

THE DANGERS OF BLACKBOXED AI IN COURT

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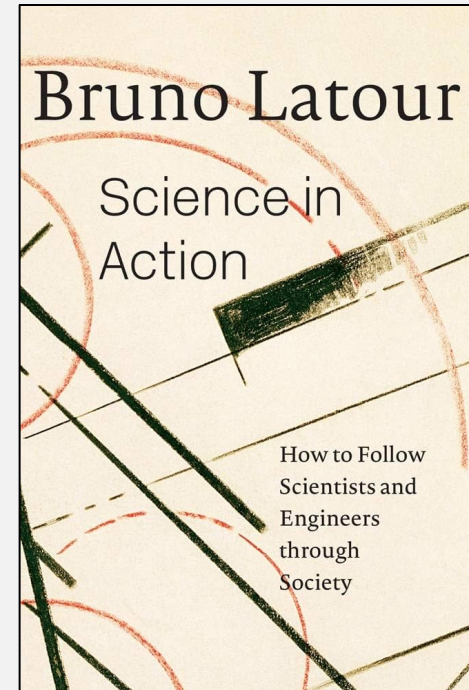
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Black Boxes



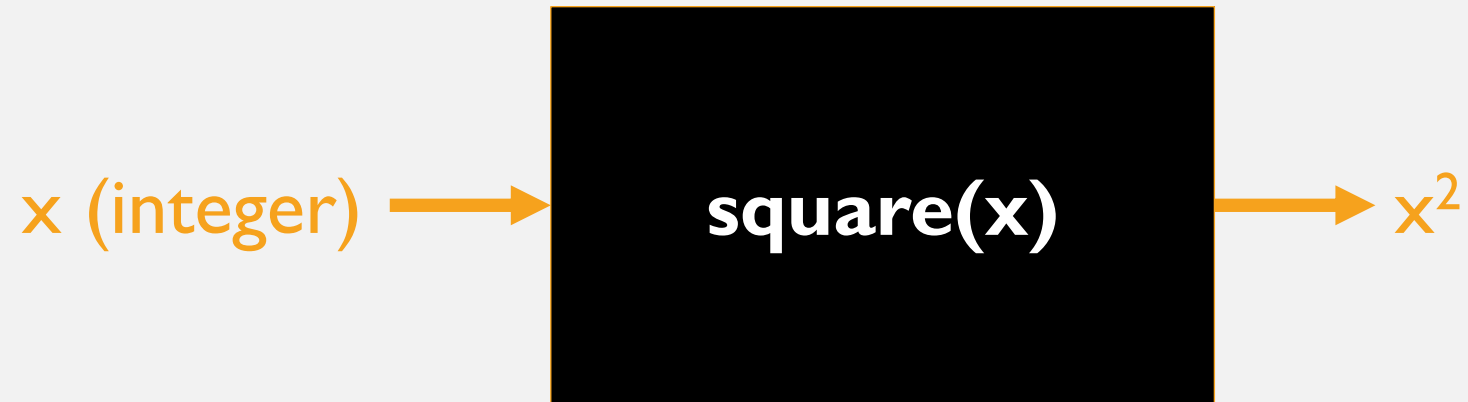
Data + Algorithm = ?

Blackboxing

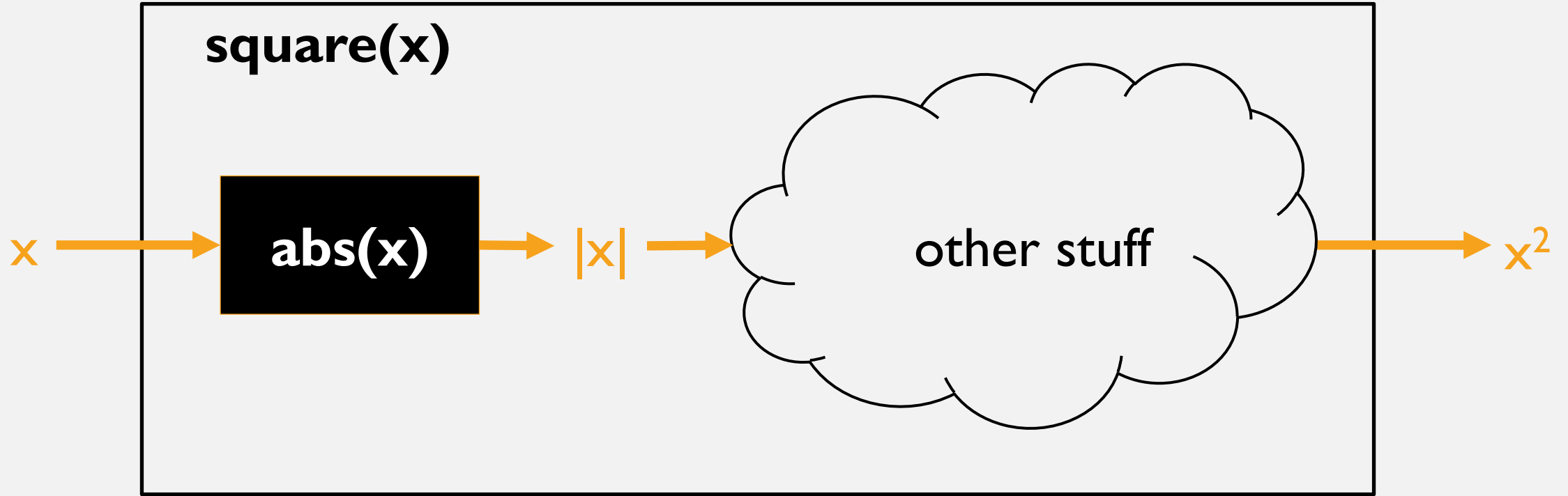


Courts must resurface and critique
technical design choices in order to
do their work correctly

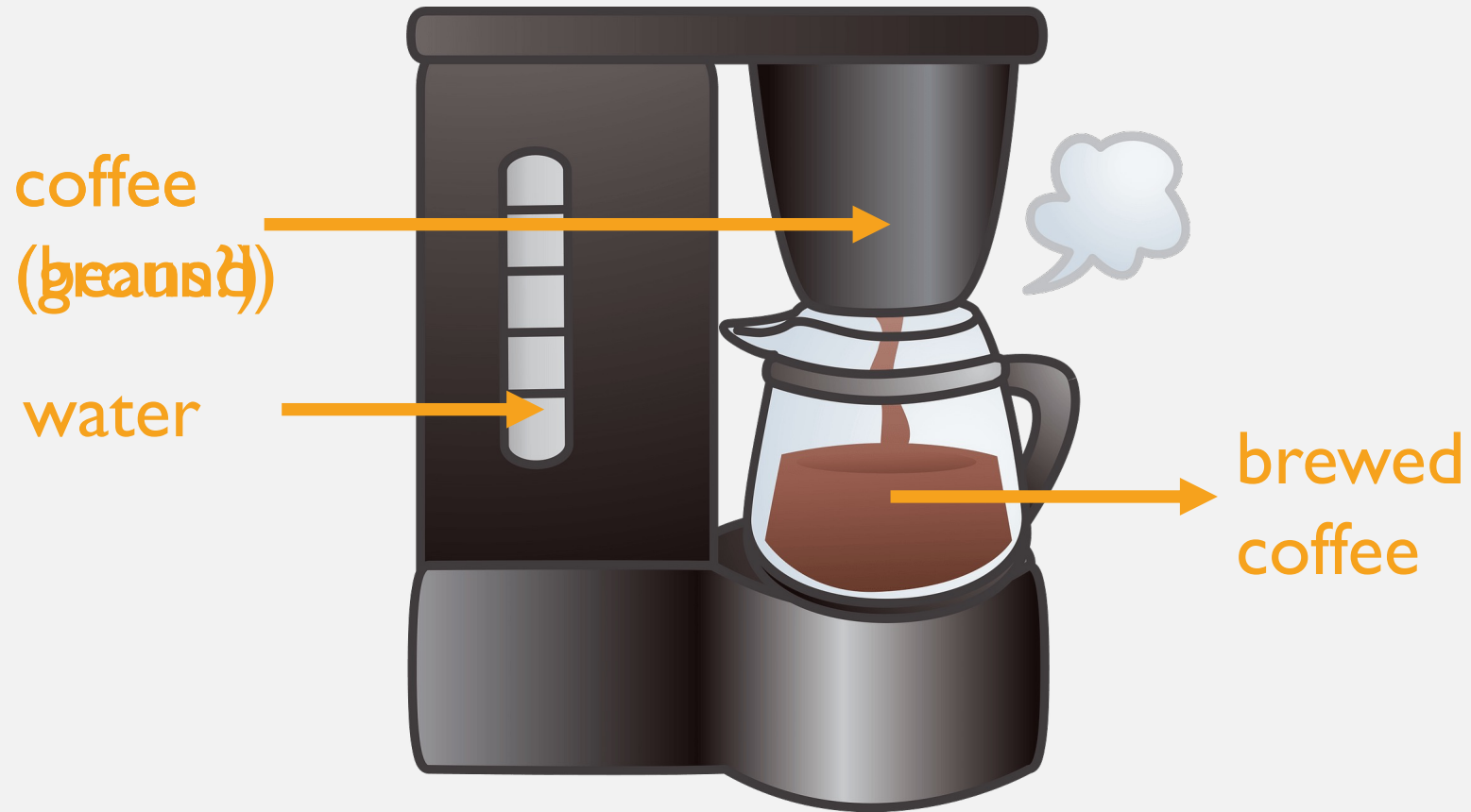
ABSTRACTION AND ITS CONSEQUENCES



```
1) y = x*x;  
   output y  
  
2) y = 0;  
   for i = 1 to abs(x):  
       y = y + abs(x);  
   output y
```



```
define square(x){  
    y = 0;  
    for i = 1 to abs(x):  
        y = y + abs(x);  
    output y}
```



coffee grinder
(separate)



BLACK BOXES AND BLACKBOXING

- Abstraction boundaries define the object
- Abstraction boundaries delineate responsibility
- After abstraction choices are made, they become invisible

WHY COURTS SHOULD CARE

ENGINEERING VALUES

- Efficiency
- Portability
- Profit
- Context

LEGAL VALUES

- Fairness/Due Process
- Justice
- Accountability
- Efficiency

A surprising amount of AI on the
market is broken.

Table 1: Failure Taxonomy

Impossible Tasks	Conceptually Impossible Practically Impossible
Engineering Failures	Design Failures Implementation Failures Missing Safety Features
Post-Deployment Failures	Robustness Issues Failure under Adversarial Attacks Unanticipated Interactions
Communication Failures	Falsified or Overstated Capabilities Misrepresented Capabilities

COURTS DO DECONSTRUCT
DESIGN...SOMETIMES

A MATTER OF SALIENCE

- Some types of cases where court already do interrogate technical design:
 - Products liability
 - Copyright retransmission cases
 - Copyright and software

PRODUCTS LIABILITY: RIDER V. TOWNSHIP OF FREEHOLD

- Plaintiff died when utility pole “intruded into the passenger compartment”
- P’s expert provided evidence of “technically feasible, practical and safer alternative” to the design of the car
- Court discusses tech arrangements in high level of detail
 - “The front and rear subframes ... were not connected to one another, creat[ing] a structural gap that allowed penetration”
 - “The floor pan ... offered no real ‘structural resistance’”
 - ...

COPYRIGHT RETRANSMISSION CASES

- *Cablevision* (2d. Cir. 2008): Remote Service DVR not a copyright problem because it was 1) a private performance & 2) initiated by user
- Aereo, BarryDriller, FilmOn built technology designed around this holding
 - Courts couldn't understand that or rule on it without unpacking the design
- Cases became battles of abstractions: Where did Aereo's "device" end for the purpose of the law?
- Supreme Court holding implies that courts need not consider the tech
 - Unfortunate result, but lower courts showed that it's entirely possible to do so

LESSONS FROM EXISTING CASES

- Courts already examine technological design where the question appears salient
- Courts can and regularly do make calls as to the correct levels of abstraction/generalality
- Courts can use typical evidentiary techniques to unearth design

HOW DECONSTRUCTION HELPS IN NON-TECHNOLOGICAL CASES

HYPOTHETICAL: DISCRIMINATORY HIRING

- Employer buys off the shelf “fair-ML” software to predict the best candidates
 - Trained on data with demographics different than the employer’s.
 - Difference causes the fairness criterion to be invalid, and software to be discriminatory.
- Abstraction: Machine inputs employment data, business objectives, outputs a version of “fair” ranking that accounts for inequities.
 - Implicit claim: User is not responsible for the internals or to know about them
 - Court’s challenge: Does this satisfy business necessity/alternative employment practice?
 - Easiest way to get a less discriminatory system is to train properly. But without technical expertise, can employers ever be liable?
 - Hard to ever hold employer liable without requiring them to know something about the internals, breaking the abstraction.

CONCLUSIONS

- Courts need to interrogate technical design whenever technology is involved in the case
- Courts may be bad at this because they are not technical experts, but:
 - They cannot avoid it
 - They already do this (with admittedly mixed success) in cases where it is more obvious that they need to
- Courts can supplement their legal expertise with expert testimony