I. Towards a Theory of Invested Objects

how I got into this in the first place • an overview of the paper

In January 2015, Buzzfeed's Longform section published Anne Helen Petersen's "Big Mother Is Watching You," a review of fitness trackers, home trackers, baby trackers, car trackers — everything trackers — and a look at the promises of quantification: that "these new devices are capturing data that used to be inaccessible and turning it into something knowable."

Unfortunately, with big promises comes even bigger disappointment. While Petersen combines a look at the coming wave of devices with critical questions about what companies and governments might do with our data — and the types of stories they tell to get us to hand it over — I found myself disappointed that this is the leading edge in the development of digital objects at all. Beyond the fight to rein in surveillance or encourage it for larger goals stands the question: *How did we even get here*?

How did we get to Lively, the device that allows you to spy on your elder parents under the aegis of care? How did we get to the Canary Project, ready to spy on your teens whenever they are in the car (you know, for safety!)? How did we get to Point, listening to your home, Dropcam watching it, and Nest deciding exactly how warm it is? Spire to tell you you're slouching and gloves to determine exactly who is at fault in your worker's comp claim? Sense will watch you sleep and, at the apex, Pavlok, the bracelet that allows you to shock yourself into good habits.

In January 2015, my answer was simple; it was pure lack of imagination. These objects, which I like to call *watcher objects*, were the product of an engineering culture where our capabilities had outrun our dreams. Once we had brought Vannevar Bush's Memex to life, the only big projects left were robotic and dystopian, and what else could we do with our sensors and networks but use them to create objects that noted and reported? And this is as much the fault of the artists as the technologists; after all, when engineers act in concord with the traditional colonial engineering imagination (see, for instance, the "Engineer's Imperialism" chapter of Michael Ada's *Dominance by Design*), artists have to explain why we have not offered a better view of object-data-human relations or why, if we have, the engineers have not heeded it.

Sadly, this seems not to have been the case for those whose first inclination is to be critical of the technological narrative, that group Janet Murray calls *the humanists*. Rather than put forth a better narrative or a more compelling story through which to understand our technical selves, the humanists chose repulsion and refusal.

"One can think of the humanist strand as dramatizing the problem," Murray writes,

> amplifying our discomfort by denaturalizing the rituals by which we deny it. The disciplinary humanists in this volume, whether artists, theorists, or scholars, are all engaged in foregrounding our cultural confusions, tuning up our sense of existential befuddlement before the scientifically revealed world of the twentieth century. (4)

And yet, if we survey the current state of object-data-human relations, we see the humanist complication has had no effect in creating a better or more-human relationship. This is rooted in the strand's fundamental oppositionalism:

> They find the punchcards of the early information age of little use. They are surveying the wreck of ideologies, coming to terms with the failed promises of print, the horrifying trajectory of the rationalist arrow. They insist that we experience the flickering focus, the slipping away of meaning between the signifier and the signified that is the intellectual predicament of the second half of the twentieth century. (Murray 4)

A refusal to acknowledge the tangible benefits technological developments and engineers have brought and an inability to locate meaning in the ambiguous, however flickering it may be, makes it difficult if not impossible to provide a template and impetus for a more humane bent to technical culture or target for development. Rather, via obfuscation, opposition and complication without engagement, artists and critics have ceded possibilities to the dystopians. By engaging contemporary technical capabilities to eat away at the beliefs sustaining our current sickness, we can offer ideas that animate and embody more humane beliefs, and thereby offer better possibilities for engineers and technologists to turn their skills towards.

In *Invested Objects* then, I will investigate the types of object-data-human relationships at the foundation of contemporary digital culture, their origin in the prehistory of computing and nineteenth-century conceptions of logic and truth, and the path they took between the two. Focusing on

the concept of information and, in particular, its expression in cybernetic theories, we can see how the notion of data as contextless and disembodied won out over more contingent understandings and why that may be a bad thing.

Next, I consider ways to pollute the possible with better ideas than we currently have going. If the objects that populate our lives can be considered to be part of a flow of ideas, the technology needed to bring them into being, and the lived experience of their instantiation, polluting the possible means setting loose prototypes of the ideas we want. The notion is rooted in an understanding of the past filtered through concepts from material culture history and an understanding of the future shaped by Joseph Voros's futures cone. Polluting the possible is similar to critical design in the way it views the possibilities of speculative design; it diverges in its earnestness.

The following three sections outline the characteristics required from an information theory pollutant and introduce the broad strokes of my project, Oublié/trouvé. O/t is a hardware–software system for saving and reflecting on memories. It is an embodiment of one kind of invested object.

Rather than undertake the traditional user-centered design approach or quantitative research, this project pulls from the second-wave phenomenological research approach outlined by practitioners like Susan Kozel.

She explains this approach to truth:

> As a first-person methodology, a phenomenological description is received subjectively. As a purveyor of lived experience with the potential for new knowledge contained within it, one person's phenomenological account can be received by others within circles of shared truth. Truth according to this model may be objective and verifiable through repeated experiments, but it also may be entirely unrepeatable and subjective. (17)

The same philosophy underlies the studio-based practice-as-research approach written about by Graeme Sullivan, Estelle Barrett and Barbara Bolt. Describing Bolt's theories, Barrett writes,

> Rather than constituting a relationship between *image* and text …, *materialising practices* constitute relationships between process and text— of which the first iteration is necessarily the researcher's own self-reflexive mapping of the emergent work *as enquiry*. A dialogic relationship between studio practice and the artist's own critical commentary in writing of the creative arts exegesis is crucial to articulating and harnessing the outcomes of these materialising practices for further application. (Barrett & Bolt 5, emphasis original)

As a project whose aims are to question the positivism that sits at the core of more traditional research methodologies, it only makes sense for the invested objet project to move away from such methodologies and into the more contingent and practice-based. This means the primary goal for the project is to explore different roles — designer, hardware manufacturer, software developer, tester — in the conception and creation of an artwork that plays with personal data and information. Within this paper, which

serves as exegesis to the project, it means using *I* and foregrounding anecdotes and impressions.

The secondary goal of the project, as a work of pollution as well as as a phenomenology, is to resonate with other technically inclined artists and peers. To investigate the success of this secondary goal, I undertook two short surveys, despite the majority of the project remaining inward-looking.

The last sections cover the process of developing Oublié/trouvé, reflections on my experience in the various roles, a review of related works, and a look at responses to a marketing site explaining the project as a consumer product.

But let's begin at the beginning.