Personal tracking and everyday relationships: Reflections on three prior studies

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Abstract
This paper summarizes and discusses findings about personal tracking and social relationships from three studies. All three studies were interview based, one where people were interviewed about their general use of trackers and two where they were interviewed about novel prototypes. None of the studies were specifically about social relationships. Yet, the details of people's everyday relationships pervaded the findings about what, how and why tracking is done. In this paper I put forward the notion that tracking is *enmeshed* in relationships: that the ways in which tracking is done is contingent on people's everyday social relationships. This can be true irrespectively of what social features a tracker has or what the user is trying to achieve with the tracker.

Author Keywords
Personal tracking; lived informatics; interviews; social relationships.

ACM Classification Keywords
H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

Introduction
In previous work I have argued that personal tracking does not necessitate new forms of living (i.e. "living by numbers") but that it becomes "*enmeshed with*

everyday life" [1]. This and other work that I have conducted with colleagues at the University of Glasgow was not specifically about relationships. However, when interviewing people about personal tracking for these studies, the interviewees often talked about issues to do with friendships, family, partnerships, and workplace relationships. In this paper I will revisit this past work to consider how tracking becomes enmeshed within relationships as a part of everyday life.

Findings from three studies

I will summarize findings from three co-authored publications. Each of these involved interviewing people who used personal tracking technology. In one case, the interviews were general about any technology, and in the other two they were about technology produced by us.

Lived Informatics

Personal Tracking as Lived Informatics [1] reports an interview study with 22 people about their use of personal tracking apps and wearables. The primary concern of the paper is how and why people use trackers. The paper identifies several styles of use of tracking (directive, documentary, diagnostic, reward collection and fetishized tracking), each of which is individualistic. However the paper does feature discussion of relationships. Points include:

- Couples share technology and sometimes encourage each other to track. There may be shared family weighing scales, or a wearable might be gifted.
- For activities being done together, a shared record might be produced, e.g. as a memento of a romantic walk, or as tracking a shared running regime.
- Disputes and rivalries can be played out with trackers, for example one participant reported that her son took her FitBit for a long walk simply in order to smash her record on the device.

The paper points out that the "sociality of tracking" is not equivalent to using social features in tracking. Rather tracking takes place within and through existing social relationships. The paper does not seek to identify social tracking as a style, but rather sees relationships as implicated in the various ways tracking can be done (or perhaps disrupted). The documentary tracking of a walk might be done as part of a romantic relationship, or the directive tracking of running might be done as part of co-present exercising.

Screen life

Personal Tracking of Screen Time on Digital Devices [3] reports the creation and evaluation of an app we called Screen Life. This app tracks the length of time a user spends using their device each day. The app can be installed on multiple devices including PCs, smartphones and tablets, and integrates and summarizes tracking data from each of these devices for the individual user. The app was designed with individual users in mind with no social features built in. However, when interviewing people about their experiences with the app, relationships were a common topic:

- Tablet computers were often shared devices, especially within families and couples. Couples were also relatively relaxed about giving access

to computers and mobile phones to their partner, but others much less so. Therefore data tracked from a device might represent use by others but most notably use by a partner or family member.
- Otherwise, devices were not typically shared except for restricted and collocated activities, such as gaming or watching videos together. The tracked screen time here would be for the owner of the device.
- The visualizations of screen time in Screen Life were abstract but 'legible' in the sense that people could often say from the representation what activity they would have been doing. Examples of this were often activities that involved others, such as calling a partner or watching something together.
- When asked, most participants did not like the idea of sharing their data with others because it often gave a clear picture of daily activities. However, one participant said it would be motivating if her mother could see the data as she would use her laptop more during 'study hours'.

The paper was concerned with individualistic tracking. However, in ways that echo the lived informatics work, we found that tracking is often enmeshed in social life. Once more this was not specifically about sharing data with others but with the production and interpretation of data within social lives. The tracked activity was individualistic to a point, but sometimes represented activity of others and activity with others. This was most pronounced for couples but extended to co-located use among friends and colleagues. The data itself could also server as a reminder or a memento of things done with others.

Pass the Ball

Pass the Ball: Enforced Turn Taking in Activity Tracking [2] reports another study in which we developed a novel tracking app and interviewed users. This paper is more overtly oriented to relationships that the others in that the app was built to explore support for 'social relatedness'. In this app users join a team. The app can be used to count steps, but only one team member can do so at any one time. Whoever has used the step counting most recently must use an option in the app to 'pass' the ability to track to a teammate. Teams compete with others to get the most step points. Our findings relevant to social relationships were that:

- Primarily the app required the management of social relationships with other users. This involved not just passing and walking, but revealing or purposefully concealing activity and reasons for doing activity and in navigating moral obligations and risk chastisement for not passing or not engaging in activity after requesting a pass.
- Between co-workers the app caused some work/life separation issues. Co-workers had particular trouble at weekends when it was not clear what others' daily routines would be and there was reluctance to discuss and negotiate this with others. It also revealed some information about daily working routines, for example what time someone commuted to work.
- The use of communication channels differed depending on relationships. Siblings in a team

could talk with each other, colleagues could use established communication channels such as email, but a team made of strangers exclusively used the communication feature within app itself.
- The app disadvantaged people that did things together, such as walking together or doing things like going for lunch at the same time. An implicit assumption in the design was that people would do activities separately.

This app was overtly designed with social issues in mind, but took the idea of "relatedness" from self determination theory as inspiration. This idea led us to implement an app that saw social interaction as something to be done via the app: physical activity is done individually and the app provides a mechanism to 'relate' with others. To an extent we achieved that, but from the findings it is evident that that interaction was achieved within broader relationship contexts: the ways in which people spend or limit time together, the ways in why people communicate, and the ways in which people do things together or apart.

Discussion

In this paper I have summarized findings from three studies to do with personal relationships. Looking across these, several themes are evident:

- Social relationships are not reducible to social features of applications. Even where social features in an app are used, this use is shaped by people's existing relationships.
- Social relationships do not constitute a style or practice of use (e.g. "romantic tracking") but pervade and shape the ways in which tracking is done.
- Tracking can be a collocated activity, but this arises from people already being collocated or familiar enough with each other to coordinate their activity.
- The issues of tracking and social relationships are not limited to issues associated with data, but also hardware: for example sharing and gifting.

Personal tracking is enmeshed in personal relationships in the sense that it is done within the context of existing social relations between people. In playing out these relationships, for example spending time together, sharing things, encouraging each other, upsetting each other, and coordinating with each other. In this sense personal tracking is not necessarily personal or individualistic, but equally is not something that needs to be fundamentally rethought in design terms as relational. Rather, we find the existing social order is played out via new technology.

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Two relationships of interest

I am interested in discussing: (1) cohabiting couple's use of trackers, and their interests in each others' data and any joint data; (2) adult children (e.g. students) and their relationships with parents when it comes to owning trackers and talking about data.

Short Biography

I am a research associate at the University of Glasgow. I have a PhD in Computing Science and an interest in connecting technology development with understandings and ideas about user practices. My work on personal tracking has seen the blending of development work with quantitative and qualitative analysis. Most recently I have been involved in the deployment and study of tracking technology in the wild via app stores and via an international healthy lifestyle program.