
Exploring Opportunities for Storytelling with Everyday Personal Data

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Abstract

Personal tracking tools often include social features, such as comparisons of one's data to data from other people using the tool or the ability to post data to social networking sites. Most of these features find limited or problematic use. We have begun exploring an enhancing approach to sharing personal data: designs supporting people in telling stories with their data. This approach builds on two thrusts of our prior work: (1) understanding people's experiences collecting and using personal data in their daily lives, and (2) examining how current designs approach sharing of personal data. We discuss how our work informs opportunities for storytelling and briefly describe our ongoing work exploring the area.

Author Keywords

Personal data; personal informatics; social sharing; storytelling.

ACM Classification Keywords

H.5.m. Information Interfaces and Presentation.

Introduction

Technologies for collecting personal data (e.g., *personal informatics* systems [8]) are now common. One in every two U.S adults claims to own, or have owned, a device for personal tracking [11]. People often include

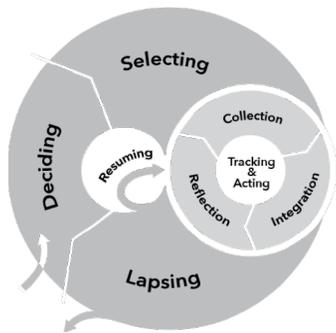


Figure 1. Our lived informatics model [7] notes people’s process of deciding to track and selecting tools to use, people tracking and acting as part of the ongoing process of collection, integration, and reflection, and people inevitably lapsing and resuming to track.

We anticipate that where people are in their lived experience with personal tracking influences the stories they are interested in telling and how they would want to tell them.

the data they collect and their experiences tracking when socially sharing with friends and family. Personal informatics systems often include data sharing features, such as in-app leaderboards and the ability to post to Facebook or Twitter.

People aspire to use social features to update others on their lives, solicit advice, or provide accountability for a goal [6]. Unfortunately, current features for sharing are often problematic. Many people are concerned that data is too personal or too trivial to share [4]. When people do share, many are disappointed by the response from others (or lack thereof) [10]. The audience can also be confused or frustrated by these posts, as designs best facilitate sharing tracked data as a single event, such as a run or a location, without context about why the data is interesting or important in a person’s life.

We have begun to examine the idea that sharing personal data is often *storytelling*, or framing information in a meaningful or memorable way [9]. Stories are designed to pique the interest of audiences. Stories therefore require consideration of what needs to be shared, and what does not, for the story to be understood and appreciated. Stories involving personal data necessitate richer context and explanation than is supported by sharing features of current systems.

Our approach to storytelling is informed by our prior research on: (1) how people use personal tracking systems in their everyday lives, and (2) practices and desires around sharing collected data. This workshop paper summarizes our prior work and how it informs directions for storytelling with personal data, briefly describing our ongoing exploration of understanding and designing for storytelling with personal data.

Everyday Personal Data

Li et al. describe personal informatics as collecting personal data for self-knowledge or understanding [8]. They introduce a model describing how people use personal informatics systems, a linear progression from preparing to collect data through to acting on the findings to change or improve behaviors. Rooksby et al. later surface how people use personal tracking tools as part of their everyday lives [12]. Among other findings, Rooksby et al. surface that people track for reasons besides behavior change, pick up or abandon tracking systems, and have sharing goals beyond updating others on what is happening in their lives.

Drawing from Rooksby et al.’s findings, we developed a new model which articulates how people use personal informatics systems in their everyday lives (Figure 1) [7]. Our model surfaces that people first *decide* to track, then *select* an app or device, *track* and *act* based on what they learn, and often *lapse* in their tracking. People’s reasons for tracking influence their use patterns. Though many people track over the course of years to change a behavior (e.g., improve their spending habits), others begin tracking out of curiosity (e.g., to learn how much they typically walk) and often abandon when that initial curiosity fades.

Opportunities for Storytelling

The insight that tracking is a part of people’s everyday lives suggests that people are interested in using their personal data to share more than their goals and accomplishments. Personal data can surface and supplement interesting everyday experiences. For example, Elsdon et al.’s “data profiles” for a dating event demonstrate how personal data can help people introduce and express themselves to others [3].



Figure 2. Personal data is often shared without substantial context, such as with purely automatic text (a). Through two studies, we found even small amounts of context (b), such as why the data is meaningful or important, increases audience interest and response online [6].



Figure 3. The design of Food4Thought, a food mindfulness app with daily social challenges, led to conversation around healthy food choices.

We anticipate the stories people want to tell with their data align with: (1) their motivations for tracking, and (2) where they are in the processes described by models of self-tracking. A person tracking out of curiosity is likely interested in telling a one-time story of what they learned about themselves by tracking. A person looking to change a behavior might instead prefer to share intermediate progress in their journey towards achieving a long-term goal. A tracker looking to change a behavior might want to share when they decided to begin tracking. Conversely, a curiosity-driven tracker might only share after they had collected data, perhaps only after they had lapsed. People may also want tell stories about deciding how or what to track, or include times they lapsed and resumed tracking.

Design Approaches to Sharing Personal Data

Today, features for sharing personal data typically share data primarily within the app they are tracked in (e.g., [2,14]) or promote sharing data to social networking sites like Facebook or Twitter (e.g., [5,10]). Beyond who the data is shared with, there are many ways the data can be presented. Tools typically summarize personal data automatically [6], such as the RunKeeper Tweet in Figure 2a. Some tools allow adding custom text or other content, such as the picture and text accompanying similar running data in Figure 2b.

We hypothesized that the way content is presented affects whether people are interested in and respond to the personal data being shared. To explore this effect, we conducted two studies exploring how RunKeeper data can be shared on Twitter [6]. We analyzed tweets people make using RunKeeper in the first study. Tweets with personalized text descriptions or pictures were more likely to receive responses. In the second study,

we generated tweets following patterns we observed in the first study, varying the content shown alongside the data. People preferred tweets which explained why the run was difficult or otherwise important.

We applied these findings in our next project, Food4Thought (Figure 3), to design a social feature which incorporated more engaging pictures and explanations of the importance of the data. Food4Thought is an app for promoting mindfulness of food choices through daily social challenges [5]. People took photos of foods they ate which met the day's challenge, sent to a private Facebook group of others with the same challenge. The app encouraged people to describe the food in the photo to stimulate conversation.

Opportunities for Storytelling

In Food4Thought, we demonstrated that common sharing features can be well-received. However, the feature we developed still focused on sharing single events with personal data (e.g., a photo of a meal that completed the challenge). Although conducted in a private group, the feature was integrated with a social networking site like many other systems, rather than participant's close friends or family. This worked for the short-duration challenges in Food4Thought. People pursuing longer duration challenges or journeys may benefit from alternative approaches to sharing their personal data. For example, sharing data collected occur over time, or sharing to a different audience.

Our research suggests people are interested in sharing context alongside personal data. Audiences also prefer receiving this type of content. Storytelling emphasizes context to explain personal data in a meaningful and memorable way [13]. Storytelling with personal data



Figure 4. Participants in our study have been interested in telling a diverse set of stories with their personal data. The above participant wanted to show their doctor trends in their health and wellness data for advice on what they should do differently.

can help the desires of the people sharing data as well as the people with whom the data is shared.

In-Progress Exploration of Designing for Storytelling with Personal Data

Our ongoing research examines what stories people want to tell with their personal data. To study this, we developed a design activity in which people think about and sketch how they would ideally like to tell a story with their personal data. The activity is designed to take place in participant's homes, where they are surrounded by their personal data.

We have conducted the design activity with 16 participants and are currently analyzing the stories they want to tell. We are particularly interested in understanding what audience people want to tell their stories to and what personal data they use in those stories. Our early design activities suggest the stories people want to tell are diverse, from telling stories about personal health to doctors for advice (Figure 4) to blogging metrics about every burger they have eaten on a journey to identify the best burger in their city. We plan to use common narrative plots to categorize the stories people want to tell (e.g., [1]).

Understanding people's desires for storytelling will inform future design directions. We plan to prototype some designs based on findings from our study and evaluate them with people interested in telling the stories they are designed to support.

Data Relationships to Discuss

At the workshop, we are interested in discussing the complex relationships between the people who are telling stories involving personal data and the

audiences they are telling them to. We are particularly interested in discussing differences between telling stories through direct communication in intimate, personal relationships (e.g., email, in-person with close friends or family) and through wider, diverse relationships on online social networks (e.g., Facebook, Twitter).

These two methods lend themselves to different types of stories. Social networks are likely an appropriate place to tell stories about an accomplishment, such as running a race. Some stories may only make sense through direct communication, such as sharing the financial details of a major home remodeling. People may be interested in telling the same story to both groups, adjusting the data and context to the audience.

Author Biography

Daniel Epstein is the primary author of this work and will attend the workshop. He is a Ph.D. Student in Computer Science & Engineering at the University of Washington where he is co-advised by James Fogarty and Sean Munson. He studies the design of personal informatics and self-tracking tools to integrate into people's everyday lives through surveying people's ongoing practices and implementing new technology.

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