

Stuck in Isabel's Garden: Anthropomorphic Metaphors and the Oversimplification of Digital Privacy

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Digital privacy is confusing. As such, technology companies deploy anthropomorphic metaphors to simplify what digital privacy means. By leveraging the familiarity of the body, such metaphors ostensibly make the intangible complexity of *digital* privacy graspable. Yet by anthropomorphizing technologies involved in the transformation of the discourse of privacy into a discourse of *digital* privacy, such metaphors confound the promise of “more-than-human” ontology. Through constant comparative analysis of the role that human embodiment plays in historical and contemporary discourses of privacy, this paper weighs the philosophical costs of using anthropomorphic metaphors to simplify the discourse of *digital* privacy. I argue that anthropomorphic metaphors problematically align contemporary technologies with an anachronistic discourse of the human, rather than productively surfacing more-than-human possibilities for understanding entangled modes of being. I provide theoretical implications for research in computing that hopes to harness the non-anthropocentric sensitivity of the “more-than-human” to effect responsible change in the world.

CCS Concepts: • **Human-centered computing** → **HCI theory, concepts and models; Ubiquitous and mobile computing theory, concepts and paradigms;** • **Security and privacy** → Social aspects of security and privacy.

Additional Key Words and Phrases: privacy, history, discourse, metaphors, anthropomorphism, more-than-human

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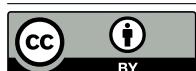
We should never forget the power of the image we subjugate to serve an argument; because if you remember this power, you will know when to let go of your metaphor before it turns on you to enslave your argument.

– Cecile Malaspina [54]

1 INTRODUCTION

The historian David Vincent begins his pithy history of privacy [83] with a complaint from 14th century London. He describes a complaint to the Assize of Nuisance on Friday, July 13, 1341, in which a person identified as “Isabel relict of John Luter” complains that the “tenement” next to her residence has a few broken windows, which allow its residents to “see into [Isabel’s] garden” and “into [Isabel’s] tenement” [83]. Further investigation of Isabel’s complaint via the digital archives of the Assize of Nuisance highlights her frustration:

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The same Isabel complains that John le Leche, fishmonger, has a leaden watch-tower (garritam) upon the wall of his tenement adjoining hers in the same par. upon which he and his household (familiares) stand daily, watching the private affairs of the pl. and her servants.¹

I begin with the example of Isabel relict of John Luter to demonstrate that privacy has a longer history than is generally discussed in Human-Computer Interaction (HCI). Yes, Warren and Brandeis described the “right to be let alone” in 1890 [84]. Sure, privacy subsequently suffered many little deaths, rattling around in dramatic throes for the last seventy years or so [83] – frequently in the pages of popular media [44]; and yes, scholars have doubled down on the control-oriented approach to privacy [3, 85] in the form of contextual integrity [60] (even alongside echoes of pronouncements from industry leaders like, “you have zero privacy anyway, get used to it” and the emergence of surveillance capitalism as a techno-economic *modus operandi*).² But there is more to digital privacy than meets the eye or than can be assessed through the separation of phenomena from the world by way of *the lab* [48]. The roots of privacy – and its discursive transformations – extend well beneath the surface of what is visible. Like the amorphous form of “more-than-human” agents – a form that will receive due attention presently – *digital* privacy presents as an emergent and uncertain function of life among changing institutions.

Answering recent calls for the adoption of historical perspectives in HCI and social informatics [67, 78], I engage with the gnarly present tense of privacy. I do so by focusing on how metaphors used to represent *digital* privacy mire “more-than-human” ontology (e.g., [52]) in anachronistic and anthropocentric metaphors of human embodiment. By “more-than-human,” I refer to a set of ontological positions predicated on a flattening of the historical hierarchy that produces humans as “exceptional” or otherwise separate and separable from “nature.” However, such positions represented by the term “more-than-human” are not unified (e.g. [19, 21, 88]). From various disciplinary perspectives, the “more-than-human” acknowledges that *people* are not singular or ontologically central entities, but are rather assemblages of codependent human- and non-human actors that exist in a flat ontology [21].³ Such acknowledgement plays out in overlapping spaces relevant to social computing: design (e.g., [33, 88]), anthropology (e.g., [82]), and infrastructure studies (e.g., [18, 69]), for example. Such variations of “more-than-human” collectively limn an aspirational mode of understanding *being* that is not predicated on anthropocentrism – particularly *being* in a world dubiously divided into the natural and the social (e.g., [47, 82, 86]).

I engage in comparative analysis to better understand the ontological problems that define our current historical “age of information” (e.g., [1]), wherein technological phenomena (e.g., breaches or potential breaches of privacy) are routinely represented through the deployment of metaphors that form equivalences between historically exceptional humans and contemporary digital technologies. From a theoretical perspective, such equivalences muddy the waters of (*i*) what we talk about when we talk about *digital* privacy and (*ii*) what it might mean to say that we have rounded a “more-than-human” corner in demonstrating care for our worlds. If “more-than-human” is understood as a theoretical position through which we might effect a flat ontology capable of supporting care for our worlds in times of profound ecological and social instability, it would be unfortunate if the convenient deployment of anthropomorphic metaphors made digital privacy understandable by granting to technologies a form of power historically associated with

¹<https://www.british-history.ac.uk/london-record-soc/vol10/pp85-98>

²<https://www.wired.com/1999/01/sun-on-privacy-get-over-it/>

³I deploy the term “assemblage(s)” in the spirit of Redström and Wiltse’s work on “fluid assemblages” from the philosophy of design [66], as well as the more canonical theory of surveillant assemblages presented by Haggerty and Ericson [38].

the exceptionalist human – the very kind of human we seek to transcend through care for more-than-human worlds.⁴ Understanding such problems is essential if those of us in computing are to realize fully our responsibilities for improving life on earth in a “more-than-human” mode (e.g., [19, 20, 35, 51, 88]). As such, one open-ended research question motivates the present work:

RQ1: Does the apparent usefulness of anthropomorphic metaphors for simplifying digital privacy outweigh the potential downstream effects of such metaphors’ tendency to *humanize* computational agents?

To answer this question, I compared two privacy-related events separated by several centuries: (*i*) public privacy complaints lodged with the Assize of Nuisance in 14th century London; and (*ii*) 21st-century, public-facing representations of privacy produced by Apple in the Western Anglosphere. I compare these events to understand how the relatively stable condition of human embodiment mediates and instantiates a discourse of “privacy” across different historical periods.

I argue that anthropomorphic metaphors cast emergent discourses (e.g., *digital* privacy) in the light of the historically exceptional human. When applied to *digital* privacy, anthropomorphic metaphors construct technologies as ontologically *equivalent* to the same human that “more-than-human” theoretical positions seek to transcend. Such metaphors shift the power and centrality of the historical discourse of the human onto computational technologies (e.g., smartphones), even as they efface the exceptionalism upon which the historical human is founded. Through and by means of anthropomorphic metaphors, contemporary technologies inherit the power and centrality of the historical human even as one locates the optimism of computing within the achievement of “more-than-human” futures that eschew the exceptionalism of the human.

The work presented here makes the following contributions:

- it identifies philosophical confounds involved in using anthropomorphic metaphors to communicate what *digital* privacy means; and
- it argues that anthropomorphic metaphors prematurely stabilize a discourse of *digital* privacy by mooring it to the historically exceptional ontology of the pre-digital human.

2 RELATED WORK

I present three related foundations for the present work. First: the theory of discourse provided by Michel Foucault [34]. Second: engagement with, and synopsis of, (digital) privacy as an historical discourse – including the necessity of considering the media effects [2, 89] of advertising in relation to privacy (e.g., [26]). Third: a bridge between privacy-as-discourse and the role of metaphors in rendering *digital* privacy understandable.

2.1 Discourse as History

Time is the medium of change [45] – sometimes even radical change [16]. As time passes in the form of change, evidence of its passage accumulates. From the perspective of post-c19th history [28, 29], such evidence most often accumulates in the form of documents (e.g., [12–14]): written papers, ledgers, personal journals, etc. Such documents are thus treated as *records* and constitute the primary data in post-Rankean, evidence-based historical research. Here in 2024, it is obvious that such records are no longer limited to written documents, but rather include data traces: those bits of people’s actions that, through the passage of time, accumulate through and by means of the digital technologies people use on a daily basis. (See: [23, 67].)

One philosophically-inclined historian in particular, Michel Foucault, was instrumental in systematizing the interdisciplinary production of historical knowledge through the analysis of time’s documental accumulations. Foucault presented a theory of discourse as a means of conducting

⁴“Meet the new boss. Same as the old boss” [81].

historical research [34]. For Foucault, analysis of discourse – the set of possible *énoncés* (i.e., statements written or verbal, actions, events) that hang together to form a “collective construction” [15, p.100] of human modes of being (i.e., the various discourses of “the human” [51, p.2001]) in any given historical period – allows for the identification of meaningful differences between periods of time. In such discursive differences, one finds the productivity of understanding durations of time as eras or ages (e.g., the modern age, the industrial age, the information age, etc.). One similarly finds the possibility of identifying novel eras through the analysis of discourse (e.g., privacy).

Foucault understood *the archive* as a vast and infinitely reconfigurable set of discourses: possible *énoncés* that maintain or challenge the social and power structures that define modes of being in a given period of time and justify such period’s definition.⁵ Such changes, or what Foucault referred to as “transformations” [34], signify breaks between one historical era and another. Ostensibly, such transformations render historical periods such as “the age of information” valid [1], although the information age also has longer historical roots than are generally discussed in HCI [8, 23].

I adopt a Foucauldian approach to the discourse of (digital) privacy [34]. If privacy is a discourse, then it is subject to change. If it is subject to change, we – scholars, researchers, practitioners – are obligated to understand how the technological ecology we have “pushed” out into the world [5] may effect or hinder discursive transformation.

2.2 Privacy as a Discourse

We might trace the word “privacy” back to the Latin *privus* and *privatus*. The former roughly refers to the characteristic of individuality; the latter to the condition of being separate and separable from the body of *the state*. From such etymological evidence, we can infer that a discourse of privacy has existed in relation to the experience of daily life for many centuries. Yet the precise discourse of privacy simultaneously constructed in and addressed by contemporary HCI scholarship is murky in relation to privacy’s deep roots in pre-digital embodiment.

In 2024, the intersection of *privus* and *privatus* – a jumbled and self-contradictory mode of performing oneself in relation to the blurred edges of what constitutes publics – confounds the development of forward-looking approaches to usable privacy, rather than retrospective, corrective approaches that treat privacy as a stable discourse rooted in control. To develop and deploy networked technologies is always already to seed a transformation of the discourse of privacy. I approach the contemporary discourse of (digital) privacy through engagement with advertisements.⁶

The linguist, Norman Fairclough notes that advertising constructs and transforms discourses, which, in turn, effects change in social systems [30, p.115-117, p.210] – there is no obvious reason to exclude the discourse of “privacy” from the set of discourses reshaped by advertising and its rampant commodification of the world.⁷ The media theorist Marshall McLuhan went somewhat further: “historians and archaeologists will one day discover that the ads of our time are the richest and most faithful reflections that any society ever made of its entire range of activities” [59, p.232]. Indeed, alongside the evolution of Benjamin’s *flâneur* from urban anthropologist to mere window-shopping consumer [7] in c19th Paris (and subsequently from consumer to something like a data

⁵Foucault engaged with no fewer than three forms of archives [27]. For the purposes of the theoretical framework I provide here, the broad definition I have provided will suffice.

⁶While some may object to the analysis of advertisements, I contend that to exclude advertisements from analyses of the discourse of “(digital) privacy” simply because such advertisements carry an economic agenda would be to unduly bound “privacy” as a discourse to which only experts (e.g., lawyers, academicians, researchers, etc.) have access. Such gatekeeping would embody the questionable politics of “privacy” as described by McDonald and Forte [57]. The world is monetized and commodified through acquisition and use (e.g., [41, 56, 90]); privacy is, too.

⁷Fairclough’s [30] approach to discourse is not as historically focused as that of Foucault [34]. Yet the two approaches are linked through focus on the ways in which language (statements in Foucault’s case) construct social systems.

prosumer in the age of surveillance capitalism [90] [cf [70]]), the very notion of privacy has been commodified such that its representation in advertisements constitutes a primary means by which “privacy” is defined (implicitly or explicitly) in relation to the public.

2.2.1 Privacy is Transforming. As evidenced by the following excerpt from Lupton’s work [50, p. 61], many of the core questions facing privacy researchers are fundamentally historical:

It has been argued by many commentators that internet users do not expect the same kind of privacy protection that once was demanded of private communications. Some scholars have questioned whether the current era of personalised computerised technology use, social media and widespread surveillance has meant ‘the end of privacy’. Have concepts of privacy narrowed down to liberal assumptions about subjectivity, are they too culturally relative or overly reliant on rights-based discourses, neglectful of new ways of living and being? Can the spatial meanings of privacy, which represent privacy as a kind of personal zone from which others are excluded unless given permission to enter, remain meaningful in a context in which digital users are available for surveillance and gathering for much of their waking day?

Historical change abounds in the quote above. “New ways of living and being” are implicitly contrasted with a vague set of ‘old ways’ (i.e., “privacy protection that once was demanded [...]”). Lupton’s reference to “the end of privacy” is always already an historical problem: ends require beginnings and middles; such components are necessarily temporal. There is no beginning or end without a history or histories. Physical space as an absolute context for interpersonal or inter-actant interaction no longer clearly applies in an era where surveillance – literally the act of watching from above – is commonplace.⁸ To even question the continued appropriateness of ‘the spatial’ as a lens for analysis is to imply an historical change – a *discursive transformation* [34].

The meanings and functions of “privacy” change alongside, and as a part of, historical eras. This much is implicit in: historical privacy-related argumentation (e.g., [43, 83]); media-centric research that demonstrates media effects on people’s expectations of privacy (i.e., if media effects influence privacy perceptions, and new media formats emerge across time, then privacy perceptions logically change across time in relation to media formats and their semantic content; e.g., [2, 89]); the broad set of literature pertaining to the privacy paradox and usable privacy; and the forward-looking theoretical work of McDonald and Forte [57, 58]. That privacy is an historical concept (i.e., one that is performed and transformed in time, the medium of change [16]) is also apparent in the various definitions of privacy that emerged in the middle of the 1900s (e.g., [3, 6, 17, 62, 65, 85]) and the emergence of Nissenbaum’s contextual integrity model of privacy in the early 2000s [60]. When theories of privacy change in relation to the spatial and technological characteristics of a given period of time (e.g., context collapse [37, 55]), it is not unreasonable to consider that ‘privacy’ itself changes simultaneously. (See [57]).

2.3 Metaphors in Technological Discourse

Metaphors are powerful semantic devices. They shape the production of knowledge across time [9]. More specifically, metaphors create equivalences between representations of disparate *énoncés* (e.g., events, objects, statements, etc.) in order to describe one in terms of the other. Far from being limited to domains like literary prose and poetry, the deployment of metaphors is central to sense-making in the human *umwelt* – predicated as such a lifeworld is on the apparently linear maintenance of narrative built upon generations of time’s passage (i.e., change [16]).

⁸For comparison, consider Haraway’s notion of the “god’s-eye view” [40].

Conceptual metaphors [46] promote functional understanding of the world by transferring the semantic indexicality of x to y , where y does not naturally or normally demonstrate characteristics similar to x . Reflexively, we might perform this description of metaphors with the provision of one: “this description of metaphors is opaque.” Being not a physical substrate through which light might pass, the application of “opaque” to “description” performs a metaphorical transference: it positions “description” in relation to something like a pane of glass, implying that like a clean pane of glass, a description should let the light through. The deployment of such a buried metaphor – a metaphor in which the transference of characteristics from x to y is implicit, but required – situates “description” in the embodied lifeworlds of contemporary *people* for whom such transparent objects as windows are commonplace, infrastructural.

While conceptual metaphors transfer indexicality from x to y , *ontological metaphors* transfer *modes of being* from x to y . That is, ontological metaphors cast separate actants (e.g., humans, smartphones) into the same mode of being – a casting that is not always accurate given the uncertain ontological status of technical and digital objects (e.g., [42, 77]) and the uncertainty of the human with regard to “more-than-human” theoretical positions (e.g. [52]). The deployment of anthropomorphic metaphors creates an ontological equivalence between elements of such metaphors, yielding a discourse of “technology” that inherits the historical mode of being assigned to humans – an historical mode that is not obviously aligned with the value of more-than-human ontologies. Lackadaisical use of ontological metaphors that effect an equivalence between “humans” and “technologies” primes not a flat ontology, but an ontology in which technology replaces the human as central to *being*.

2.3.1 Metaphors in Social Computing. Metaphors have long been studied within the broader social computing community (e.g., [53]). Interest in metaphors does not appear to be waning, either (e.g., [4, 25, 49, 61]). For example, and in the context of “networks,” Pierce and DiSalvo [64, p.1] put a fine point on the function of metaphors:

One way to grasp the network in its distributed and diffuse totality is to fixate upon its pivotal metaphors: a cyberspace, a virtual net, a surfable web, an information superhighway, a global village, a digital commons, a social web 2.0, and most recently a cloud and an Internet of Things (IoT).⁹

Such metaphors arguably foster understanding of what “networks” are because they position networks – abstractions bound up in an alien phenomenology [10, 32, 75] – in relation to known and knowable entities (e.g., spatiality in the case of “cyberspace,” a body of water in the case of “a surfable web,” a transportation infrastructure in the case of “an information superhighway,” or the natural world as in the case of “the cloud,” [see [63]] etc.). As the technologically-mediated world becomes more abstract, metaphors appear essential in maintaining continuity from an ontologically “human” point of view.

2.3.2 Metaphors Have Shelf-Lives. But for all of the recent work in and around the relationship between technology and metaphors, there is a wrinkle. Such a wrinkle is found in the temporality of ontological metaphors [46]: they are time-bound and instantiate a certain form of historicity. That is, they are bound up in whatever discourses are stable during a given period of time so as to confer periodicity to such time.

⁹It is worth noting that Pierce and DiSalvo’s framing of metaphors is, itself, a metaphor: “grasp” positions the possession of knowledge or pragmatic understanding in relation to the physicality of objects and the possibility of “grasping” them through and by means of a human condition of embodiment. (See Flusser [31], as well as Han [39], to get a sense of the vastness of the “grip” as metaphor.)

Because of the inherent historicity of the discourses that subtend metaphors, metaphors may, under certain circumstances, outlive their usefulness [54]. As I will describe in Section 5, the contemporary tendency to use anthropomorphic metaphors to make phenomenologically inaccessible techno-events (i.e., “digital privacy”) understandable is problematic. It places researchers, practitioners, scholars, and even corporations and governments at a crossroads. We may proceed down the familiar, anthropocentric path; or we may restructure our understanding of privacy to align with the “more-than-human” [52]. While anthropomorphic metaphors may render a pragmatic understanding of a given technical phenomenon, the tendency that anthropomorphic metaphors have to mistakenly assign *human* modes of being to technologies undercuts what communicative value such metaphors have.

As we lurch toward an unintegrated post- or more-than-human ontological condition, anthropomorphic metaphors merely transfer the weight of the historical human to novel technologies. Such transference does not constitute a more-than-human *ism* characterized by a flat ontology; rather, it prostrates the emergent discourse of *the human* before the technologies and infrastructures it effectively humanizes. Anthropomorphic metaphors function to familiarize people with emergent and phenomenologically alien events [10]; in doing so, such metaphors hinder progress toward a genuinely “more-than-human” ontological position. They do so by objectifying the human (i.e., dehumanizing the human in relation to its historical status) while imbuing the technical with the historical power of the exceptionalist human.

3 METHOD

This section presents descriptions of: (1) the constant comparative method (CCM); (2) the two data sets analyzed in this study; and (3) the deployment of CCM relative to the data sets described.

3.1 Constant Comparative Method

CCM is an inductive mode of qualitative analysis intended for theory-generation [36]. CCM entails a four-part process. First, analysts are tasked with coding data (i.e., open coding) in order to generate a sense of concepts represented therein. Second, the analyst constantly compares and revises codes as they account for novel data – hence the method’s name. Through constant comparison of codes, the analyst able to identify theoretical properties of categories (i.e., sets to which coded materials belong); one moves from analysis of “incidents” in the data to analysis of properties that unite “incidents” into categories [36, p.439]. Subsequent to coding and concurrent with comparison, Glaser prescribes engagement in “delimiting” [36]. Delimiting refers to the reduction of scale and scope, re-aligning the unpredictable outcomes of qualitative analysis with the original questions that motivate one’s research. Thus one moves from codes/incidents to categories to a theoretical armature. Finally, the analyst writes the theory [36, p.443]. Prior to describing engagement with the four processes described by Glaser [36], I describe the data analyzed in this work. I do so in the following two subsections, devoting one subsection to the Assize of Nuisance data and one subsection to the “Privacy. That’s iPhone.” data.

3.2 First Data Set: 14th Century, Assize of Nuisance

The story of Isabel relict of John Luter has already introduced data from the Assize of Nuisance’s online records. Of the 660 complaints recorded in the London Assize of Nuisance between the years 1301 and 1431, roughly 2% (12) are explicitly related to what we might now term “privacy violations.” Such complaints are deemed to be privacy-related because in them complainants specifically use the word “private” or a derivative thereof as a foundation for their complaints.

In each of the 12 complaints, people bemoan neighbors' abilities to see or hear their "private" business. Such complaints are available and accessible in the digital archive of the Assize of Nuisance by conducting a keyword search for "priva*". I present the following complaint as an exemplar:

Thomas Ashebourne, prior of the Austin Friars, complains that Robert Dyngele and Margaret his wife have made nine windows below the height of 16 ft. in their tenement in the par. of St. Peter in Bradstret ward, adjoining his churchyard, through which they and their servants, lessees (firmarii) and tenants can see the private business of the prior and his brethren and servants.¹⁰

Such complaints provide evidence of modern privacy's origins in the context of modern spatiality: the lines of sight and distance of earshot between increasingly cramped living quarters – a harbinger of spatially- and architecturally-motivated definitions of privacy in the centuries to come (see: [3, 62, 83, 85]). The complaints contained in the records of the Assize of Nuisance represent a long history of negotiating and maintaining lines between public behavior and private behavior; a history that proceeds alongside the development of novel technologies, ranging from architectural and city-planning technologies to those now-ubiquitous devices that mediate our inhabited spaces: smartphones. Like the emergent urban spaces of 14th century London, smartphones radically reshape the spatiality of daily life in the 21st.

3.3 Second Data Set: 21st Century, Apple Advertisements (i.e., "Privacy. That's iPhone.")

Using the video advertisement database, iSpot.tv, I collected video advertisements from the "Privacy. That's iPhone." ad campaign. I limited my search to advertisements airing in English and in the United States. Searches on iSpot.tv resulted in the identification and collection of the full run of Apple's "Privacy. That's iPhone." spots from 2019. I list these advertisements here in order of their publication date: "Private Side;" "The Answer;" "In on the Joke;" "Over Sharing;" and "Simple as That." To orient the reader, I provide descriptions of each advertisement presently alongside still frames from each ad. (See: Figure 1.)

3.3.1 "Private Side". First, the advertisement, "Private Side," was published on March 19, 2019. "Private Side" is a forty-two-second spot that presents a barrage of privacy-related imagery, including signs reading, "No Tresspassing," and "Keep Out," a conversation at a restaurant being interrupted by a waiter, a file cabinet being closed and locked, an office door being shut while office blinds are closed, and a teenage female slamming her bedroom door to reveal a sign that reads, "Keep Out." The advertisement ends with the presentation of written text, "If privacy matters in your life it should matter in the phone your life is on". The advertisement closes with a close shot of a Black-presenting female holding her phone in bed. She places the phone on her bedside table, the viewer hears a *click* sound, and the words, "Privacy. That's iPhone." appear on the screen. I present a still frame from this advertisement in Figure 1 (top row, left).

3.3.2 "The Answer". Second, the advertisement, "The Answer," (see: Figure 1, top row, right) was published on March 28, 2019. It is a twenty-eight-second spot that depicts a teenage, Hispanic-presenting male standing in a bathroom. The ad begins with a closeup of a fledgling mustache on the teenager's face. A young-sounding male voice says, "Hmmm. All these websites say it's normal to start shaving at age fifteen." Written words appear on the screen as the viewer watches the young man contemplate shaving for the first time: "Safari limits sites from tracking you across the web. Because what you browse should be your business." As these words appear on the screen, the viewer witnesses the young man make the decision to start shaving. He puts his phone, screen facing down, on a towel. The viewer hears the sound of an electric razor. The written text, "Privacy.

¹⁰<https://www.british-history.ac.uk/london-record-soc/vol10/pp163-183>

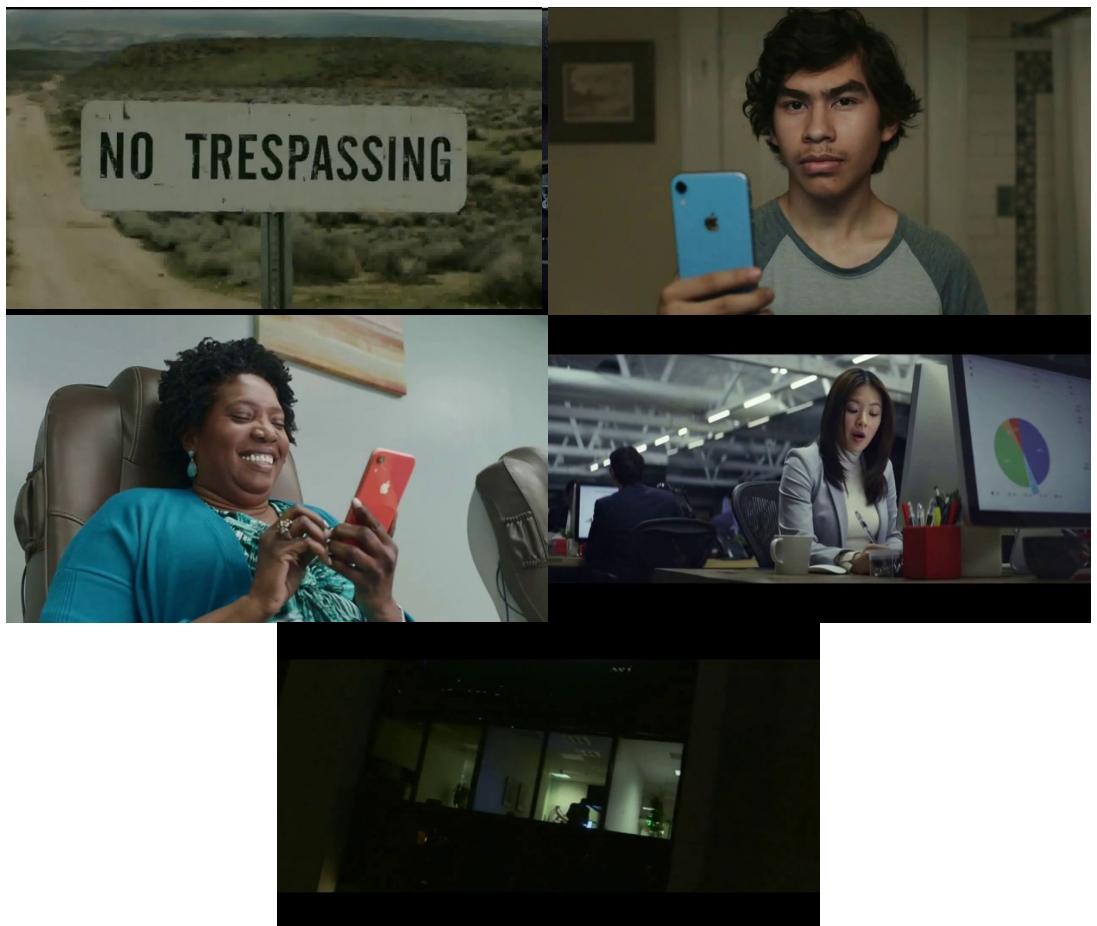


Fig. 1. Still frame from Apple ads in the “Privacy. That’s iPhone.” 2019 ad campaign. Upper row, left to right: “Private Side” and “The Answer.” Middle row, left to right: “In on the Joke” and “Over Sharing.” Bottom row center: “It’s That Simple.”

That’s iPhone.” appears at the center of the frame. Throughout the advertisement, the song “I’m a Man” performed by Muddy Waters plays in the background.

3.3.3 “*In on the Joke*”. Third, the advertisement, “In on the Joke,” (see: Figure 1, middle row, left) was published on May 10, 2019. It is a fifty-six-second spot depicting a Black-presenting woman laughing infectiously as she receives a string of text messages on her phone. Messages are indicated by the audio signal from iMessage, which is audible to the viewer. As the woman’s laughter becomes increasingly intense with the receipt of more messages, written text appears: “iMessage encrypts your conversations.” As the frame shifts from a close shot of the woman’s face and phone to a medium shot of the woman’s social context – a pedicure salon populated by several other people – the written text, “Because not everyone needs to be in on the joke,” appears on the screen. This text is followed by the “Privacy. That’s iPhone.” tagline. There is no musical accompaniment in the advertisement, the soundscape being constructed entirely of the woman’s laughter.

3.3.4 “Over Sharing”. Fourth, the advertisement, “Over Sharing,” (see: Figure 1, middle row, right) was published on September 4, 2020. It is a fifty-six second spot that depicts a diverse set of individuals in variously public settings. In each of these short vignettes, the central character loudly divulges personal information, including divorce proceedings, log-in information for all of their online accounts, the location of their home, their credit card number, their heart rate during exercise, the purchase of pregnancy tests, etc. The divulging of such information in public settings meets with strange looks from other characters in-frame. Following the presentation of these short vignettes, the frame turns black and the viewer is presented with the written text, “Some things shouldn’t be shared. iPhone keeps it that way.” The spot closes on a close shot of a Black-presenting male holding his phone in front of his face while walking through an urban green area. The written words, “Privacy. That’s iPhone.” appear on screen. The video’s soundscape is comprised of music for a small ensemble of strings, for which no authorial information is available.

3.3.5 “Simple as That”. Fifth, the advertisement, “Simple as That,” (see: Figure 1, bottom row, center) was published on October 25, 2019. It is a fifty-six-second spot that uses voice-over narration set against disorienting views of cityscapes. As if from a camera on a drone, the viewer sees off-kilter views of buildings in a city at night. At times the viewer can see into lighted rooms through windows, a woman swimming in a lighted pool, people working out in front of windows at a gym, and finally, into a dimly lighted apartment through a balcony window. As these images are presented, a female narrator says:

Right now, there is more private information on your phone than in your home. Think about that. So many details about your life. Right in your pocket. This makes privacy more important now than ever. Your location, your messages, your heart rate after a run. These are private things. Personal things. And they should belong to you. Simple as that.¹¹

“Simple as That,” closes when the drone-camera flies through a balcony door of an apartment and reveals a Black-presenting female sitting in her dimly lit living room, holding her iPhone in front of her face. The camera angle is such that the phone obscures her face before the words, “Privacy. That’s iPhone.” appear on screen.

3.4 Present Deployment of CCM

Having described the two datasets with which I engaged, I now present my rationale for comparing data points from such disparate sets. I then describe the process of deploying CCM.

3.4.1 Rationale. I chose to compare privacy complaints from 14th century London and public-facing communications (i.e., advertisements) from the 21st century Western Anglosphere because of the similar functions such events play in relation to constructing a discourse of “privacy.” In both cases, agents (i.e., complainants and tech producers) leverage existing infrastructures (e.g., the law, advertising) to negotiate the social norms of their respective historical periods. Such norms are obviously negotiated in relation to the technological characteristics of each respective era. I further drew inspiration from the work of Crawford et al [22], which demonstrates the value of analyzing the historical semantic content of tech-oriented advertising, as well as Wong and Mulligan’s work analyzing the function of concept videos [87] – ads and concept videos both imagine futures. Seberger [68] further engaged in a conceptual analysis of smart home advertisements in order to suss out latent ontological problems in the discourse of “the user.”

¹¹In this quote, I use periods to denote pauses in the narration.

3.4.2 *Caveats.* I take as a given that advertisements are active in the construction, negotiation, and maintenance of the discourse of digital privacy. I do so because in a late-capitalist age characterized by hyper-networked people and devices, it would be of dubious value to separate legal, academic, and consumer-oriented facets of the privacy discourse – indeed, to separate out advertising and the communications of Big Tech companies (i.e., Apple) would be to deny the role that corporations play in redefining the social contract (see: [73, p.1-2, 13-14]).

RQ1 is concerned with the ways in which human modes of sensation and perception are involved in the construction, negotiation, and maintenance of “privacy” within historically-framed social imaginaries [80]. The cases compared in this study each demonstrate suitable characteristics to answer the sole research question that motivates this study: each situates individuals possessed of a more or less standard kit of human sensation and perception within the sociotechnical spatiality of a given era. The relationship between such spatiality (itself a technological construction in relation to urbanization), human sensation and perception, and violations of “privacy” are sufficiently present in both cases to warrant comparison. I make claims about neither the separability of discursive facets of “privacy” nor the veracity (or positivist Truth) of “privacy” in either case. We are obligated to follow the discourse of privacy through its myriad simplifications and descriptions, rather than imposing *a priori* assumptions about what “privacy” means in order to perpetuate the usefulness of such simplifications and descriptions over time.

3.4.3 *Deployment of CCM.* Constant comparison of the Assize of Nuisance data yielded two categories: vision and audition. A third category, spatiality (i.e., the proximity of living quarters in an historically emergent period of proto-urbanization), became apparent through constant comparison given that vision and audition are always already phenomena grounded in spatiality and temporality. Thus a total of three categories were derived from analysis of the Assize of Nuisance data.

After identifying initial categories of incidents in the Assize of Nuisance data, I began analysis of the “Privacy. That’s iPhone.” data. I focused on the ways in which vision, audition, and spatiality are used to communicate what (digital) “privacy” means some seven centuries subsequent to the complaints lodged with the Assize of Nuisance. I deployed the code of “proprioception” (i.e., the embodied sense of oneself in space) to account for the forms of spatiality constructed in the Assize of Nuisance data and the “Privacy. That’s iPhone.” data.

4 FINDINGS

This section lays out findings related to the use of human vision, audition, and proprioception as metaphors for constructing and representing the contemporary discourse of digital privacy. In doing so, it illustrates the profound similarities between 14th century privacy complaints and 21st century representations of *digital* privacy, which serve as foundations for the discussion to follow.

4.1 Vision, or Privacy as Line of Sight

Most commonly in the “Privacy. That’s iPhone.” ad campaign, that which is unseen is private. As such, the primary sensory-based metaphor for privacy in the ad campaign is vision. The primacy of vision in the “Privacy. That’s iPhone.” ads mirrors the primacy of vision in the complaints lodged in the Assize of Nuisance. Yet where vision was primary in the Assize of Nuisance complaints, its primacy derived from the relative absence of non-human modalities of communication in 14th century London. In 14th century London, vision achieves its primacy in relation to privacy because of the comparatively limited set of mediators involved in the construction of what might now be called the sociotechnical ecology. The importance of vision *vis-à-vis* privacy complaints in the Assize of Nuisance is a result of pre-digital form of spatiality.

Centuries later, the advertisement, “Private Side,” presents images that signify privacy, or the spatial division of the public and the private as represented by lines of sight. Such presentation occurs despite the hyper-mediated sociotechnical ecology of the 21st century. In various scenes throughout the ad, physical signs declare spaces to be private or protected; doors and windows close to occlude inhabitants of rooms; shades and shower curtains are drawn. Such lines of sight and the objects which disrupt them obviously occur within the human *umwelt*: the macro-biological niche in which human embodiment meshes with the broader world. This is the same *umwelt* in which Isabel Relict of John Luter [83] complained about her neighbors in 14th century London.

Yet such lines of sight are only conveniently applicable to the 21st century – they ground the discourse of digital privacy in the discrete contexts of a world known wholly and exclusively through physical embodiment. Such lines of sight are not necessarily applicable to a digital realm in which actants (e.g., apps, phones, etc.) do not possess embodied means of sensation, but rather constitute a meta-context for human embodiment.

Complainants to the Assize of Nuisance construct privacy violations based on *having been seen* to engage in actions that are not meant to be seen by others. Characters in the Apple ads, however, are *seen* to engage openly with their devices. Thus, it is not having been seen to engage with a device, *per se*, that constitutes a privacy violation; it is, rather, the possibility that those actants enmeshed in the assemblage of the device which constitutes the site of potential privacy violations. Where Isabel worried about lines of sight into her garden, we – as users – worry that the walls of the garden might see.

It is not necessarily the seeing, then, that constitutes a privacy violation. It is, rather, the seeing of what occurs in the abstract spatiality of the iPhone that constitutes a violation. From this, I infer that the interaction between user and device (e.g., iPhone) constitutes a category of spatiality unto itself: one in which the immediacy of the user’s physical space extends to include an abstract and unknown spatiality that includes the invisible infrastructures [69, 79] of networking, packet transfers, data brokering/trafficking, and model-training.¹²

Apple’s emphasis on the importance of sight implies that the process by which third parties gain access to user data is analogous to *human* sight. The ontological-metaphorical transference becomes clear when we consider whether non-human animals might breach a human individual’s privacy. The answer is generally, “no.” The ontological metaphor that connects the human to the non-human, technological observer within the Apple advertisements is not only problematic, but patently absurd – unless we assign human qualities to the device’s assembled actants that might “see.” Such a mode of communicating “what privacy is” primes the fear of being seen, but does not identify actants which might “see” beyond situating them within a broader ontology of an historical human.

4.1.1 iPhone as Visual Barrier. In the majority of the Apple ads, the iPhone itself is depicted as a visual barrier protecting user privacy. The iPhone is both the site at which a novel spatiality is constructed and the mode of bounding lines of sight into such spatiality. Thus, the problem is privacy (i.e., being seen) and the solution is the iPhone, which prevents “being seen.” (See Figure 2.)

Apple presents the iPhone as a shield that occludes one of the most personal characteristics of a user: their face. It is, metaphorically, like the walls of Isabel’s garden, or the windows that Thomas Asheburne wished would be covered. Such occlusion implicitly situates the discourse of privacy as it relates to Apple and smartphones as one of lines of sight: that which cannot be seen is implicitly private; that which prevents seeing (i.e., obstructs lines of sight) is implicitly privacy-preserving. Yet, again, the assemblage of possible third parties who might *see* end users

¹²In referring to “invisible infrastructures,” I am drawing on the work of Star and Ruhleder [79], in which the authors famously claim that functional infrastructures are functionally invisible – they are taken as given.

(i.e., breach their privacy) remains unidentified. Yet through reliance on the metaphor of human sight, such unidentified third parties receive the capability of human-like sight.

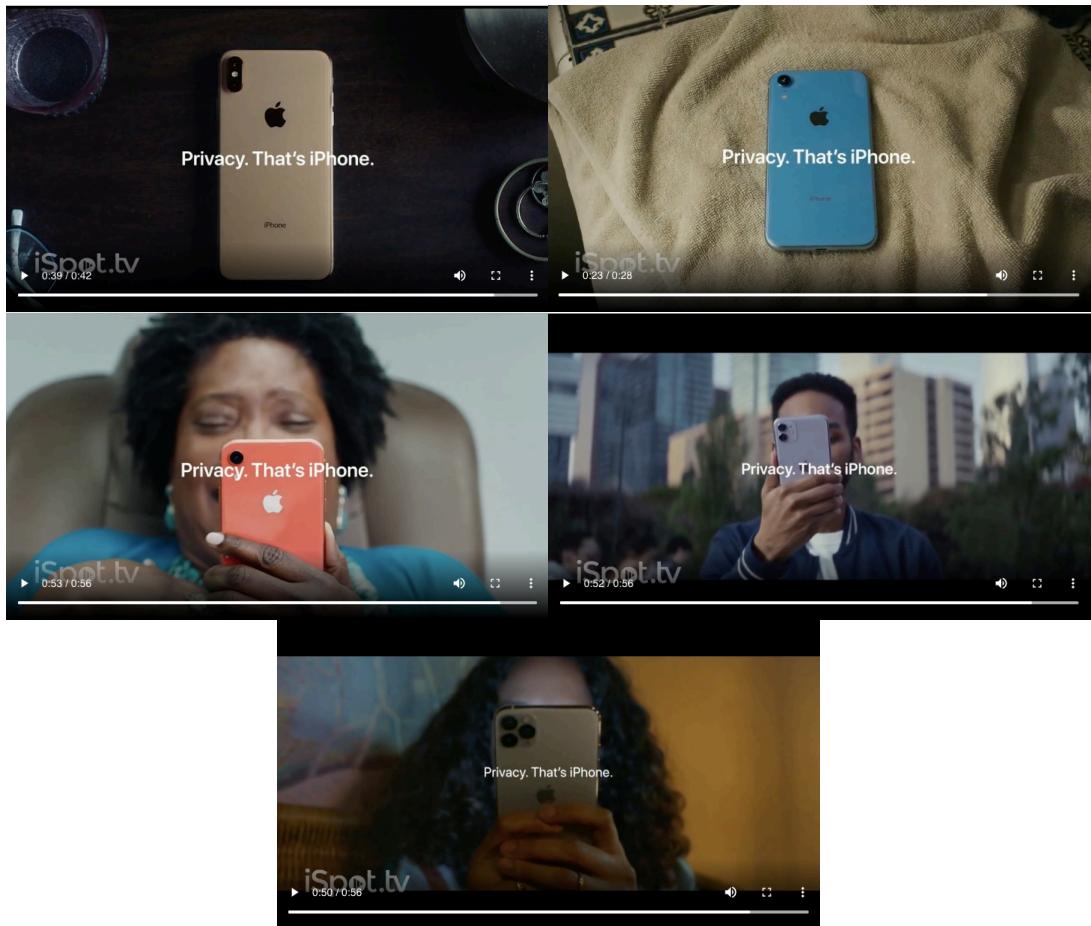


Fig. 2. Still frames of each closing shot from Apple's "Privacy. That's iPhone." ad campaign. Top row, left to right: "Private Side" and "The Answer." Middle row, left to right: "In on the Joke" and "Over Sharing." Bottom row center, "Simple as That."

"The Answer," while not ending with an image of the teenage male's face obfuscated by an iPhone, *does* end with a similar image. At the close of "The Answer," the teenage male places his phone, screen-down, on a towel. Where the towel stands as a symbol of hygiene, and the ad is itself framed by a young male consulting the web (via the browser Safari) to learn when it is appropriate to start shaving, the placement of the phone on the symbolic towel indicates that the iPhone shields the young man's decision from interlocutors. In some ways, this is a more powerful metaphor than those that conclude the other ads in the "Privacy. That's iPhone." campaign. While the terminal shot in the other ads implicates the iPhone itself as a privacy-preserving device by representing it in such a way as to obscure users' faces, the terminal shot in "The Answer" speaks to a deeper privacy: not one of phenotypic characteristics as might be collected for facial recognition, etc., but rather one of self-knowledge. The young man who consults the web for advice about when to start

shaving is enrolling the web – a sprawling polyphony of actants – in the deeply personal process of puberty and sexual development.¹³

4.1.2 Summary of Findings about Vision. The phone itself is used as a visual obstruction: a shield that protects the user from being seen. By presenting the iPhone as an object that literally occludes the user or their intentions/context from sight, the “Privacy. That’s iPhone.” campaign effects a rhetorical switch: it inverts the relationship between (*digital*) *privacy* and *the smartphone*. By inversion, I mean that this ad campaign constructs the smartphone as the solution to privacy problems, when, in fact, the smartphone is in many ways the cause of many privacy problems, providing as it does by way of apps, platforms, etc., third parties with access to data. Vision as a site of privacy maintenance or violation, then, in the iPhone ads is wholly mediated by the smartphone. The smartphone colonizes the human sense of vision, along with the phenomenological experience of vision. Vision-as-privacy becomes discursively inseparable from the smartphone that mediates the world; through such discursive inseparability, the smartphone comes to occupy the same ontological space as the human that sees. Such occupation hardly represents a “more-than-human” ontology, but rather an ontology in which the human is superseded by the technological.

4.2 Audition, or Privacy as Earshot

Three of the ads comprising the 2019 run of the “Privacy. That’s iPhone.” campaign draw parallels between that which can be heard and that which constitutes a privacy violation through being heard. (See Figure 3.) Such parallels echo complaints from Isabel relict of John Luter and others from the 14th century Assize of Nuisance.

In the ad, “Over Sharing,” characters loudly divulge personal information in various public settings. The ad’s reliance on the human sense of audition speaks loudly to the difference in spatiality between pre-digital and digital contexts. While the human sense of vision affords a roughly 165 degree field of perception, audition is all-encompassing: we see those stimuli which present in front of us, but we hear in 360 degrees of space (as well as a vertical axis). Thus, the representation of privacy as a phenomenon grounded in audition is perhaps the strongest implication that “digital privacy” plays out at different scales depending on the spatial qualities of the context in which privacy is protected or breached.

In “Over Sharing” other people populating public spaces represent third parties that might gain access to users’ private data. While strangers co-inhabiting public spaces gain access to erstwhile private information when the various protagonists of “Over Sharing” loudly share personal information, it remains unclear just who or what gains access to such personal information at the scale of Big Tech firms and the brokers and buyers of use-related data.¹⁴ Put differently, strangers in public spaces stand in for ambiguous third-parties in the “Over Sharing” ad. The viewer is thus primed to anthropomorphize third parties: to situate third parties that might gain access to their data within the category of “other people.” But it requires some little stretch of the imagination to assign human senses (e.g., audition, vision, etc.) to the non-human third parties implicated in the contemporary discourse of privacy.

“In on the Joke” also focuses on the human sense of audition, but its use of audition to situate privacy concerns differs from that of “Over Sharing.” As described above, that which is audible to non-central characters (i.e., the other individuals populating the pedicure salon) constitutes

¹³I assume that the personal nature of this development is apparent, but would contend that the young man’s situation within a private room of the familial house (i.e., the bathroom with its closed door, glazed windows, and closed shower curtain) further communicates the private nature of the young man’s decision.

¹⁴In a non-trivial difference between the role of audition in 14th century privacy complaints and 21st century Apple ads, audition is only problematic in the Assize of Nuisance when the ‘hearer’ is identifiable.

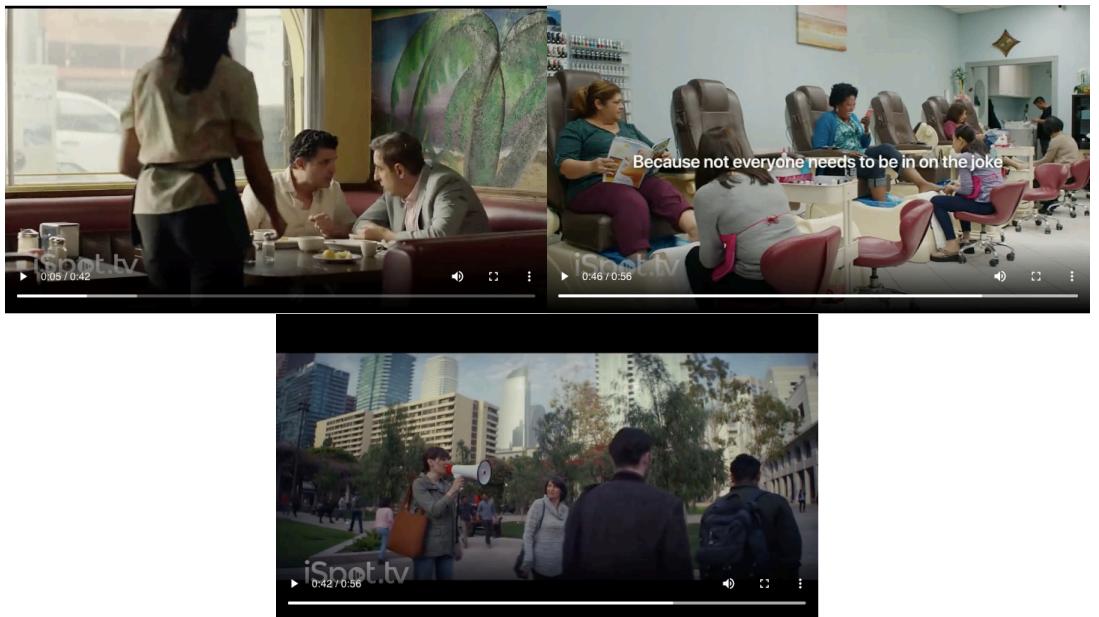


Fig. 3. Still frames from Apple’s “Privacy. That’s iPhone.” ad campaign depicting audition-based representations of privacy. Top row, left to right: “Private Side” and “In on the Joke.” Bottom row center, “Over Sharing.”

smoke to the metaphorical fire of a privacy violation. Hearing evidence of private communications (i.e., the infectious laughter of the main character) places third parties at the eaves of a private communication. Yet, in reducing the spatial relationship between herself and her phone (i.e., holding her phone directly in front of her face), the main character protects the communications she wishes to remain private. Thus, in terms of the role that senses play in communicating the meaning of (*digital*) *privacy* in an increasingly networked world, we might conclude that audition is a secondary sense relative to vision. As with the preceding discussion of vision, we see here that the smartphone (iPhone) supplants the human as central in the constitution of privacy. The human is not expanded to include “more-than-human” actants, but is rather superseded by those actants.

Further, in the ad, “In on the Joke,” the inclusion of narration indicating that “iMessage encrypts your messages. Because not everyone needs to be in on the joke,” situates unwanted access to messages as a form of eavesdropping. Yet, the ad does not specify the nature of potential eavesdroppers. Instead, and as has been observed in prior empirical work [72], those who might act as eavesdroppers and therefore violate an individual’s privacy by gaining access to private messages, are implicitly comprised of the broad category of “others.” The encryption that iMessage effects is not one directed at any specific eavesdropper, but rather at the unspecified set of actants who might gain access to messages. The eavesdropping that iMessage allows is not actual eavesdropping: nothing is heard. Rather, the human sense of audition stands in for the means by which unknown third parties (e.g., eavesdroppers) might gain surreptitious access to information or data not intended for their consumption.

“Private Side” relies upon a mix of vision- and audition-based representations of privacy. The primary audition-based representation found in “Private Side” involves a pair of men sitting at a table in a cafe. They are engaged in a conversation, but cease their conversation when a waiter approaches their table. That which is unheard in the spatial context of two individuals ostensibly

remains private. Yet theirs is a spatiality co-comprised by humans and inanimate materialities: tables, windows, walls, menus. The diners are able to maintain their privacy through the cessation of discussion when the waiter encroaches upon their physical space. The demarcations of an analogous space are not clear within the pseudo-lifeworld of the smartphone. In a bizarre inversion, the human appears as encroacher in relation to the intangible spatiality of the smartphone.

4.2.1 Summary of Findings about Audition. In each of these advertisements, audition is used to represent a means by which third parties might gain access to otherwise private information. Yet, the vast majority of third parties involved in the negotiation and maintenance of privacy do not possess the ability to hear in a way that relates to the human experience of audition. In these advertisements, I interpret audition to symbolize the transmission of information within a given space. Yet, the human spaces of buses, public parks, movie theaters, diners, etc., are poor representations for the spatiality of data as it is collected via apps, passed through networks, stored in servers, and ultimately processed via algorithms to achieve some kind of informational output. Human users occupy, by means of inescapable embodiment, the spaces in which informational outputs are provided. Such human users, however, do not and cannot occupy the spatialities of servers, etc. Rather, digital traces of human users occupy such spaces.

At best, the use of audition as a metaphor for privacy invasions in the “Privacy. That’s iPhone.” advertisements makes viewers aware that just because third parties are not immediately apparent to them (i.e., visible to them) doesn’t mean that such third parties are wholly absent. At worst, however, the use of audition to communicate the nature of privacy in a digital context primes the anthropomorphosis of networked systems. Such anthropomorphosis of networked systems constitutes a slippery ontological slope. Yet, it is a slope that may define the nascent discourse of privacy that will emerge through the transformative powers of networked computing’s ubiquity. An examination of how the body senses itself in space (i.e., proprioception) will elucidate.

4.3 Proprioception, or Humanizing the Surveillant Other

In the two previous sections, we have seen that Apple constructs privacy as a function of vision and audition. We have similarly seen that such modes of sensation are framed by an anachronistic form of spatiality: that in which space is wholly accounted for through the physical space of embodiment (e.g., gardens, buildings, etc.). In the present section, however, we encounter a representation of an alien spatiality in which vision and audition occur in relation to a technological Other – the same Other represented by the assemblage of actants that comprise the smartphone.

As already discussed, “Private Side” begins with a montage of signage. Such signage communicates to the viewer common contexts: the division of space into different areas. Such areas ostensibly belong to (i.e., are occupied by) different parties (i.e., human agents). Such belonging constitutes the boundary of the private and the public (i.e., the performance of *privus* and *privatus*). The implication is that spatial boundaries that define public/private space in the physical world can and should map onto the *n*-dimensional space of digital data. Yet the alien and disorientating spatiality of the digital world is specifically addressed in another ad.

“Simple as That” juxtaposes humanly embodied spatial orientation (i.e., proprioception) with the alien perspective from a camera-equipped drone flying through a cityscape. It is through such perspective that the concept of the “more-than-human” is most apparent. Yet the perspective’s functionality – the means by which it communicates an external and agential actant as a form of predator in relation to human embodiment – is always already predicated on the familiarity of perceiving the world *as human*. The images derived from the camera-equipped drone that provides the footage for “Simple as That” are purposefully off-balance. That is, they present disorienting views of common urban sights: buildings, freeways, even the city skyline itself. Such disorienting

perspectives subtly introduce the phenomenological Other that might be responsible for peeping or eavesdropping (i.e., the unspecified set of third parties who might gain access to data not intended for their access). (See: Figure 4.)



Fig. 4. Still frames from the advertisement, “Simple as That” from Apple’s “Privacy. That’s iPhone.” ad campaign. Each still frame presents an off-kilter and disorienting vantage on an otherwise common subject: a mirrored cityscape from the air; a row of office windows in a high rise building; a swimming pool; a lighted private residence in an apartment building.

As the camera-equipped drone flies, the viewer sees through windows into offices and apartments, a god’s-eye view (see: [40]) of a figure swimming in a lighted pool, and people running on treadmills in front of apartment-complex windows. Each of these sights is seen from an off-kilter perspective: floors are never parallel to the bottom edge of the frame; medium external shots reveal buildings standing at strange angles relative to the landscape of the frame. Such cinematography alludes to the alien assemblage of actants that might gain access of a user’s data and therefore breach their expectations of privacy. Such an assemblage *sees*, but does so differently, metaphorically. In so seeing, this technological Other is cast in the ontology of the human.

Yet, “Simple as That” resolves the disorienting effect of its cinematography by ending with a close shot of a woman in her apartment using her phone. The complexity of the digital Other that might *see* or *hear* private data is reduced again to simple human lines of sight. As in other ads, in the terminal shot of “Simple as That” the iPhone is positioned as the user’s shield: as an object that stands for or symbolizes her privacy by visually obfuscating her face. The closing close shot of “Simple as That” appears to resolve the disorientation of the contemporary heterogeneity of digital privacy by refocusing on a human user: a woman in the comfort of her own home. Yet such resolution is deceptive. The resolution achieves itself through the protection provided by the iPhone – a protection only required because of the existence of such smartphones in the contemporary digital ecology. The device protects its user from the predation of the off-kilter Other despite the fact that the smartphone is *of* that Other. What we see is the interpellation [23] of the

“human” through and by means of the undefined third-party, the digital Other. Such interpellation signifies a superseding of the human through the anthropomorphic metaphor of proprioception.

4.4 Summary of Findings

Analysis revealed that anthropomorphic metaphors were the primary means by which the discourse of privacy was constructed in Apple’s “Privacy. That’s iPhone.” ad campaign – a public-facing series of communications that implicitly defines digital privacy. The message communicated is, “What can be seen or heard is not private, *per se*.” Yet, such ads also deployed an Other’s perspective: a disorienting and non-human view from a drone as it flies through a nighttime cityscape. Despite comprising an Other’s view, such a perspective is filtered through pre-digital and deeply anthropocentric modes of sensation and perception (e.g., human sight, human audition).

In “Simple as That,” the drone’s alien view of the city represents a new reality: apps, platforms, and Big Tech institutions – each deeply entangled with the datafication [50] of the contemporary world – demonstrate modes of awareness about people’s data that do not map onto the familiar modes of human awareness: the processing of worldly stimuli through embodied senses. The non-human actants onto which Apple foists both the violation and protection of privacy do not (and cannot) *see* or *hear* us or you any more than your grandmother’s couch might. Rather, by framing the view of an alien surveillant assemblage [38] in anthropomorphic metaphors, and therefore creating an ontological equivalence between human users and non-human devices (e.g., smartphones), Apple mobilizes end users’ fear of *having been spied or having been eavesdropped*. Non-human devices (e.g., smartphones) become human-like in their ability to spy and eavesdrop. Such fear further positions the human (as user) in an ontology in which technology is primary; such primacy does not align with “more-than-human” ontologies in which flatness characterizes the relationship between historically separate and separable actors, but rather asserts technologies as *dominant over* the contemporary human (i.e., user). Such technological dominance indicates not the flat ontology of the “more-than-human,” but an ontology in which the historically exceptionalist human is subservient to technologies that *inherit* the power of the historically exceptionalist human. What emerges is not a flat playing field through which humans and technologies might collaborate (or even *play* [74]) to yield care for worlds, but a sloped field in which technologies and people exist in an adversarial, predative relationship.

The use of anthropomorphic metaphors to convey the meaning of *digital* privacy may prime people to understand machines through an anthropomorphic lens. That is: the smartphone sees, hears, and orients itself in space – processes most clearly interpretable through the experience of human embodiment. While human embodiment allows for emphatic communication of privacy violations through metaphors of vision, audition, and proprioception, such simultaneous products and constituents of human embodiment do not adequately map onto the modes by which digital technologies parse the world. If we take as given that digital technologies do not *sense* in a way that fully maps onto the modes by which embodied human individuals sense, then we are obligated to address the delta between human perception and digital-prosthetic, computational perception. When such a delta – logically identified, but as yet not fully known – is treated as a focal point of research, the apparent sensibility of relying on metaphors of human senses to represent privacy violations appears counterproductive: it centers *people* as the underdogs in an adversarial relationship with technologies that have been humanized through the deployment of anthropomorphic metaphors that wield the power of the historically exceptional human.

5 DISCUSSION

As researchers, practitioners, and scholars – all united by a condition of being users – we appear to be stuck in Isabel’s garden. Anthropomorphic metaphors deployed to simplify the discourse of

digital privacy reduce privacy to a problem of vision, audition, and spatiality (i.e., proprioception). Such reduction primes everyday people to understand digital privacy as something equivalent to audition and vision in the relatively simplistic spatiality of pre-digital life. Through such reduction, communications like Apple’s “Privacy. That’s iPhone.” ad campaign cast interlopers – privacy-violating actants – into the ontology of the historical, exceptional human. Such construction of interlopers as human-like undercuts the value of “more-than-human” perspectives. What the viewer is left with is a non-human observer that inherits by way of an ontological metaphor the power associated with the historical and exceptionalist human.

While each of us – author, readers, users – lives in worlds vastly more mediated than that which contained Isabel relict of John Luter’s 14th century garden, it would appear that we are incapable of escaping the discursive simplicity of Isabel’s garden. Put differently: we appear to be stuck in a world of human sight and audition that we transfer to the instruments of an hybridized “ism” at the intersection of computerized empiricism and surveillance capitalism. Through such preoccupation, it becomes possible to assign privacy violations to devices themselves, rather than to the agencies (e.g., corporate bodies, economic motives, bad actors, etc.) that subtend the deployment of such devices. Such possible assignment demonstrates the dangers of, as Malaspina said [54], letting metaphors enslave arguments.

It may once have been appropriate to reduce privacy to seeing and hearing. The complaints submitted to the Assize of Nuisance in 14th century London attest to this [83]. It may once, as well, have been appropriate to strictly limit privacy to an issue of control over who sees what and hears what – a form of control that negotiates distinctions between different resonances of “privacy” (e.g., *privus* and *privatus*). Control-oriented approaches to privacy are also historically appealing because of their ostensible focus on identity: the ability to control who and what influences one’s identity, as well as the ability to control which facets of one’s self are known to others.

Yet such historical approaches to privacy are clearly complicated by the proliferation of networked technologies, each of which belong (in one form or another) to the contemporary data economy. By virtue of networking, the peeper and the eavesdropper are always already in the loop. In the “Privacy. That’s iPhone.” ads, Apple positions smartphones, like beer to Homer Simpson, as the cause of and solution to all of privacy’s contemporary problems. Should such a representation, grounded in fundamental characteristics of normalized human embodiment, be perpetuated, the effects on what it might mean to say, “my data are private,” are many and varied.

5.1 Grappling in the Stuckness

Amid the confounding and contradictory semiotics of the anthropomorphic metaphors used to simplify digital privacy and render it familiar, in the words of Lupton, everyday users are left to “[grapple] with coming to terms with new ways of defining privacy in a context in which concepts of ‘the public’ and ‘the private’ are no longer confined to a spatial dimension” [50, p. 61].

In the analysis provided above, one reason for such “grappling” becomes clear. In Apple’s “Privacy. That’s iPhone.” ad campaign, basic metaphors of sensation and perception are still used to communicate what privacy means. In this use of metaphors grounded in vision, audition, and proprioception, the user is implicitly placed within an exclusively physical world that *presents itself as experientially physical* exclusively through the human condition of embodiment. Yet for all of information’s materialities (see [24]), the human body is permanently excluded from the scale of the digital. (See Bowker’s analysis of microtemporalities [11]). Data *about* embodiment can be digital; the body cannot be digital in and of itself. The map may, indeed, turn out to be the territory [76], but humans perform themselves as agents grokking the difference between the two. Such is the clearest impetus for the development of “more-than-human” perspectives: people are arguably *in* the data they produce, but people are emphatically not *of* such data. We in computing can only

sufficiently accept responsibility for a more-than-human world when we respect the profundity of such grokking rather than enrolling digital “maps” of the world into anthropocentric ontologies.

As embodied people, users simply cannot and do not experience the world *of* data. We encounter its edges. Such users, of course, see outputs of data processing, but the ontological realm of data remains alien, *per se*. When data about a user’s practices – the ways in which they perform their daily lives through and by means of digital technologies – are processed in such an alien realm, but such processing is communicated through ill-suited metaphors that construct processing agents as “seeing” or “hearing”, “grappling” is perhaps all one might expect of an informed user. To borrow language from Westin [85], faulty metaphors used to explain what (digital) privacy is cannot contribute to people’s “reserves,” which I interpret presently as their ability to mentally protect themselves from the effects of sociotechnical systems that challenge core, and long-founded beliefs about privacy. The development of such reserves is an under-explored facet of privacy literacy.

5.2 Reconstructing “Humans” in Relation to Anachronistic Privacy

Lupton adeptly notes that the discourse of “the human” may, indeed, encompass such relatively novel theoretical positions as posthumanism, the more-than-human, and the transhuman [52, p.2001]. That is, such novel ontologies of the human always already relate to a preceding ontology of the human. Such is the conundrum investigated in the analysis above. As the motivation for this work, I asked whether the downstream ontological effects of deploying anthropomorphic (and therefore anthropocentric) metaphors to explain phenomenologically inaccessible phenomena to users is warranted. Based on the analysis provided above, I contend that it is not warranted. Rather, the continued use of anthropomorphic metaphors for the explanation of such complex techno-phenomena as “privacy” paints researchers and theorists into a corner. On the one hand, anthropomorphic metaphors probably do yield better understanding of privacy among everyday people. On the other hand, such metaphors hamstring the value of novel ontologies of the human precisely because they replace the centrality of the historical human with the centrality of emerging technologies. Such centrality does not represent a flat(ter) ontology, but rather an ontology in which technology receives primacy.

Through its various treatments of privacy, computing simultaneously embraces and repels novel ontologies of the human. Such paradoxical action is possible because of the present ontological variety of the human. *On the one hand*, HCI engages with theories of privacy that implicitly construct people as rational users – actors who engage in logical calculus in order to weigh the trade-offs that come with technology use. While this is a particularly conservative approach to privacy, it is also, unexpectedly, a posthuman approach: an approach that drowns the *sui generis* human in a wave of objectifying empiricism, resurrecting the *sui generis* human as a function of something greater than itself: an epistemic culture wherein the weight of *scientistic* knowledge production colors the greyness of the human *umwelt* (i.e., the sociotechnical system that rests upon the macro-biological niche in which people experience themselves as a function of embodiment).¹⁵

On the other hand, the objectified human created and so frequently addressed in privacy research – the human who is an empirically constructed and metricated “user” – retains the limits of human embodiment. Yet the extension of embodiment constituted by the ubiquity of computational devices (e.g., smartphones, wearables, etc.) challenges the edges of the historical human body. Indeed, it challenges the centrality of historically stable human embodiment in relation to the discourse of “the human.” Through and by means of computational devices, humans no longer see only that which appears to the naked eye; they, rather, see that which first appears to the algorithmic eye and which is subsequently presented – regurgitated – in the form of human-readable information

¹⁵For coverage of *scientism*, see: [71, p.8].

outputs [75]. And yet, such a confounding and foreign notion is not easily explained to everyday users. We appear caught between a rock and a hard place: dumbing down the complexity of *being* in a “more-than-human” mode by explaining techno-phenomena through metaphors of human sensation and perception; or normalizing a more accurate, but alienating [69] condition of *being* in an ontology in which we are no more exceptional than a finch, a coffee bean, a virus, or a mushroom [82] – and neither are networked devices.

6 CONCLUSION

Constant comparative analysis of data from two privacy-related events separated by seven centuries revealed the extent to which the sprawling discourse of digital privacy is oversimplified through advertisements (i.e., a component of the “digital privacy” discourse in our heavily monetized age of surveillance capitalism). Such oversimplification occurs through reliance on anachronistic metaphors that draw on the pre-digital ontology of the human; such metaphors anthropomorphize digital technologies (e.g., smartphones). While the use of such metaphors likely renders the complex contemporary discourse of privacy more understandable to everyday people, such use constitutes a double-edged sword. Anthropomorphic metaphors create implicit equivalences between the historical human and contemporary technologies (e.g., smartphones). The formation of such equivalences implicitly confounds the development and proliferation of novel ontologies, including, but not limited to, the “more-than-human.” Such confounds arise through the conflation of “technology” (e.g., smartphones) with the historical ontology of the human (i.e., as exceptional). Such confounds therefore manifest as a humanization of technology, rather than a flattened ontology in which heterogeneous actants are understood to be equally valid and valuable. As the computing fields continue to recognize and account for their social and ecological responsibilities, the simplification of “digital privacy” by way of anthropomorphic metaphors is ultimately counterproductive. Anthropocentric metaphors *may* render digital privacy more broadly understandable, but such understandability leaves us – scholars, researchers, practitioners, and *users* all – discursively stuck in Isabel’s garden: clinging to anachronistic and outdated ontologies that prevent us from reckoning with (and therefore designing for) the new “more-than-human” condition in which we already live, but with which we have yet to grapple.

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REFERENCES

- [1] Alessandro Acquisti, Laura Brandimarte, and George Loewenstein. 2015. Privacy and human behavior in the age of information. *Science* 347, 6221 (2015), 509–514.
- [2] Elizabeth Aguirre, Anne L. Roggeveen, Dhruv Grewal, and Martin Wetzels. 2016. The personalization-privacy paradox: Implications for new media. *Journal of consumer marketing* 33, 2 (2016), 98–110.
- [3] Irwin Altman. 1976. A conceptual analysis. *Environment and behavior* 8, 1 (1976), 7–29.
- [4] Patrícia Alves-Oliveira, Maria Luce Lupetti, Michal Luria, Diana Löfller, Mafalda Gamboa, Lea Albaugh, Waki Kamino, Anastasia K. Ostrowski, David Puljiz, Pedro Reynolds-Cuéllar, Marcus Scheunemann, Michael Suguitan, and Dan Lockton. 2021. Collection of Metaphors for Human-Robot Interaction. In *Designing Interactive Systems Conference 2021* (Virtual Event, USA) (DIS ’21). Association for Computing Machinery, New York, NY, USA, 1366–1379. <https://doi.org/10.1145/3461778.3462060>
- [5] Jeffrey Bardzell and Shaowen Bardzell. 2016. Humanistic HCI. *Interactions* 23, 2 (feb 2016), 20–29. <https://doi.org/10.1145/2888576>
- [6] Alan P. Bates. 1964. Privacy—A useful concept? *Social forces* 42, 4 (1964), 429–434.
- [7] Walter Benjamin. 2023. *Charles Baudelaire: A lyric poet in the era of high capitalism*. Verso Books.

- [8] Ann M. Blair. 2010. Too much to know. In *Too Much to Know*. Yale University Press.
- [9] Hans Blumenberg. 1997. *Shipwreck with spectator: Paradigm of a metaphor for existence*. MIT Press.
- [10] Ian Bogost. 2012. *Alien phenomenology, or, what it's like to be a thing*. U of Minnesota Press.
- [11] Geoffrey C. Bowker. 2019. The Time of Computers: From Babbage and the 1830s to the Present. *Historical Studies in Computing, Information, and Society: Insights from the Flatiron Lectures* (2019), 1–15.
- [12] Suzanne Briet and Laurent Martinet. 2006. *What is documentation?: English translation of the classic French text*. Scarecrow Press.
- [13] Michael Buckland. 1997. What is a “document”? *Journal of the American society for information science* 48, 9 (1997), 804–809.
- [14] Michael Buckland. 1998. What is a digital document. *Document numérique* 2, 2 (1998), 221–230.
- [15] Peter Burke. 2005. *History and Social Theory*. Polity Press.
- [16] Cornelius Castoriadis. 1987. *The imaginary institution of society*. MIT Press.
- [17] F. Stuart Chapin. 1951. Some housing factors related to mental hygiene. *American Journal of Public Health and the Nations Health* 41, 7 (1951), 839–845.
- [18] Bodhisattva Chattopadhyay and Geoffrey C. Bowker. 2019. Ant Network Theory. *NatureCulture* 5 (2019), 26–49.
- [19] Rachel Clarke, Sara Heitlinger, Marcus Foth, Carl DiSalvo, Ann Light, and Laura Forlano. 2018. More-than-Human Urban Futures: Speculative Participatory Design to Avoid Ecocidal Smart Cities. In *Proceedings of the 15th Participatory Design Conference: Short Papers, Situated Actions, Workshops and Tutorial - Volume 2* (Hasselt and Genk, Belgium) (PDC '18). Association for Computing Machinery, New York, NY, USA, Article 34, 4 pages. <https://doi.org/10.1145/3210604.3210641>
- [20] Aykut Coskun, Nazli Cila, Iohanna Nicenboim, Christopher Frauenberger, Ron Wakkary, Marc Hassenzahl, Clara Mancini, Elisa Giaccardi, and Laura Forlano. 2022. More-than-Human Concepts, Methodologies, and Practices in HCI. In *Extended Abstracts of the 2022 CHI Conference on Human Factors in Computing Systems* (New Orleans, LA, USA) (CHI EA '22). Association for Computing Machinery, New York, NY, USA, Article 150, 5 pages. <https://doi.org/10.1145/3491101.3516503>
- [21] Paul Coulton and Joseph Galen Lindley. 2019. More-than human centred design: Considering other things. *The Design Journal* 22, 4 (2019), 463–481.
- [22] Kate Crawford, Jessa Lingel, and Tero Karppi. 2015. Our metrics, ourselves: A hundred years of self-tracking from the weight scale to the wrist wearable device. *European Journal of Cultural Studies* 18, 4-5 (2015), 479–496.
- [23] Ronald E. Day. 2001. *The modern invention of information: Discourse, history, and power*. SIU Press.
- [24] Paul Dourish. 2017. *The stuff of bits: An essay on the materialities of information*. MIT Press.
- [25] Graham Dove and Anne-Laure Fayard. 2020. Monsters, Metaphors, and Machine Learning. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems* (Honolulu, HI, USA) (CHI '20). Association for Computing Machinery, New York, NY, USA, 1–17. <https://doi.org/10.1145/3313831.3376275>
- [26] Nora A. Draper and Joseph Turow. 2019. The corporate cultivation of digital resignation. *New Media & Society* 21, 8 (2019), 1824–1839.
- [27] Knut Ove Eliassen. 2010. The Archives of Michel Foucault. In *The Archive in Motion. New Conceptions of the Archive in Contemporary Thought and New Media Practices*, Eivind Røssak (Ed.). Novus Press, 29–52.
- [28] Kasper Risbjerg Eskildsen. 2008. Leopold Ranke’s archival turn: location and evidence in modern historiography. *Modern Intellectual History* 5, 3 (2008), 425–453.
- [29] Kasper Risbjerg Eskildsen. 2013. Inventing the archive: Testimony and virtue in modern historiography. *History of the Human Sciences* 26, 4 (2013), 8–26.
- [30] Norman Fairclough. 1992. *Discourse and social change*. Polity Press.
- [31] Vilém Flusser. 2014. *Gestures*. U of Minnesota Press.
- [32] Vilém Flusser and Louis Bec. 2012. *Vampyroteuthis Infernalis: A Treatise, with a Report by the Institut Scientifique de Recherche Paranaturaliste*. University of Minnesota Press.
- [33] Laura Forlano. 2017. Posthumanism and design. *She Ji: The Journal of Design, Economics, and Innovation* 3, 1 (2017), 16–29.
- [34] Michel Foucault. 2012. *The Archaeology of Knowledge*. Knopf Doubleday Publishing Group.
- [35] Elisa Giaccardi and Johan Redström. 2020. Technology and more-than-human design. *Design Issues* 36, 4 (2020), 33–44.
- [36] Barney G. Glaser. 1965. The constant comparative method of qualitative analysis. *Social problems* 12, 4 (1965), 436–445.
- [37] Erving Goffman. 2016. The presentation of self in everyday life. In *Social Theory Re-Wired*. Routledge, 482–493.
- [38] K.D. Haggerty and R.V. Ericson. 2000. The surveillant assemblage. *British Journal of Sociology* 51, 4 (2000), 605–622.
- [39] Byung-Chul Han. 2022. *Non-things: Upheaval in the Lifeworld*. John Wiley & Sons.
- [40] Donna Haraway. 2003. *The Companion Species Manifesto: Dogs, People, and Significant Otherness*. Prickly Paradigm Press.
- [41] Martin Heidegger. 1982. *The Question Concerning Technology, and Other Essays*. HarperCollins.
- [42] Yuk Hui. 2013. What is a digital object? *Philosophical engineering: Toward a philosophy of the web* (2013), 52–67.

- [43] Sarah E. Igo. 2018. *The known citizen*. Harvard University Press.
- [44] Nicholas A. John and Benjamin Peters. 2017. Why privacy keeps dying: the trouble with talk about the end of privacy. *Information, Communication & Society* 20, 2 (2017), 284–298.
- [45] Immanuel Kant. 1999. *Critique of Pure Reason*. Cambridge University Press.
- [46] George Lakoff and Mark Johnson. 2008. *Metaphors we live by*. University of Chicago press.
- [47] Bruno Latour. 2005. *Reassembling the Social: An Introduction to Actor-Network-Theory*. OUP Oxford.
- [48] Bruno Latour. 2012. *We have never been modern*. Harvard university press.
- [49] Dan Lockton, Devika Singh, Saloni Sabnis, Michelle Chou, Sarah Foley, and Alejandro Pantoja. 2019. New metaphors: A workshop method for generating ideas and reframing problems in design and beyond. In *Proceedings of the 2019 on Creativity and Cognition*. 319–332.
- [50] Deborah Lupton. 2016. *The quantified self*. John Wiley & Sons.
- [51] Deborah Lupton. 2019. *Data Selves: More-than-Human Perspectives*. John Wiley & Sons.
- [52] Deborah Lupton. 2019. Toward a more-than-human analysis of digital health: Inspirations from feminist new materialism. *Qualitative health research* 29, 14 (2019), 1998–2009.
- [53] Kim Halskov Madsen. 1994. A guide to metaphorical design. *Commun. ACM* 37, 12 (1994), 57–62.
- [54] Cecile Malaspina. 2018. The Material Intellect: Simondon and the Individuation of Thought and Matter, Centre for Critical Thought, Department of Politics & IR, University of Kent, Canterbury, 13th-15th September 2018.
- [55] Alice E. Marwick and danah boyd. 2011. I tweet honestly, I tweet passionately: Twitter users, context collapse, and the imagined audience. *New Media & Society* 13, 1 (2011), 114–133. <https://doi.org/10.1177/1461444810365313> arXiv:<https://doi.org/10.1177/1461444810365313>
- [56] Karl Marx. 2004. *Capital: volume I*. Vol. 1. Penguin UK.
- [57] Nora McDonald and Andrea Forte. 2020. The politics of privacy theories: Moving from norms to vulnerabilities. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems*. 1–14.
- [58] Nora McDonald and Andrea Forte. 2021. Powerful privacy norms in social network discourse. *Proceedings of the ACM on Human-Computer Interaction* 5, CSCW2 (2021), 1–27.
- [59] Marshall McLuhan. 2001. *Understanding Media: The Extensions of Man*. Routledge.
- [60] Helen Nissenbaum. 2009. *Privacy in Context: Technology, Policy, and the Integrity of Social Life*. Stanford University Press.
- [61] Denis Obrezkov, Karsten Sohr, and Rainer Malaka. 2022. "Do Metaphors Influence the Usability of Access Control?": A Gamified Survey.. In *Proceedings of Mensch Und Computer 2022* (Darmstadt, Germany) (*MuC '22*). Association for Computing Machinery, New York, NY, USA, 472–476. <https://doi.org/10.1145/3543758.3547559>
- [62] Leon A. Pastalan. 1970. Privacy as an expression of human territoriality. *Spatial behavior of older people* (1970), 88–101.
- [63] John Durham Peters. 2015. *The Marvelous Clouds: Toward a Philosophy of Elemental Media*. University of Chicago Press.
- [64] James Pierce and Carl DiSalvo. 2018. Addressing Network Anxieties with Alternative Design Metaphors. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems* (Montreal QC, Canada) (*CHI '18*). Association for Computing Machinery, New York, NY, USA, 1–13. <https://doi.org/10.1145/3173574.3174123>
- [65] Amos Rapoport. 1972. *Some Perspectives on Human Use and Organization of Space*. A. Rapoport.
- [66] Johan Redström and Heather Wiltse. 2018. *Changing things: The future of objects in a digital world*. Bloomsbury Publishing.
- [67] John S. Seberger. 2021. Into the archive of ubiquitous computing: the data perfect tense and the historicization of the present. *Journal of Documentation* 78, 1 (2021), 18–37. <https://doi.org/10.1108/JD-11-2020-0195>
- [68] John S. Seberger. 2021. Reconsidering the user in IoT: the subjectivity of things. *Personal and Ubiquitous Computing* 25, 3 (2021), 525–533.
- [69] John S. Seberger and Geoffrey C. Bowker. 2021. Humanistic infrastructure studies: hyper-functionality and the experience of the absurd. *Information, Communication & Society* 24, 12 (2021), 1712–1727. <https://doi.org/10.1080/1369118X.2020.1726985>
- [70] John S. Seberger and Geoffrey C. Bowker. In Press. Mirror, Mirror... Disco Ball? On Dancing with Double-Goers. *New Media & Society* (In Press).
- [71] John S. Seberger, Hyesun Choung, Jaime Snyder, and Prabu David. 2024. Better Living Through Creepy Technology? Exploring Tensions Between a Novel Class of Well-Being Apps and Affective Discomfort in App Culture. In *Proc. ACM Hum.-Comput. Interact.* 8, CSCW1. Association for Computing Machinery, New York, NY, USA, Article 22, 39 pages. <https://doi.org/10.1145/3637299>
- [72] John S. Seberger, Marissel Llavore, Nicholas Nye Wyant, Irina Shklovski, and Sameer Patil. 2021. Empowering resignation: There's an App for That. In *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems*. 1–18. <https://doi.org/10.1145/3411764.3445293>

- [73] John S. Seberger and Sameer Patil. 2021. Us and Them (and It): Social Orientation, Privacy Concerns, and Expected Use of Pandemic-Tracking Apps in the United States. In *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems* (Yokohama, Japan) (CHI '21). Association for Computing Machinery, New York, NY, USA, Article 65, 19 pages. <https://doi.org/10.1145/3411764.3445485>
- [74] John S. Seberger and Gwen Shaffer. 2023. Changing the Rules of Play in Long Beach, California: Smart Cities, Infrastructure, and the Well-Played Game. *International Journal of Human–Computer Interaction* 39, 2 (2023), 286–301. <https://doi.org/10.1080/10447318.2021.2012380>
- [75] John S. Seberger and R. Aubrey Slaughter. 2020. The Mystics and Magic of Latent Space: Becoming the Unseen. *Membrana—Journal of Photography, Theory and Visual Culture* 5, 1 (2020), 88–93.
- [76] Bernhard Siegert. 2011. The map is the territory. *Radical Philosophy* 5 (2011), 13–16.
- [77] Gilbert Simondon. 2017. *On the mode of existence of technical objects*. Univocal Publishing Minneapolis.
- [78] Robert Soden, David Ribes, Maggie Jack, Will Sutherland, Vera Khovanskaya, Seyram Avle, Phoebe Sengers, and Susanne Bødker. 2019. Fostering Historical Research in CSCW & HCI. In *Conference Companion Publication of the 2019 on Computer Supported Cooperative Work and Social Computing* (Austin, TX, USA) (CSCW '19). Association for Computing Machinery, New York, NY, USA, 517–522. <https://doi.org/10.1145/3311957.3359436>
- [79] Susan Leigh Star and Karen Ruhleder. 1994. Steps towards an ecology of infrastructure: complex problems in design and access for large-scale collaborative systems. In *Proceedings of the 1994 ACM conference on Computer supported cooperative work*. 253–264.
- [80] Charles Taylor. 2004. *Modern social imaginaries*. Duke University Press.
- [81] Pete Townshend. 1971. Won't Get Fooled Again. LP.
- [82] Anna Lowenhaupt Tsing. 2015. *The mushroom at the end of the world: On the possibility of life in capitalist ruins*. Princeton University Press.
- [83] David Vincent. 2016. *Privacy: A short history*. John Wiley & Sons.
- [84] Samuel D. Warren and Louis D. Brandeis. 1890. Right to privacy. *Harv. L. Rev.* 4 (1890), 193.
- [85] Alan F. Westin. 1968. Privacy and freedom. *Washington and Lee Law Review* 25, 1 (1968), 166.
- [86] Alfred North Whitehead. 2013. *The concept of nature*. Courier Corporation.
- [87] Richmond Y. Wong and Deirdre K. Mulligan. 2016. These Aren't the Autonomous Drones You're Looking for: Investigating Privacy Concerns through Concept Videos. *J. Hum.-Robot Interact.* 5, 3 (Dec. 2016), 26–54. <https://doi.org/10.5898/JHRI.5.3.Wong>
- [88] Daisy Yoo, Tilde Bekker, Peter Dalgaard, Eva Eriksson, Simon Skov Foug, Christopher Frauenberger, Batya Friedman, Elisa Giaccardi, Anne-Marie Hansen, Ann Light, Elisabet M. Nilsson, Ron Wakkary, and Mikael Wiberg. 2023. More-Than-Human Perspectives and Values in Human-Computer Interaction. In *Extended Abstracts of the 2023 CHI Conference on Human Factors in Computing Systems* (Hamburg, Germany) (CHI EA '23). Association for Computing Machinery, New York, NY, USA, Article 516, 3 pages. <https://doi.org/10.1145/3544549.3583174>
- [89] Yu-Qian Zhu and Kristsapas Kanjanamekanant. 2021. No trespassing: Exploring privacy boundaries in personalized advertisement and its effects on ad attitude and purchase intentions on social media. *Information & Management* 58, 2 (2021), 103314.
- [90] Shoshanna Zuboff. 2019. *The age of surveillance capitalism: The fight for a human future at the new frontier of power*. Public Affairs, New York.

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