

# Behaviorism is Not Enough

Better Recommendations through Listening to Users



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TL;DR

*Listen to your users*

*At least sometimes*

# Learning about Users

Look at what they do



**Implicit Feedback**  
**Behavioral A/B Testing**



Created by Luis Prado  
from Noun Project

Listen to what they say



**Explicit Feedback**  
**User surveys**  
**Focus groups**  
**Future Research!!!**



Created by Sarah Abraham  
from Noun Project

If they disagree?

# Why Listen to Users?

## **Pragmatic reasons**

Open questions require explicit user input

These can enable compelling new applications!

## **Philosophical reasons**

Are users' values reflected in the technology?

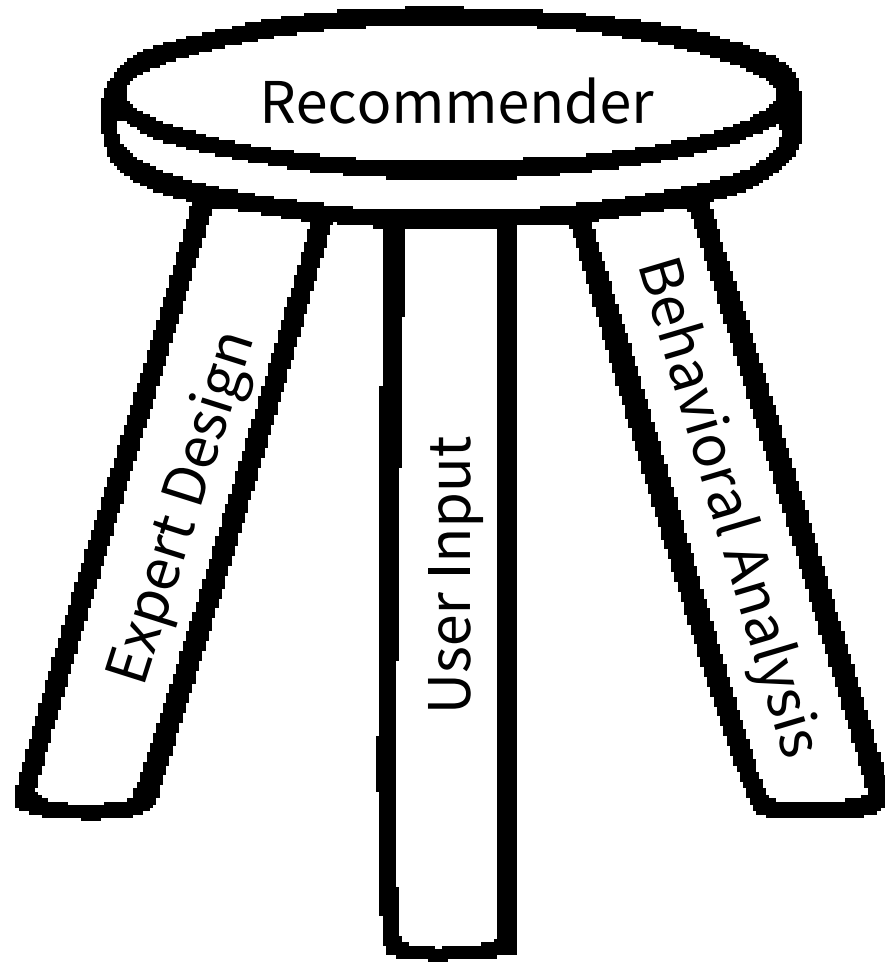
*Reciprocity* (Franklin) and *participatory design*

# What We Aren't Saying

Design products by UserVoice mob rule

Ignore behavioral data

Give up on A/B testing or bandits



Recommender

Expert Design

User Input

Behavioral Analysis

# Limits of Behavioral Observation

Neil Hunt, RecSys '14 keynote:

*NetFlix's metrics cannot distinguish between an enriched life and addiction.*

# Intention-Behavior Gap

Problem: users say one thing and do another

Old problem: Paul in 1<sup>st</sup> century AD said ‘What I want to do, I don’t do; what I don’t want to do, I do.’

- They do not truly understand their desires.
- They are not satisfied with their actions.

Which is true?



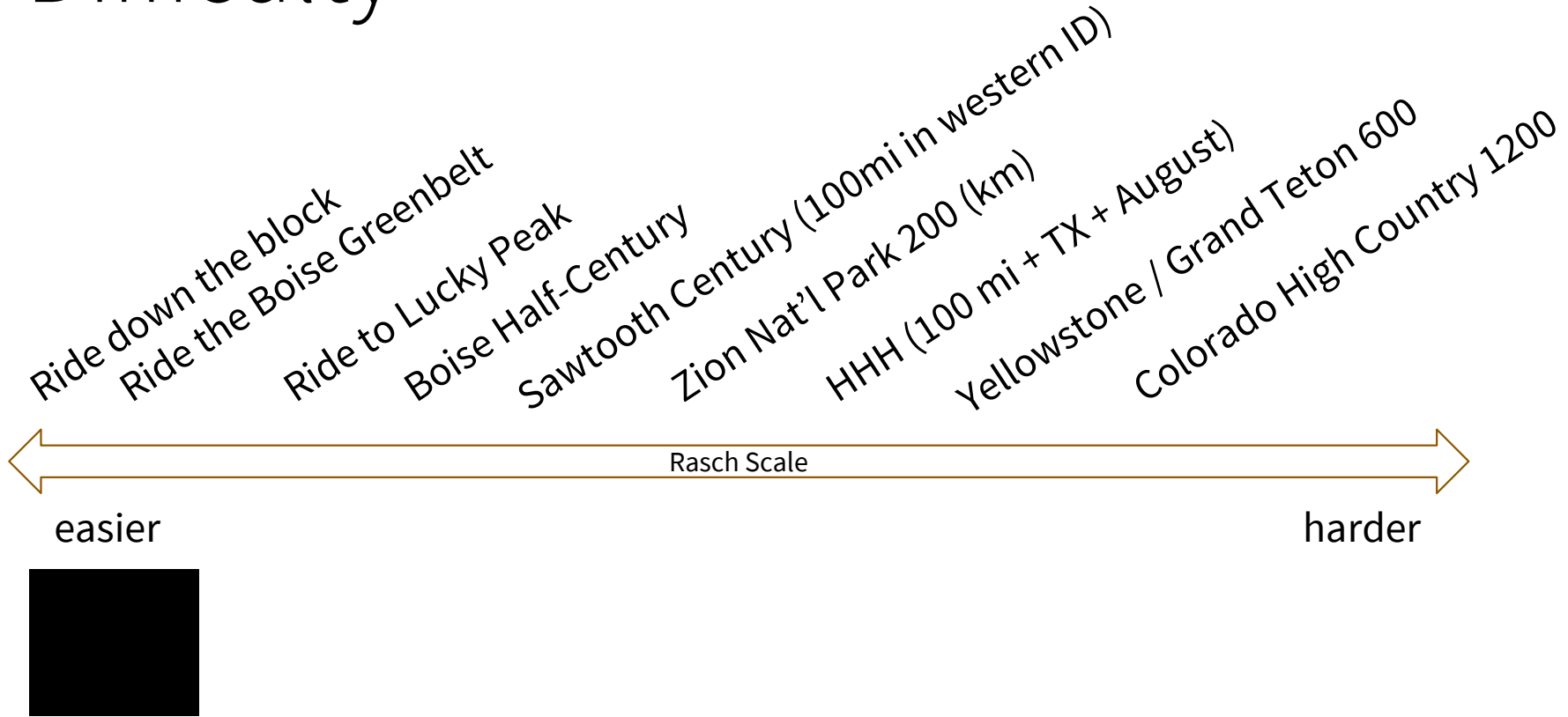


# Opportunities for Recommenders

If we know a user's **goals** *and* their **behavior**, maybe the recommender can help!

- Find 'baby steps' that are:
  - Likely to be adopted (behavior helps here!)
  - Closer to user's goals (their input necessary here!)

# Difficulty



# Giving Users a Voice

Example: Twitter and the algorithmic feed

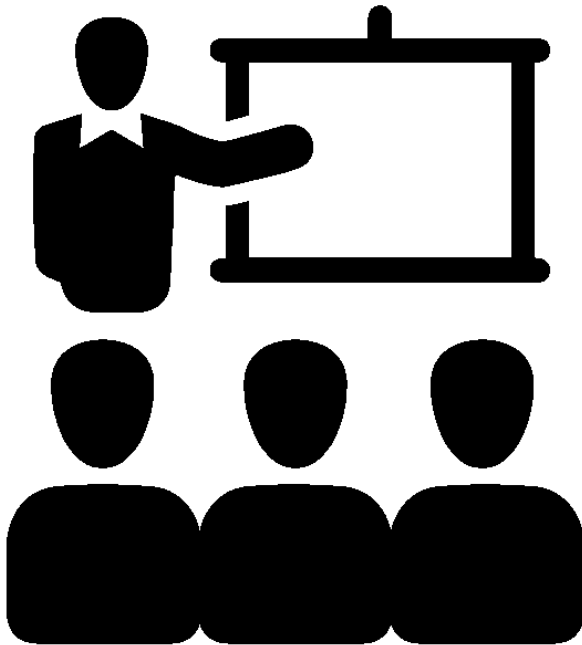
- Good reasons to involve filtering!
- But: it changes how the service is used
  - Existing users feel unheard

**Participatory design** provides a framework for incorporating user voices into the design process.

**Transparency** lets users know whose voices are being incorporated and how.

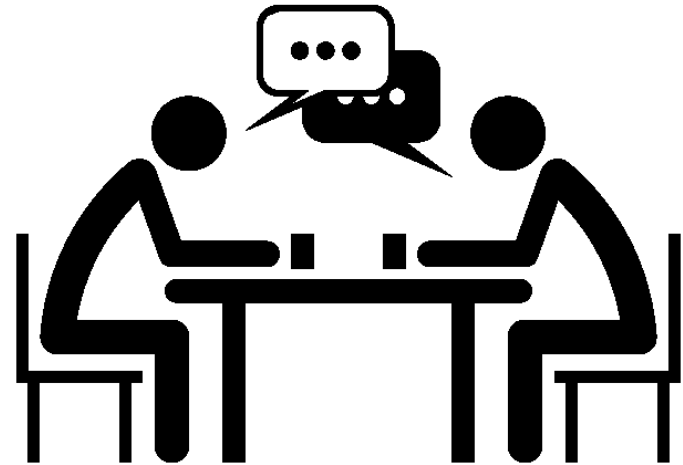
# Reciprocity (Franklin, 1989)

Broadcast ...



Created by Delwar Hossain  
from Noun Project

... or conversation?



Created by Michael V. Suriano  
from Noun Project

# Whose Values are Built For?

Many stakeholders, each with values:

Shareholders

Management

Developers

Users

*What* values are embedded in the system?

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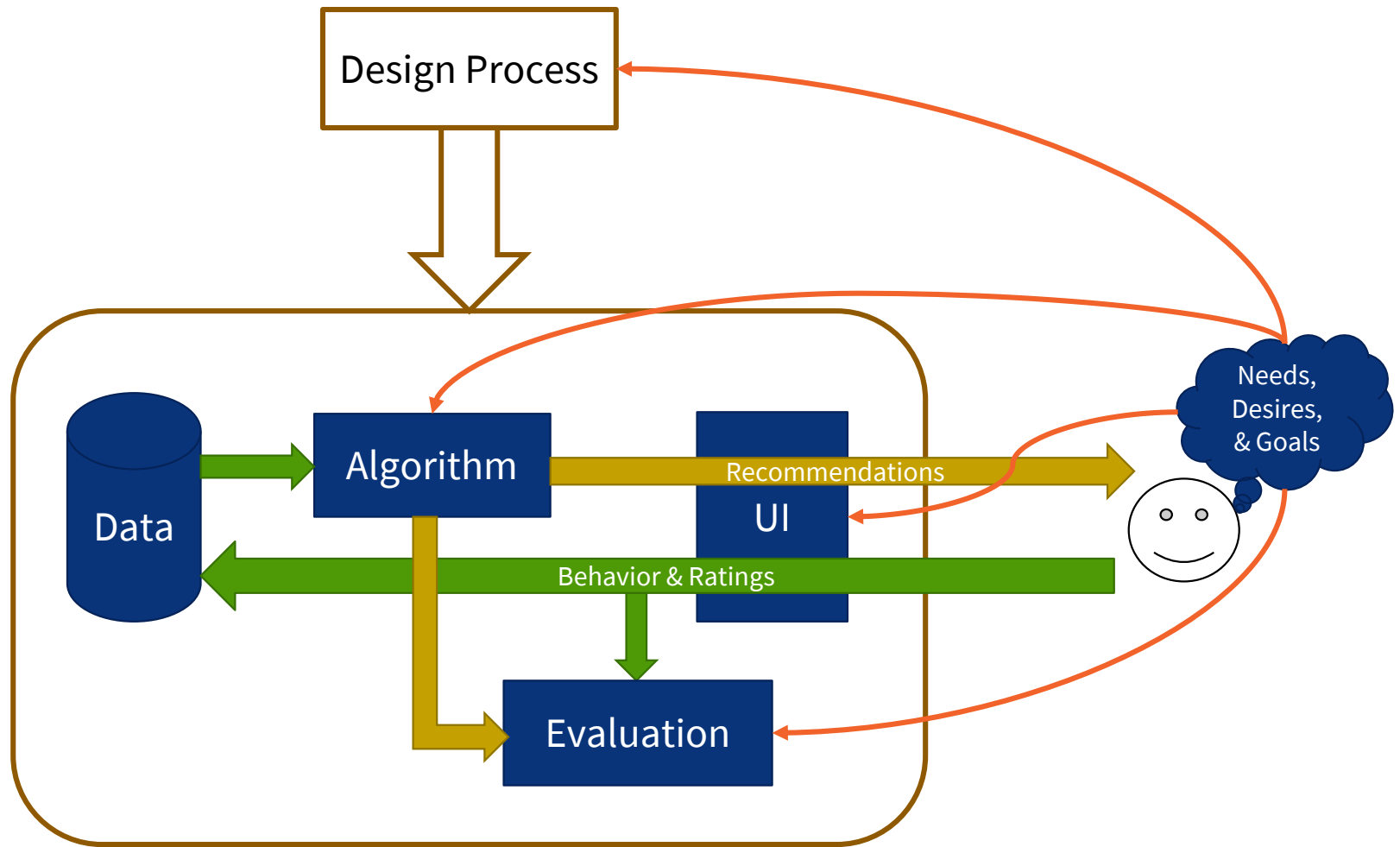
**Behavior will not tell you values.**

# Pragmatics Again...

If users are co-creators of their technology, might it

- Combat the filter bubble & similar PR problems?
- Increase user satisfaction?
- Increase user adoption of recommendations?

# The Recommender Architecture



# Going Forward

A lot of work to do!

Some challenges:

- How can we scale participatory design?
- What does participatory design of algorithms look like?
- How can we use intention-behavior gap to build compelling recommender experiences?
- How can we provide *meaningful* control over the recommendation process to users?



What We Get

Compelling New Applications

Maintaining User Agency

*Questions?*