

Mapping and Taking Stock of the Personal Informatics Literature

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PIE Lab

**Personal
Informatics
Everyday**

HAI

Health and Information
UC Irvine



Personal informatics systems collect personally relevant information for self-reflection and self-knowledge

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



Consolvo, Klasnja, McDonald, Avrahami, Froehlich, LeGrand, Libby, Mosher, Landay. *Flowers or a Robot Army? Encouraging Awareness & Activity with Personal Mobile Displays*. UbiComp 2008

10-year impact award winner



21% of U.S. Adults regularly use wearable activity trackers

<https://www.pewresearch.org/fact-tank/2020/01/09/about-one-in-five-americans-use-a-smart-watch-or-fitness-tracker/>

Reviewing publications

Total: **523** publications



332 publications



98 publications



147 publications

53 indexed by more than one source



Daniel Epstein
@daepstein



Working on the [@ubicomp](#) presentation for our paper mapping the personal informatics lit. Rather than rehash our thoughts, I'd rather incorporate the community's perspectives. What phenomena/circumstances/domains should we study more?



Daniel Epstein @daepstein · Nov 16, 2020

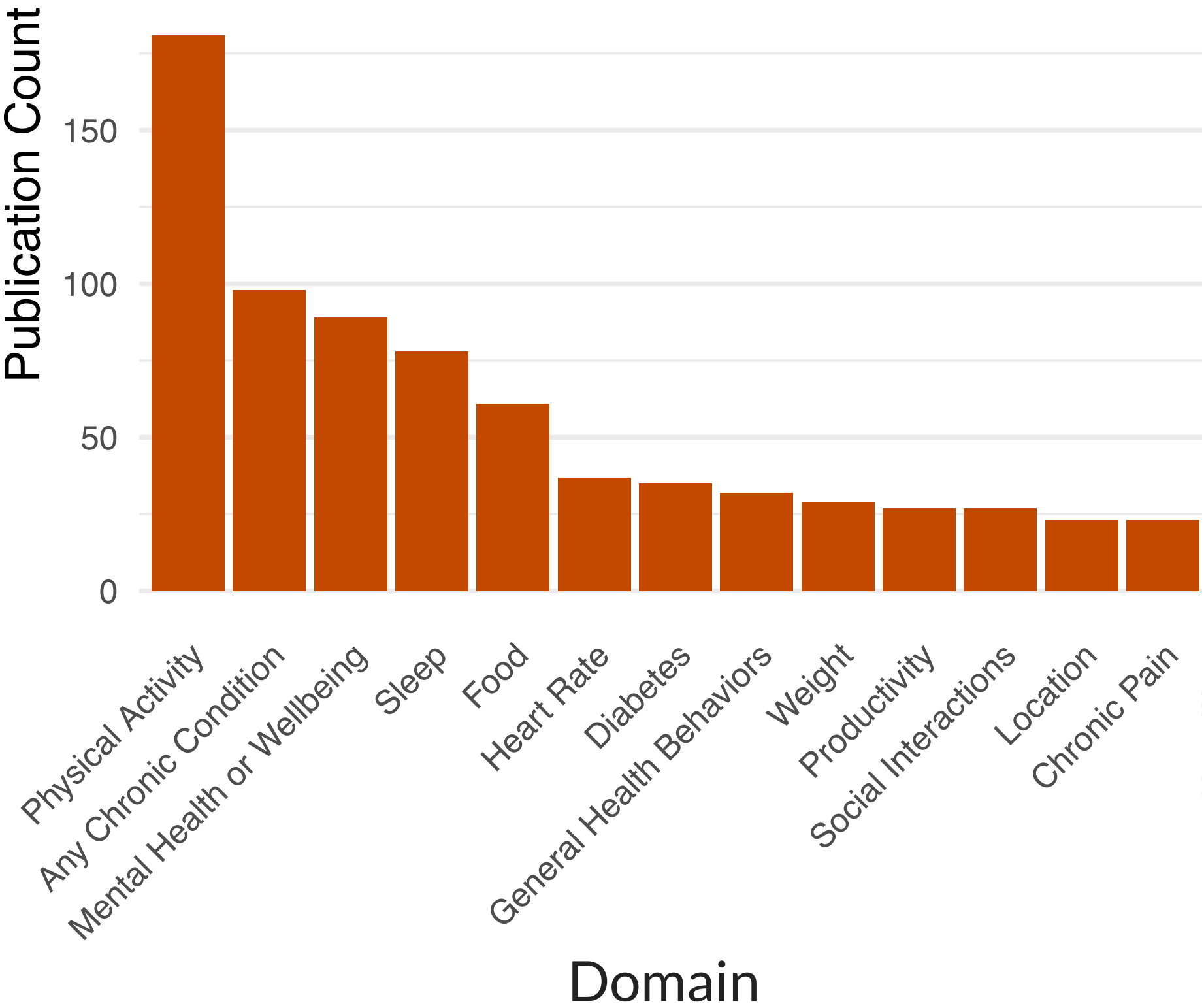
Our upcoming #IMWUT @ubicomp paper maps areas of study in 523 personal informatics papers to point to opportunities for future research. Preprint available at depstein.net/assets/pubs/de..., and you can browse the papers we tagged at personal-informatics.depstein.net. A few key takeaways: (1/8)

[Show this thread](#)

2:04 PM · Jul 28, 2021 · Twitter Web App

6 Retweets 24 Likes

Considering tracking domains



Christina Chung @sweetflute · Jul 29

Something I've been thinking about:
what "counts" as personal data? There are lots of experiences that are very hard to capture but are very important/insightful to people.



Health & wellness: **83%** of publications
Physical activity: **35%** of publications

Considering tracking domains

Recommendation:
expand to study
other widespread
& crucial domains



Personal
finances



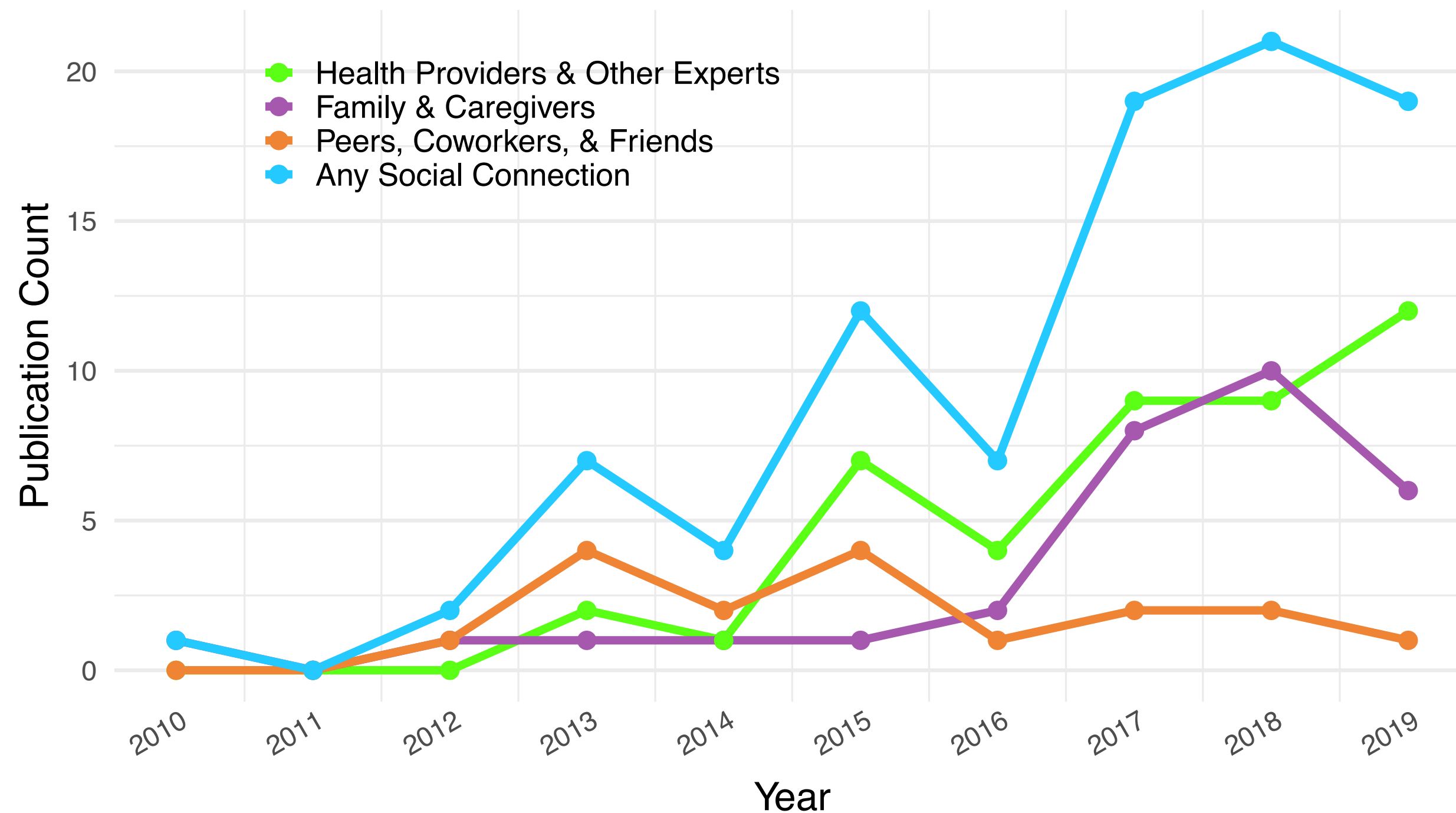
Sustainability



Sarita Schonebeck @syardi · Jul 29
I'll chime in from left field. It'd be intriguing to bridge social media influencer/creator self tracking with personal informatics lit. So many people stringently tracking their social media behaviors and metrics—strong links to wellbeing, self-esteem, physical health, burnout...



Examining social roles



Increasingly studying and designing for multiple stakeholders



Sean Munson @smunson · Jul 28

Negotiating use of personal data across settings continues to be not-well-solved even as it becomes more possible. We see this in health/health insurance and coaching, and I'm sure in other contexts if we look.

1



7



Herman Saksono @hermansaksono · Jul 28

Is personal informatics personal or also social? And how can we accommodate these two differing "realms"?

2



3



Dr. Julie Kientz @juliekientz · Jul 29

More on understanding collective tracking, e.g., within families, workplaces, team sports, etc.

1



3



Designing tracking tools



Jon Froehlich @jonfroehlich · Jul 29

The intersection of **PI and disability** and the tendency for trackers to encourage normative trends rather than those personalized for unique bodies and abilities.



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6

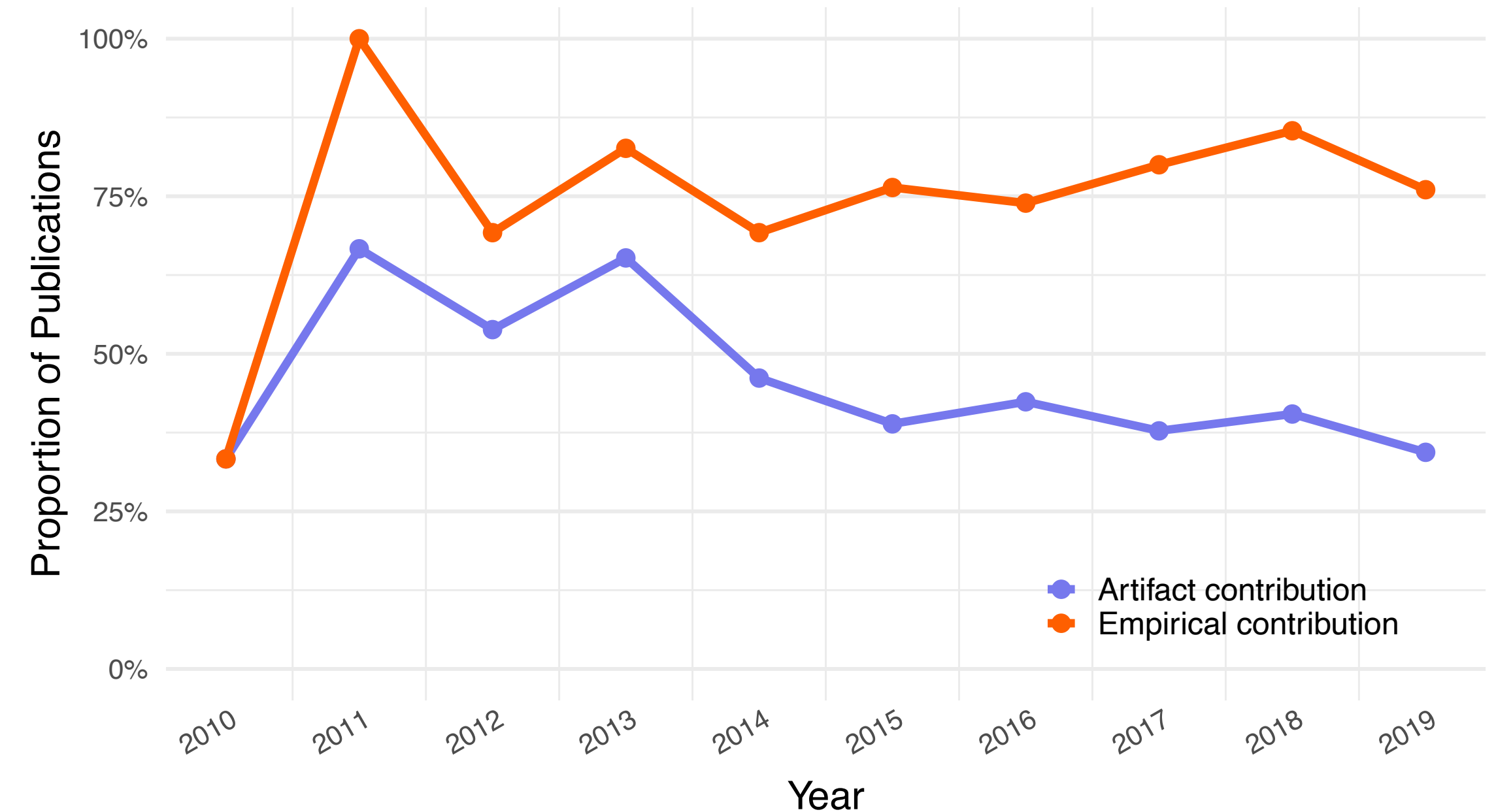


Eun Kyong Choe @slowalpaca · Jul 29

I've been recently thinking & pursuing the intersection between accessibility and personal informatics & **how/whether personalization features are enough or whether we should re-envision from scratch**. One option is leveraging multimodal interactions to support people with different abilities interacting with data.



3



Recommendation: promote more artifact contributions (demos, efficacy evaluations, lower fidelity)

(Re-)examining core self-tracking problems



Katie Siek, Ph.D. @katiesiek · Jul 29
Sensemaking vs. confirming biases of data...
how could we do that when our samples
are still fairly small? Especially on sensitive topics
related to fertility, transitions, etc.

1 1 4 1



Dr. James Landay @landay · Jul 29
Why are interfaces still so analytical?

1 1 3 1



Matthew Kay @mjskay · Jul 28
I left behind uncertainty communication stuff
in personal informatics but kept working on it
in other domains. Maybe others kept working
on it in that space?

1 1 3 1



Ian Li @ianli · Jul 29
Reflection is part sensemaking and part storytelling.
When data tells something about ourselves, how do
we integrate it with self-stories? What are the pros
and cons of personal informatics on mindfulness?

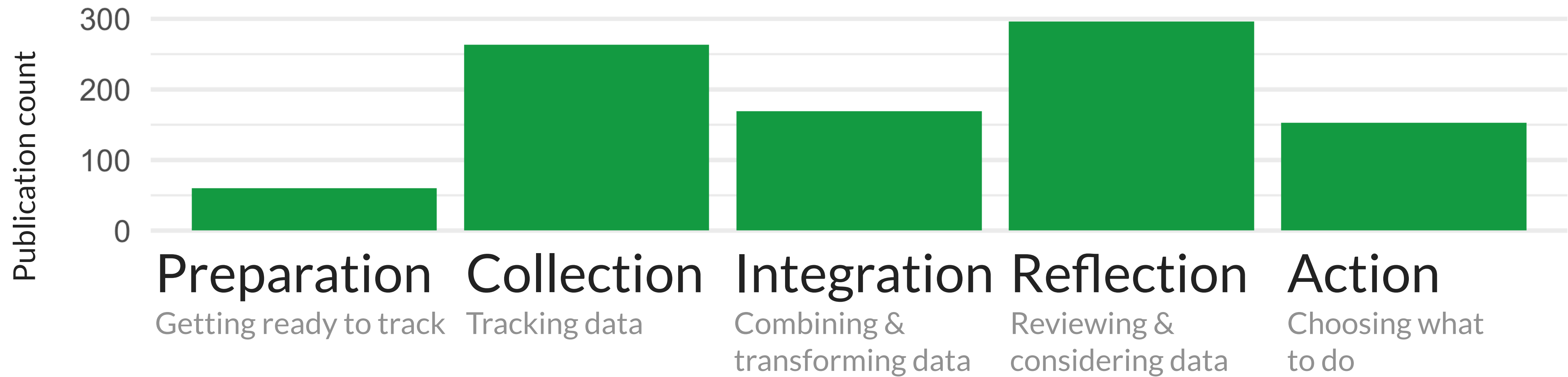
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Edison Thomaz @ethomaz · Jul 30
A question I'm still interested in: how do derive
deeper insights from PI beyond the low hanging fruit?

1 1 4 1

(Re-)examining core self-tracking problems



Recommendation: examine other stages alongside improving collection & reflection

Building population-level understanding



Dr. Julie Kientz @juliekientz · Jul 29

Understanding disparities within tracking - **Fitbit likely has loads of data, but it's hardly a representative sample** - should we be drawing any conclusions from that data set? Who would be left out of that dataset and why?



Jon Froehlich @jonfroehlich · Jul 29

The researcher in me does love the *possibility* of studying behavioral phenomena on a large scale as enabled by trackers, **but this introduces its own issues of who has access to this data to be able to conduct these sorts of analyses** (typically companies like Google, Apple, etc., but would they share?)



Sean Munson @smunson · Jul 28

Additionally, **mediating between personal measurement and population-level understanding continues to be more of a dream than reality**, especially with respect to practical rather than research uses.



Addressing surveillance concerns



Chris Elsden @ElsdenChris · Jul 29

One thing I've wondered about since working in this area is the role of PI tools r.e. Surveillance Capitalism. **Are there sustainable business models for PI products / devices that are not solely based on extracting value from users data?** And do users care?



1



2



Jon Froehlich @jonfroehlich · Jul 29

Business models. **Is it inevitable that all trackers eventually default to surveillance capitalism?** Fitbit being acquired by Google, Runkeeper by ASICS, etc. The most overt are companies or services like Progressive SnapChat that may coerce folks—particularly those most financially vulnerable—into receiving discounts at a cost of giving up their privacy and personal data.



1



4



Discussed in design
of a system: **73 papers**

Discussed in
study findings: **90 papers**

Recommendation:
propose more solutions
& alternate models

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Recommendations for the field:

- expand to study other widespread & crucial domains
- promote more artifact contributions
- examine other stages alongside improving collection & reflection
- propose more privacy-preserving solutions & alternate business models

 <http://personal-informatics.depstein.net/>

 [@daepstein](https://twitter.com/daepstein)

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We thank Elena Agapie, Christina Chung, Ravi Karkar, Jessica Schroeder, and our anonymous reviewers for their feedback. This work was funded in part by the National Science Foundation under award IIS-1850389.

Additional thanks to Eun Kyoung Choe, Christina Chung, Chris Elsdén, Jon Froehlich, Matthew Kay, Julie Kientz, Ian Li, James Landay, Sean Munson, Edison Thomaz, Herman Saksono, Sarita Schonebeck, Katie Siek, and everyone else for your Tweets!