The DataEconomy@Home

The Private Sphere, Privacy, and the Embedding of Artificial Intelligence Systems into Everyday Life as an Expansion of Economic Data Grabbing

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Abstract *Although voice assistants have been adopted widely in private homes, they still cause bafflement among those who have a negative attitude towards smart speakers. But what is at stake in affective reactions such as these? And why does the issue of privacy frequently come to the fore in this context? This contribution sets out to somewhat unsettle the seeming naturalness of problematizing smart speakers as a "privacy issue", so as to offer a clearer understanding of the whys and wherefores of the issue in the first place. To this end, I first examine the astonishment that is frequently expressed in response to the dissemination of smart speakers (section 2). What is so astounding about installing smart speakers in the private sphere of the home? The next aspect to be investigated (section 3) concerns an essentially modern privacy practice: it is linked to the expectation that individuals have the right and the means to control which entities may receive which elements of their personal information. The idea that in order to constitute oneself as an individual one must have control over who can access one's personal information came to prevail as the dominant concept of data privacy in the 20th century. Having thus specified the notion of the private sphere on the one hand, and of privacy on the other, I proceed (section 4) by investigating why some of today's users willingly relegate these fundamental forms of privacy. And I analyze what actually happens to the data that is collected and processed by smart speaker infrastructures that reach into private homes. To conclude (section 5), I bring together the insights gained in order to support the argument that smart speakers in the private home form part of surveillance capitalism's expansion into as many social spheres as possible.*

1. Introduction

Over the last few years, I participated regularly in University of Kassel's winter semester lecture series "Der soziologische Blick" ("The sociological gaze"), a course that serves primarily to introduce new students to relevant research fields, topics, and debates addressed by contemporary sociology, but sometimes also attracts interested listeners from the general public. As I have spent many years investigating the digital transformation of information privacy (Ochs 2022), I was frequently assigned with the task of presenting to students a sociological perspective on the social role played by the distinction of private versus public in pre-modern, modern, and contemporary societies. At the end of my lecture in the 2022 series, I was approached by an elderly man; I assumed that he had either started to study sociology since retirement, or was simply interested in the topic. He expressed his appreciation of the lecture, before going on to raise some criticism regarding my bad habit of bridging pauses for thought by murmuring filler words like "exactly", "yes", "that's it", etc. After this assessment of the quality, he shifted to the lecture's content and pointed out to me that the major current threat to privacy was the implementation of smart speakers, "such as Alexa", in private homes. *That* was something that my research should focus upon, he advised, shaking his head with bafflement that anyone could be crazy enough to welcome such devices into their homes.

What the anecdote illustrates is a rather common reaction when it comes to voice assistants in private homes, common at least among people who have a negative attitude towards smart speakers and the infrastructures that enable their agency (for an impressive mapping of such an infrastructure, see Crawford and Joler's 2018 visual rendition and analysis of Amazon Echo's "anatomy"). It is perhaps unsurprising that the practice of using smart speakers seems particularly alarming to an elderly generation that has witnessed the state surveillance in East Germany and/or the resistance to the West German census in the 1980s and the Federal Constitutional Court's assertion of the right to informational self-determination. And yet, we should not presume that it is only the elderly who are concerned. But what is at stake in affective reactions such as these? What exactly was it that made the lecture attendee shake his head at the idea of allowing smart speakers into private homes? And why does the issue of privacy come to the fore in this context?

This contribution sets out to somewhat unsettle the seeming naturalness of problematizing smart speakers, such as Echo, and voice assistants, such as Alexa, as a "privacy issue". It is not my aim to applaud the proliferation of these

devices and infrastructures, nor to absolve them of criticism, but rather to offer a clearer understanding of the whys and wherefores of the issue in the first place. To this end, I will distinguish three different aspects and consider them in succession before consolidating the insights gained to formulate the main argument of my contribution.

The first aspect to be examined in the next section (section 2) concerns the astonishment that is frequently expressed in response to the dissemination of smart speakers. What is so remarkable or astounding about installing smart speakers *in the home*? As I will explain, there is nothing "natural" about assumptions that the home as a private sphere should be shielded from techno-economic agencies such as the Amazon Echo. Yet, many people do perceive the idea of connecting their household to Amazon's global infrastructure as an invasion into the domestic private sphere that threatens the established norms of the private/public distinction in contemporary society.

While the notion that the sanctity of "local privacy" (Rössler 2001, 25; 255; cf. Roessler 2004) must be upheld already had genealogical precedents in premodernity even if it took on a more specific form in modern societies, the next aspect to be investigated (section 3) represents an essentially modern practice: it is linked to the expectation that individuals (the owners or residents of private homes, for example) have the right and the means to control which entities may receive which elements of their personal information. The idea that in order to constitute oneself as an individual one must have control over who can access one's personal information came to prevail as the dominant concept of data privacy in the 20th century. It is intimately tied to the idea that 'the individual' is not static or given but rather evolves over an individual trajectory of self-development, i.e., as an individual "career" (Luhmann 1989; 1997) with the self becoming a "project" (Giddens 1991). By this point, then, we should have gained a deeper understanding of the reasons that led to the lecture attendant's head-shaking after the 2022 lecture on the private/public distinction. The installation of smart speakers such as the Amazon Echo in people's private homes affects two basic types of privacy at the same time – and two that are guaranteed by basic rights: the security of the private spatial sphere, and that of personal information. For some, it is hard to imagine why anyone would willingly relegate these fundamental forms of privacy.

The next section (section 4) will present some explanations for this apparent "carelessness" on behalf of smart speaker users, and consider them alongside an analysis of what actually happens to the data that is collected and processed by smart speaker infrastructures that reach into private homes.

To conclude (section 5), I bring together the insights gained in order to support the argument that smart speakers in the private home form part of surveillance capitalism's expansion into as many social spheres as possible (Zuboff 2019). The difficulties that data protection bodies have in adapting to this expansion, I propose, are due to the historical context in which measures to protect privacy protection were originally developed – they were tailored to the sphere of labor, and to the practices of work. Whereas individuals' control of their own personal information is undermined by the requirements of digital, networked self-constitution, practices that take place in the private sphere of the home have only recently been dragged into the realm of social datafication.

2. Private Spheres: Genealogical Remarks on the Private Home

In a 2018 essay accompanying their impressive analytical mapping of the sociotechnical planetary infrastructure that constitutes Amazon's Machine Learning (ML)-based Artificial Intelligence (AI) agent Alexa, Kate Crawford and Vladan Joler sketch out the underlying user scenario propagated by Amazon:

> A cylinder sits in a room. … It is silently attending. A woman walks into the room, carrying a sleeping child in her arms, and she addresses the cylinder. 'Alexa, turn on the hall lights?' The cylinder springs into life. 'OK.' The room lights up. … A brief interrogative conversation – a short question and a response – is the most common form of engagement with this consumer voice-enabled AI device. But in this fleeting moment of interaction, a vast matrix of capacities is invoked: interlaced chains of resource extraction, human labor and algorithmic processing across networks of mining, logistics, distribution, processing, prediction and optimization. The scale of this system is almost beyond human imagining. (Crawford and Joler 2018, 1)

What is so astonishing about the idea of implementing a technical agent that is "silently attending" in one's private home? Why do some people shake their heads when Echo/Alexa users connect their private homes to a sociotechnical global system that "is almost beyond human imagining"? The first and almost automatic response to this question is that many people find it disturbing to envisage inviting a silent listener that is connected to some infrastructure 'out

there' into their private homes. Do we not usually expect external listeners to remain firmly outside our private sphere, the spatial privacy of our homes, where we engage with family and friends, i.e., with those who do not play a functional role, but with whom we choose to share our lives with? Do we not expect these domestic interactions, which constitute our lifeworld, to be none of the economy's business?

Indeed, upholding the spatial privacy of the home is a long-standing social practice that can be traced back to the ancient world of Greco-Roman antiquity and is still performed today, with the sanctity of the home in Germany guaranteed by article 13 of German constitutional law[1]. While it therefore might seem somewhat natural to us to expect the private sphere to form a separate realm within society, there is nothing natural about this separation whatsoever. In fact, the status of the spatial private sphere as an experiential realm in its own right, shielded from authorities' access, and clearly separated from the world of work, is a product of the social history of European societies from antiquity to the present day.

As Hannah Arendt has explained, in ancient Greek society, the "oikos" was the homestead of the extended families of Greek patriarchy. It served both as a discrete spatial realm in which families went about their daily business, and as the site of economic reproduction that guaranteed the social position and standing of the family head in the public agora, and thus in Greek society (Arendt 2002, 76–77). In this way, "the distinction between private and public correspond[ed] to a division between two institutional domains – the private domain of the household and the public domain of the body politic" (Gobetti 1997, 104).

Notwithstanding that European medieval societies differed, of course, in many respects from those of Greco-Roman antiquity, the family and its homestead in the Middle Ages continued to play the role of a base from which to operate. Even if the head of this medieval type of family did not act in any realm

1 As this remark indicates, the issues dealt with in this chapter are approached from a European perspective by an author based in Germany. The ideas and explanations presented thus relate to the social history of the 'province' of Europe, which is not to say that similar developments might not have occurred elsewhere too. For example, it seems that the US approach to privacy is based upon a similar idea of the home, at least this is suggested by Warren and Brandeis' considerations in their classic "The Right to Privacy" in which they discuss "the sacred precincts of private and domestic life" (Warren and Brandeis 1890, 195).

that may be reasonably called "public" or "private" as these terms are used in industrialized times, it was nonetheless the function of the family "to strengthen the authority of the head of the household, without threatening the stability of his relationship with the community" (Ariès 1977, 228). What is more, just as in ancient times, the homestead featured a certain openness compared to the private sphere we have become accustomed to now: "The medieval household mixed up young and old, men and women, servants and masters, friends and family, intimates and strangers. It was open, almost like a café or pub, to the comings and goings of a multitude of diverse types of people, intent upon a bewildering variety of tasks concerned with business or pleasure" (Kumar 1997, 209).

Leaving aside structural differences between ancient and medieval "oikos" (see Ochs 2022, 116), it is important to note that medieval family life was practiced within the stratified social order of feudalism. Significantly, for nobles, the family was not positioned in dichotomous opposition to the polis (as in Greek antiquity) or the state (as it is to a certain degree in modernity), but was part of a competitive landscape with all the other families that ruled a particular territorial dominion, always striving to expand their territory (Elias 1997, 95). As territories constantly changed hands, for a long time, medieval forms of rule remained decentralized – there was no overarching central power that could establish itself as a kind of quasi-public counterpart to some quasi-private familial sphere (Elias 1997, 28; Habermas 1990, 58; Ariès 1991, 7)[2].

Although sociological (e.g., Habermas 1990) and social history analyses of medieval privacy (e.g., Brandt 1997) disagree as to whether a specifically medieval type of privacy can be distinguished, the current state of research invites the conclusion that the development of the familial private sphere occurred as part of the processes of social differentiation that were observable in all areas of early modern society. The compartmentalization of social life (Shibtuani 1955, 567) had a lasting effect on the private sphere:

> Gradually, starting sometime in the early seventeenth century, this promiscuous world was ordered and tidied up. Houses – upper-class houses to

2 This is not to say that medieval societies did not recognize any form of privacy at all. Shaw (1996), for example, identifies practices relating to property and to the body in medieval London that reference privacy both in semiotic (use of the word) and practical terms (distinct practices). Nonetheless, there are marked differences between ancient and modern ways of enacting privacy practices (Ochs 2022, 150).

> start with – began to reflect a marked degree of segregation of the status and functions of husband and wife, parents and children, masters and servants, friends and family. Boundaries were more strictly drawn – in paths and hedges, bricks and mortar, as well as in social customs – between the private and intimate world of the home and family, and the public world of acquaintances, business associates, and strangers. Work and nonwork ('living') were rigidly separated. (Kumar 1997, 209)

In the 18th century, the private sphere of the family once again comprised a closed realm, separate from public space and life (Sennett 2008, 18–19; 89–91). A range of oppositional counterparts distinguished themselves from the private sphere of the home and the family. First, the state evolved from an absolutist regime of surveillance (Elias 1997, 282) – "loath to accept the fact that there were certain areas of life beyond its sphere of control and influence" (Ariès 1977, 228) – into the public monopoly on violence and taxation that we are familiar with today (Ochs 2022, 108). Second, and quite relevant for my argument here, the private sphere of the family became gradually separated from the realm of labor. The structural force driving this separation, as many scholars assert, was the sociotechnical drive towards industrialization. In the pre-industrial economies of the Middle Ages, the whole "oikos" of the extended family's homestead had been the site of economic reproduction (hence the term "economy" as derived from "oikos"), where economic and other social activities consolidated as a family's spatial-economic unit (Meier-Gräwe 2008, 116; Lundt 2008, 60–61). When the means and processes of production increasingly shifted to factories and sweatshops, this unit fell apart: the result was a "split between home and factory, a split between economic and other aspects of the parent-child relationship" in workers' families (Smelser 1967, 31), while in bourgeois society in general, work was separated from the private realm and families' homes were conceived as a private sphere, shielded from labor (Burkart 2001, 403).

As the spatial private sphere thus evolved in structural opposition to the state (representing public authority); to the private economy and working world; and also to "public life" in general, a gendering of the separated sphere occurred. The male *homo eoconomicus* was deemed to belong "naturally" to public life in all its varieties, while females were considered *domina privata* (Meier-

Gräwe 2008, 117)[3]. At the same time, there was a shrinking of the family, which in the 19th century increasingly came to play the role of a "bulwark against the buffets of a rapidly changing world" (Kumar 1997, 222). With the transition to capitalism inducing massive transformations that unsettled established expectations and practices, actors retreated into the idealized private sphere of the familial homestead, which came to be seen as a refuge from the vagaries of public social and economic life (Sennett 2008, 20)[4].

Over the course of the 20th century, the shrinking of the "staff" operating in the spatial private sphere continued:

> The twentieth century has seen the decline and disintegration of the family as a community, as a collectivity expressing the common purposes of its members. Individualism's progress, interrupted and held in check in various ways, has continued apace. It has now invaded the family as well as other sectors of society. In the end it's individualism, not the family that has triumphed. (Kumar 1997, 222)

Whether or not one agrees with the idea that the family is in a process of dissolution (the patchwork character of many families rather suggests a de-naturalization of the form called 'family'), most will accept that the private sphere nowadays can be occupied by different constellations such as single persons, familial groupings, or flatmates. But whoever the actors are that claim the privacy of their homes, the closed-shop character of the private sphere as a realm distinct from the working world, from the attention of public authorities, and from uninvited listeners representing the economy or the general public, remains a widespread normative expectation[5].

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3 The picture drawn here is an accurate, yet simplified one, as empirical reality is always more messy than historical analysis suggests. For detailed and at the same time controversial accounts of the gendering of public and private spheres in industrial society see Hausen (1976); Pleck (1976); and Lundt (2008). Please note that despite the ways in which these researchers' views differ, they largely agree on what counts for the argument of this chapter: the spatial private sphere (of the family) began to separate from that of work in the 17th century and gradually became a distinct realm.

4 At the same time, the private sphere of the family became the site of gendered violence, especially against women and children (Müller 2008); the 20th-century "women's movement" therefore re-politicized the private in order to render patriarchal violence accessible to public intervention (Lundt 2008, 51).

5 The phenomenon of the 'home office' in the course of the COVID-19 pandemic temporarily blurred the boundaries between the private home and the working world.

So, here we have our first explanation for the head-shaking of people who feel disturbed by the introduction into the home of listening devices that are deemed at least potentially capable of transmitting recorded audio to an unknown audience: such persons are uneasy about the unsettling of the closed shop that they still expect the private sphere of their homes to encapsulate.

3. Information Control: Privacy in the 20th Century

AI-equipped smart speakers and the infrastructures they form part of disturb people's entrenched expectations concerning the exclusivity of the private home; its separation from the economy, from the realm of work, and from external observation in general. A further aspect that normative attitudes towards smart speakers relate to are issues of privacy and data protection. What is called "information privacy" in social theory (e.g., Rössler 2001, 45) usually goes under the name of "data protection" in regulation. Smart speakers seem to affect this idea of privacy/data protection, because as

> human agents we are visible in almost every interaction with technological platforms. We are always being tracked, quantified, analyzed and commodified. But in contrast to user visibility, the precise details about the phases of birth, life and death of networked devices are obscured. With emerging devices like the Echo relying on a centralized AI infrastructure far from view, even more of the detail falls into the shadows. (Crawford and Joler 2018, 12)

This may well be true, but why is it at all noteworthy that we "are always being tracked, quantified, analyzed and commodified"? Couched in social theory terms: why should information privacy (to be distinguished from the private sphere) be an issue at all? What is the meaning of "information privacy" in the first place? And, how did information privacy become an entrenched practice in contemporary digital society's genealogical forerunner – 20th century European modernity? To answer these questions, I will begin by offering a general sociological characterization of 20th century high modernity, before focusing on the issue of self-constitution and privacy.

However, I will not discuss here whether these developments have had structural consequences for people's normative expectations concerning the privacy of their homes.

According to Andreas Reckwitz (2006, 275), the early decades of the 20th century marked the end of bourgeois cultural rule. The period witnessed a massive expansion of space–time relations, enabled by innovations in technologies of transport, communication, media, and production (Berger, Berger, and Kellner 1975; Beniger 1986). At the same time, social life came to be increasingly structured by large organizations, such as unions, associations, people's parties, huge corporations etc. – an observation that has led sociological analysis to characterize, roughly speaking, the first half of the 20th century as "Organized Modernity" (Wagner 1998). Nazi barbarism, totalitarianism, and the two industrialized world wars of the "short 20th century" (Hobsbawm 1994) could not have taken place without Organized Modernity's capacity to assemble people by sociotechnical means at a huge scale; and to construct for them *collective identities* based on the sometimes violent and lethal exclusion of "othered" (i.e., purposefully generated) "outsiders" (Bauman 1989; Wagner 1998, 68–69; Arendt 1975). After World War II, European post-war societies passed into what has been called "Reflexive" or "Second Modernity" (Beck 1986; Beck, Giddens, and Lash 1994), within which self-constitution became an ever more *individualized* process that was to be realized by neo-liberalism's structurally "released" – and also isolated – actors themselves.

The shifting logic of self-constitution mirrors the transition from Organized to Second Modernity. The beginning of the short 20th century witnessed the appearance of "organization man", a social figure who tended to follow a career largely predetermined by organizational environments (Reckwitz 2006). A typical trajectory of "organization man" would lead him through organizations that aim to provide their members with a "corporate identity" (Whyte 2002). In such settings, organizations strive to *fix* their members' identities (Mönkeberg 2014), because stable – or rather *stabilized* – identities can be easily integrated into large organizations and formalized sequences of operation (e.g., production under Taylorism). However, while organizations demanded stable identities, the mass media (radio, TV) and urbanization began to make it plain for all to see that "[m]ost people live more or less compartmentalized lives, shifting from one social world to another as they participate in a succession of transactions" (Shibutani 1955, 567). For 20th century subjects, it came to be taken for granted that "[d]ifferent sectors of their everyday life relate them to vastly and often severely discrepant worlds of meaning and experience" (Berger, Berger, and Kellner 1975, 63). Whereas in the 19th century, everybody had implicitly known that they lived "compartmentalized lives", radio and television rendered visible this compartmentalization

of life by putting the pluralism of social worlds on display simultaneously (Berger, Berger, and Kellner 1975, 64 ff.; Goffman 1959). Now, everybody knew that *everybody knows* that everybody lives compartmentalized lives.

As a result, the idea of the self as an undivided coherent whole, which defined early modernity's notion of the individual, begins to seem increasingly unsustainable. Sociologists monitor closely how actors moved in everyday life and over the life course through different social worlds and organizational contexts that offer contradicting rules and roles. Pierre Bourdieu (1987) elaborates in a virtuoso manner how people in European post-war societies came to terms with the different social worlds and areas they passed through, how they continually adapted themselves and developed further instead of self-constituting as a static self with some singular once-and-for-all core identity. In 20th century high modernity, processes of self-constitution were obliged to incorporate frequent changes of subjectification schemes as well as organizations' identity fixations. The mechanism that allows people to reconcile continuous change with the constancy of corporate identity is the *career mode* (Luhmann 1997, 742). Facilitating the organizational channeling (fixation) of developmental trajectories (movement) through society, it became subjectification's key mechanism. Giddens (1991) accounts for 20th century self-constitution with the concept of the "reflexive project of the self", while Goffman sheds light on the informational aspects of practicing such a self. The project-self is habitually bound to play contradictory roles, for "[i]n each [social] world there are special norms of conduct, a set of values, a special prestige ladder, characteristic career lines, and a common outlook toward life – a Weltanschauung" (Shibutani 1955, 567). Given the potential contradictions between contexts, it becomes imperative for individual project-selves to separate the audiences associated with different roles from one another, and to hide internal inconsistencies. Individuals are obliged to establish "audience segregation", and to do this, the project-self takes measures to control which audiences have access to which elements of their personal information (Goffman 1959). Hence, over the course of the 20th century in Euro-American society, boundaries came to be drawn between different types of information. As long as these boundaries were not crossed, "contextual integrity" (Nissenbaum 2010) remained intact.

In the 1980s, a conflict arose in Germany that led to the practice of individual information control becoming a case of legal dispute: the right to informational self-determination. At the time, "new social movements" were evolving, addressing issues such as women's rights, environmental protection, discrimination, etc. (Beck 1986). Extending the objectives of German social movements

beyond labor issues, these movements contributed to a generally politicized atmosphere, marked by the Cold War and accompanying controversies.

It was in this tense political atmosphere that the German government announced its intention to conduct a census (Berlinghoff 2013). Fueled by the politicized *Zeitgeist*, a large-scale controversy erupted. Before long, advocates of data protection who were worried about government surveillance had filed a suit to the German Federal Constitutional Court. Crucially, the conflict unfolded against the backdrop of the computerization of administration and heated debate about data protection (Frohman 2013). The Constitutional Court's response was sensitive to this and explicitly pointed out the potential dangers of the *networking of data across informational contexts*. It argued that, as citizens, people might feel pressurized to hide their political commitments if they knew they were being monitored from a central point of observation. For this reason, the court ruled, information about persons' political activities must remain private (BVerfG 1983).

The verdict of this *Volkszählungsurteil* asserted that any German citizen has the general right to control who knows what about them, at what point in time and for what purpose – because if they did not, they might not be able to engage freely in self-development, and in the processes of self-constitution. This is ultimately a legalistic articulation of the view that any individual actor, in order to self-constitute as a Giddensian "project-self" (Giddens 1991), or to follow a Luhmannian "career" (Luhmann 1989), must be able to regulate what information concerning their person is accessible to actors from the various social contexts and worlds that that individual passes through. Arguing along similar lines of reasoning, the court translated the everyday practice of information control into the right to information self-determination (Rössler 2010, 45).

Individual information control became the dominant privacy practice of the 20th century because it allowed the project-self to deal with the contradiction between corporate identity fixation and ongoing personal development. The court mobilized this practice and turned it into a legally guaranteed right when the practice appeared to be coming under threat from a novel type of emergent public enabled by digital networking – which was already discussed in the data protection discourse of the 1980s, although the internet at that time was but a far cry from being part of digital everyday practices (Steinmüller 1988). Even so, a technological innovation that facilitated the flow of information across borders was already on the horizon, threatening to disrupt "contextual integrity" (Nissenbaum 2010). Nevertheless, the right to control who has access to one's own personal information still forms the basis of current

data protection law, and Amazon's Echo and Alexa operate in a techno-legal environment that is still largely informed by the idea of individual information control. This raises the question of whether these technologies contribute to the border-crossing of information flows, and, if so, what the consequences are in terms of social structuration. Perhaps those who shake their heads at the thought of Alexa implicitly assume that there will indeed be consequences? Let's render this assumption explicit.

4. Digital Self-Constitution and Machine Learning@Home

Having gained some clarity regarding the different conceptualizations of the private that seem to be somehow affected by the integration of smart speakers and AI assistants into private homes, we can now move on to consider the functionality of these technical apparatuses, i.e., the purposes they serve and operations they perform once they have been installed in people's homes. From the perspective of Echo/Alexa users, smart speakers are there to increase automation and convenience. At least, that is Amazon's great promise. Describing a 2017 promotional video advertising the Echo, Kate Crawford and Vladen Joler observe:

> The video … explains that the Echo will connect to Alexa (the artificial intelligence agent) in order to 'play music, call friends and family, control smart home devices, and more.' … The shiny design options maintain a kind of blankness: nothing will alert the owner to the vast network that subtends and drives its interactive capacities. The promotional video simply states that the range of things you can ask Alexa to do is always expanding. (Crawford and Joler 2018, 3)

As the authors go on to point out, firstly, the smart speaker itself appears to be just an "'ear' in the home" but is actually far more than that: "a disembodied listening agent that never shows its deep connections to remote systems" (Crawford and Joler 2018, 5), by means of which the private home of the Alexa user is connected to an extensive infrastructure that is inaccessible to the user. Second, the device seems to have been designed to remain unnoticed, and is notably unrevealing of its connection to the external infrastructure. And third, the number of tasks Alexa can fulfill is promised to increase over time. How can that be possible?

All three aspects refer to the nature of the Echo's/Alexa's functionality and thus shed light on the question of what the system actually *does* in people's private homes. Starting with the third aspect, the system's increasing capabilities, we should note that the quite brief interactions between user and device (the user issues a command, the system executes it, or, if it fails to do as required, the user attempts to articulate their command more clearly) not only serve to deliver an immediate required response (e.g., switching on a light, playing a particular song, warming up the living room); crucially, the interaction sequences serve as a training material to expand the system's capabilities: "For each response that Alexa gives, its effectiveness is inferred by what happens next: Is the same question uttered again? … Was the question reworded? … Was there an action following the question?" (Crawford and Joler 2018, 3). In this sense, the service that *users* provide is to "supply … Amazon with the valuable training data of verbal questions and responses that they can use to further refine their voice-enabled AI systems" (Crawford and Joler 2018, 5).[6]

In providing data to train the device, users and their homes are integrated into the infrastructure and process of value-creation that is organized, managed, and exploited by Amazon. This is made possible by the first aspect highlighted above in Crawford and Joler's characterization of Alexa: the connection of users' private homes to Amazon's extensive sociotechnical and techno-economic infrastructure. The second aspect mentioned above, the attempt to render this infrastructural connection unnoticeable, points to Amazon's strategy to make the Echo a sociotechnical actor that forms part of users' everyday practices in a seemingly 'natural' way. By shaping practices, the Echo becomes an entity that operates on the level of what Giddens (1984, 7) has called "practical consciousness" as distinct from "discursive consciousness". That is, the device is generally perceived as merely part of the background. It may occasionally become the focus of attention if it does not function as expected, for example, but by and large its presence is simply taken for granted within everyday life and practices.

6 In retrospect, we can say that Amazon's strategy has not yet paid off, as users' simple utterances turned out to be of limited value for training AI systems (Lindner 2023). The recent announcement by Facebook, however, that it would use personal data for machine learning purposes (Spiegel 2024) indicates that the data economy's drive to collect (personal) data is indeed to a large extent motivated by the desire to improve their machine learning systems – even if this desire is not always satisfied, as in the case of Amazon's Alexa. Regardless of its degree of success, what counts for my argument here is what *causes* the drive towards increased data collection.

There is anecdotal evidence that Amazon's strategy has been successful, at least in some instances. As part of a research project exploring the social negotiation of artificial intelligence, privacy, and democracy[7], we interviewed two Echo/Alexa users. When asked whether they switched their Alexa off when they had visitors, such as friends or family, the first interviewee, who worked as a software engineer and presented a more business-oriented mindset in the interview, said "no", adding that "such devices have simply become too normal to do so."[8] The second respondent, who expressed a more critical attitude to the data economy, also answered "no", but went on to reflect:

> Actually we should have warned our guests … as one would in the case of CCTV … actually we should do that. But we just don't – not out of maliciousness. Who would do something like that? But because it's so natural to us. And perhaps that's the crux of the matter, that it's become so natural that you don't even mention the device anymore. Like having an oven in your kitchen. You wouldn't tell anyone: 'Beware, there's an oven', or 'there's a toaster, you might burn yourself'; these are devices that are simply natural to us, but, of course, for those who visit us, they might seem not natural at all.[9]

As the second quote indicates, when prompted by the interviewer to reflect on the Echo's presence in social situations that include visitors, the interviewee focused their attention on the device, thus shifting it from the realm of practical consciousness to that of discursive consciousness. The problematization

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7 The project "Democracy, AI, and Privacy" forms part of the long-running research association "Forum Privatheit." I would like to thank the Federal Ministry of Education and Research (BMBF) for funding the project (16KIS1379) and thus enabling me to write this article.

8 In German: "dafür sind solche Geräte zu normal geworden."

9 The original quote: "[Z]umindest müsste man mal darauf hinweisen … so, wie man es bei Videoüberwachung auch macht. Das müsste man eigentlich tun. Wir tun es explizit nicht; gar nicht mal aus böser Absicht heraus. Wer würde sowas schon machen? Sondern eher, weil es für uns so selbstverständlich ist. Und das ist vielleicht auch die Krux, dass es so selbstverständlich ist, dass man schon gar nicht mehr darauf hinweist. Also so quasi wie man in der Küche einen Backofen hat. Da würde man auch nicht sagen: 'Achtung, da ist ein Backofen', oder 'hier steht ein Toaster, du kannst dich verbrennen', sondern das sind Geräte, die mittlerweile schon für uns so selbstverständlich sind, aber natürlich für die, die uns besuchen, möglicherweise mitnichten selbstverständlich sind."

that followed is precisely what usually remains in the shadows of practical consciousness – just as Amazon's strategy strives to achieve.

Amazon's obscuring of the Echo's/Alexa's infrastructural connection has the convenient side effect – or perhaps it is even the main objective – that users rarely reflect on the sociotechnical relations they and their operations form part of. The seemingly isolated magic of Alexa's AI is in fact the product of the real-life actions of a whole variety of embodied beings (Engemann 2018; Crawford and Joler 2018, 14) who provide the material, physical, intellectual, etc., resources that make the system run in the first place. From the data economy's point of view, devices such as the Echo can be understood as agents of "datafication": the expansion of socio-digital agencies into all areas of social life and society (Houben and Prietl 2018; van Dijck 2014). Insofar as "datafication" is driven by the data economy's interest in profit (Zuboff 2019), it results, as Till Heilmann (2015) has aptly stated, in the systematic expansion of the realm of economic utilization (*Ausweitung der Verwertungszone*).

How does this expansion structurally affect the institutionally protected privacy of the private sphere, as well as the degree to which individuals are able to control who can access their data? These are the questions to be addressed in my conclusion.

5. Conclusion: How Surveillance Capitalism Taps into Just Another Realm of Experience

According to Crawford and Joler (2018, 14) the goal that motivates corporations to persuade consumers to install their devices, such as the Amazon Echo, in private homes, is the expansion of the infrastructure by means of which they can engage in "data extractivism". Succeeding industrial society, contemporary digital society is populated by new players that aggressively aim to maximize data-based profits:

> The new infinite horizon is data extraction, machine learning, and reorganizing information through artificial intelligence systems of combined human and machinic processing. The territories are dominated by a few global mega-companies, which are creating new infrastructures and mechanisms for the accumulation of capital and exploitation of human and planetary resources. (Crawford and Joler 2018, 14)

To the extent that profit-oriented companies engaged in advancing datafication expand their infrastructures of value generation into private homes, activities performed at home should be classified as work, surmise Crawford and Joler (2018, 7) and others including Heilmann (2015) who talks about "data work". So, if activities undertaken at home are drawn into economic schemes of value creation, i.e., those activities that in modern society were recognized as part of one's "lifeworld" and were (ideally) to remain undisturbed by the imperatives of private economic agencies and public authorities (Habermas 1995, 473), what are the implications for contemporary privacy and the private sphere? There are at least two possible interpretations:

- First, we might interpret this process as an *expansion of work*, insofar as human activities are utilized to generate a product – data – that is appropriated and translated into exchange value (Heilmann 2015, 43). From this perspective, then, the proliferation of voice assistants helps to expand the realm of work, thereby breaking down the historically evolved demarcation of the private sphere of the home as a zone separate from institutionalized labor, productivity, and economic imperatives.
- Second, an alternative interpretation would not so much portray the infrastructural expansion into private homes as the transformation of whatever activities are done there into work, but as the *appropriation of the realm of non-work by the agencies of surveillance capitalism's data economies*. The author whose work supports this perspective is, of course, Shoshana Zuboff (2019), who argues that surveillance capitalism has expanded its exploitation of human labor to capitalize on human experience itself.

While I have little difficulty accepting the diagnosis that, in the last two decades or so, we have witnessed the digital expansion of the realm of economic utilization (*Ausweitung der Verwertungszone* in the words of Heilmann 2015), I believe there is also substantial indication that it is the second interpretation that accounts for what is novel about this expansion. As many commentators have observed, techno-economic expansion into people's everyday social lives is often not experienced as an extension of work at all (Heilmann 2015, 41), but rather as the incorporation of social life into the digital realm (Ochs 2021). Moreover, while users and their social lives are indeed exploited, insofar as they provide the resources for the profitable activities of the data economy, they do not participate in crafting *the product* itself that is then sold. Users whose data is utilized do not themselves generate advertisement space, ads, or attention; nei-

ther do they produce predictions, devise strategies, or impose manipulations. As Dolata and Schrape (forthcoming) clarify, the platforms of the data economy use data as raw material, but the value of the data is only realized when it has undergone further processing by those platforms' commodification processes – processes that users are not at all involved in.

Perhaps it would be even easier to come to terms with the constitution of digital society if the digital expansion of the realm of economic utilization was indeed transforming all social activities into work. For one, that would simplify the measures needed to regulate the data economy. But it is not so simple. As shown above, at least when it comes to voice assistants and smart speakers in the private home, the datafication of social life affects *both* the privacy of the home and individual information privacy at once. In the working world, there are well-established regulatory bodies and legal protection that can be mobilized to address data protection. But once datafication expands its scope to access the social realms of human experience, established concepts and boundaries become hard to enforce. As Werner Steinmüller, a German pioneer of data protection, already warned in the 1980s:

> As yet, there is no legal term to describe the spread of IT beyond the sphere of labor into the grey zone of illicit work, into the lifeworld that is not about wage-earning … and even into children's worlds of play; nor does any work-like legal protection exist, and even less so when it comes to the newly emerging interrelationships between the world of work and that of 'life'. It is not easy to legally and politically support those affected. (Steinmüller 1988, 157; my translation[10])

At first glance, these considerations might seem to suggest that we should simply adapt and expand the regulatory and political measures imposed in response to digital capitalism, which themselves were based upon those created to address certain consequences of industrial capitalism. However, the digitally-enabled expansion of the realm of economic utilization traverses established forms of structuration. This is exemplified by the way it simultaneously

10 The German original reads: "Für die Ausbreitung der IT in die Grauzonen der Schattenarbeit und in die Lebenswelt außerhalb des Erwerbslebens (…) bis hinein in die Spielewelt der Kinder gibt es noch keinen recht(lich)en Namen und keinen Arbeitsrecht-ähnlichen Schutz – erst recht nicht für die neuartigen Verbindungen zwischen Arbeits- und ‚Lebens'welt. Die Lage der Wohnweltbetroffenen ist rechtspolitisch nicht einfach zu würdigen" (Steinmüller 1988, 157).

affects the spatial-institutional private sphere and individual information privacy. We will therefore need regulatory innovation that builds upon, but also goes beyond established regulatory schemes that have co-evolved with industrial society. Hence, the socio-digital restructuration of society and the digital expansion of the realm of economic utilization as it materializes in the deployment of smart speakers in private homes urges us to use our heads in more creative ways than just in shaking them.

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References

Arendt, Hannah. 1975. *Elemente und Ursprünge totaler Herrschaft, Teil 3: Totale Herrschaft.* Frankfurt am Main: Ullstein.

Arendt, Hannah. 2002. *Vita Activa oder Vom tätigen Leben*. München: Piper.

Ariès, Philippe. 1977. "The Family and the City." *Daedalus* 106 (2): 227–35.

Ariès, Philippe. 1991. "Einleitung: Zur Geschichte des privaten Lebens." In *Geschichte des privaten Lebens, Band 3. Von der Renaissance zur Aufklärung*, edited by Philippe Ariès and Roger Chartier, 7–19. Frankfurt am Main: S. Fischer.

Bauman, Zygmunt. 1989. *Modernity and the Holocaust.* Cambridge (UK): Polity.

Beck, Ulrich. 1986. *Risikogesellschaft. Auf dem Weg in eine andere Moderne.* Frankfurt am Main: Suhrkamp.

Beck, Ulrich, Anthony Giddens, and Scott Lash. 1994. *Reflexive Modernization: Politics, Tradition and Aesthetics in the Modern Social Order.* Stanford (Cal.): Stanford University Press.

Beniger, James. 1986. *The Control Revolution. Technological and Economic Origins of the Information Society.* Cambridge, MA, London: Harvard University Press.

Berger, Peter L., Brigitte Berger, and Hansfried Kellner. 1975. *Das Unbehagen in der Modernität.* Frankfurt am Main: Campus.

Berlinghoff, Marcel. 2013. "Totalerfassung im Computerstaat. Computer und Privatheit in den 1970er und 1980er Jahren." In *Im Sog des Internets. Öf-*

fentlichkeit und Privatheit im digitalen Zeitalter, edited by Ulrike Ackermann, 93–110. Frankfurt am Main: Humanities Online.

Bourdieu, Pierre. 1987. *Die feinen Unterschiede: Kritik der gesellschaftlichen Urteilskraft.* Frankfurt am Main: Suhrkamp.

Brandt, Rüdiger. 1997. "… his stupris incumbere non pertimescit publice: Heimlichkeit zum Schutz sozialer Konformität im Mittelalter." In *Geheimnis und Öffentlichkeit*, edited by Aleida Assmann, Jan Assmann, Alois Hahn, and Hans-Jürgen Lüsebrink, 71–88. München: Fink.

Burkart, Günter. 2002. "Stufen der Privatheit und die diskursive Ordnung der Familie." *Soziale Welt* 53 (4): 397–413.

Crawford, Jane, and Vladan Joler. 2018. "Anatomy of an AI System: The Amazon Echo as an Anatomical Map of Human Labor, Data and Planetary Resources." https://anatomyof.ai/img/ai-anatomy-publication.pdf.

Dolata, Ulrich, and Jan-Felix Schape. Forthcoming. "Bewertung, Inwertsetzung, Regulierung: Eine kurze politische Ökonomie des plattformbasierten Internets." In *Varianten digitaler Bewertung: Rahmungen, Aushandlungen und Widersprüche digitaler Bewertungspraktiken*, edited by Karoline Krenn, Jonathan Kropf, Stefan Laser, and Carsten Ochs. Wiesbaden: VS.

Elias, Norbert. 1997. *Über den Prozeß der Zivilisation. Soziogenetische und psychogenetische Untersuchungen: Band 1.* Frankfurt am Main: Suhrkamp.

Frohman, Larry. 2013. "Rethinking Privacy in the Age of the Mainframe: Integrated Information Systems, the Changing Logic of Privacy, and the Problem of Democratic Politics in Surveillance Societies." In *Im Sog des Internets. Öffentlichkeit und Privatheit im digitalen Zeitalter*, edited by Ulrike Ackermann, 71–92. Frankfurt am Main: Humanities Online.

Giddens, Anthony. 1984. *The Constitution of Society: Outline of the Theory of Structuration*. Berkeley, Los Angeles: University of California Press.

Giddens, Anthony. 1991. *Modernity and Self-Identity: Self and Society in the Late Modern Age*. Cambridge, UK, Oxford, UK: Polity.

Gobetti, Daniela. 1997. "Humankind as a System: Private and Public Agency at the Origins of Modern Liberalism." In *Public and Private in Thought and Practice: Perspectives on a Grand Dichotomy*, edited by Jeff Weintraub and Krishan Kumar, 103–32. Chicago, London: University of Chicago Press.

Goffman, Erving. 1959. *The Presentation of Self in Everday Life.* New York: Doubleday.

Habermas, Jürgen. 1990. *Strukturwandel der Öffentlichkeit: Untersuchungen zu einer Kategorie der bürgerlichen Gesellschaft.* Frankfurt am Main: Suhrkamp.

Habermas, Jürgen. 1995. *Theorie des Kommunikativen Handelns, Band 2: Zur Kritik der funktionalistischen Vernunft.* Frankfurt am Main: Suhrkamp.

Hausen, Karin. 1976. "Die Polarisierung der ‚Geschlechtscharaktere': Eine Spiegelung der Dissoziation von Erwerbs- und Familienleben." In *Arbeiterexistenz im 19. Jahrhundert: Lebensstandard und Lebensgestaltung deutscher Arbeiter und Handwerker*, edited by Werner Conze and Ulrich Engelhardt, 363–93. Stuttgart: Klett-Cotta.

Heilmann, Till. 2015. "Datenarbeit im „Capture"-Kapitalismus: Zur Ausweitung der Verwertungszone im Zeitalter informatischer Überwachung." *Zeitschrift für Medienwissenschaft* 7 (13): 35–48.

Hobsbawm, Eric J. 1994. *Age of Extremes. The short twentieth century 1914–1991.* London: Michael Joseph.

Kumar, Krishan. 1997 "Home: The Promise and Predicament of Private Life at the End of the Twentieth Century." In *Public and Private in Thought and Practice: Perspectives on a Grand Dichotomy*, edited by Jeff Weintraub and Krishan Kumar, 204–36. Chicago, London: University of Chicago Press.

Lindner, Roland. 2023. "Amazon baut weitere Stellen ab." In: *Frankfurter Allgemeine Online*. Accessed June 13 2024. https://www.faz.net/aktuell/wirtschaft/unternehmen/amazon-baut-weitere-stellen-rund-um-alexa-ab-19323202.html.

Luhmann, Niklas. 1989. "Individuum, Individualität, Individualismus." In *Gesellschaftsstruktur und Semantik. Studien zur Wissenssoziologie der modernen Gesellschaft, Band 3*, edited by Niklas Luhmann, 149–258. Frankfurt am Main: Suhrkamp.

Luhmann, Niklas. 1997. *Die Gesellschaft der Gesellschaft. Zweiter Teilband.* Frankfurt am Main: Suhrkamp.

Lundt, Bea. 2008. "Öffentlichkeit" und "Privatheit" in der historischen Geschlechterforschung." In *Das Private neu denken. Erosionen, Ambivalenzen, Leistungen*, edited by Karin Jurczyk and Mechtild Oechsle, 48–69. Münster: Westfälisches Dampfboot.

Meier-Gräwe, Uta. 2008. "Familie, Ökonomie und Gesellschaft – über die Wirkungsmächtigkeit des vermeintlich Privaten." In *Das Private neu denken. Erosionen, Ambivalenzen, Leistungen,* edited by Karin Jurczyk and Mechtild Oechsle, 113–32. Münster: Westfälisches Dampfboot.

Mönkeberg, Sarah. 2014. "Feststellungen der Identität? Über Nutzen und Laster digitaler Sichtbarkeit." *Der Bürger im Staat* (4): 268–75.

Müller, Ursula. 2008. "Privatheit als Ort geschlechtsbezogener Gewalt." In *Das Private neu denken. Erosionen, Ambivalenzen, Leistungen*, edited by Karin Jurczyk and Mechtild Oechsle, 224–45. Münster: Westfälisches Dampfboot.

Nissenbaum, Helen. 2010. *Privacy in Context. Technology, Policy, and the Integrity of Social Life.* Stanford, CA: Stanford University Press.

Ochs, Carsten. 2021. "Digital Infrastructures Suck: Zur digitalen Absorption des Sozialen." In: "Welt. Wissen. Gestalten. 42. Kongress Der Deutschen Gesellschaft Für Volkskunde (dgv) 2019." Special issue, *Hamburger Journal für Kulturanthropologie* (13): 127–38. https://journals.sub.uni-hamburg.de/hjk/issue/view/92.

Ochs, Carsten. 2022. *Soziologie der Privatheit: Informationelle Teilhabebeschränkung vom Reputation Management bis zum Recht auf Unberechenbarkeit.* Weilerswist: Velbrück. https://doi.org/10.5771/9783748914877.

Pleck, Elizabeth H. 1976. "Two Worlds in One: Work and Family." *Journal of Social History* 10 (2): 178–95.

Reckwitz, Andreas. 2006. *Das Hybride Subjekt: Eine Theorie der Subjektkulturen von der bürgerlichen Moderne zur Postmoderne.* Weilerswist: Velbrück Wissenschaft.

Roessler, Beate. 2004. *The Value of Privacy.* Stanford, CA: Stanford University Press.

Rössler, Beate. 2001. *Der Wert des Privaten.* Frankfurt am Main: Suhrkamp.

Rössler, Beate. 2010. "Privatheit und Autonomie: Zum individuellen und gesellschaftlichen Wert des Privaten." In *Die Grenzen des Privaten*, edited by Sandra Seubert and Peter Niesen, 41–57. Baden-Baden: Nomos.

Sennett, Richard. 2002. *The Fall of Public Man.* London: Penguin.

Shaw, Diane. 1996. "The Construction of the Private in Medieval London." *Journal of Medieval and Early Modern Studies* 26 (3): 447–66.

Shibutani, Tamotsu. 1955. "Reference Groups as Perspectives." *American Journal of Sociology* 60 (6): 562–69.

Smelser, Neil J. 1967. "Sociological History: The Industrial Revolution and the British Working-Class Family." *Journal of Social History* 1 (1): 17–35.

Spiegel. 2024. "Datenschützer legen Beschwerde gegen Meta wegen KI-Trainings mit Nutzerdaten ein." In: *Der Spiegel Online.* Accessed June 13 2024. https://www.spiegel.de/netzwelt/netzpolitik/noyb-datenschuetzer-legen-beschwerde-gegen-meta-wegen-ki-training-mit-nutzerdaten-ein-a-31d98e77-621f-4cfb-b9ab-4aee207b0c7f.

Steinmüller, Werner. 1988. "Rechtspolitik im Kontext einer informatisierten Gesellschaft." In *Verdatet und Vernetzt. Sozialökologische Handlungsspielräu-*

me in der Informationsgesellschaft, edited by Werner Steinmüller, 142–64: Fischer.

Volkszählungsurteil BVerfG 22. Bundesverfassungsgericht, December 15. Accessed October 13, 2022. https://www.bundesverfassungsgericht.de/SharedDocs/Downloads/DE/1983/12/rs19831215_1bvr020983.pdf?__blob=publicationFile&v=1.

Wagner, Peter. 1998. *A Sociology of Modernity: Liberty and Discipline.* London: Routledge.

Warren, Samuel D., and Louis D. Brandeis. 1890. "The Right to Privacy." *Harvard Law Review* 4 (5): 193–220.

Whyte, William Hollingsworth. 2002. *The Organization Man*. Philadelphia: University of Pennsylvania Press.

Zuboff, Shoshana. 2019. *The Age of Surveillance Capitalism*. *The Fight for the Future at the New Frontier of Power.* London: Profile.