

PIM 2022: SUCCESSFULLY AGING WORKSHOP - APPLICATION STATEMENT

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DATE: SEPTEMBER 26, 2022

Hello PIM 2022 Workshop Committee,

My name is Zach Havens, and I am a Masters student at the University of Manitoba under the supervision of Dr. Celine Latulipe. My thesis research is focused primarily on how online banking interfaces can leverage behavioural nudges to support informal caregivers who bank on behalf of older adults. These caregivers are referred to as “close others” in this context, and are often family members, spouses, or close friends (Engel et al., 2019). Our goal is to determine how behavioural nudges can be leveraged to minimize the risk of financial misconduct by close others while also ensuring these are minimizing the negative impacts that the nudges might have on the relationships that the close others have with the older adult they support .

My interest in this work stems from Dr. Latulipe’s prior work investigating how informal caregivers support older adults with financial tasks (Latulipe et al., 2022). In her research, she found that most close others perform tasks on behalf of older adults as opposed to assisting the older adults or performing tasks collaboratively with theme. This work also showed that a majority of older adults opt to share online banking passwords with close others to allow access (Latulipe et al., 2022). This practice not only poses a great security risk due to the prevalence of password reuse (Florencio and Herley, 2007) but also means that the older adult has relinquished control over the data the person assisting can see or actions they can perform. Dunphy et al. have described the possibility of using proxy accounts or delegates to give users of online banking platforms more granular control over the actions of those who bank alongside them or on their behalf (Dunphy et al., 2014). Proxy accounts allow a user to control the data and actions available to a third party through a separate-but-linked account with its own set of access credentials. In the context of banking, this might allow an older adult to configure an account for a close other to access specific account statements or to pay certain expenses below a given threshold. This mechanism could be useful for anyone who allows others to bank on their behalf, such as people with financial advisors or people with cognitive impairment, not just for older adults. In fact, availability of and familiarity with these tools earlier in life may encourage people to retain more control over their data as they age. Unfortunately, proxy accounts are not particularly prevalent across systems that handle sensitive personal information in North America. In her research, Dr. Latulipe found that proxy accounts are seeing limited adoption withing online healthcare portals in the United States (Latulipe et al., 2018), and are not available at all to those banking in Canada (Latulipe et al., 2022). Specifically within banking, there is very little academic research on the usefulness of proxy accounts and the value they afford users in terms of their ability to manage access to their data and funds. I would like to change that as I believe that they could be extremely powerful mechanisms and believe that more research and discourse about them will encourage adoption.

As mentioned previously, my thesis focus is primarily on using behavioural nudges to encouraging financial propriety by close others who bank online on behalf of older adults. Behavioural nudges are interface elements that leverage psychological principles to guide users towards specific outcomes without actually limiting their options (Mirsch et al., 2017). We will be presenting our nudges to a close others via a prototype of a banking interface that uses proxy accounts. We've specifically chosen to use proxy accounts in this context as they allow the flexibility to present nudges to both the close other and the older adult independently. Proxy accounts can also allow the older adult to control what nudges are presented to the close other on their behalf. The nudges in my research are specifically designed to encourage financial propriety towards older adults, but they could also be very applicable for people receiving assistance at any point in their lives, much like proxy accounts can.

In a more traditional sense, nudges in banking can be used to help us manage our own finances and make better use of our data. It's been shown that nudges can be extremely valuable in helping users make better security-related decisions for themselves (Peer et al., 2020; Turland et al., 2015). It is also evident that use of large datasets related to an individual can be used to personalize nudges directed towards them to guide towards personalized outcomes and improve the nudges' efficacy (Mills, 2022). There are many opportunities for users to *control how they are nudged* based on their own data to achieve their desired outcomes. For example, users can configure our online banking systems to nudge us towards changes to their spending behaviours based on their habits over a specific historical timeframe that they think works best for themselves individually. As we age, our priorities will inevitably change and we will likely want to reflect those changes in the content and types of nudges that we receive. Returning to the online banking example, a user might want the ability to indicate that they would like to begin minimizing their small incidental expenditures in preparation for affording a home, but large individual expenses should be ignored.

In my research, the use of behavioural nudges to influence another person who is acting our behalf is novel. Most nudges are presented within a system to benefit either the organization providing the service or the user themselves. In my work, we are instead nudging a third-party to act in a user's best interest. This ties strongly to the relationship between data ownership and data stewardship in informal care relationships and is therefore something that Dr. Latulipe and I have discussed extensively. As previously mentioned, most close others perform tasks *on behalf of the older adult*, as opposed to with them, using mechanisms such as password sharing or joint accounts where they have unrestricted access to the older adult's data and funds. This leads to a situation where a close other is not only a steward of the older adult's data and funds, but is also creating data and managing those funds on their behalf by performing transactions. This is true even with proxy accounts, despite the ability to limit the actions of the proxy user. Given that close others are often close social relations who have the best interest of the older adult at heart, it follows that they would also like to make the most of the older adult's data either in concert with them or on their behalf. Systems that we design need to be able to support that shared stewardship dynamic by ensuring that they allow proxies to make the most of our user's when they cannot do it themselves.

One major concern with the personalization of nudges is the perceived encroachment on privacy Malheiros et al., 2012; White et al., 2008. However, prior work in this area has not engaged with users to give them the choice in how their data was used for personalization. For

nudges designed to benefit the user themselves, one way to mitigate privacy concerns is to give the users the ability to dictate what data is being used and how it shapes the nudges they encounter. Users should be able to control how their data is used to nudge both themselves and the people who support them, specifically as new access mechanisms such as proxy accounts enable them to better receive assistance with tasks online. Users should have the ability to shape and grow the ways in which they are nudged as they age as well, whether within online banking, healthcare portals, or elsewhere. More research is needed to determine the efficacy of using these well-established techniques in these collaborative social contexts to empower people to make the most of their data over time.

I would love the opportunity to participate in this workshop and bring my own perspective and background to bear. I am able to attend both the pre-workshop discussions online as well as the in-person workshop in Pittsburgh. Thank you very much for your consideration!

Sincerely,
Zach Havens.

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