Inaction as a Design Decision: Reflections on Not Designing Self-Tracking Tools for Menopause

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ABSTRACT

This reflective essay documents an attempt to design self-tracking technologies for menopause. This process culminated in the decision to not design. The contribution of this essay is the knowledge produced through reflecting on inaction. From an investigation into current examples, it became clear that applying self-tracking to menopause was fundamentally inappropriate. These technologies were also found to risk resulting in more harm than good; both in essentializing and medicalizing a non-medical process, and in perpetuating notions of the bodily experience of the menopausal transition as a negative experience.

CCS CONCEPTS

• **Human-centered computing > Interaction design > Interaction design theory, concepts and paradigms**;

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KEYWORDS

Menopause; women's health; reflective HCI; non-design; undesign; menstrual cycles

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INTRODUCTION

The field of human-computer interaction (HCI) is typically faced towards the development of the new and the novel. It is evident, particularly within the CHI community, that with every year that passes, we apply technological solutions and augmentations to an ever-expanding array of cases. This reflective essay addresses how the reverse of this; inaction, can be a contribution to the field. I contribute my reflections on my own decision not to design self-tracking technologies for menopause. I examine what knowledge is produced in the stage before we design. This knowledge broadly refers to ethical questions around designing for menopause. Menopause is defined as the period of life when there has been a stretch of time longer than one year since menstruation has taken place. A myriad of physiological and emotional phenomena accompanies this change. These include but are not limited to; hot flushes or night sweats; disturbed sleep; feeling tired or worn out; trouble remembering or concentrating; loss of interest in sex; vaginal dryness or pain with sexual intercourse; uncontrollable loss of urine; mood swings; feeling irritable; aches and pains; headaches; or heart palpitations [12]. "Peri-menopause" or "the menopause transitional" phase is a general term that refers to the period before menopause where symptoms correlating to hormonal changes begin. Peri-menopause can begin up to ten years before menopause takes place.

Since the act of not-designing does not produce any artifact to disseminate knowledge, literary accounts such as this are key in disseminating knowledge. Reflective essays facilitates a first person, often more narrative, and reflective perspective [39]. I use this medium to communicate my thoughts and feelings. Through telling the stories of our experiences as designers within the field of HCI, we are able to share our personal reflections as human shaping our complex digital landscape, including our decisions to not design at all.

INACTION AS A DESIGN DECISION

Within HCI, a prevalence of research addressing the systems of power and norms enacted by technologies reflects changing expectations of the designer as a reflective, value sensitive, and critical actor [9, 11, 24, 34]. Baumer and Silberman propose that designers have a responsibility to not only consider

how to design technologies for specific contexts, but whether to do so at all. Similarly, Pierce presents the "undesign" of technology through a range of inhibiting techniques including inaction; "the notion of inaction as design action could be a useful construct for consideration of the limits of design action, and the appropriateness of such (in)action" [28]. Baumer, Silberman and Pierce agree that designers have a responsibility to consider carefully whether or not to continue the ever expanding application of technological fixes to all parts of lives. They recommend a reflective awareness for situations where the addition of technologies could be "inappropriate or potentially harmful". Baumer and Silberman discuss how the fact that technology works within metrics and comparisons of these metrics enforces a reductive approach to complex situations; designers must be aware of the particular lens that technologies cast on a design space. Baumer and Silberman also warn of solutionism, the desire to reduce complex phenomena into problems to be solved by the addition of technologies.

The wider context that this project fits into is a research-through-design program exploring how the design of self-tracking technologies influence both the social constructions of the body and also the lived experience of the self-tracker [16]. After having just completed a project designing speculative menstrual cycle tracking technologies, I arrived at menopause with the assumption that a similar approach could be applied. However, once I had conducted a review of current projects and products and mapped out the design space of self-tracking technologies for peri-menopause, I found myself wavering and eventually decided not to act. I will now present my concerns regarding designing self-tracking technologies for the menopausal transition. The knowledge produced by this project lies in the reasons behind my inaction. In attempting to design for menopause, I came to the realization that it was something that I could not do without compromising my research approaches and beliefs. These approaches and beliefs included a commitment to feminist and phenomenological approaches to designing for the body [17].

In order to avoid designing harmful or inappropriate technologies, Baumer and Silberman propose asking these three questions; "Is there an equally viable low-tech or no-tech approach to the situation? Might deploying the technology result in more harm than the situation the technology is meant to address? Does the technology solve a computationally tractable problem rather than address an actual situation?" [10]. I will use these three questions to unpack my decision to not design and finally reflect on not-designing and its limitations. The research activities that these reflections are drawn from include; reviewing current menopause tracking technologies, interviews with founders of menopause tracking apps, interviews with medical experts in menopause, talking to people who are currently experiencing the menopausal transition about their experiences, and following online forum discussions about menopause. The findings from these activities will not be laid out in full, but rather the key themes and trends will be presented. Predominantly these will be those that arose from a review of current self-tracking tools for menopause as a form of interaction criticism [8].

Motivation behind Founders of Commercial Examples

- MySyster's founder: "I came up with the idea for a perimenopause app after seeing the period trackers popular among women in their teens and twenties and wondering, 'Where's mine?'" [6]
- Menopause View's tagline is: "Knowledge is power, we're here to help" [4]
- Hot Flash Sisters' founder: "And what happens when we go to the doctor? We're asked the date of our last period...Someone needed to make an app for this!" [2]
- My Pause app 'About' section: "No one can predict exactly what your experience will be, so the more information you have at hand about your symptoms and the possible solutions, the more in control you can be." [5]
- Clue article on using the app for menopause tracking: "By understanding these signs, and discussing them with other women, you will immediately feel more in control." [1]

Figure 1: Menopause Ticker counting down to one year without menstruation

Is there an equally viable low-tech or no-tech approach to the situation?

Commercial menopause tracking apps include MySysters, Menopause View, Hot Flash Sister and MyPause. These apps are designed specifically for peri-menopause and menopause tracking functions. They include the option to log peri-menopausal symptoms and menstruation. As evident in the motivation behind Hot Flash Sister and MySysters apps (see sidebar), these apps are designed to mimic menstrual cycle tracking apps. Menstrual cycle tracking apps predict the timing of future menstrual cycles through employing self-reported data and algorithmic calculations. Menstrual cycle tracking apps are built upon the belief that menstrual cycles are cyclical and occur at relatively regular intervals (though this is not the case for all). Since menopause is defined by the irregularity, and eventual cessation, of menstrual cycles, the predictive function of menstrual cycle tracking is redundant. Menopause tracking apps are therefore solely functional for the logging of symptoms and menstruation. As mentioned in the motivation of the Hot Flash Sisters' founder, this information can then by used to inform visits to the doctors. They become a memory aid, rather than providing any autonomous function. Menstruation logging tools also come in the form of menopause "tickers". Tickers allow you to "Count-down to Menopause" through recording your last menstruation and counting down to menopause (which is officially 365 days after the last menstruation) [3]. These websites provide you with the code of your own ticker to integrate into your blog or website. These tickers can be customized and many come labelled with positive messages about menopause (Figure 1.) Fundamentally, since it is not appropriate to apply an algorithm to predict future menstrual cycles during the menopausal transition, paper calender or note taking tool to record the most recent menstruation and symptoms could replace these apps. The information apps provide is valuable in informing the user of the menopausal transition, but could easily be disseminated through literature or a website. The only foreseeable benefit, apart from the mobile phone offering a handy tool for documentation, could potentially be the use of the apps to collect of data for large scale studies on menopause, though this is not yet implemented.

Within most current tools, categories of pre-defined symptoms are given in order for users to document and communicate their lived experience of menopause. There are two reasons behind this categorization; that it uses a simpler interface and provides more options computationally, and that it is a way to educate the user on possible peri-menopausal symptoms that they may hypothetically experience. These pre-defined symptoms run the risk of excluding some people's lived experience of menopause if they do not find their symptoms on the list. A tactic for avoiding this essentializing of experience might be a more open form of symptom tracking. This would require a more flexible and customizable format that would not enact universalizing ideals on how the menopausal transition was experienced. However, without any framing, this would culminate in an ambiguous and undefined

design. The logging of peri-menopausal symptoms could therefore be replaced by an analogue diary or journal.

Might deploying the technology result in more harm than the situation the technology is meant to address?

Deciding not to design self-tracking tools for the menopausal transition is a value-driven as well as rationally driven decision. The motivation behind my project was to offer a menopause tracking device that enacted feminist and phenomenological perspectives on the body. However, from my research into existing commercial products and research on design for menopause within HCI, I found the application of digital self-tracking tools to not only be redundant, but also to be driven by troubling perspectives and demands on the menopausal body.

Current academic research projects designing self-tracking tools for menopause include an ongoing multidisciplinary consortium project designing technological "solutions" for the menopausal transition [33, 38]. This project uses persuasive design to "empower and coach" women into adapting their lifestyle choices; such as increasing exercise, stopping smoking and improving diet. In this case, self-tracking is applied with a set end goal; to mitigate poor metabolic and cardiovascular health that accompanies menopause. Users are coached towards good health through symptom monitoring and personalized goal setting based on self-reported data. This design strongly resembles self-tracking weight management and exercise apps and wearables, with the addition of a peri-menopausal symptom tracker. Taking a critical eye to this project, the clear message is that it is the responsibility of the individual to maintain their own good health over the risky period of the menopausal transition. This perpetuates the biopolitical conception of the ideal citizen as being responsible for their own duty of care in order to ease the burden of care from the state [13, 27, 29, 32]. The harm possibly produced by taking this perspective on designing self-tracking tools is the risk of self-blame if self-tracking fail to persuade the user to turn towards healthier habits, as is very often the case within self-tracking [14].

The fact that defining and logging peri-menopause symptoms provides a sense of control is reflected in the motivation behind commercial apps, e.g. "knowledge is power" (see sidebar). A complex aspect of symptom tracking throughout the menopausal transition is that symptoms are often also common in non-menopausal contexts; e.g. anxiety, depression and loss of libido and insomnia. Enigmatic symptoms are one factor that prompts people to validate their lived experience of symptoms through medical information [15]. Self-tracking has been shown to "empower" and "give control" to people within their management of complex chronic diseases such as multiple sclerosis and diabetes [7, 37]. Menopause is clearly not a disease and it is problematic to treat it as such. Giving validation to the lived experience of peri-menopause through labeling symptoms can be seen as a form of medicalization. Medicalization refers to the treatment of human conditions as medical conditions. Several menopause research projects within HCI cite the increasing life expectancy of women as their motivation to

design. Some state explicitly that their motivation is the fact that longer-living women will now spend a third of their life in a post-menopausal state [22, 23, 38]. To frame this as a motivation to design is to say that the menopausal transition is a factor that requires mitigation by the addition of ameliorative technologies. Taking a critical eye to this motivation brings the definition of a healthy female body into question. Menopause is framed by these technologies "as a malfunction, rather than a change in function or the cessation of an unnecessary function (i.e. menstruation)" [31]. From a critical feminist perspective, this approach reflects a long-standing, androcentric view of the female body as unstable and therefore irrational and unsuitable for positions of power [35]. The peri-menopausal and menopausal body is being held up against the norm of both the regularly menstruating body and the stable male body, and found inferior.

Even the term "symptoms" perpetuates the concept that the menopausal transition is to be suffered; symptoms become a problem to be solved rather than merely a consequence of a process of change. Phenomenologist Drew Leder offers the term "dys-appearance" to describe how the culture of modern medicine in the west has resulted in a negative reaction to the emphasized experience of the body. The body appears to us predominantly during physiological changes, such as puberty and menopause, and illness. An exaggerated awareness of the body culminates in a desire to regain control through medical intervention. Within a society that prioritizes cognition over embodied knowledge, bodily absence is our desirable state [19]. Symptom tracking makes felt experience present to the user as something to be categorized, logged and then mitigated. This supports conceptions of exaggerated bodily experience as a negative aspect, rather than accepted as part of a holistic lived experience [20]. Designing symptom tracking tools, therefore, might result in more harm than good; both in essentializing and medicalizing the non-medical process of menopause, and in perpetuating the exaggerated bodily experience that occurs during the menopausal transition as a negative experience.

Does the technology solve a computationally tractable problem rather than address an actual situation?

Lee et. al use focus group interviews to validate a potential design for an application that, amongst other functions, diagnoses which stage of menopause the user is in by the symptoms they self-report [22]. The menopause staging system is usable without the use of technologies, however, Lee et al.'s design offers the automatic quantification of the body, without any effort or calculation on the part of the clinician. The hypothesis is that knowing which stage they are in will improve their user's experience of peri-menopause. The staging system on which Lee et al. base their design was put together at a multidisciplinary workshop with experts within the field of menopause in 2001 where they constructed a staging system for reproductive aging from -5 (early reproductive age) to +2 (late post-menopausal age) [36]. The reporting of the staging system in the original document makes it clear that this is not a hard and fast framework that can be applied to all cases; "Not all women

have symptoms as they transition to the menopause, and women with symptoms experience them in different combinations and with different levels of intensity. These symptoms are subjective by their nature, which makes quantification difficult. It has been observed that symptomatology varies markedly between ethnic groups, cultures and socioeconomic groups, and even in different climates. Furthermore, these symptoms do not track closely with the menstrual cycle or endocrine changes during the menopausal transition." [36]. This throws into doubt the possibility of using self-reported symptoms to accurately or usefully diagnose a particular stage of reproductive aging to a user, as even one of Lee et al.'s participants stated; "my periods happened every 30 days regularly and then it disappeared all of a sudden. I don't know if there really are such thing as transition stages." [21].

Quantification, a common tool within self-tracking, allows for the reduction of the menopausal body into a numerical form without the intervention of a clinician. This places the tool of quantification into the hands of the user and allows for self-comparative and diagnostic work to take place. Lawson et al. show that there is a strong desire for quantification with little scientific justification and warn that "if there is little incentive for ensuring a consistent level of scientific accuracy in quantified data interpretation, it seems unlikely that companies would bother to engage in the expensive and time consuming trials necessary to demonstrate this" [18]. Quantification is a method aiming for efficacy and accuracy rather than the representation of lived experience [26]. Knowing oneself and validating lived experience through quantification speaks to a Cartesian understanding of the body in medicine [30]. Numerical representations of the body are taken as "truth" and as higher in the hierarchy in knowledge than embodied experience [13, 25]. Rather than addressing the menopausal transition, quantitative approaches to the body prove to offer an efficient and pragmatic solution to computationally sorting collections of symptoms.

Summary

Current examples of self-tracking tools designed for the menopausal transition clearly play a role in user's lives, else they would not be adopted. This is despite the fact that they could largely be replaced by analogue tools. It is the fact that these technologies are adopted that reveals societal notions around menopause. I have found these notions of peri-menopause to be; something that requires control through knowledge, a negative experience to be mitigated through compliance of the individual, something to be validated through the categorizing of lived experience, and as a computational problem to be solved.

REFLECTIONS ON INACTION

Within this project I have encountered the decision between either designing 1. for the current wishes of the user, current trends, and opportunities provided by digital technologies, or 2, designing devices that do no harm in a wider society. Most of the time there is no friction between these two options;

what is desired by the user does not cause harm in society. However, this was not the case with my attempt to design self-tracking tools for the menopausal transition. I found that applying self-tracking technology mechanisms in any way at all would have re-enacted biopolitical, essentializing, subjugating, and androcentric perspectives on peri-menopausal body within society. They only re-ified the status quo; that menopause was a problem to be fixed by the addition of technology.

The decision to not design signals my own value-judgement as a designer. In this case, my values were drawn from a commitment to a feminist and phenomenological perspective on the body. Discovering the limits and the boundaries of my own research beliefs has been a novel experience. I experienced that these limits and boundaries were really *felt*. Attempting to find a way to design self-tracking technologies for menopause gave me an uncomfortable feeling in my stomach. My initial reading of this uncomfortable feeling was that I was out of my depth and unqualified to address such an emotionally charged and complex topic because I am not yet peri-menopausal. It took taking a reflective stance on what I'd learned from existing examples, and laying out the design space of self-tracking for menopause, to understand the true causes behind my gut feeling.

As a research-through-design practitioner, not producing an artifact to communicate knowledge and act as the vehicle for further research has felt disappointing, and often like a failure. At the early stages I blamed myself for having been naive about the appropriateness of menopause as a design case. However, it has been through gaining an understanding of my decision to not design that I have come to better understand my wider research program and beliefs. In particular, deciding not to design self-tracking tools for menopause has shown me the limits of the appropriateness of self-tracking. I do wonder if I myself were peri-menopausal, would I have acted differently? In my current situation, I see the menopausal transition as a natural and normal stage of the life process. Since I do not see it as a problem, I am not interested in providing a solution. Were I acting from a direct, perhaps negative, experience of the menopausal transition, perhaps my positionality would have countered my research beliefs and pushed me to designed to improve my own experience.

As a final note on not designing; writing this essay as a way of documenting my decision to not design has provided me with a rich structure for reflection on my perspectives and position as a designer. Baumer and Silberman state "just as much as we value design implications, we should similarly value the implication not to design." [10]. For every ten published research projects, there must be one discarded project that never made it to the design process. Were all designers to unpack their abandoned projects and the reasons behind the abandonment, what rich knowledge we would produce about the limits of the application of technologies. We might also save some wheels from being re-invented.

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Commentary

For alt.chi paper
Inaction as a Design Decision: Reflections on Not Designing Self-Tracking Tools for Menopause

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The author is describing her research stream of designing a quantified self solution to document pre-menopause or menopause symptoms and data.
The author argues, that overall, it didn't make sense for her - I understand the author to clearly agree that this is a value-driven decision, not a solely rationally driven decision - to develop a quantified self system for logging, data-centered, experiences related to menopause.
In this commentary, I complement the conceptual dimensions that the author uses to reflect on her decision by two additional questions for consideration at design time.

I do so based on own work on using data as basis for reflection and action (Pammer et al., The Value of Self-Tracking and the Added Value of Coaching, Proc. Of ECTEL 2015; Rivera-Pelayo et al., Introducing Mood Self-Tracking at Work: Empirical Insights from Call Centers, ACM Transactions on Human-Computer Interaction, Vol. 24, No. 3, 2017). In my own work, I have explored data as basis for reflection and action in workplace settings. In Pammer et al. (2015), we used automatically logged activity data, logged on Windows PCs, as basis for reflecting with respect to time management. In Rivera-Pelayo et al. (2017) we used manually and collaboratively entered mood data as basis for reflection. Both works have evaluated the research prototypes in multiple-week field trials with professionals. I elaborate on this prior work, in order to enable readers to also judge the basis, and point of view, from which I make my comments.

The first question is: Is menopause something useful, interesting, or relevant to reflect on? What are underlying, or surrounding issues for reflection? So, I'm asking to identify the wider themes on which people who would track data about their menopause would reflect?
In many workplace settings, time management is something relevant to reflect on because a lot of people are under time pressure (so, there's a pain point) and self-organized (so people can do something if any issues are identified). With mood data, we embedded tracking within operative work, and related mood entries directly to work. In other words: The ultimate point of mood tracking was reflection on work, not on mood. As one mechanism that made collaborative mood tracking effective in our field studies, we found that mood tracking served in particular to trigger face-2-face peer or managerial support.

With respect to menopause I would ask: What is it that people who already track data about their menopause are reflecting on? Which aspects and activities of life are related to menopause, that one would want to reconsider and re-evaluate in light of menopause and menopause symptoms?

The second question follows immediately from the first: Knowing what it is that users want to reflect on, are menopause symptoms, or days of last menses really relevant? Can analysis of such data over time provide insights to users that they wouldn’t have without tracking?
With respect to time management for instance, automatic activity logging provides a very fine granular perspective on actual time use, and show worktime fragmentation really well. Additionally, the amount of

worktime fragmentation is very surprising to users (Pammer & Bratic, Surprise, Surprise: Activity Log Based Time Analytics for Time Management, ACM CHI 2013, Extended Abstracts). Granted, there are many things one cannot easily read out of such data, such as goal achievement, but it is not necessary for one set of data to show everything, just something.
Following this question it could be that one ultimately finds, that free text, reflective diaries, mood entries plus explanatory free text – I am thinking here of course on own work on mood tracking – would be better suited as representations of the overarching issues that the target users are reflecting on, or as documentation of a longer reflection activity.

Finally, I would see at the latest here an excellent point in time to engage, as the author did, with the questions of whether a no-tech or low-tech solution might not be equally viable, with less potential to do harm (paraphrasing Baumer & Silberman, When the Implication is Not to Design, ACM CHI, 2011) than a quantified self, digital tracking solution.