# Sharing traces: Barriers & Facilitators to Getting Support and Accountability

Sean Munson · smunson.com · @smunson

**W** HUMAN CENTERED DESIGN & ENGINEERING
UNIVERSITY *of* WASHINGTON

DUB DESIGN USE BUILD

# Manpokei 万歩計

交通巡査
11260歩＝6.7㌔(8時間)

客席は約五百 大体三十人前後でサービスに当る 満員になれば ちょっと立止る暇もない

さん(20)＝東京・有楽町のビヤホール

ビヤホールのウェートレス
12550歩＝5.5㌔(8時間)

阪の幹線を二往復 タバコや飲み 物のサービスで機内を動き回る 乗客は少なく楽だったという

さん(22)＝東京—大

エアホステス
9000歩＝4.1㌔(6時間半)

# Five-Stage Model of Personal Informatics



PREPARATION | COLLECTION | INTEGRATION | REFLECTION | ACTION
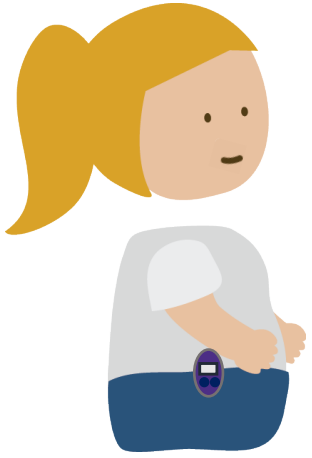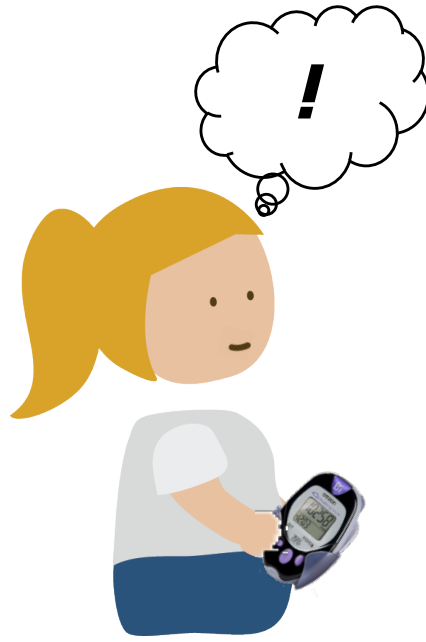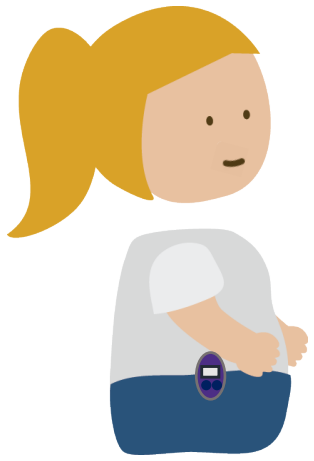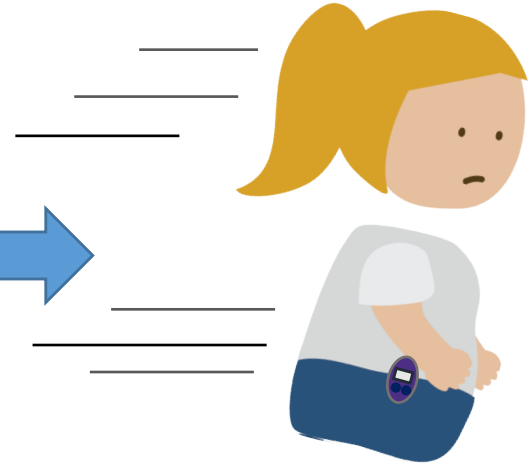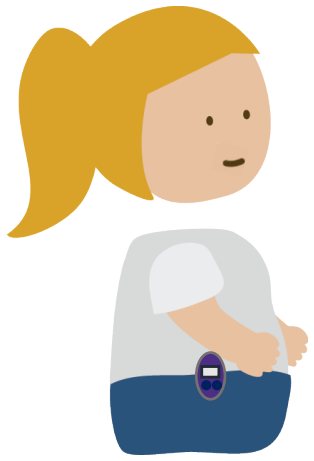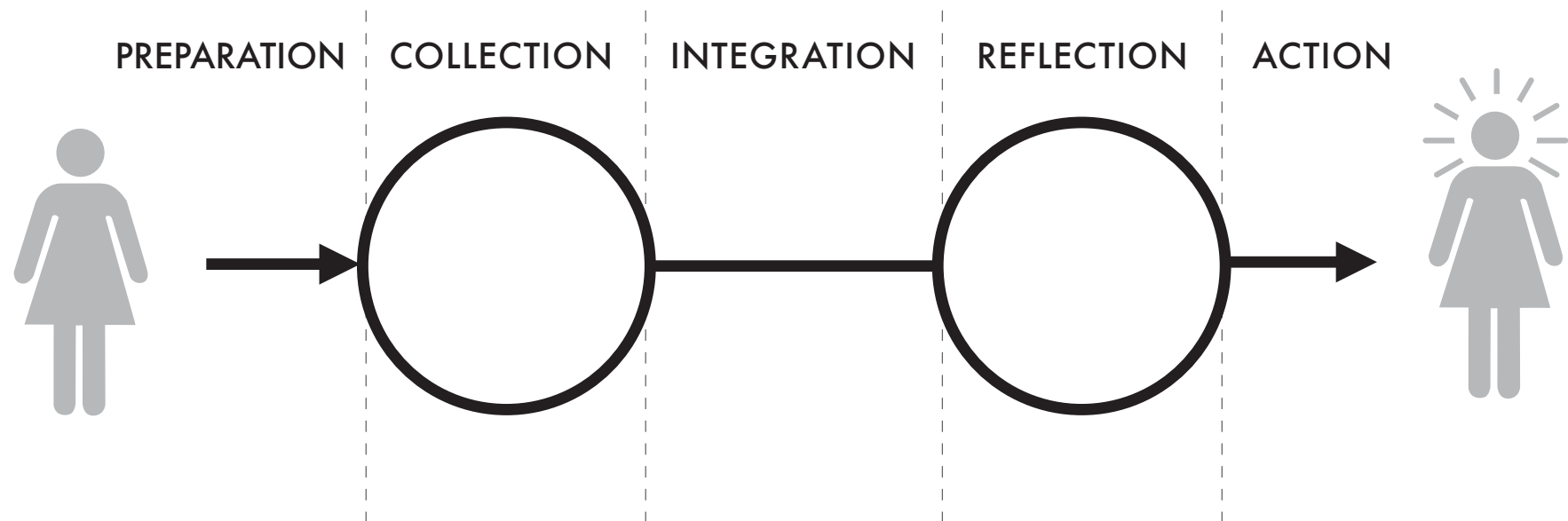
Li I., Dey A., Forlizzi J. *CHI 2010.*
"A Stage-Based Model of Personal Informatics Systems"

# Five-Stage Model of Personal Informatics
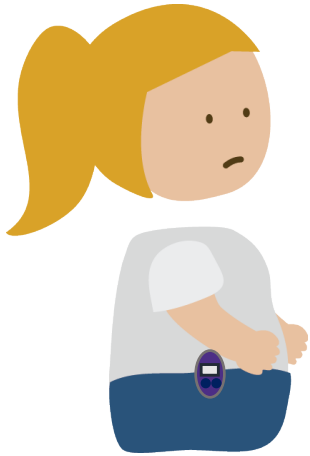
Alice

- 20 years old

- Has a family history of heart disease

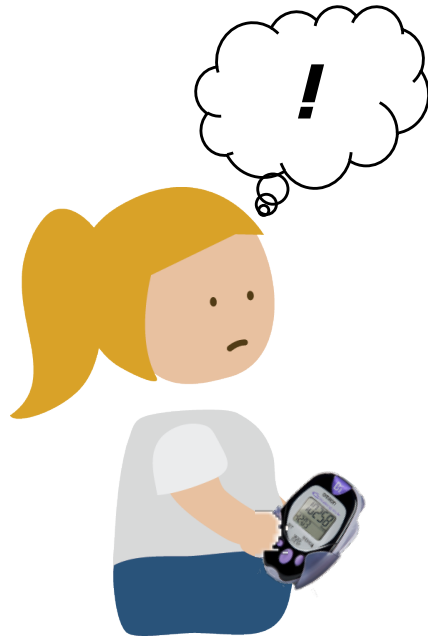- Wants to be more active

- Does not know how, because she is busy

Li I., Dey A., Forlizzi J. *CHI 2010.*
"A Stage-Based Model of Personal Informatics Systems"
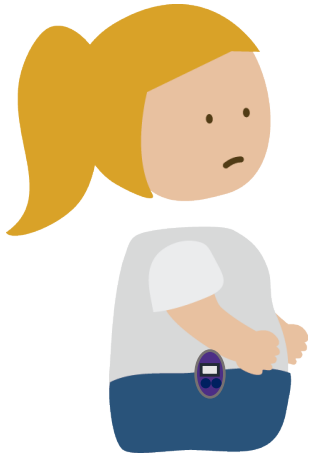
# Preparation

# Preparation
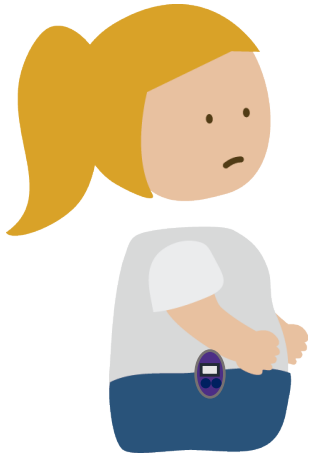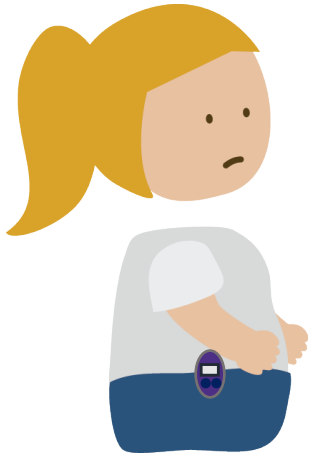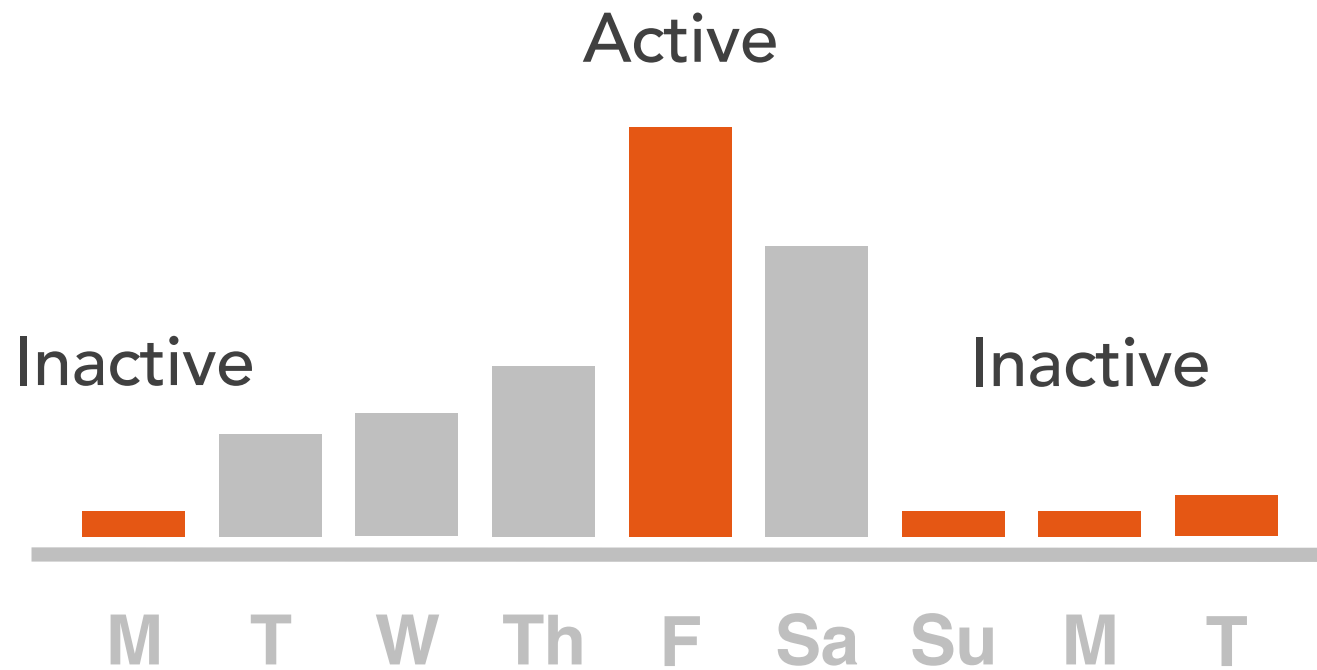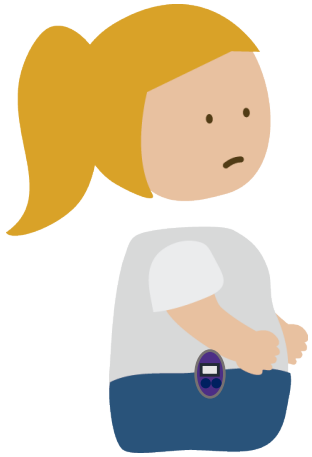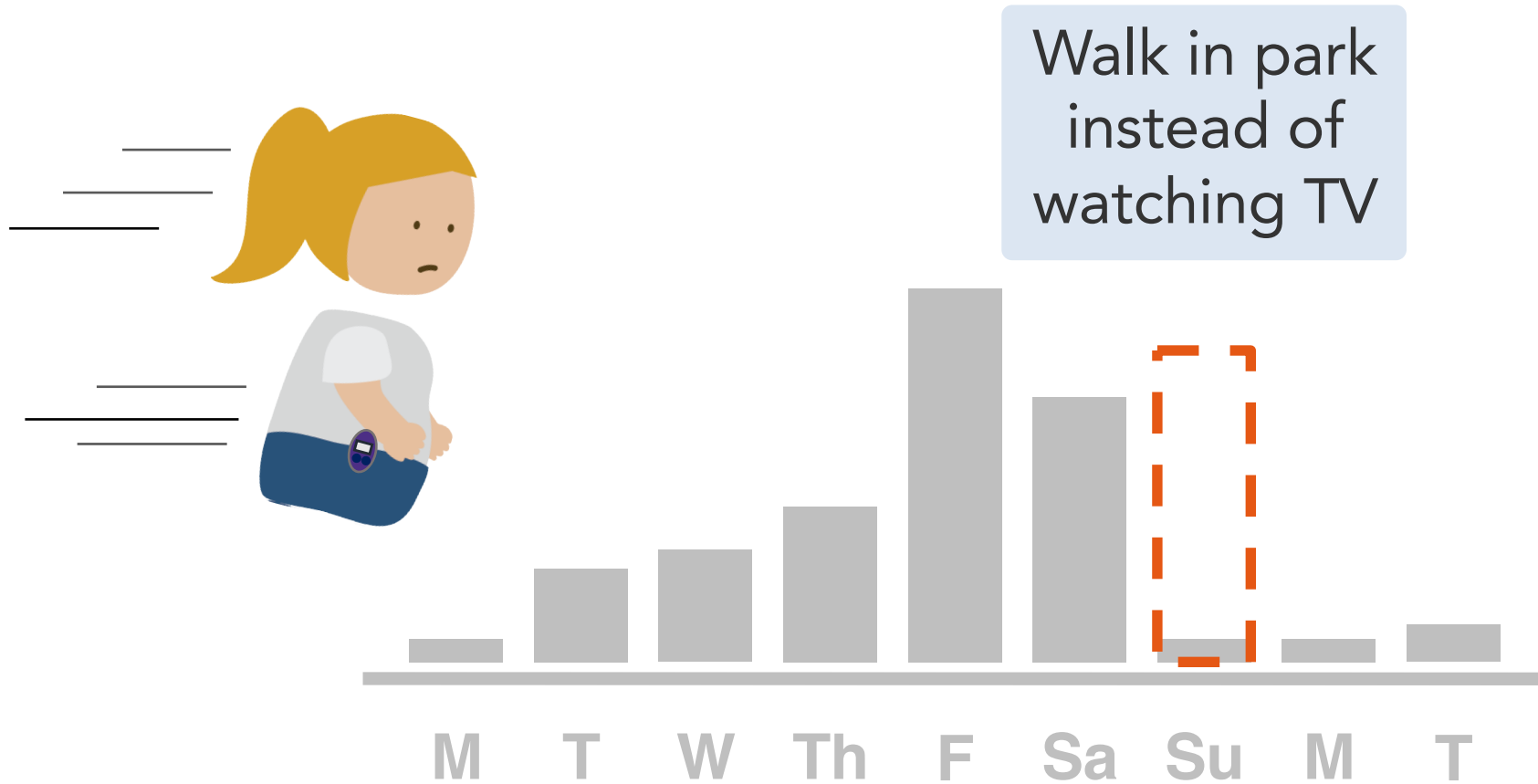
Li I., Dey A., Forlizzi J. *CHI 2010.*
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# Preparation

Li I., Dey A., Forlizzi J. *CHI 2010.*
"A Stage-Based Model of Personal Informatics Systems"

# Integration



M  T  W  H  F  Sa  Su  M  T

Li I., Dey A., Forlizzi J. *CHI 2010.*
"A Stage-Based Model of Personal Informatics Systems"

# Reflection



Active

Inactive

Inactive

M T W Th F Sa Su M T

# Action

Walk in park instead of watching TV



M  T  W  Th  F  Sa  Su  M  T

Li I., Dey A., Forlizzi J. *CHI 2010.*
"A Stage-Based Model of Personal Informatics Systems"

# Five-Stage Model of Personal Informatics

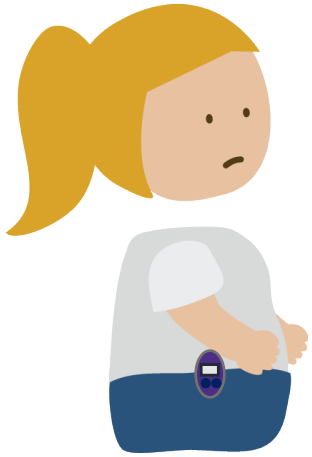PREPARATION    COLLECTION    INTEGRATION    REFLECTION    ACTION
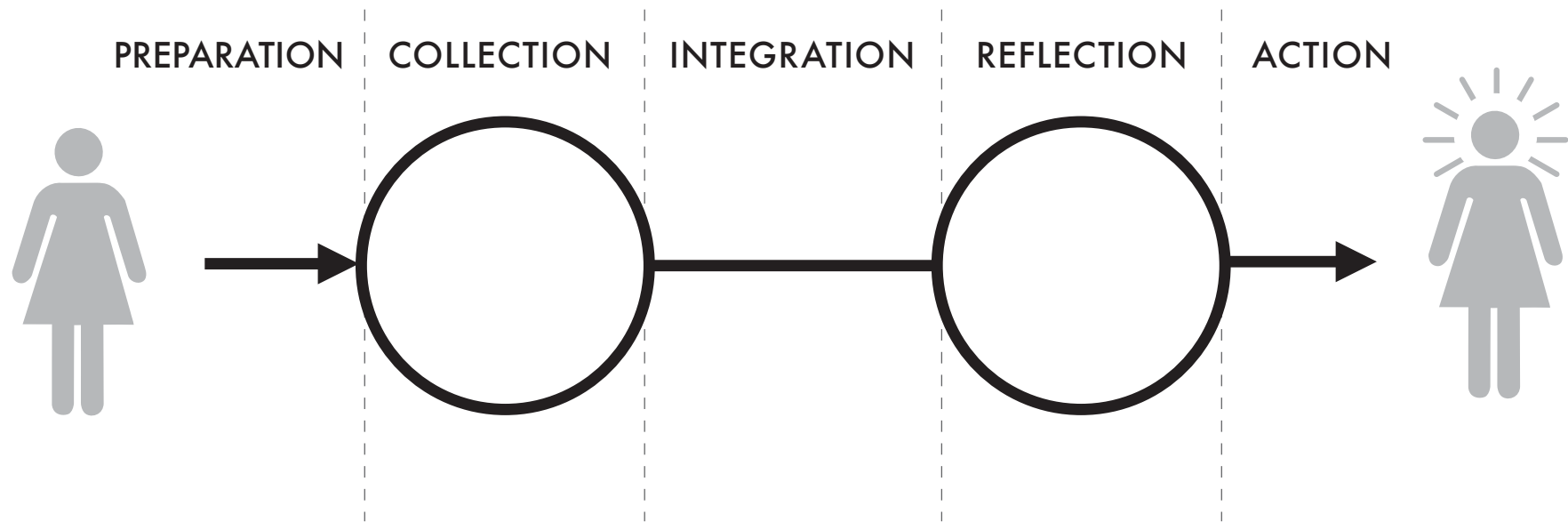
Li I., Dey A., Forlizzi J. *CHI 2010.*
"A Stage-Based Model of Personal Informatics Systems"

PREPARATION | COLLECTION | INTEGRATION | REFLECTION | ACTION

PREPARATION    COLLECTION    INTEGRATION    REFLECTION    ACTION
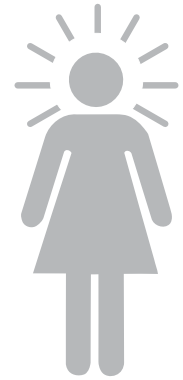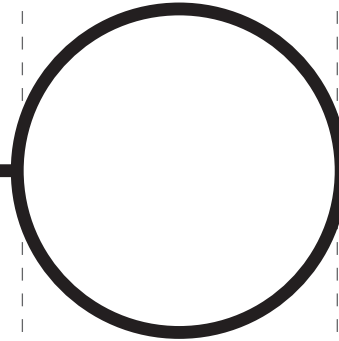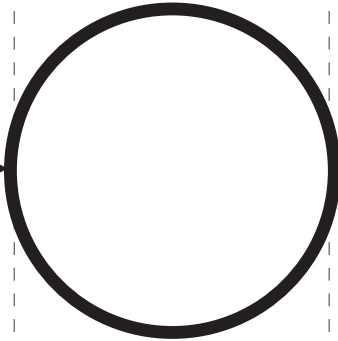
but it has some assumptions

PREPARATION | COLLECTION | INTEGRATION | REFLECTION | ACTION
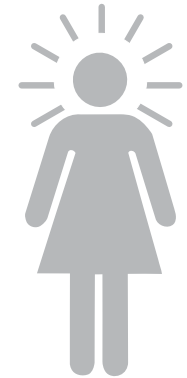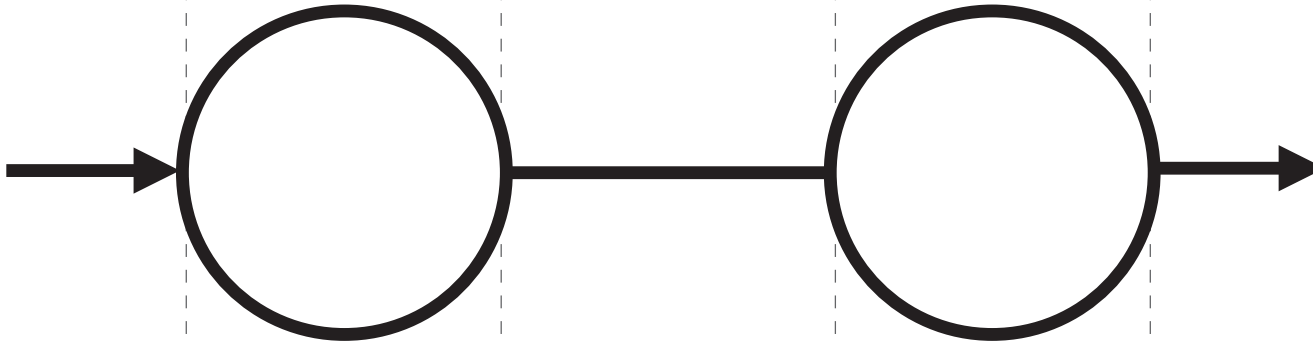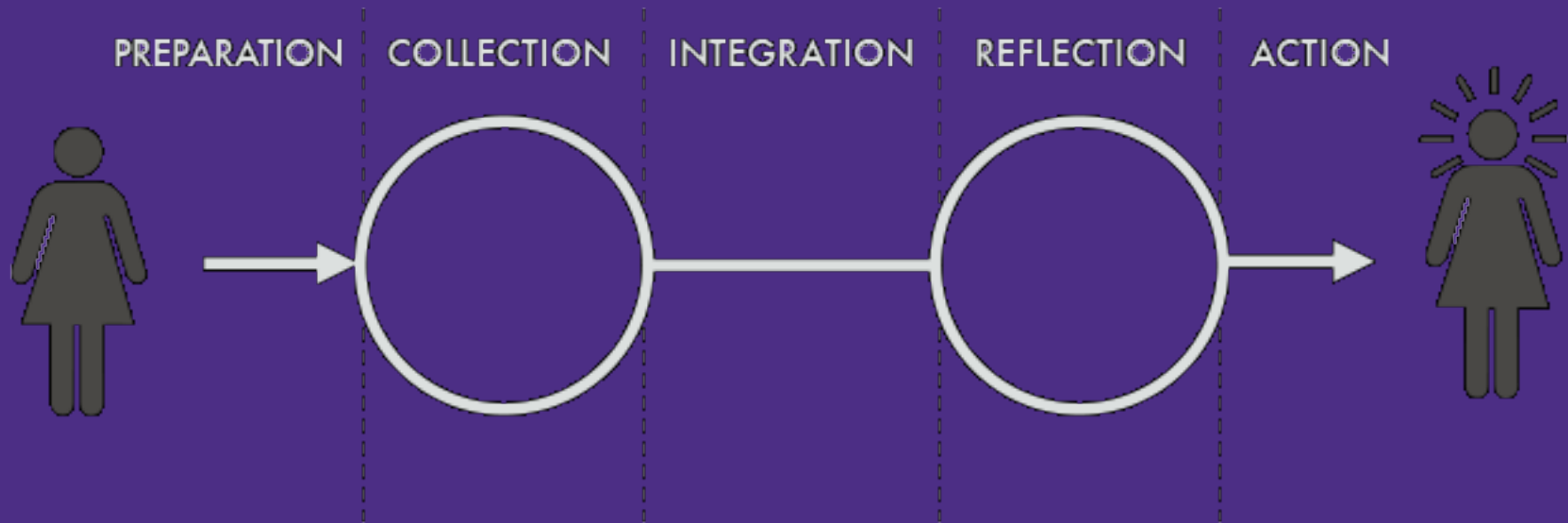
but it has some assumptions

1.  Action is the goal

2.  The process is linear

3.  People use the tools indefinitely / until they achieve insight or action

4.  Self-tracking is *self*-tracking

## today

- Assumptions in personal informatics model and what that might mean for trace data.

- Exploration of social sharing of activity traces.

Assumption #1

# Action is the goal.

Goals

1. Get actionable insights

**Epstein DA**, Ping A, Fogarty J, Munson SA. *UbiComp* 2015.
A Lived Informatics Model of Personal Informatics.

Rooksby J, Rost M, Morrison A, Chalmers MC. *CHI* 2014.
Personal tracking as Lived Informatics

# Goals

## 1. Get actionable insights

## 2. Satisfy curiosity

Epstein DA, Ping A, Fogarty J, Munson SA. *UbiComp* 2015.
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1. Get actionable insights

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3. Have a record

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## Goals

1. Get actionable insights
2. Satisfy curiosity
3. Have a record
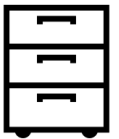4. Participate socially
5. Collecting rewards

Epstein DA, Ping A, Fogarty J, Munson SA. *UbiComp* 2015.
A Lived Informatics Model of Personal Informatics.

Rooksby J, Rost M, Morrison A, Chalmers MC. *CHI* 2014.
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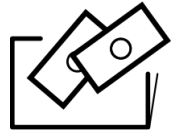
6. Fetishized Tracking

Epstein DA, Ping A, Fogarty J, Munson SA. *UbiComp* 2015.
A Lived Informatics Model of Personal Informatics.

Rooksby J, Rost M, Morrison A, Chalmers MC. *CHI* 2014.
Personal tracking as Lived Informatics

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A Lived Informatics Model of Personal Informatics.

Rooksby J, Rost M, Morrison A, Chalmers MC. *CHI* 2014.
Personal tracking as Lived Informatics

1. Get actionable insights
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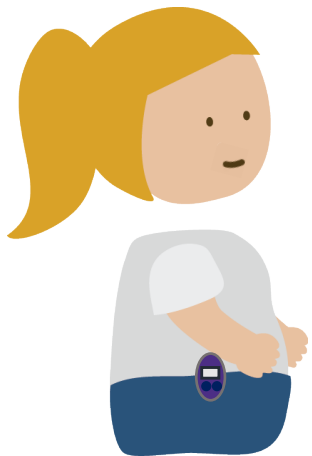5. Collecting rewards
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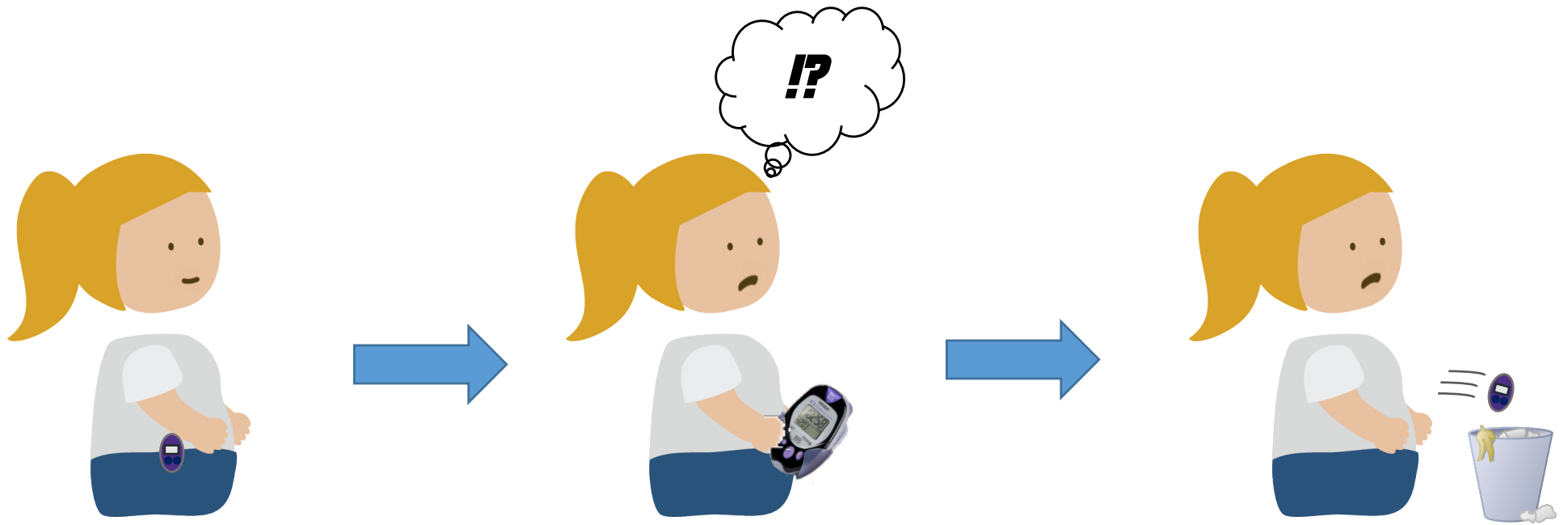
**Different goals → Different Use Patterns**

Assumption #2
# The process is linear.

Assumption #3
# People use the tools indefinitely / until they achieve insight or action.

Epstein DA, Ping A, Fogarty J, Munson SA. *UbiComp* 2015.
A Lived Informatics Model of Personal Informatics.

Epstein DA, Ping A, Caraway M, Johnston C, Fogarty J, Munson SA. *CHI* 2016.
Beyond Abandonment to Next Steps:
Understanding and Designing for Life after Personal Informatics Tool Use.
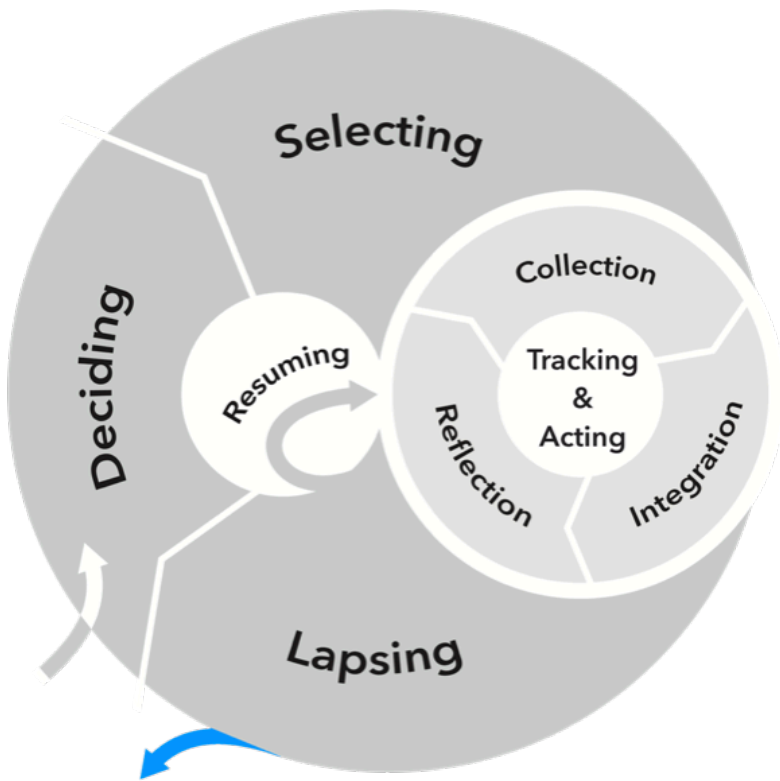
Self-tracking tools have high rates of abandonment and lapsing.

⅓ of people abandon wearable trackers with 6-months, ½ within a year.
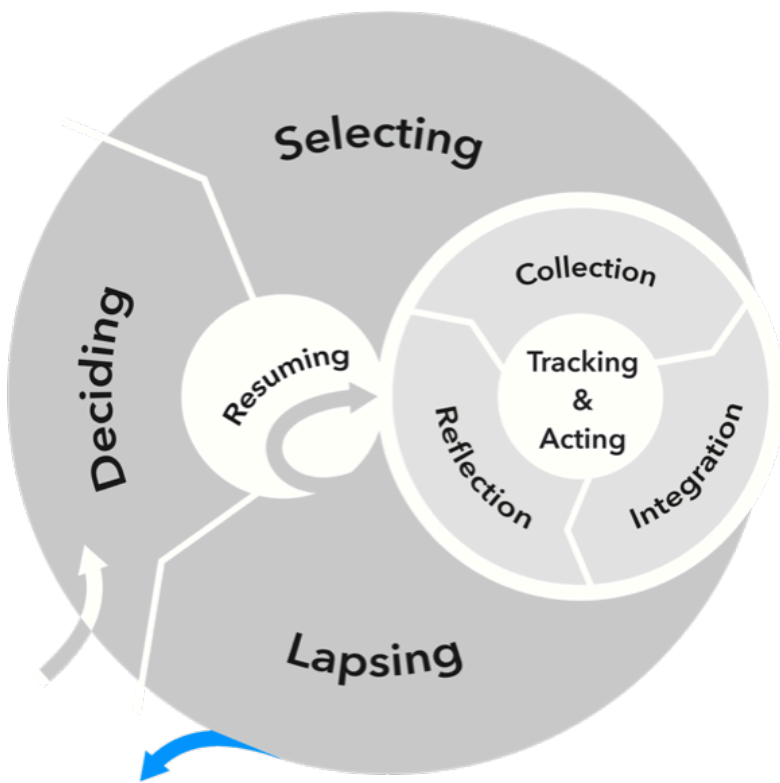
Common reasons people lapse

1. Tracking is high burden – for collecting the data, for being confronted by one's data, or just *having* the data

2. They meet their goals or satisfy their curiosity

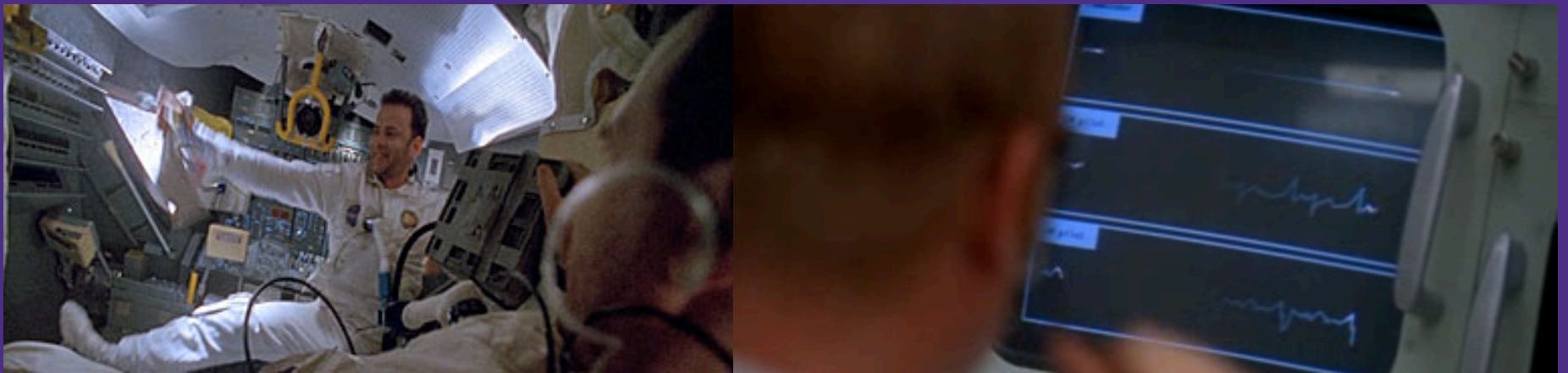3. They don't (or no longer) get the benefits they sought.
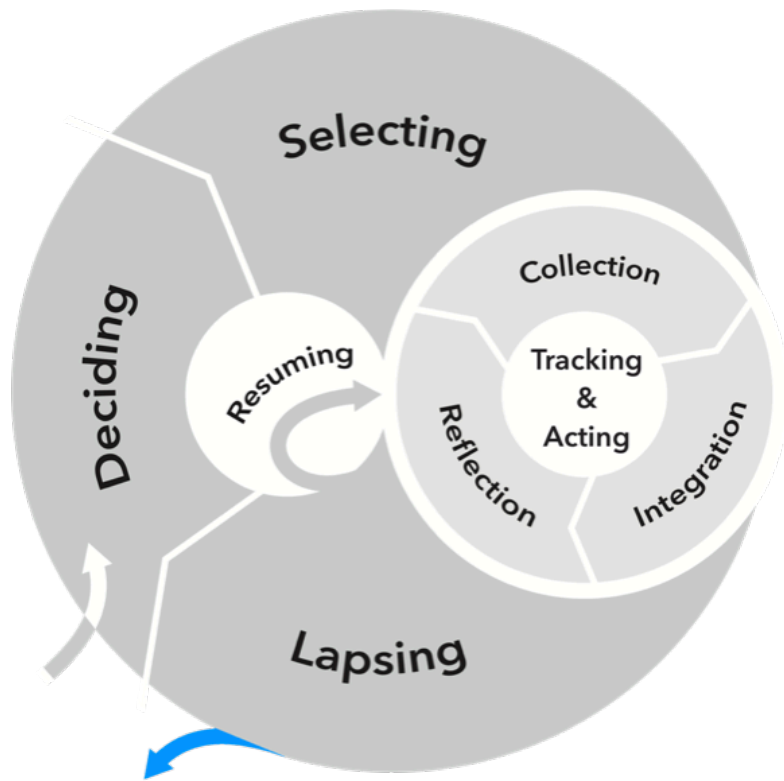
Lapses in data may also mean that someone has switched to a different tool.

Lapses are common, and an underexplored opportunity for design.

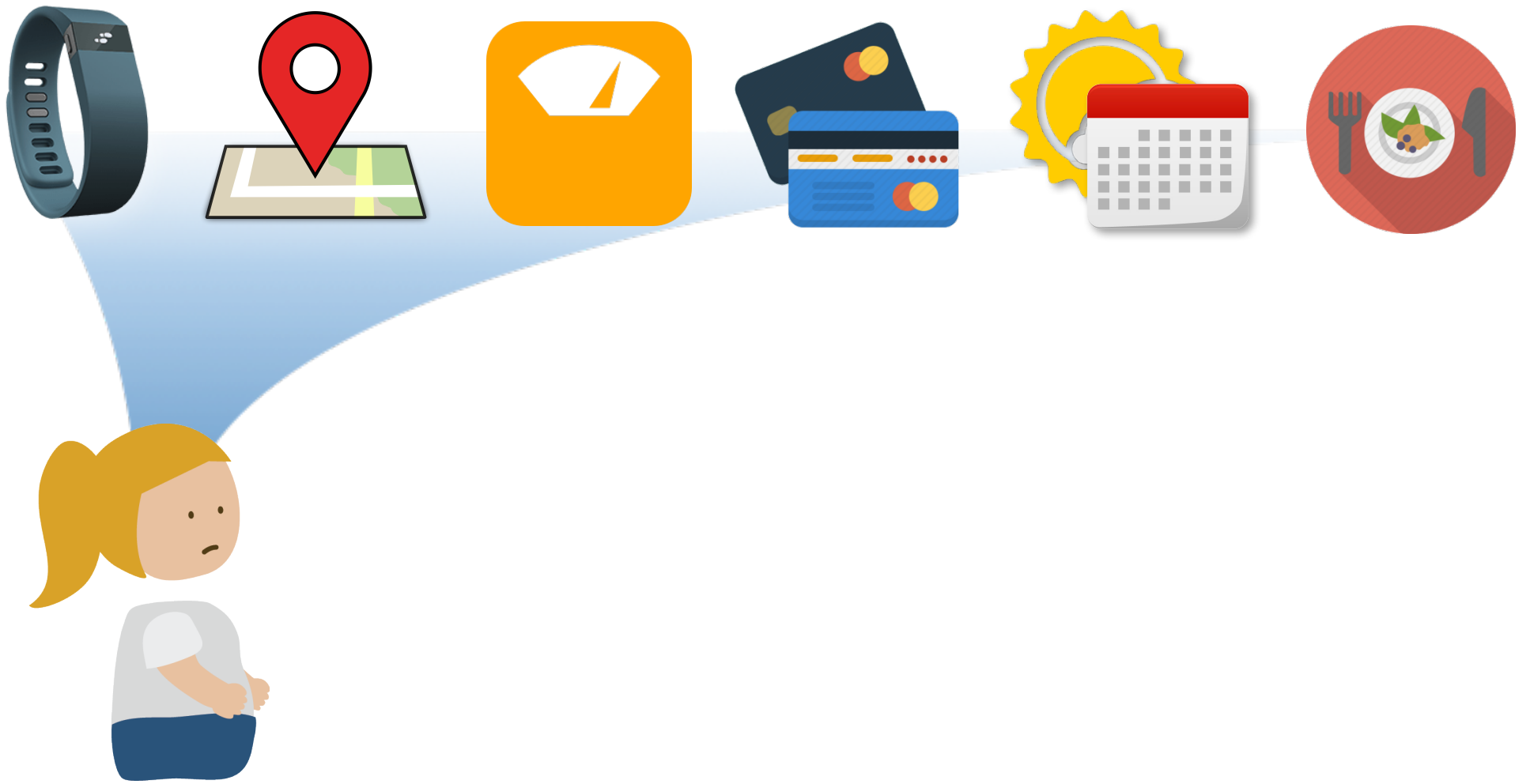# Lapses are common, and an underexplored opportunity for design.

Lapses are common, and an underexplored opportunity for design.

Not all lapses indicate a problem or a failure. The loss of telemetry does not always mean loss of action.
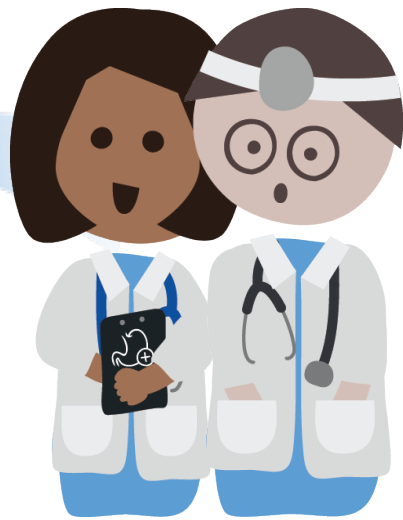
Assumption #4
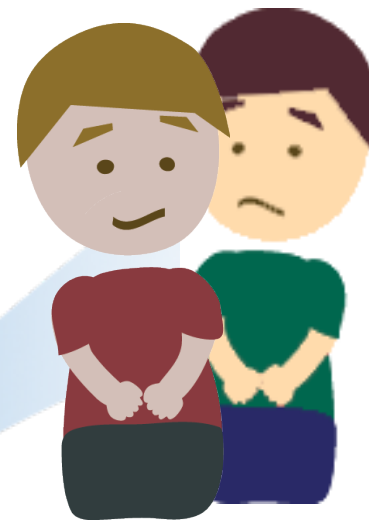# Self-tracking is *self*-tracking.

**Individuals**

Individuals
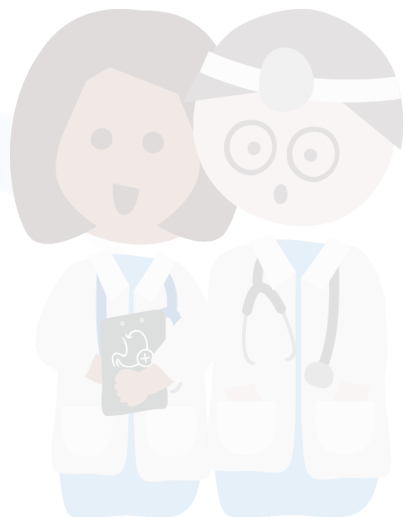
Medical Team
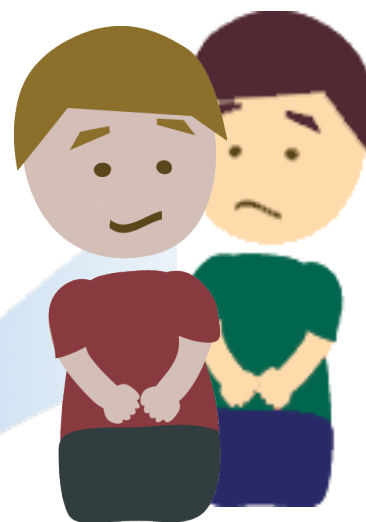
Peers &
support networks

Individuals

Medical Team

Peers &
support networks

# Many apps support sharing to social streams

**Just completed a 8.12 mi run with RunKeeper**
Duration 1:10:46 | Calories Burned 1281

Average Pace 8:43 / mi | Average Speed 6.88 mph | Elevation Climb 544 ft

Like · Comment · Track your fitness · 38 minutes ago via RunKeeper ·

Exploration: Social support in Online Health Communities & Facebook
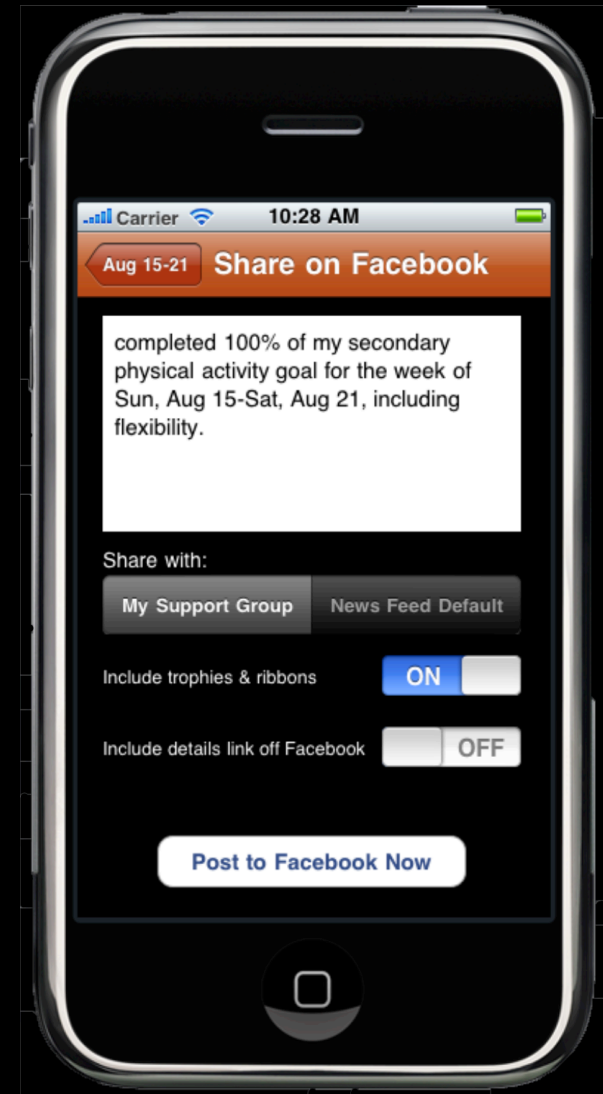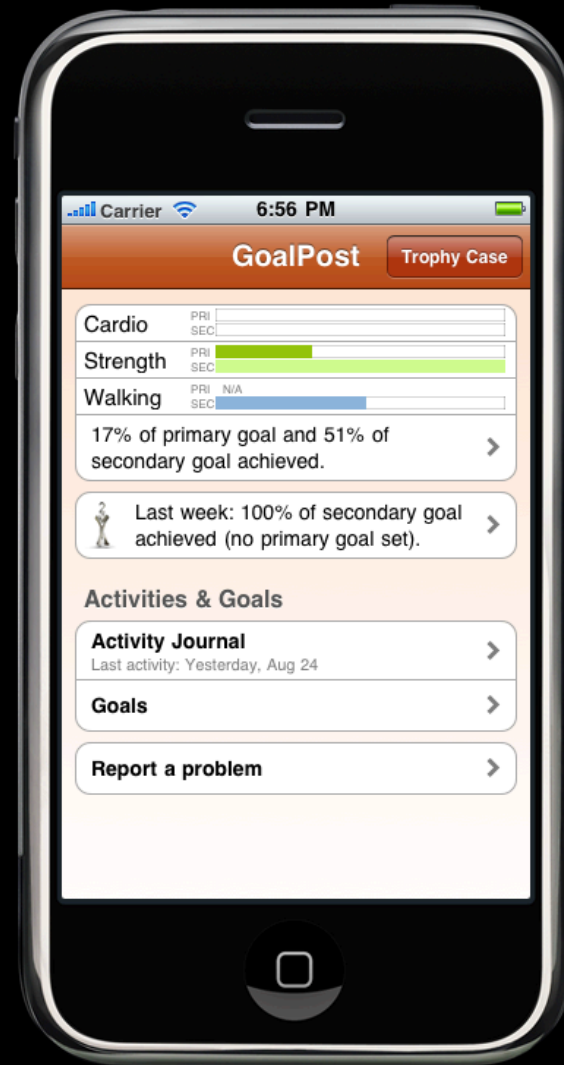
Newman MW, Lauterbach D, Munson SA, Resnick P, Morris ME.
"It's not that I don't have problems, I'm just not putting them on Facebook"…, *CSCW 2011*.

# GoalPost

1-month field deployment of physical activity tracking app
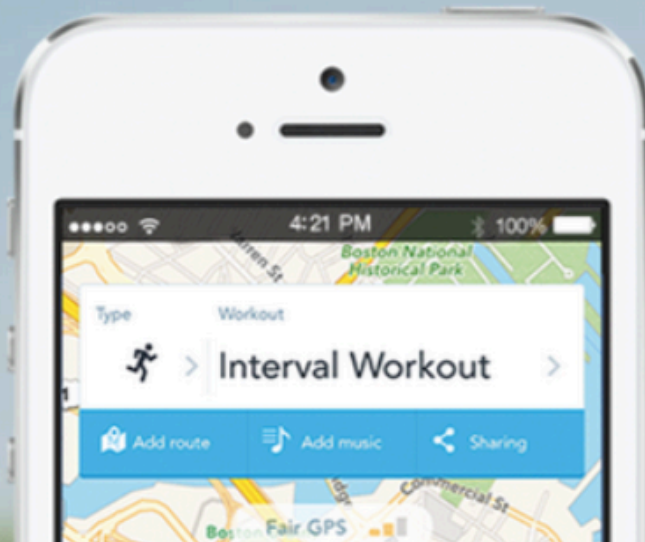
Munson SA, Consolvo S. "Exploring Goal-setting, Rewards, Self-monitoring, & Sharing to Motivate Physical Activity," *Pervasive Health* 2012.

# Review of sharing practices, experiments, and surveys with sharers and audience

Epstein D, Jacobson B, Bales E, McDonald D, Munson SA. *CSCW* 2014.
From "nobody cares" to "way to go!": A Design Framework for Social Sharing in Personal Informatics

# People seek support from friends & peers

- Accountability
- Emotional support: celebrate successes and commiserate struggles

- Information and advice
- Role models and inspiration

# emotional support from people who matter

I got a TON of comments…. Lots of people said they liked that, and they responded to that and congratulated me…

3GT participant

I didn't want everybody on Facebook knowing that my butt muscle hurt today.

Participant who shares struggles to OHCs

People are more confident in positive reactions from peers, but want to reach them where they are.

vs

They also seek to inspire and be inspired.

# managing impression

I kind of like to 'out' my running ability now... I really like to talk about my running on Facebook, because I'm so darn proud of it...

"They're just so surprised I'm running and they'll say like 'fantastic' and 'when are you going to run?' And so yeah, I'm getting the feedback I want. I'm finally getting... some positive feelings from those people that I couldn't get back in high school.

Interviewee

# posts can threaten others' impression

but I got people, you know, from my high school and that I am friends with that I haven't talked to in 25 years. And I have no desire for them to know about my weight issues or weight status.

GoalPost participant

# shares can antagonize friends

- Bore them
- Seem boastful
- Confuse them about what you want

Your friend does not have Facebook so she wants you to know that she ran 5.44 miles in 52 minutes and it felt good. Comments? Likes?

Really bro, no one cares.

Ugh.

Why would someone post this?

survey respondents

# emotional support from people who matter

… my friend liked my post, my *GoalPost*, and that **made me feel good** that she was at least looking at it.

Goal Post participant

# emotional support from people who matter …sometimes

> … my friend liked my post, my *GoalPost*, and that **made me feel good** that she was at least looking at it.
>
> She was **the only one** out of my whole support group that looked at it…. so I was kind of bummed. **I was disappointed in my friends…. Nobody cared**.

Goal Post participant

# appropriate "selfcasting" >> privacy

Munson SA. *Potentials 2011.*
"Beyond the share button: Making social network sites work for health and wellness."

DATA FETISH

These are default, auto posts.

They are not good posts.



lazydays
@lazydaydays

Follow

burned 136 calories doing 21 minutes of walking #myfitnesspal

1:24 AM - 8 Dec 2014



Cameron
@cameron36

Just posted a 7.02 mi run with @RunKeeper. Check it out!
http://rnkpr.com/a5sjetc #RunKeeper

12:17 PM - 8 May 2014

Providing even a tiny bit of context can elicit more support.

(also, people seem to like photos of shoes.)



**Taylor**
@taylorr

Watch my run right now with @RunKeeper Live- cheer me on! http://rnkpr.com/a5sjetc #RunKeeper

12:17 PM - 8 May 2014

**Kendall**
@run_kendall

Just posted a 5.74 mi run - first training run for my half! http://rnkpr.com/a5sjetc #RunKeeper

12:17 PM - 8 May 2014



**Cameron**
@run_cameron
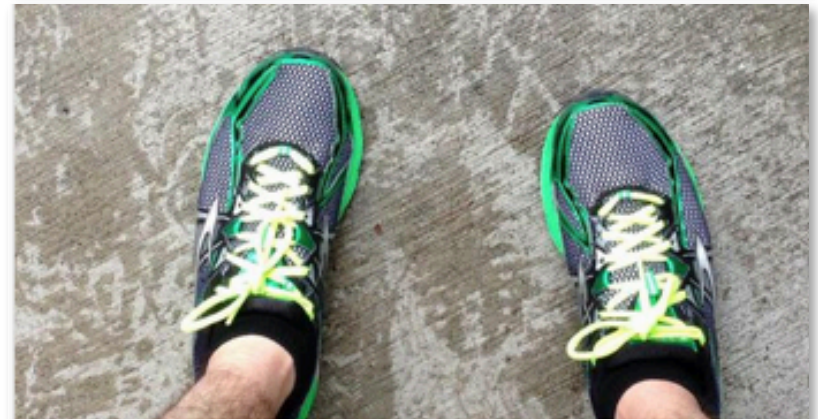
Watch my run right now with @RunKeeper Live- happy to go running! http://rnkpr.com/a5sjetc #RunKeeper

Providing even a tiny bit of context can elicit more support.

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**Taylor** @taylorr
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12:17 PM - 8 May 2014

**Cameron** @run_cameron
Watch my run right now with @RunKeeper Live- happy to go running! http://rnkpr.com/a5sjetc #RunKeeper

# tests of design principles

- Providing audience with context, structured ask

- Avoiding the data fetish

Can we combine goals and monitoring to generate support and accountability?

**COMMIT TO STEPS**

Welcome back, **Paul!**
Logout · FAQ · Change sharing settings
Submit an injury or illness

## Progress Report

**You committed to walk at least 3400 steps per day on at least 4 days this week.**

### Your progress

**1** day completed
3 to go

last upload May 19, 6:10AM

**3591** steps today
191 above target!

### Your walking history



May 5 to May 11 | May 12 to May 18 | May 19 to May 25
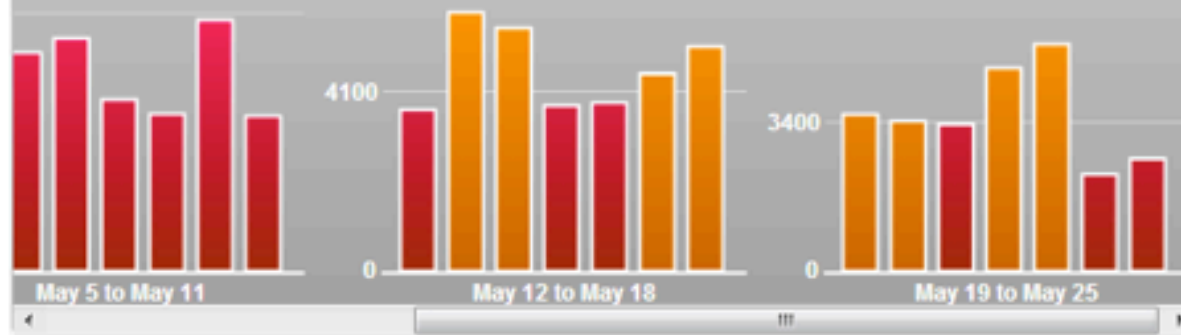
4100

3400

### Your commitment history

| Week | Daily target | Committed days | Successful days |
|------|------|------|------|
| May 19 - May 25 | 3400 | 4 | 4 |
| May 12 - May 18 | 4100 | | 4 |

- Algorithmically set daily target

- Participants optionally commit to how many days that week they will strive to achieve it

Met my commitment last week. Yay! 5 days over my daily steps target, just like I said I would.

Next week's commitment (week 7): 5 days over 10000 steps. Please encourage me or, better yet, walk with me.

Like · Comment · Promote · Share

and 6 others like this.

Go ⬛ !
September 24 at 6:31am via mobile · Like

Thanks, everyone! The treadmill desk makes it a lot easier to hit 10K in a day. But I did go running once last week...
September 24 at 4:05pm · Like

Write a comment...

## Three Versions

| | Goal | Outcome |
|---|---|---|
| Private | 🔒 | 🔒 |
| Announce goal | facebook | 🔒 |
| Announce goal and results | facebook | facebook |

# Results

- Public posts about goals and outcomes were met with emotional, informational, and instrumental support

- People in the public outcome condition were less likely to set a commitment, but, if they set one, more likely to achieve it

- Novelty wore off over 12 weeks – people received fewer likes and comments with time.

# tests of design principles

- Providing audience with context, structured ask

- Avoiding the data fetish

Your friend does not have Facebook so she wants you to know that she ran 5.44 miles in 52 minutes and it felt good. Comments? Likes?

A wealth of information creates a poverty of attention, and a need to allocate that attention efficiently among the overabundance of information sources that might consume it.

- Herbert Simon

Unanalyzed data are
worse than no data.

- Margaret Mead

Food journals can help people eat healthier and tune their diet.

Food journals can help people eat healthier and tune their diet.

but...
- they are high-burden
- they can feel judgy
- they can nudge people to eat things that are easier to log.
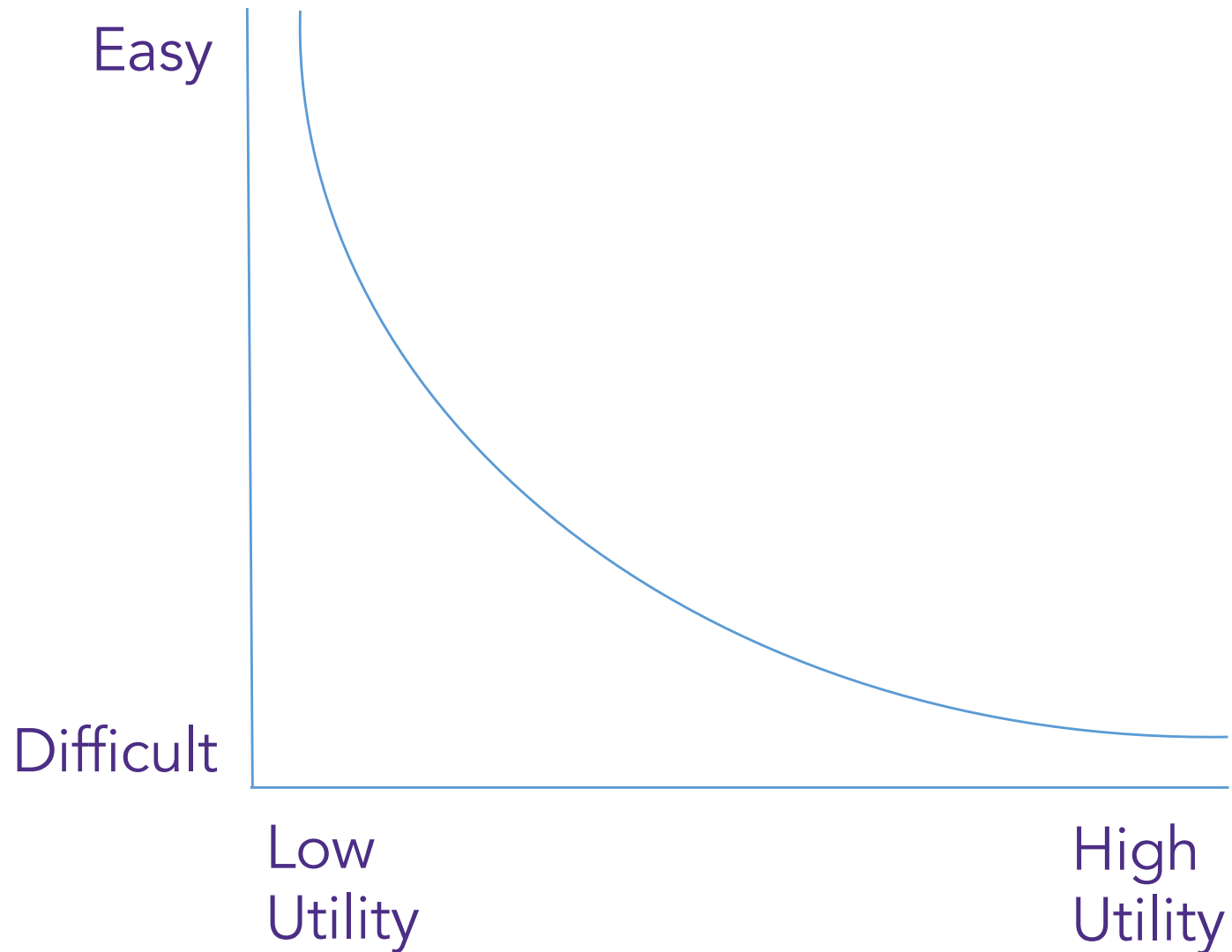
Is there another way?

flickr: Timothy Vollmer

Photo-based food journals

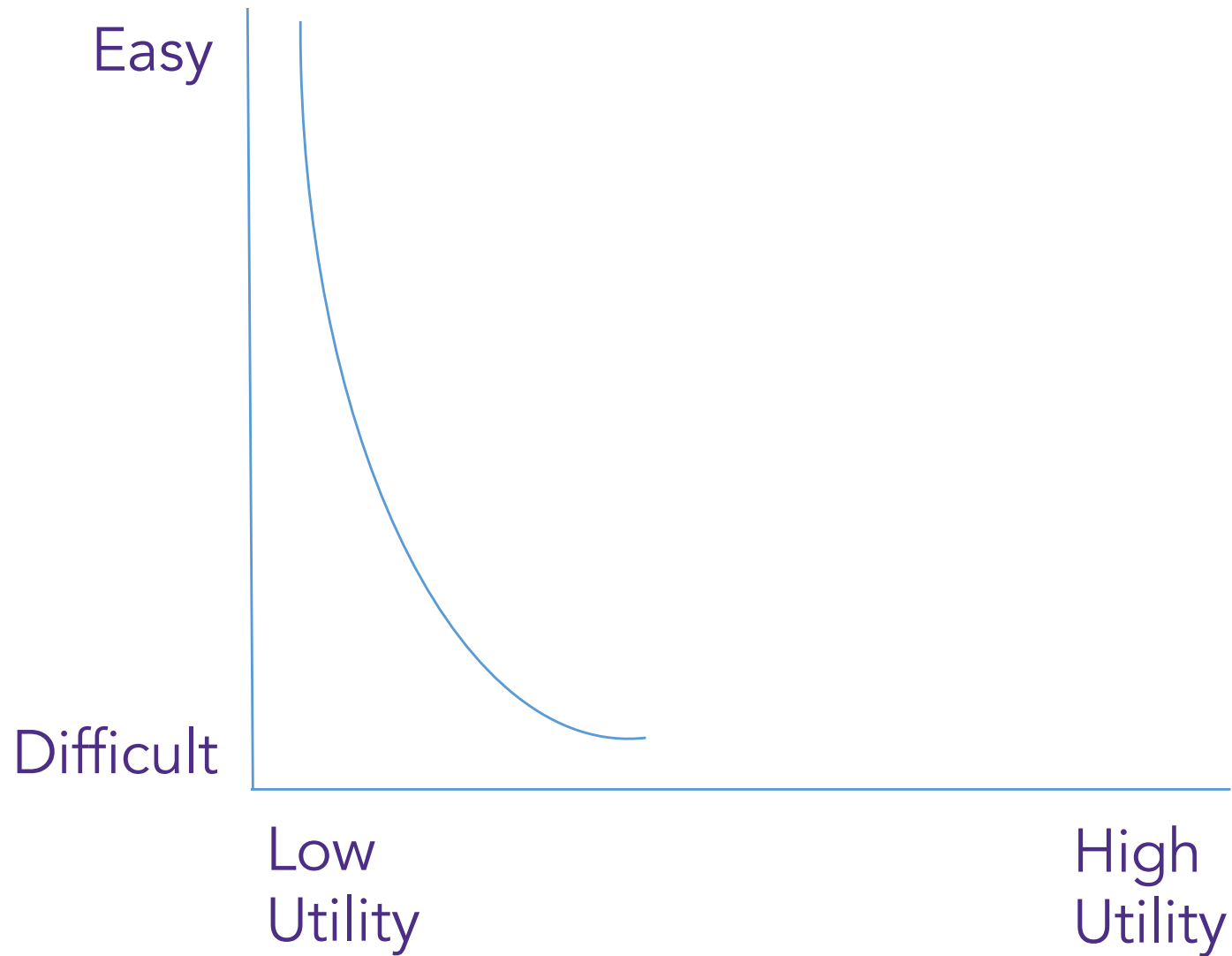Lower burden than traditional food journals, without many of the "negative nudges."
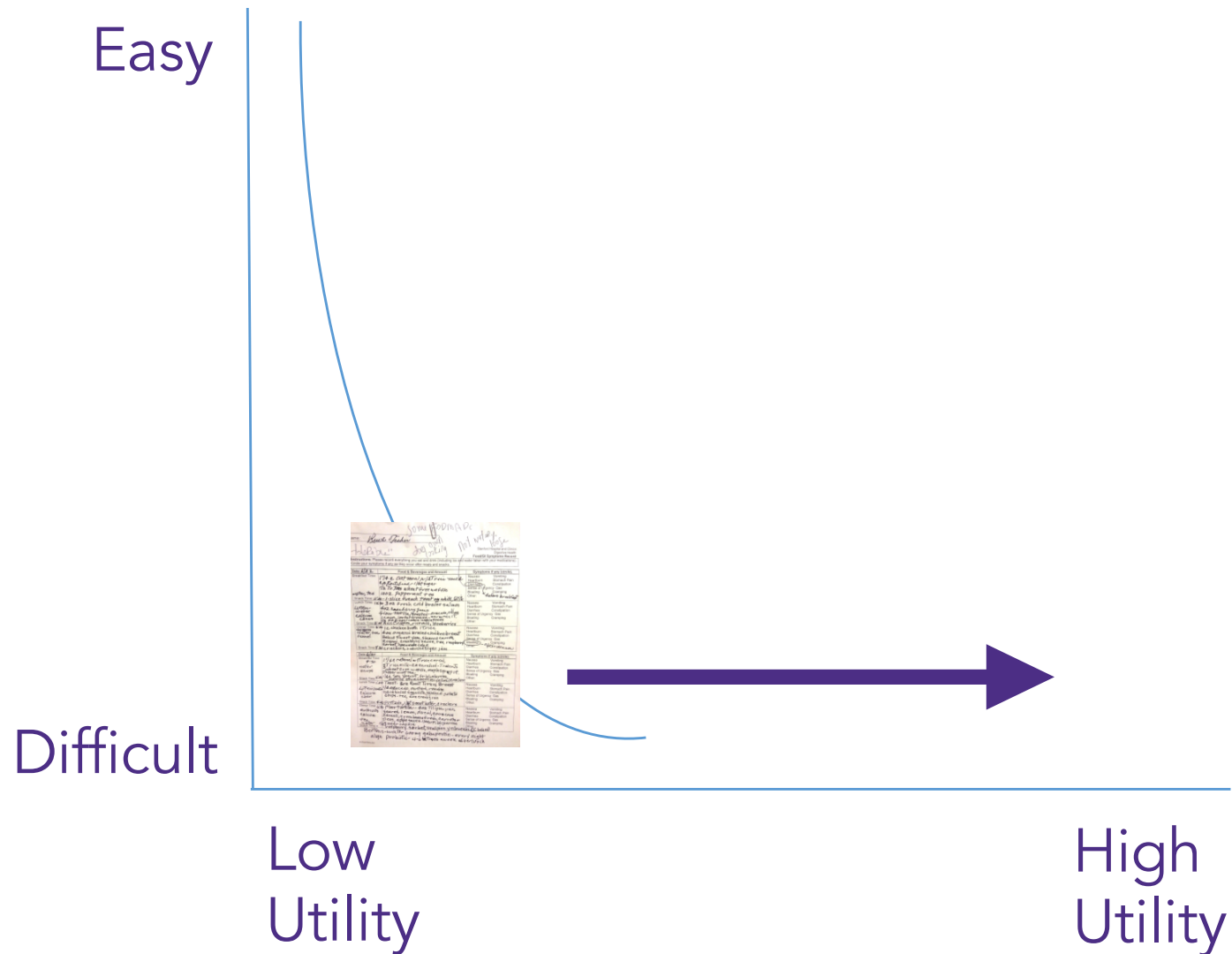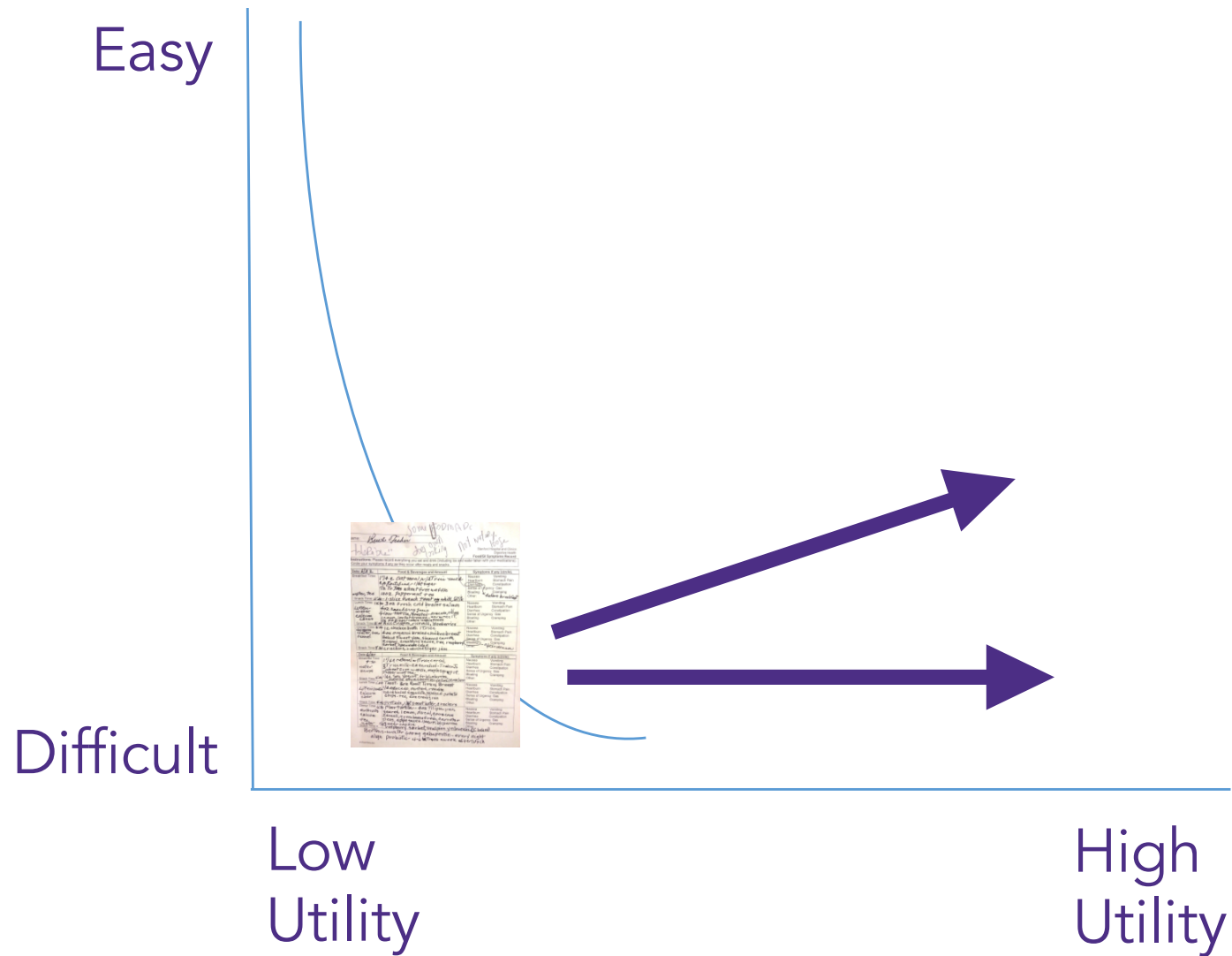
# A Trade-Off Between Effort and Utility

# A More Realistic Notion of Where We Are

# A More Realistic Notion of Where We Are

Easy

Difficult

Low
Utility

High
Utility
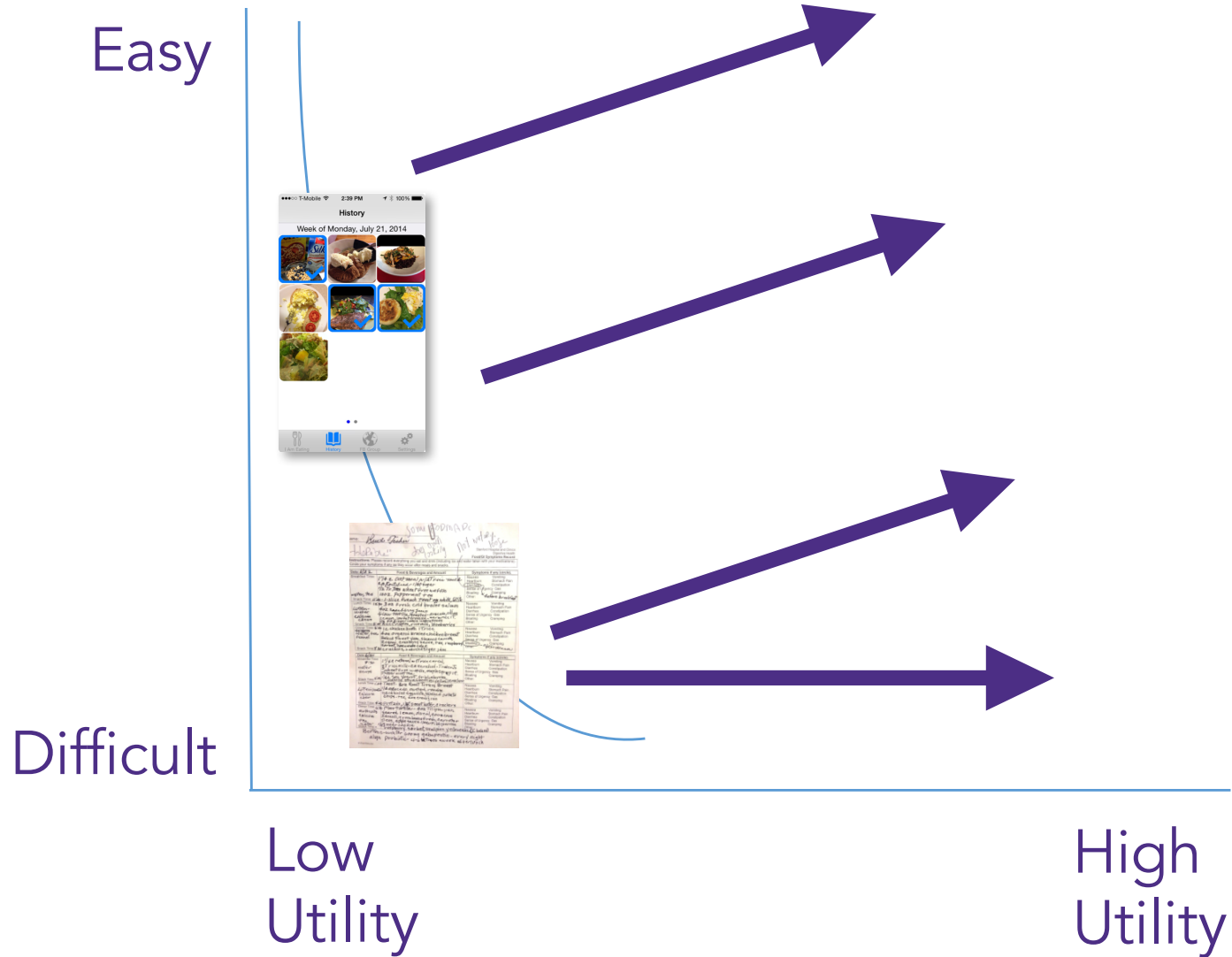
# A More Realistic Notion of Where We Are

# We should be pushing on the whole curve
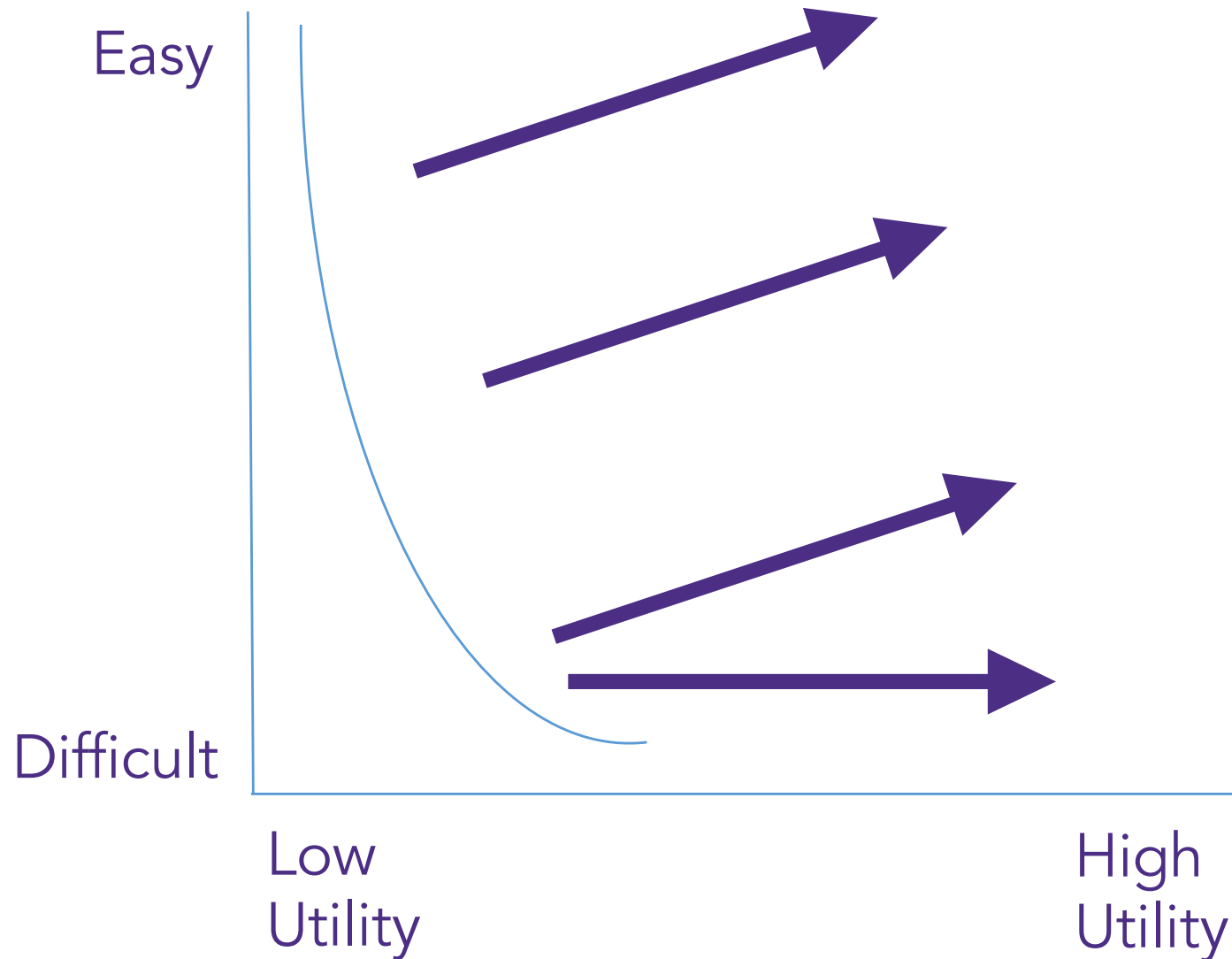
# We should be pushing on the whole curve

# History

## Week of Monday, July 21, 2014
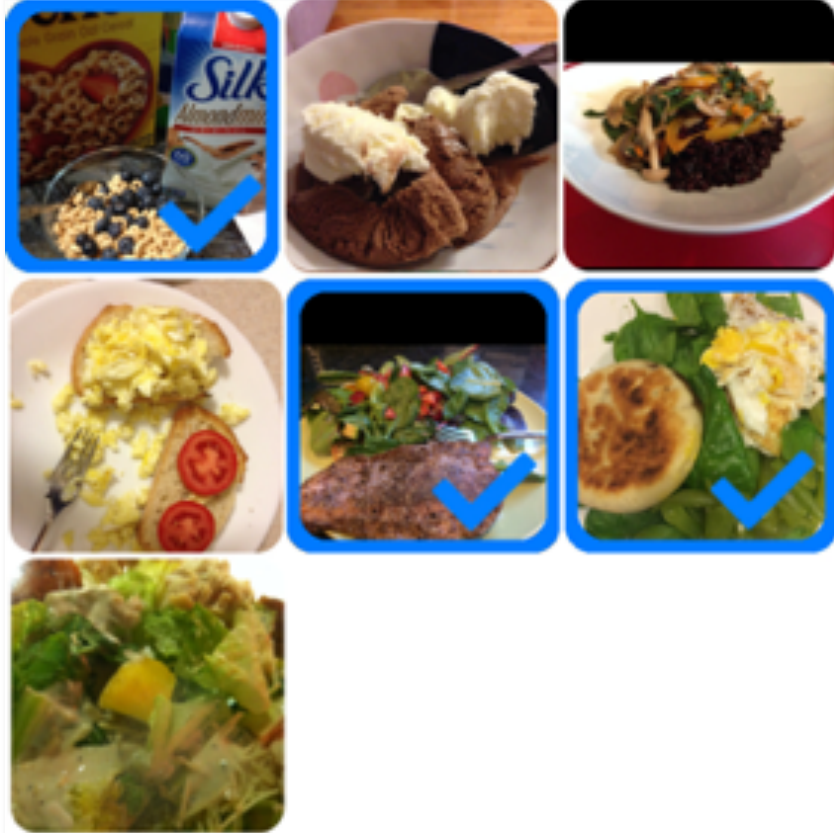


**Food4Thought**

# History

| | |
|---|---|
| **Thursday July 24** | Eat something that is good for your eyes. |
| **Wednesday July 23** | Eat something containing no carbs. |
| **Tuesday July 22** | Eat something cooked in a healthy oil. |
| **Monday July 21** | Eat something that is good for your immune system. |
| **Sunday July 20** | Eat something high in vitamin D. |
| **Saturday July 19** | Eat something that contains monounsaturated fat. |

Four versions

Social features | No social features

Nutrition challenges

Non-nutrition challenges

# Nutrition challenges

Nutritionally prescriptive, serious, conventional

- Eat something high in fiber
- Eat something with at least 20 grams of protein
- Eat something that is good for your eyes

# Non-nutrition challenges

fun, curiosity inspiring, random, varied

- Eat something that is yellow
- Eat something that an elephant would eat
- Eat something that reminds you of your high school years

**Social features**



Arugula!

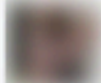Todays Challenge: Eat something that starts with the letter 'A'.

Like · Comment

and like this. ✔ Seen by 21

Nice! I was getting bored of the apples 😋 I'm trying to think of something else A-related for my post!
· Like

Haha, we (including myself) have all been quite creative with our apple submissions.
· Like

## Nutrition challenges
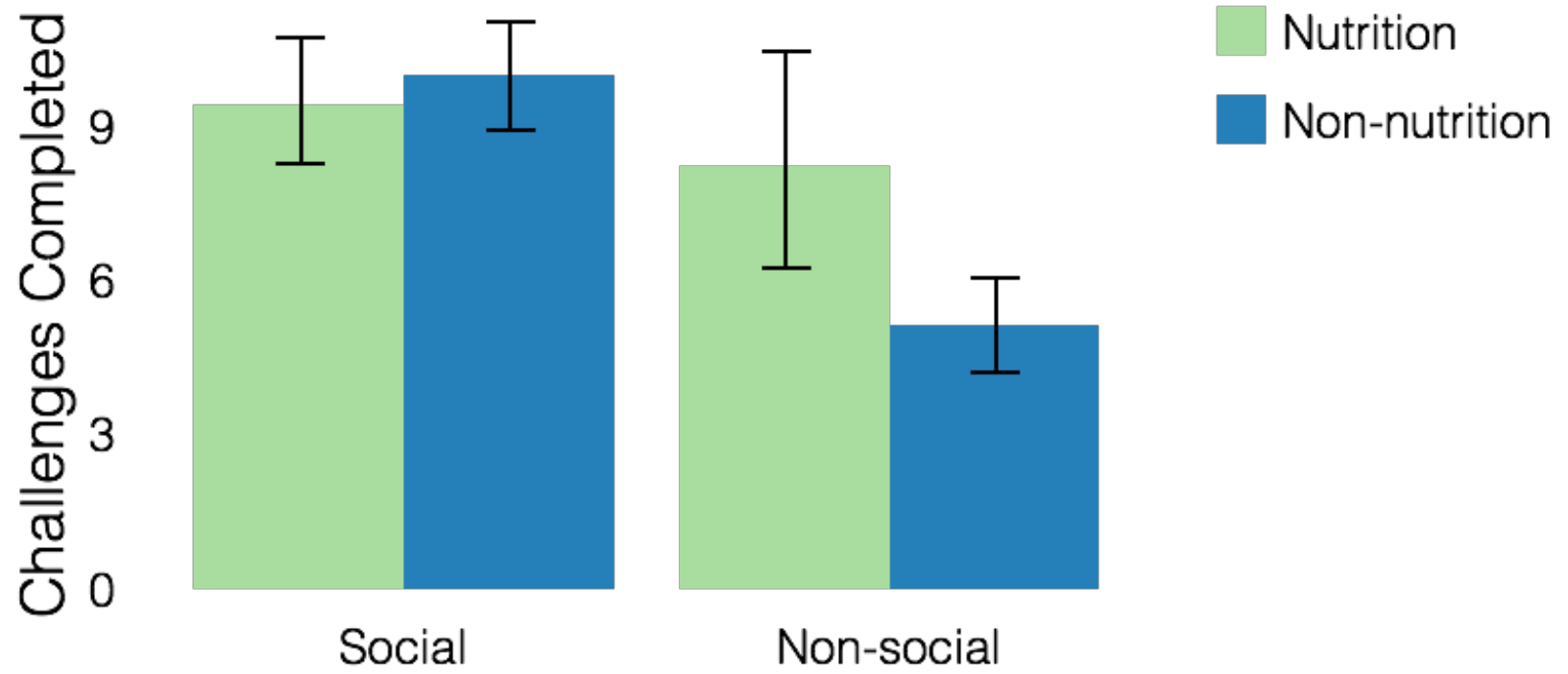
- Higher engagement
- More judgy

## Non-nutrition challenges

- Greater gains in food mindfulness
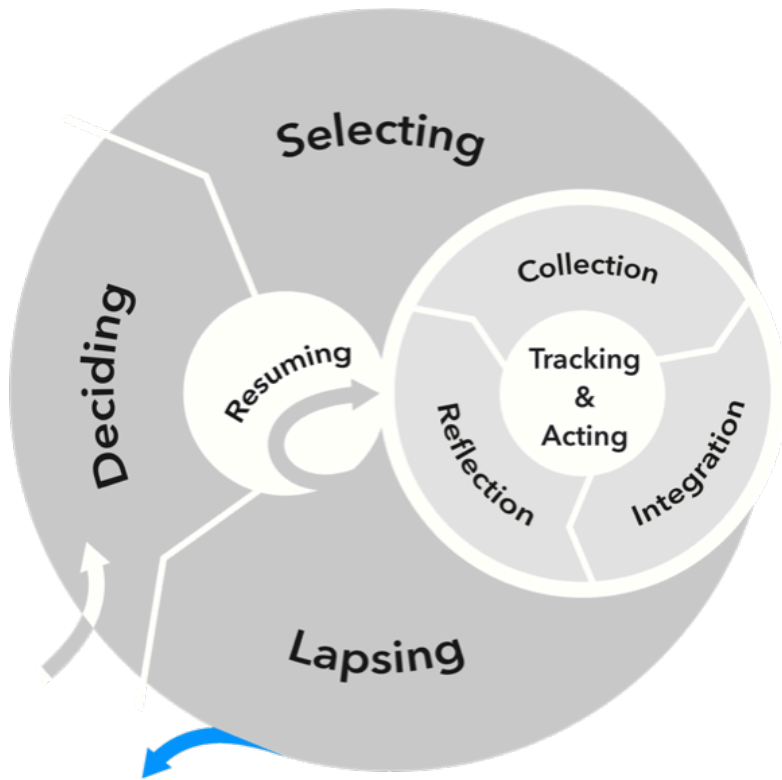- Challenges and activity felt more arbitrary

## Social features

- Completed more challenges
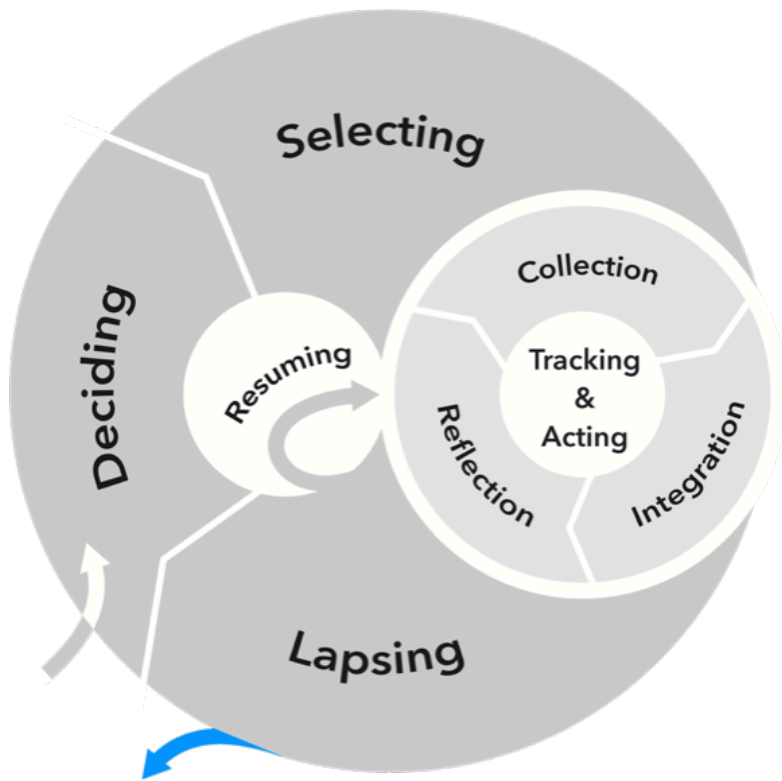- Less likely to use the app to record other foods

People (try to) enlist peers,
family, friends, & experts for help.
Families track together.

Data-first presentations rarely work.
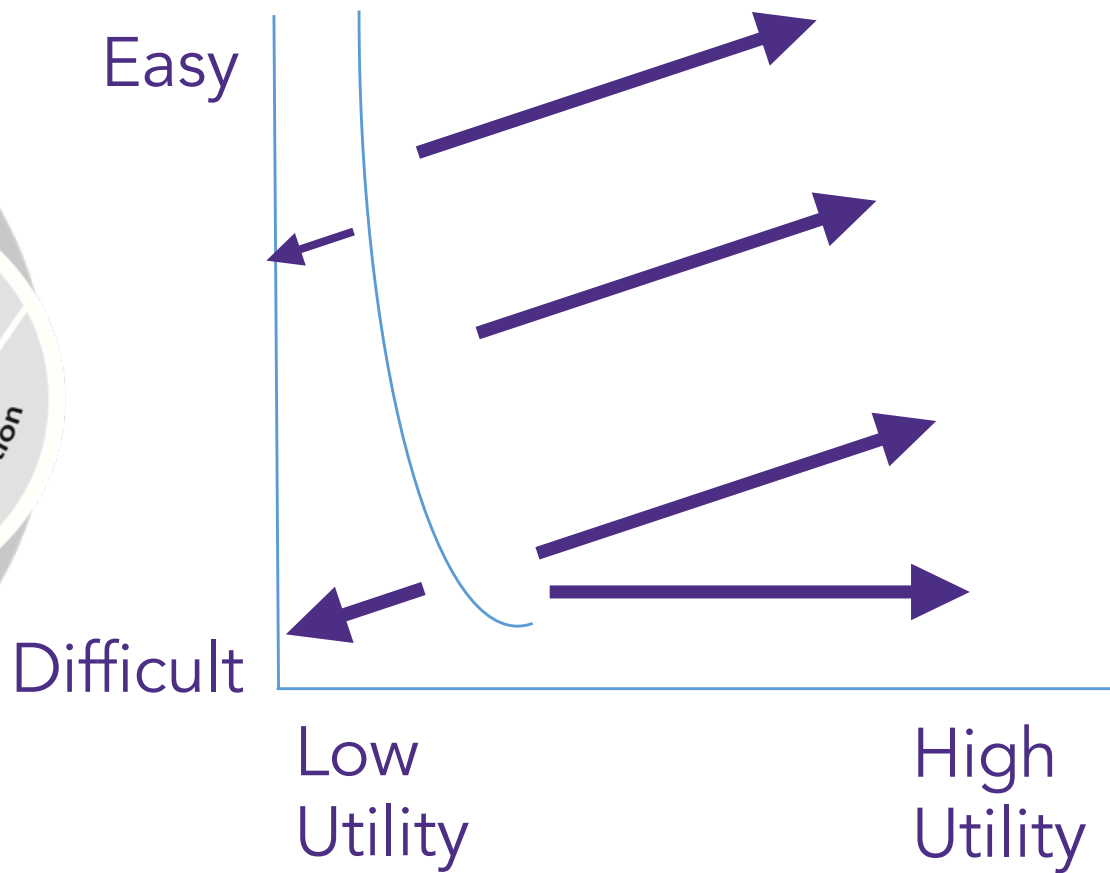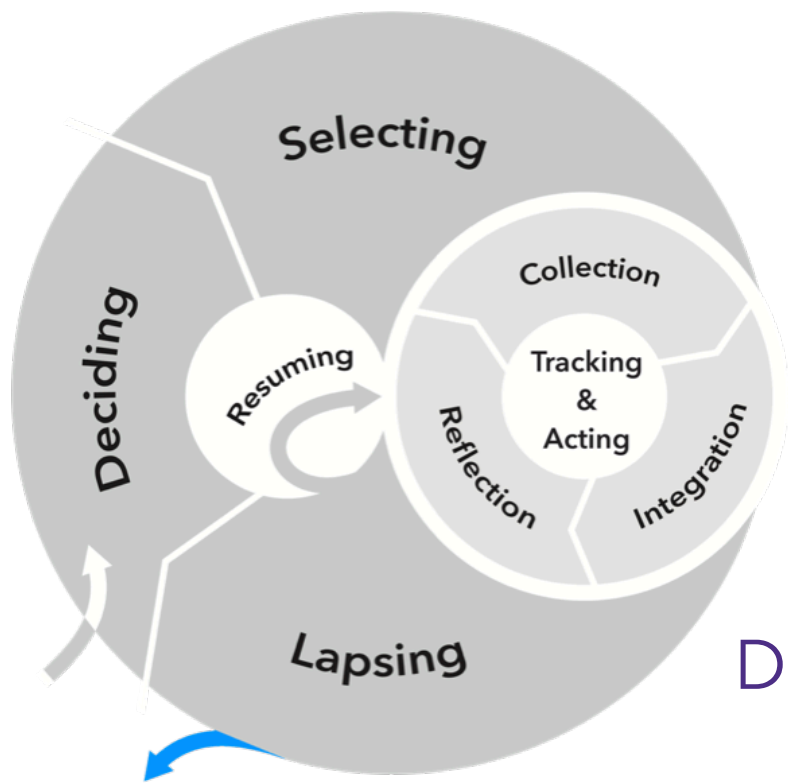What is the minimum viable data for an
experience?

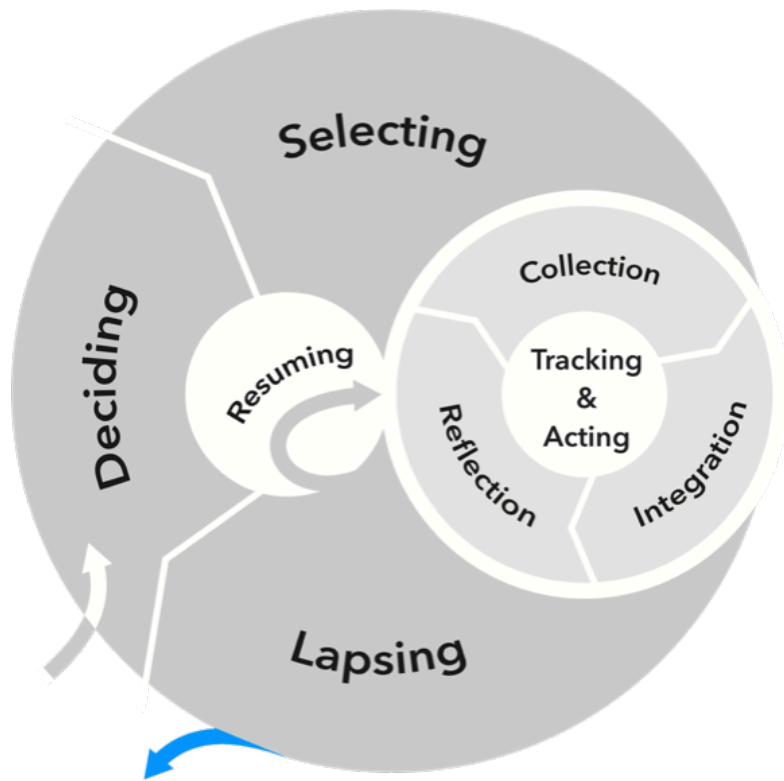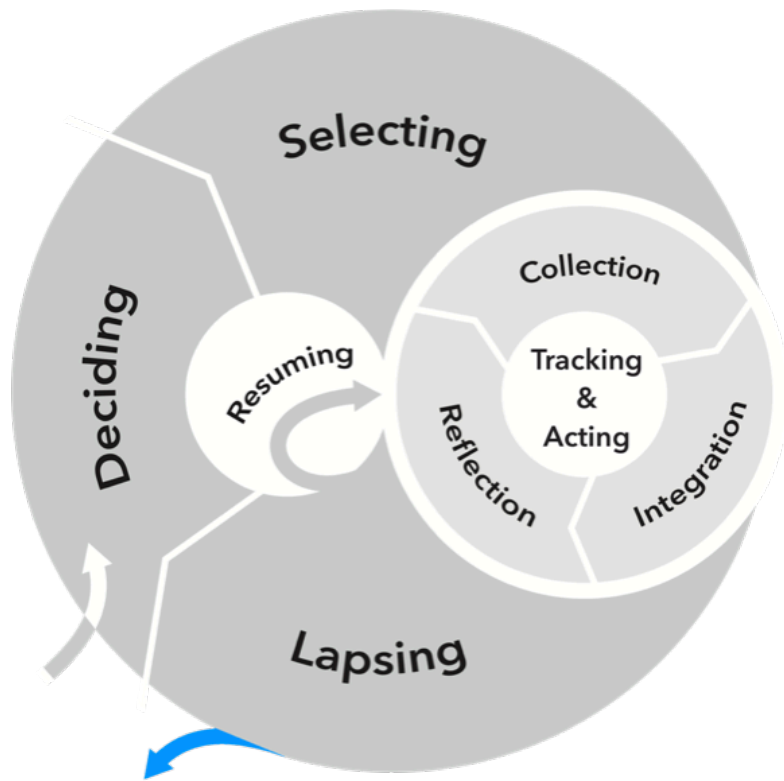1. People have varied goals, with varied use patterns.

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4. Effective sharing requires more than just the data we can sense.

# Sharing traces: Barriers & Facilitators to Getting Support and Accountability

Sean Munson · smunson.com · @smunson

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# Sharing traces: Barriers & Facilitators to Getting Support and Accountability

Sean Munson · smunson.com · @smunson

Many collaborators, but especially PhD students who lead the projects:

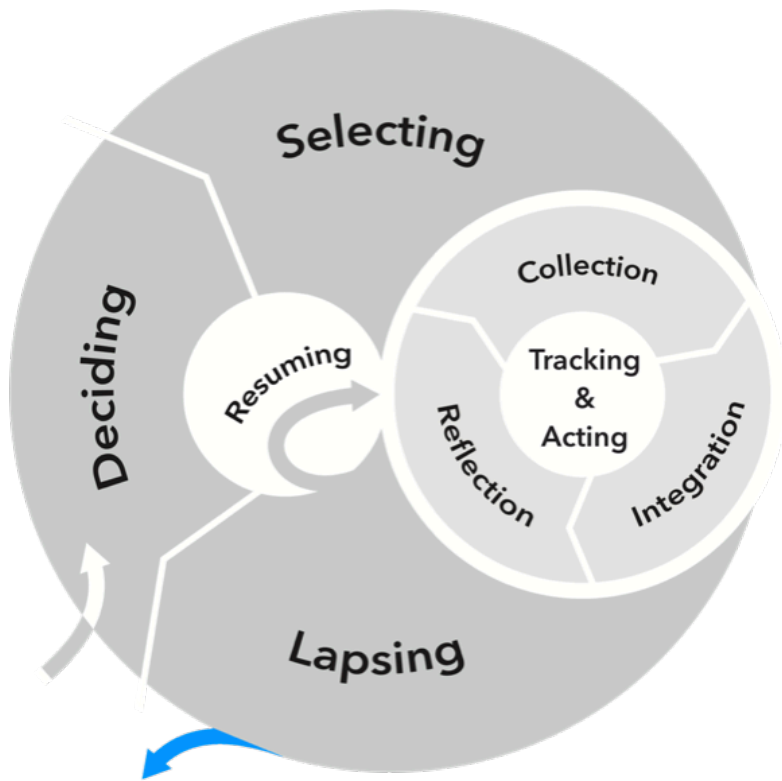| Daniel Epstein | Christina Chung | Elena Agapie | Jessica Schroeder | Ravi Karkar | Jane Hoffswell | Ruben Gouveia |

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