

Follow the User?!

Data Donation Studies for Collecting Digital Trace Data

Session **1** : Welcome & Intro to Digital Traces

Frieder Rodewald (University of Mannheim) & Valerie Hase (LMU Munich)

👉 Part of the SPP DFG Project [Integrating Data Donations in Survey Infrastructure](#)

Agenda

1. Intro to the workshop
2. What is digital trace data?
3. How can we collect digital traces?



Image by Hope House Press via Unsplash

1. Intro



Source: Image by Markus Winkler via Unsplash

Who are you?

Please raise your hand 🙋 if you

- are familiar with the term digital trace data
- have worked with APIs
- have worked with data donation
- have worked with automated content analysis
- regularly use programming languages (e.g., R, Python)

About us: Frieder Rodewald



PhD, University of Mannheim (DFG project on data donation)

Research interests:

- CSS (automated content analysis, digital traces, bias)
- Privacy concerns & behavior

More info: github.com/frodew & frieder-rodewald.de

About us: Valerie Hase



Akademische Rätin a. Z./Postdoc, LMU Munich (prev.: University of Zurich & LSE)

Research interests:

- CSS (automated content analysis, digital traces, bias, data access)
- Digital journalism, crisis communication






More info: github.com/valeriehase & valerie-hase.com

A big thank you to the organizers

Shoutout to the organizers behind the 7th COMPTExT, especially

- Fabienne Lind
- Veronika Ebner
- Marcin Stecker

What is the goal of this workshop?

-  Understanding digital data traces as a *type* of data
-  Understanding data donation as a *method* of data access
-  Working through key steps of data donation methods (user & researcher view)
-  Discussing when (not) to use data donation studies
-  Detailed implementation (e.g., server set-up)

Timetable



10:00–10:20

Session **1**: Welcome & Intro to Digital Traces



10:20–11:00

Session **2**: Data Donation Studies (Participant Perspective)



11:00–12:15

Session **3**: Data Donation Studies (Researcher Perspective)



12:15–13:00

Session **4**: Bias & Outro

2. What is digital trace data?



Source: Image by Markus Winkler via Unsplash

Which examples for digital trace data you know? 🤔

What is digital trace data?

Definition 💡: *The recording and storing of activities on digital platforms to draw conclusions about digital and analog phenomena*

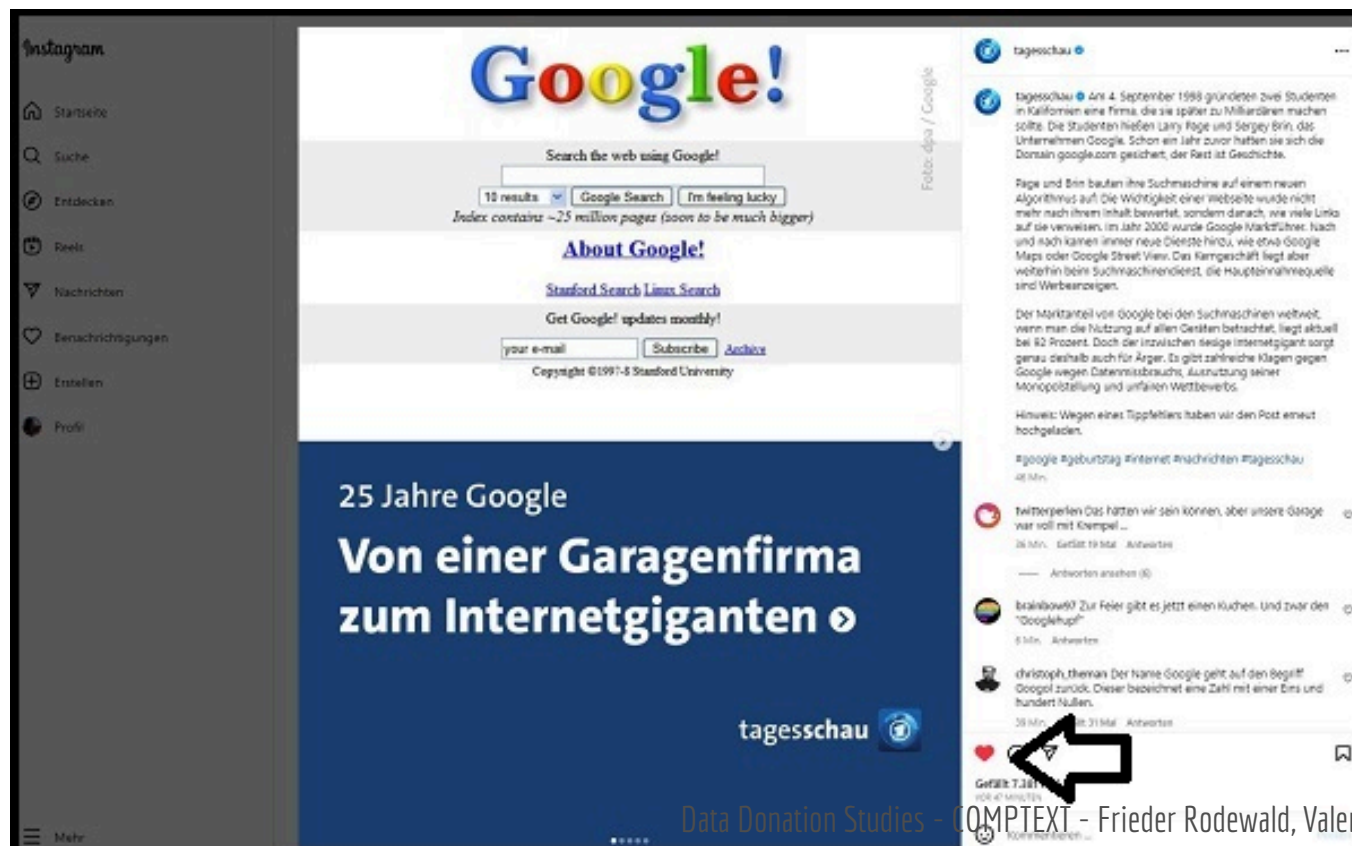
- e.g., tweets, likes, shares on social media
- e.g., geo data (locations, movements)
- e.g., digital payments
- e.g., Spotify playlists

What is digital trace data?

Definition 💡: *The recording and storing of activities on digital platforms to draw conclusions about digital and analog phenomena*

- e.g., tweets, likes, shares on social media

Example: Instagram Like



What is digital trace data?

Definition 💡: *The recording and storing of activities on digital platforms to draw conclusions about digital and analog phenomena*

- e.g., tweets, **likes**, shares on social media

Example: Instagram Like



```
{
  "likes_media_likes": [
    {
      "title": "tagesschau",
      "string_list_data": [
        {
          "href": "https://www.instagram.com/p/Cwwp6TyIETJ",
          "value": "\u00f0\u009f\u0091\u008d",
          "timestamp": 1688963882
        }
      ]
    }
  ],
}
```

Where can we find/collect digital trace data?

- Apps (e.g., running apps)
- Social media platforms (e.g., Instagram)
- Payment systems (e.g., Paypal)
- Wearable devices (e.g., smart watch)

Which types of data does this include?

Depending on the data collection method... (Haim & Hase, 2023; Ohme et al., 2024):

- often fine-grained (e.g., time-stamped)
- often longitudinal (e.g., over years, within-individual change)
- often less reactive (e.g., less concerns about social desirability)

Which (latent) constructs can we measure?

- **Internet use** (Parry et al., 2021) related to ...
 - well-being (Ohme et al., 2024)
 - voting (Bach et al., 2021)
- **News engagement** (Reiss, 2023) related to ...
 - news diversity (Jürgens & Stark, 2022)
 - public opinion formation (Yan et al., 2022)
- **Movements** related to ...
 - Mobility during pandemics (Li et al., 2021)
 - Social networks (Sepulvado et al., 2022)

Why are digital traces becoming more popular?

- Problems with self-reported data (e.g., via survey)

“How many minutes a day do you use the internet to consume news?”



Source: Image by Scott Graham via Unsplash

- „internet”?
- „news”?
- „how many minutes”?

Why are digital traces becoming more popular?

- Problems with self-reported data (e.g., via survey)
 - Self-reported data subject to specific bias (Parry et al., 2021; Scharkow, 2016)
 - Response rates in surveys are declining (Luiten et al., 2020)

Why are digital traces becoming more popular?

- Problems with self-reported data (e.g., via survey)
- Availability
 - cheap (e.g., via APIs)
 - large data sets (“big data”)






Why are digital traces becoming more popular?

- Problems with self-reported data (e.g., via survey)
- Availability

Be careful: These “advantages” are often claimed, but **not** empirically proven.

Digital traces are neither necessarily less biased, nor cheaper, or larger (we will discuss this in Session 4).

(Dis-)advantages of digital trace data

-  More fine-grained, often longitudinal measures due to timestamps
-  Partly measurement of new variables (e.g., algorithmic inference)
-  Bias due to errors in representation and measurement
-  Implementation can be expensive
-  More data does not mean better data!

Summary: What is digital trace data?

- **Definition:** *The recording and storing of activities on digital platforms to draw conclusions about digital and analog phenomena*
- **Further literature**
 - Keusch & Kreuter (2021)
 - Haim & Hase (2023)
 - Ohme et al. (2024)

3. How can we collect digital traces?



Source: Image by Markus Winkler via Unsplash

Which methods do you know/have you used for collecting digital trace data? 🤔

Platform- and user-centric methods

- **Platform-centric** (based on platform cooperation)
 - API ([Jünger, 2021](#))
 - Cooperation with platforms ([Wagner, 2023](#))
- **User-centric** (based on user cooperation and informed consent) or “follow the user” approaches ([Caliandro, 2024](#))
 - Data donation ([Carrière et al., 2024](#))
 - Linkage ([Sloan et al., 2020](#))
 - Sensors ([Struminskaya et al., 2021](#))
 - Tracking ([Christner et al., 2022](#))

Platform- and user-centric methods

- Restrictions of platform-centric methods
 - Discontinuation of APIs ([Freelon, 2018](#))
 - Concerns about bias ([Schatto-Eckrodt, 2022](#); [Ulloa et al., 2025](#))
- User-centric methods become more popular, given ...
 - Changes in law that enable such studies (GDPR, DSA)
 - Presumably (!) less biased data
 - Ethical considerations (informed consent)

Summary: How can we collect digital traces?

- **Summary**

- Central methods including platform-centric methods (e.g., APIs) and user-centric methods (e.g., data donation)
- Key differences: control over samples & measurements, legal & ethical contexts

- **Further literature**

- Haim & Hase (2023)
- Ohme et al. (2024)

Questions?

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