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Cumulative Revelations in Personal Data

Leif Azzopardi, Jo Briggs, Amal Htait, Wendy Moncur, Emma Nicol, Burkhard Schafer

Small, apparently innocuous pieces of **personal data** that are generated during online interactions can, collectively, pose risks to personal reputation and employer and organisational security.

Over time, such **digital traces** arising from data shared intentionally and unintentionally by individuals and also shared by others about them, can lead to unintended insights into:

personality

where you live

where you go

what you think

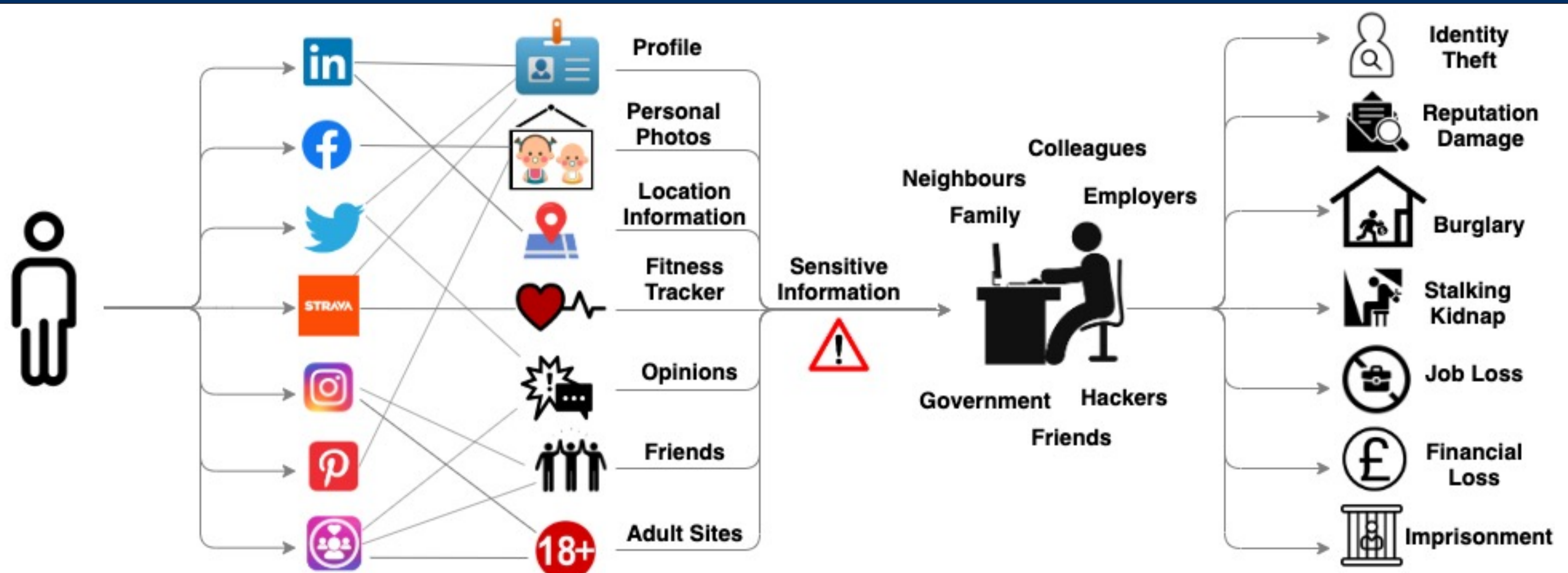
political leanings

bad habits

mood

work patterns

Digital Traces and Security Vulnerabilities



Interviews with UK Public (26 participants) May-July 2020

We collected **verbal descriptions** and **sketches** of:

- **their data** (e.g. date of birth)
- **communication channels** (e.g. WhatsApp)
- **sharing networks** (e.g. Facebook)
- **data management services** (e.g. OneDrive)
- **device ecosystems** (e.g. integrating Fitbit & iPhone)
- **behavioural patterns/practices** (e.g. pseudonym use)
- **aspects of online identity** (e.g. language style)
- **personal data revealing more than intended** (e.g. sharing a photo of family pet with phone no. on collar)

Results

- **Visibility:** profiles dominated by data that's most difficult to remove or omit
- **Revealing More:** sharing motivated by significant personal/world events
- **Leakage:** due to lack of expertise in secure account set up
- **Literacy:** lacking privacy literacy and agency to manage cumulative effects
- **Lockdown changes:** new implications for individual and employer security

Future Directions

A **Software Tool** is in production. It will allow individuals to:

- Gather and visualise personal data shared online.
- Understand the image they present online.
- Understand steps needed to protect themselves.

More at: Htait, A. et al, *DataMirror: Reflecting on One's Data Self: (A Tool for Social Media Users to explore their Digital Footprints)*. SIGIR 2020