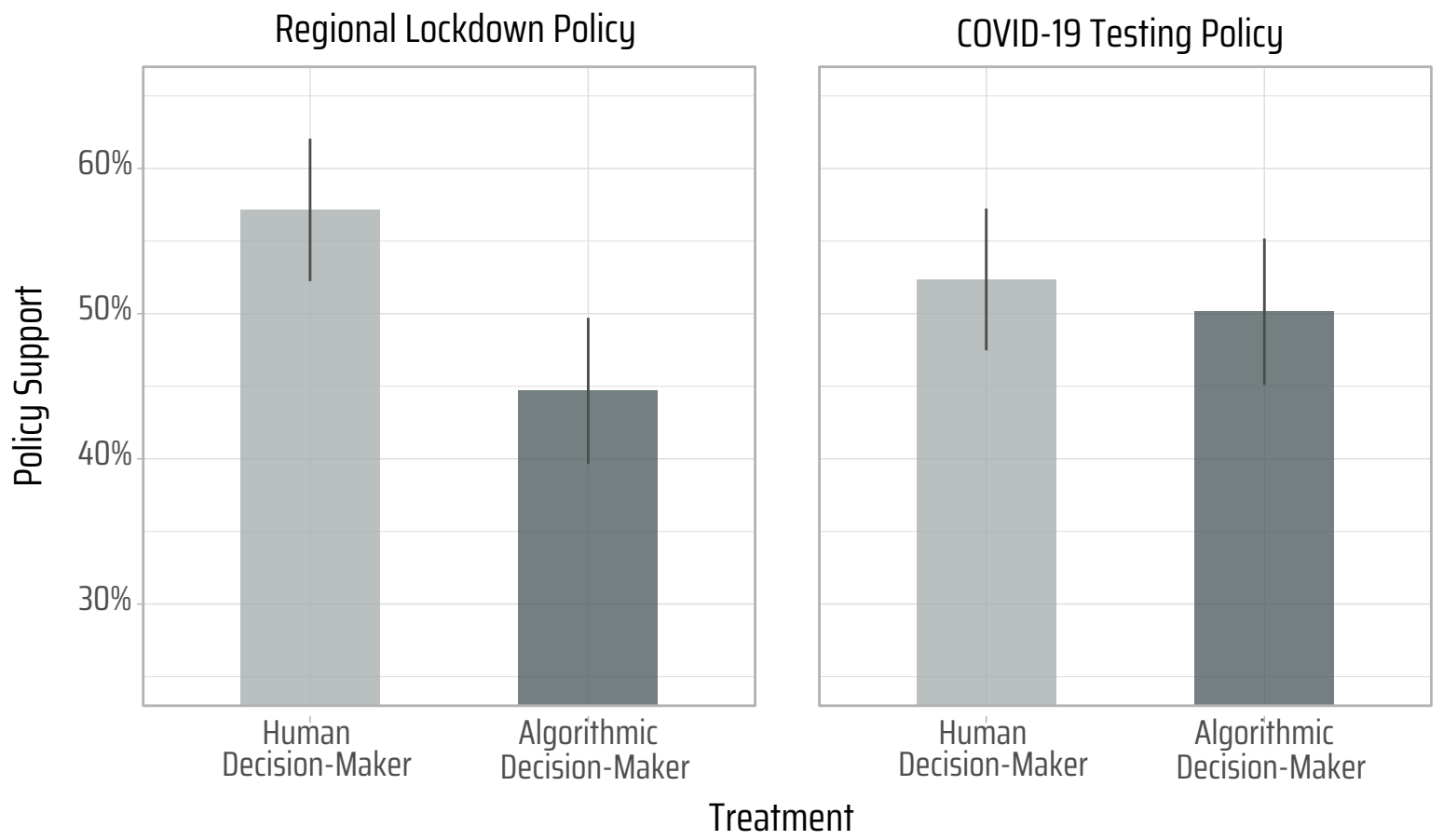
MECHANISMS

|	
Education	**Assisting:** • Deciding which teachers to promote based on an assessment of their effectiveness in improving students' grades. • Deciding which schools should receive extra funding for alcohol and drug education programs, based on the risk of juvenile crime in that area. **Sanctioning:** • Deciding which teachers to fire based on an assessment of their effectiveness in improving students' grades. • Deciding at which schools to conduct drug and alcohol tests, based on an assessment of the risk of juvenile crime in that area.
Policing	**Assisting:** • Deciding which residents should receive certain social services and mental health assistance, based on an assessment of their likelihood of shooting someone with a gun. • Deciding where to place street lighting, based on an assessment of the risk of crime in the area. **Sanctioning:** • Deciding which residents the police forces should monitor, based on an assessment of their likelihood of shooting someone with a gun. • Deciding where the police forces should patrol, based on an assessment of the risk of crime in the area.
Child Welfare	**Assisting:** • Deciding which families to provide caseworker coaching and mental health services, based on an assessment of the risk of child abuse. • Deciding where to open community-based resource hubs, based on the risk of child abuse and neglect in neighborhoods. **Sanctioning:** • Deciding which child abuse allegations to investigate, based on an assessment of the risk of child abuse. • Deciding where police forces should increase enforcement, based on an assessment of the risk of child abuse in neighborhoods.
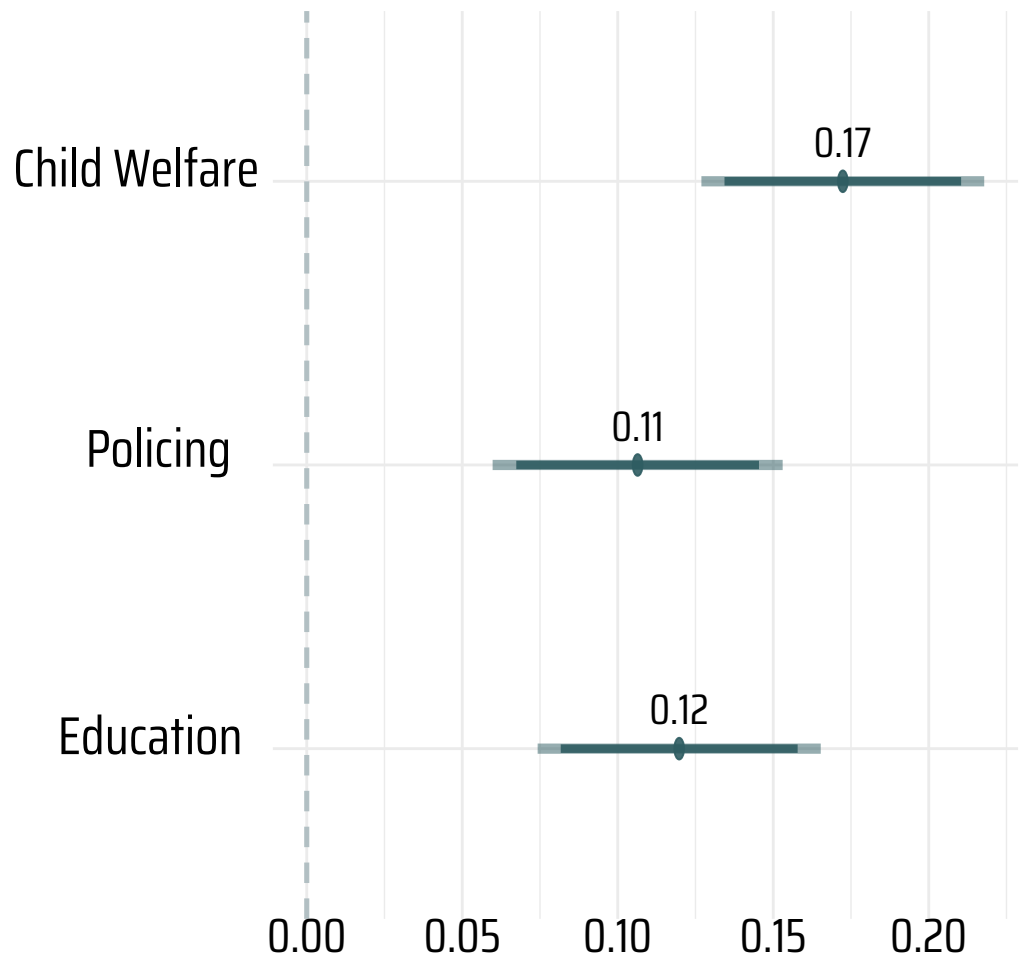
THE ISRAELI CASE

A replication of the regional lockdown experiment
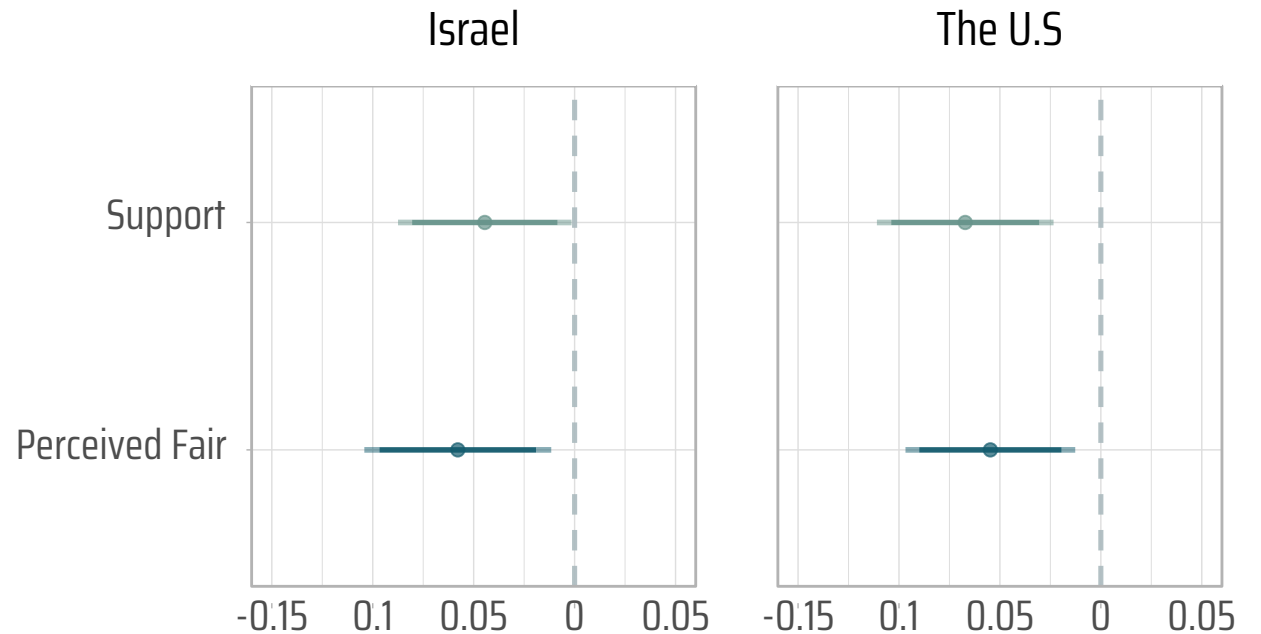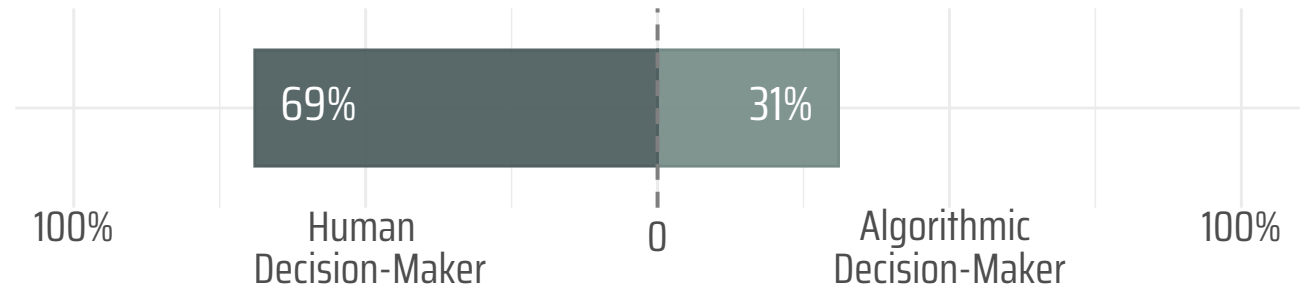
KEY TAKEAWAYS

- EXPLICIT PREFERNCES: most people are skeptical about using AI algorithms to manage the COVID-19 crisis

- EXPLICIT ATTITUES: The strong preferences for human DM do not uniformly translate into less support for policies involved ADSs. The same algorithmic system affects public perception differently depending on the decision context in which it is deployed.

The study demonstrates the promise of using experiments to assess the potential reactions of citizens to the growing deployment of AI in public policy - in a way that might not be possible through direct survey questions.