

Inclusively Co-designing 'with' and 'by'

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The ancestral and traditional territories of the Mississaugas of the Credit, the Haudenosaunee, the
Anishinaabe & the Huron-Wendat

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Academic research
ecosystem is
complicit in
deepening **disparity**



My work...

- Risks and opportunities of emerging systems
- Outliers and marginalized minorities

Ursula Franklin's Technology:



- "**Technology** involves organization, procedures, symbols, new words, equations, and, most of all, a mindset."

Favoured research methodology

Academic publishing

Research Ethics

Tenure and promotion

Research Funding

= Rigorous
= Publishable
= Citable
= Generalizable
= H-Index worthy

Significant.

significance.

significance.

significant?

significance.

significant.

significant!

significance.



Statistical significance
Statistical power
P Value

PUBLICATION BIAS

#Scicommunity Thursdays

...and this is where we put the non-significant results.



someecards
user card

@andreahardyrd



Research Ethics vs. Inclusive Co-design

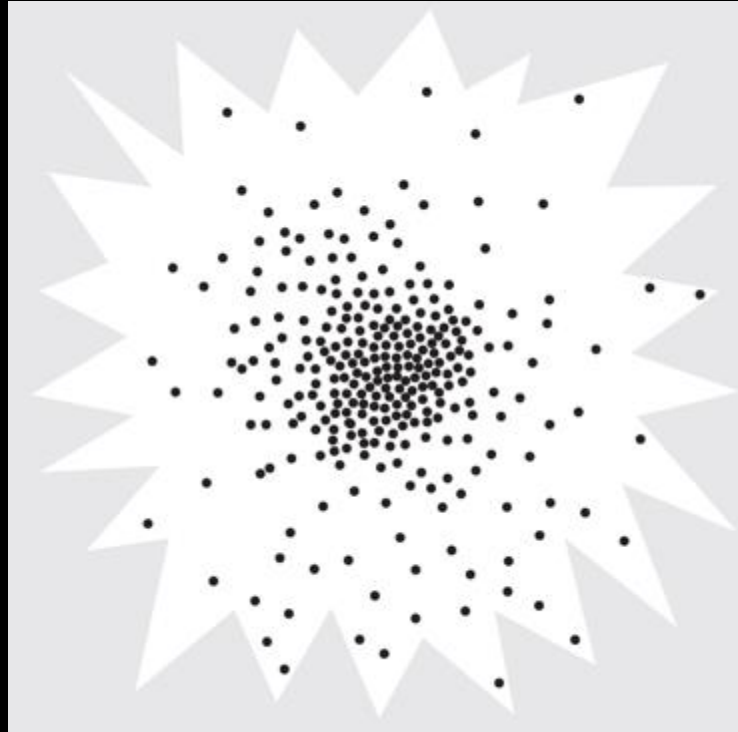
Not....

- Passive subjects of research
- Predetermined plan and focus without agency or attribution
- Notions of informed consent

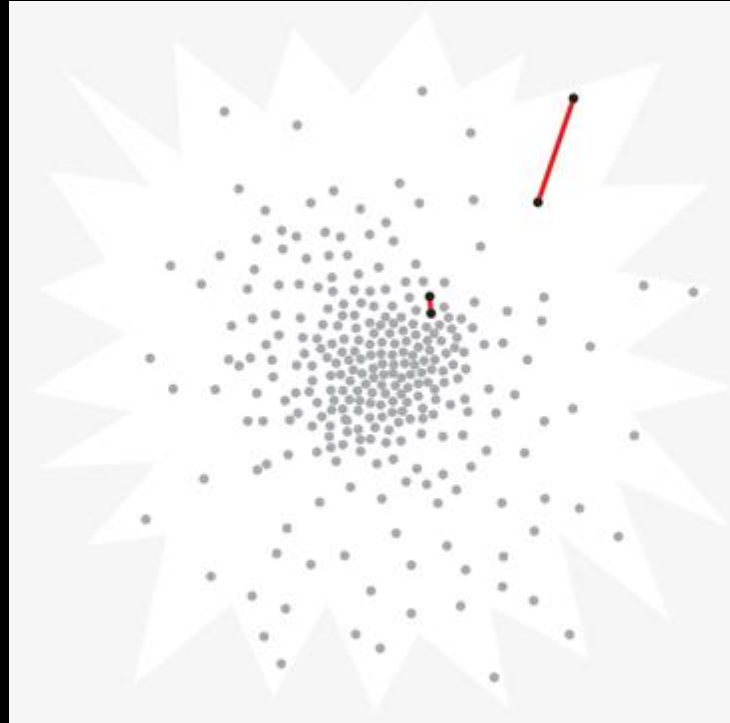
Disability & data..

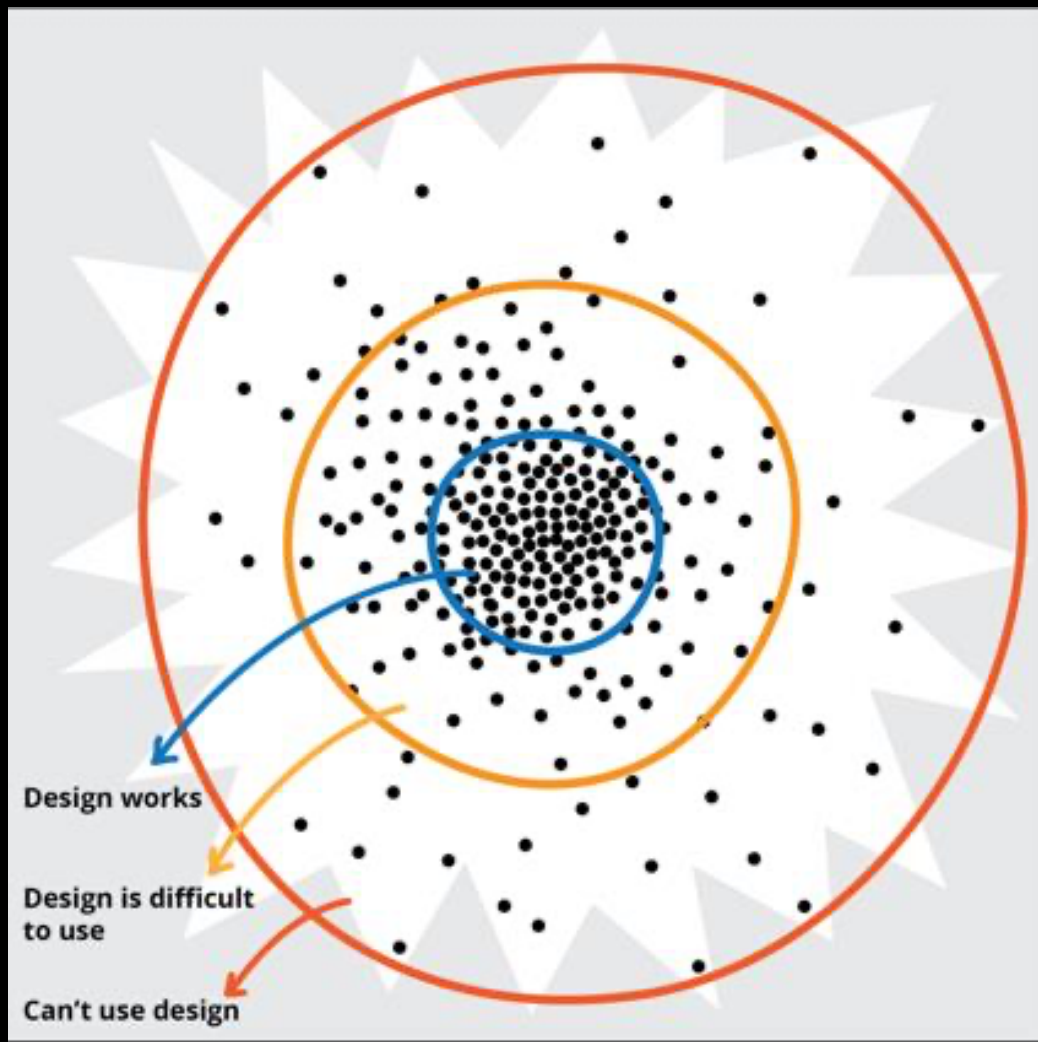
My data set of human
requirements....

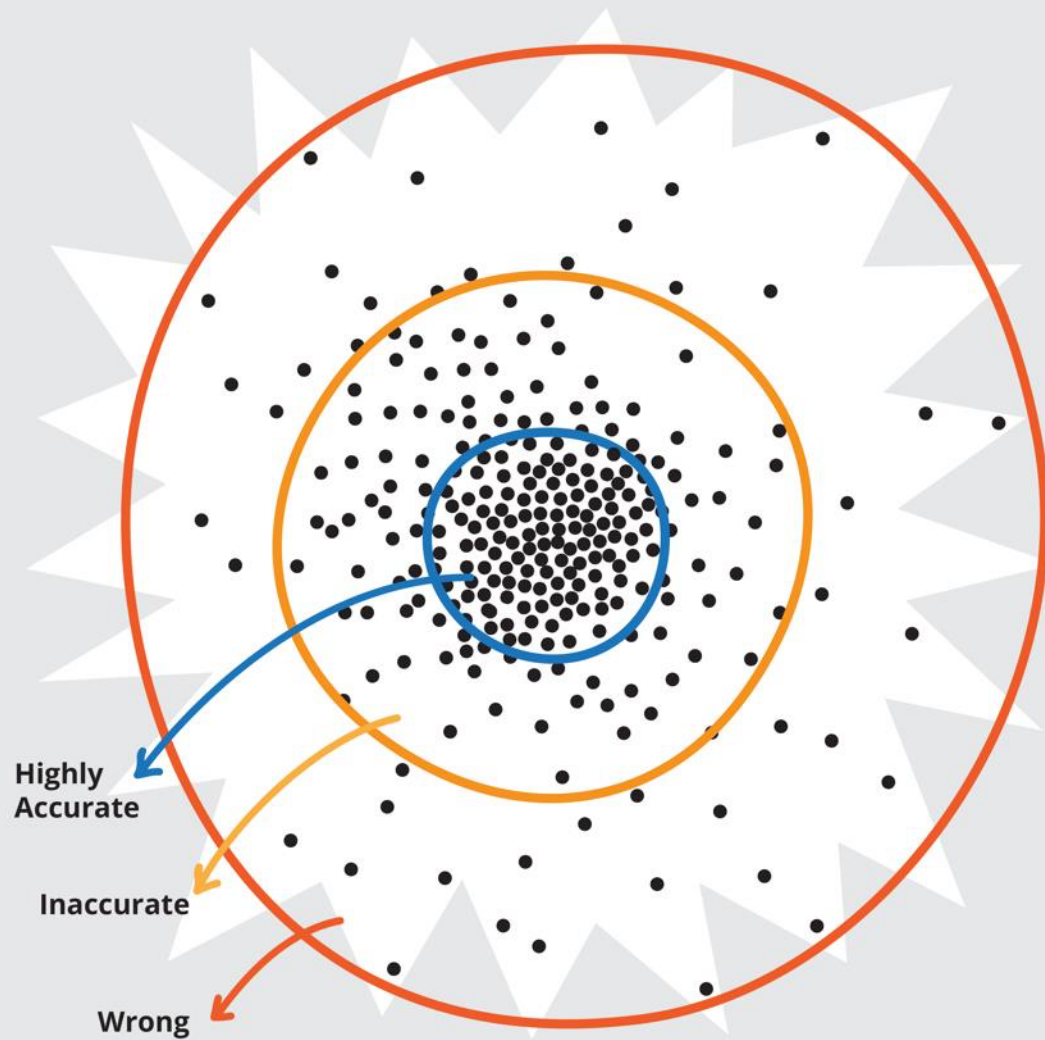
Our human starburst...



Difference...

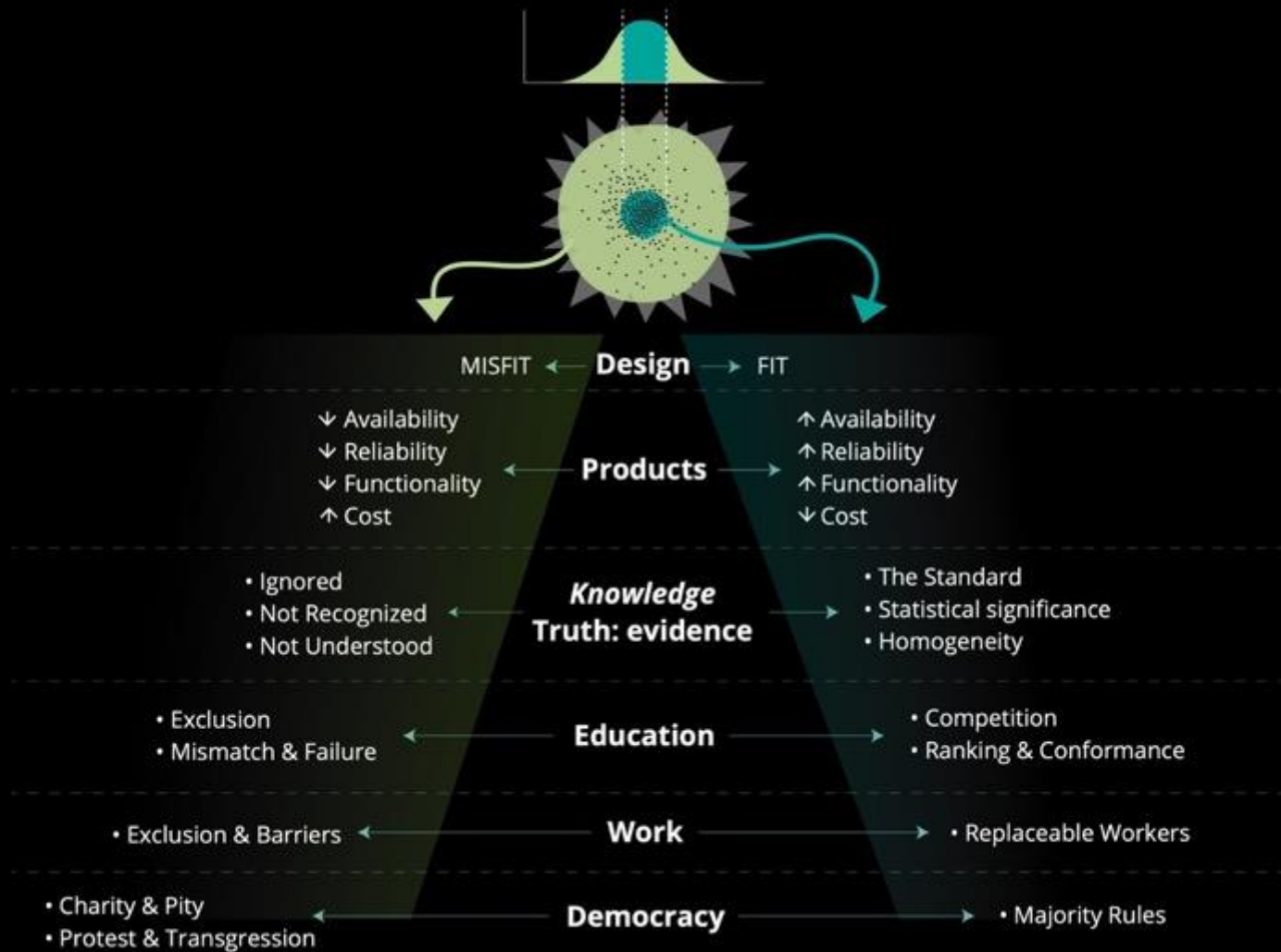




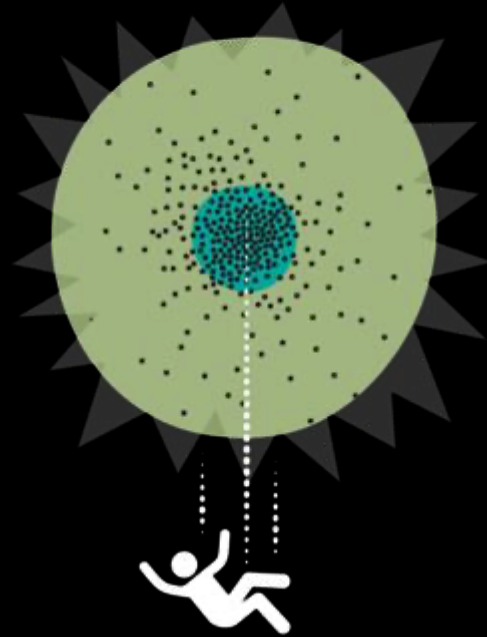


Statistical reasoning
as the means of making decisions
does harm

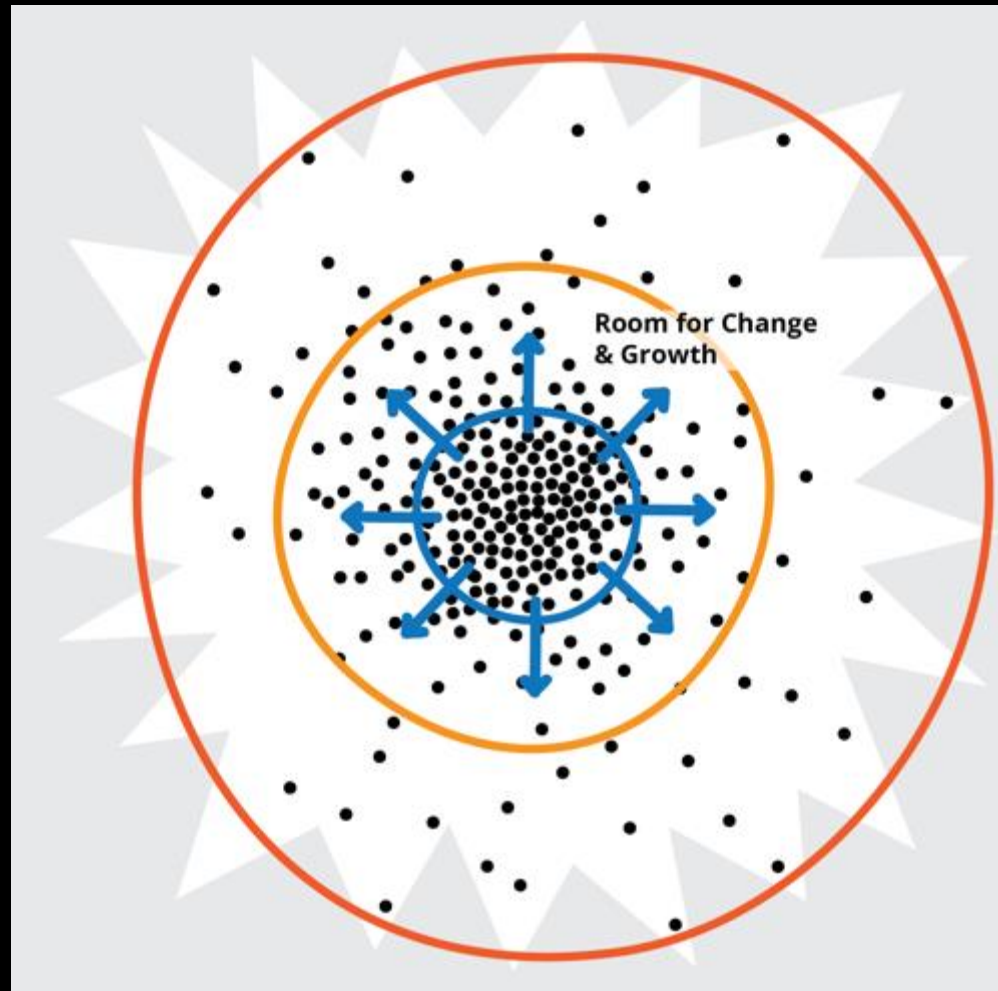
Assuming that what we know about the
majority applies to the minority does
harm



The prediction with the greatest probability

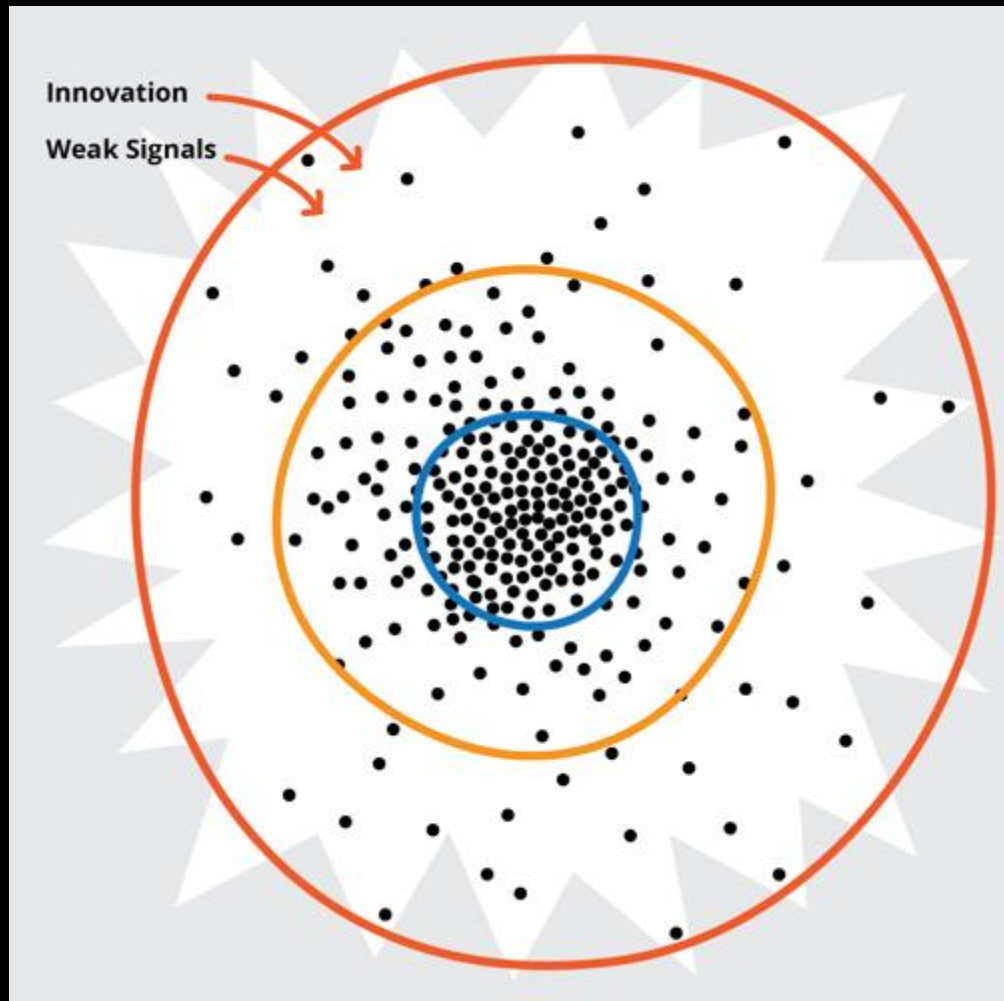


- Anytime
- When you least expect it
- Greatest Probability



Innovation

Weak Signals



AI is amplifying, accelerating and automating the same pattern.

What is AI?

... a statistical reasoning machine

feeding on available data

a power tool...



More
efficiently,
accurately,
consistently..

Statistically finding or producing the...

typical

popular

normative

predictable

statistically average

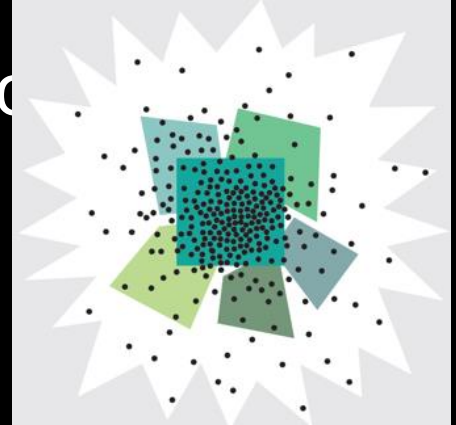
If you have a disability the
opportunities and risks are at the
extremes

Harm and incident databases

- Disproportionate reports related to disability
- Examples: parents with disabilities falsely flagged as unfit, false positive tax audits, false positive security flagging, excluded from optima filtering in employment, biased credit and asset rating, unfairly denied mortgage and loans, unfairly high insurance rates, deprioritization of relevant information, iatrogenic death and illness...

Statistical Discrimination in AI Ethics Measures

- Insignificant when determining impact metrics and thresholds
- Invisible or insignificant in error testing and risk-benefit framework
- No bounded cluster in cluster comparison



“an anomaly”

“merely an anecdote”

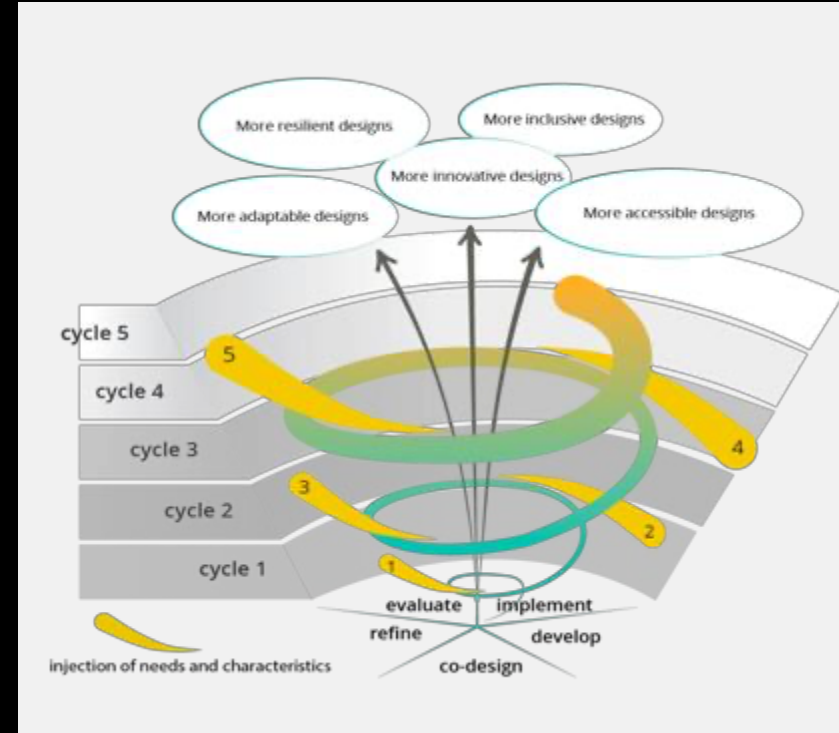
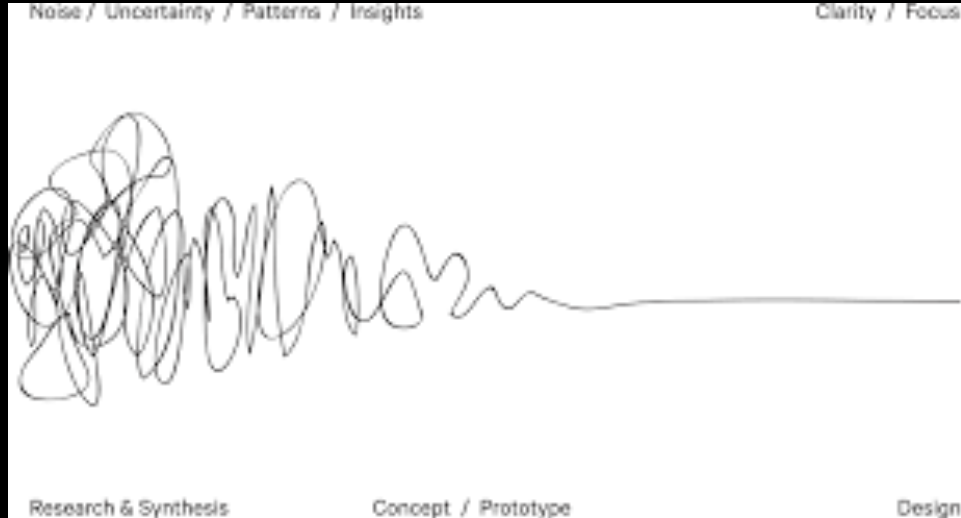
AI as a mirror



Credit image: Photo by Marc-Olivier Jodoin on Unsplash

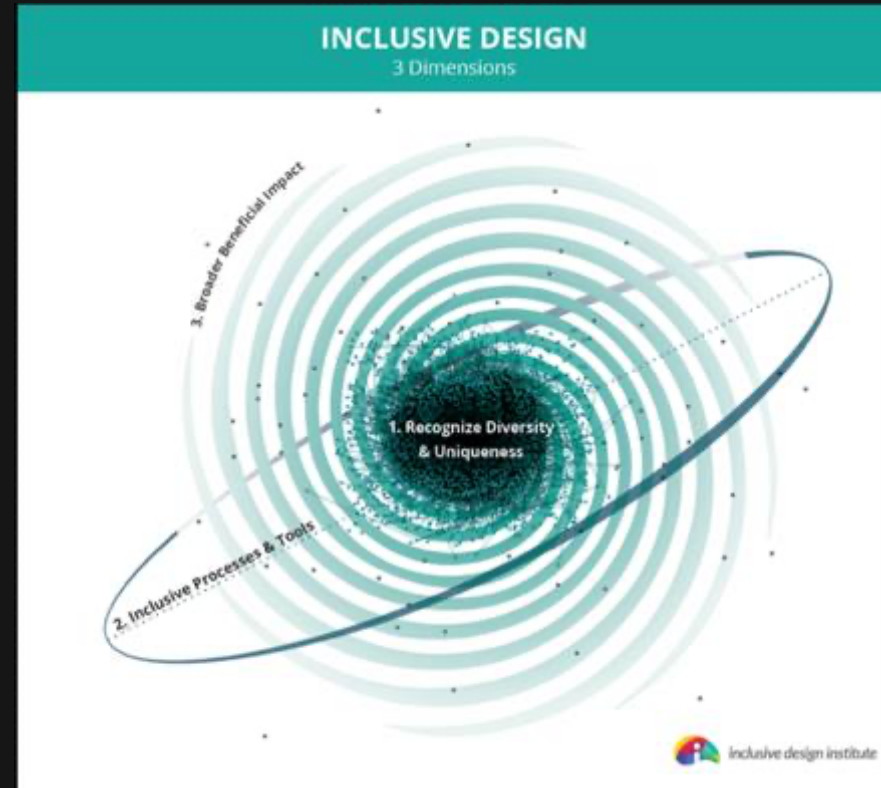
When our processes are guided
by individuals who have lived
experience of struggle &
adversity, our systems will
function in times of struggle and
adversity.

From the Design Thinking Squigggle to the Virtuous Tornado



Inclusive Design..

1. Recognize diversity, variability, & self-knowledge in integrated design
2. Inclusive process – co-design – diverse team- “who is missing?”
3. Benefit-for-all - intervention in complex adaptive system, culture change



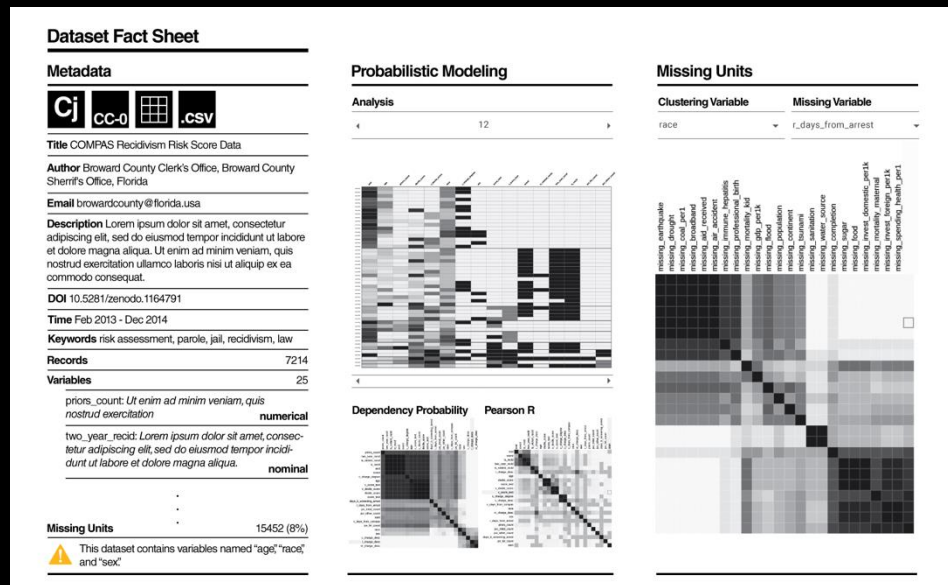
Flipping the perspective

- Focus on the novel and unique
- Inverting the metrics



Prevent Harm

- "Trust meter"
- Suitability of decision system to instance before you
- Based on data used to train AI



Pushing benefits to where they are needed the most...

“Baby Bliss Bot”



αH

baby

Σ

Blissymbol
writing (for) world

plan digital
software

$\cdot \check{V}_1 |$

ability self
independent

Filling the regulatory vacuum...

Accessible and Equitable AI
Standard

for the Accessible Canada Act

... and the EU

Intelligence that works with the edge of our human scatterplot is better able to ..

- Adapt to change & respond to the unexpected
- Detect risk
- Transfer to new contexts
- Results in greater dynamic resilience & longevity
- Will reduce disparity
- May hold the key to our survival

Supported in part by:



Accessibility Standards
Canada

Normes d'accessibilité
Canada

Funded by Government of
Canada's Innovation, Science
and Economic Development
Canada and Employment and
Social Development Canada

The wordmark for Canada, with the letters 'Canada' in a serif font and a small Canadian flag icon above the final 'a'.

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