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Autonomous Dwelling: Smart Homes and Care IT

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In the context of eHealth, the development of smart homes aims to enable older and ill people to live in their own home environment. This paper focuses on the relationship between dwelling, autonomy and care, approaching it from three perspectives: from the perspective (and interests) of the vendors, from the experience and perspective of the people living in the smart home, and from the view of care providers and services.

The introduction and implementation of smart and autonomous technologies in private households is frequently accompanied by three arguments: the new technology will improve convenience for its user, enhance security, and help to sustain or increase individual independence. According to the "Smart Home Monitor 2017," a representative survey of Germany, this holds for smart home technologies as well: prospective buyers of networked household appliances and central controls for home automation wish for comfort (63.9%) and security (39.1%). The actual utilization of smart home technologies covers energy management (59.7%), entertainment and communication (56.1%), home automation (36.4%),

surveillance/security (32.5%) and health (15.5%) (see Splendid Research 2017).

Although smart home technologies may not seem to be used primarily for health reasons, they feature as a field of research and teaching in informatics, medical informatics, and eHealth. Additionally "Ambient assisted living" and "assistive technologies" are subjects of different funding programs on a national as well as on a European level.[1]

Two main arguments stress the imperative of the development and implementation of smart home technologies: the first points to increasing costs and the growing need for personnel and nursing facilities in times of ageing societies. The second makes the point that people want to live at home as long as possible. Following these arguments, smart homes fulfill the desires of the individual and solve the upcoming societal problems of the near future (see Neven 2015; Domínguez-Rué and Nierling 2016b).

In the following I want to demonstrate how smart homes for medicine (re-)configure dwellings in a specific way. My focus lies on the relationship between dwelling, autonomy, and care. I describe this relation from three different perspectives. First, the perspective (and interests) of the vendors—developers of technologies, and providers of housing and care services —which could also be seen as a "backend" perspective or as an external view on the smart home, and second, the experience and perspective of the people living in the smart home, thus being-in the smart home. In comparing these perspectives, their similarities and divergences become apparent. Finally I consider the view of care persons and service providers, whose positions regarding the smart home and its agency change and develop, entering the smart home from the "outside" and leaving it from the "inside."

1. Perspective: Development

I will continually refer to one specific example: the so-called smart home for medicine, developed and researched at the Peter L. Reichertz Institute for Medical Informatics at Technische Universität Braunschweig. The Institute runs the research apartment Halberstadtstraße in Braunschweig, which is equipped with all sorts of sensors to track activity and deduce behavior.

1 For the EU program "Active and Assisted Living Research and Development Programme (AAL)," see: http://www.aal-europe.eu/, accessed May 7th 2019. In Germany, AAL is part of the High-Tech Strategy of the Bundesregierung as well as of the Digitale Agenda 2014–2017.

It is a kind of testbed to collect data, evaluate methods, and develop algorithmic analyses. "The goal of the 'research apartment Halberstadtstraße' (HSS) is to establish the home as a site for diagnostics and therapy for medical care" (Mielke, Voss, and Haux 2017, 93).

The research apartment aims to detect mental illnesses such as depression, dementia or bipolar disorder at a very early stage of the disease. The collected data are used to deduce behavioral patterns and the habits of the resident. On the basis of such analyses the flat is then supposed to decide whether its inhabitant is healthy or ill. The vision of the developer is that in the future the flat will be able to intervene at a very early stage of an illness.[2]

1.1 Sensors and Data Collection

Crucial for the survey of behavior patterns and habits of the inhabitant of a smart home are several factors: the sensors, the collected data, their computation, and the interpretation of their results. In the research apartment every room is equipped with presence and brightness detectors installed in the ceiling, and temperature and humidity sensors in the walls (see Mielke, Voss, and Haux 2017, 94).

The presence detector contains three passive infrared sensors (PIR) that detect temperature changes (changes in thermal radiation) in their respective reception area. A brightness sensor uses a photodiode to measure the intensity of light in a room. Every window and the front door is equipped with (magnetic) contact sensors to indicate whether they are open or closed. Finally, there are sensors monitoring all taps, measuring when and for how long cold or warm water is running. These sensors record values either in short intervals or, if a particular condition is detected, send them (via a bus) to a MiniPc, where they are stored as time series.[3]

Essentially, the data can tell us *when*, *where*, and *what*: where a heat-emitting object (maybe a person) is, and where and when which devices are used. To then deduce behavioral patterns and habits from these data, the data have to be merged, analyzed, and interpreted.

2 Interestingly, Rosalind W. Picard uses the same argument as early as 1997 to underline the use of computer-based recognition in her book *Affective Computing* (Picard, 1997).

3 For more detailed descriptions regarding the sensors, see Cook and Krishnan (2015, 11ff.).

1.2 Analysis and Interpretation of Stored Data

There are different stages of data analysis and interpretation: the first two weeks of data storage are set as a reference phase—the measured data are considered to represent the normal everyday life of the subject. Based on this, the monitoring/surveillance is supposed to recognize differences and deviations from that norm.

Regarding these stages of data processing, statistical methods are used to calculate characteristic parameters like maxima, minima, means, deviations, variations, and the like. These numbers summarize and characterize the time series output of one sensor in a chosen time interval. As such, they characterize first of all the activity of a specific sensor.

Regarding the detection and interpretation of the behavior and habits of a person, it is reasonable to relate the data from a number of different sensors.

> For example, in a smart home setting, multiple sensors such as motion, temperature, and pressure sensors gather complementary data about a Cooking activity. Motion sensors can provide data about a human presence in the kitchen area, temperature sensors provide clues to whether the stove is on and pressure or vibration sensors can indicate whether any kitchen objects are being used. While these three sensor classes may independently be weak at characterizing the Cooking activity, fusing them together leads to a stronger model. (Cook and Krishnan 2015, 34–35)

In order to relate measurements made by different sensors data mining methods are used. Statistical analyses of the single sensor measurements show patterns—what sensor events occur when and how often. With methods like correlation it becomes obvious which of the sensors are most likely to simultaneously measure activity.

The interpretation of the data follows the framework of the so-called ADLs, or "activities of daily living." There are a couple of ADL indexes, depending on national traditions and on the contexts in which they are used, but they all provide a categorization of activities of self-care. They include tasks like bathing, dressing, toileting, transferring, continence, and feeding. The ADL indexes define (to a certain extent) standard specifications of self-care and provide a kind of test or rating of how self-care has to happen. They are used in health care of elderly people, where their ability to perform certain ADL tasks can be a crucial factor in deciding whether they can be

discharged from hospital. In this perspective, ADL indexes allow the assessment of the degree of a person's autonomy.

1.3 The Relation Between Dwelling, Autonomy, and Care

From my perspective, the smart home for medicine considers dwelling as daily routines—what do people usually do in their apartment? The "doing" itself is mainly being in and moving through the space and using its facilities and devices. The "usually" is determined by two aspects: *firstly* by the data collection of the reference phase, in which the data are set as "normal" and used to recognize differences and deviations in the data. *Secondly* the "usually" is determined through the definition or categorization of ADL. Then dwelling is performing daily routines, which includes performing enough ADL and taking sufficient time or duration for each of them.

Care is understood initially as self-care with regard to physical or personal hygiene. The smart home for medicine incorporates a diagnostic view or perspective of elderly care in its monitoring. In this view self-care activity and self-care ability are references for normal behavior and autonomy.

In the context of the smart home and its diagnostic view, autonomy predominantly means the ability to live alone without health service intervention. Thinking about autonomy as a concept, it has a double structure of independence and self-determination (the latter in the sense of self-legislation—giving oneself aims and performing them with discipline).[4]

The smart home evaluates whether the behavior of its resident with regard of performing independent and self-determined actions guarantees the preservation and care of the body and its vital functions. Thus autonomy somehow equals self-care or, to be more precise, autonomy shows itself in self-care; self-care is a feature of autonomy. Which means that one's autonomy is proven, because one is performing sufficient self-care in using the facilities in the home. Conversely, that means not performing sufficient self-care is the indicator that one's autonomy is somehow broken. The envisioned health services and interventions do cure the symptoms:

4 There is a vital debate in philosophy and social science as well as in media studies around the term and concept of autonomy. The crucial points are, if anybody might be seen as isolated from others, or if everybody is embedded in (social) relations and every self is influenced by cultural and governmental issues. I do take up the discussion with a focus on relational autonomy later. Another question is, how (media) technologies enter in the formation of self-conception (Selbst-Verständnis), self-relation (Selbst-Verhältnis), and technologies of the self (Selbst-Technologien)—which are crucial for autonomy.

the smart home would call for support or assistance, to get its data back to normality. With this analysis, I do end up in a bio-cybernetic vision of organism-and-environment (see e.g., Morin [1981] 2015). Care IT would then provide a form of self-regulation for this composite of organism and environment, which materializes as self-regulation of the data streams representing it.

In a way, this diagnosis is unsatisfactory: the relationship between living and autonomy is not limited to personal hygiene—it includes categories of personal space, having control and feeling at home, which includes aspects of affect regulation as well. Following up, I would like to consider the questions: What does dwelling mean in the experience of the living human? And how does this relate to autonomy and care?

2. Dwelling as Experience and Perception—Inhabitants' Perspective

What is dwelling? As a part of an adequate standard of living "the right of housing" is recognized in the Universal Declaration of Human Rights (1948). It has been regarded as a freestanding right in International Human Rights Law since 1991. As such it demands that there is sufficient living space (including necessary infrastructure such as electricity and water) and that the housing is protected against state and private interference (see Krennerich 2018).

> [H]aving a home is undoubtedly one of the most basic of human needs: the right to adequate housing is founded and recognised under international law. Described under article 25(1) of the Universal Declaration of Human Rights, the right to adequate housing is one that has also been identified within other major international human rights treaties. Referring to much more than the robustness of a building, 'adequate housing' encompasses also the intangible, but no less essential elements of what makes a dwelling into a home. This includes creating a private space that is secure and safe, which encloses and facilitates the formation and maintenance of human relationships and personal bonds. (Guihen 2016, 141–42)

In these terms of human and political rights, housing serves to protect against the forces of nature and society and is the condition that enables physical well-being and emotional relations. Dwelling or living—*wohnen* in German—is more than housing: it refers to being or feeling at home.

Thus on a basic level dwelling comprises a demarcation and thus a distinction between outside and inside. At the same time, dwelling is emotional or affective: the inside becomes a living place in subjective experiences and the affective inhabitation of the space. This understanding of dwelling is grounded in the experience of the subject, and resonates with approaches of (phenomenological) philosophy at the beginning of the 20th century.[5]

Around 1900, the traditional notion of a preceding, empty, homogeneous (Euclidean) space extending into infinity became problematic. In different disciplines space is no longer thought of as an independent and given container, but as something becoming, something evolving in relations and in perceptions. In the early phenomenological thinking of Edmund Husserl the corporality is the origin of perception and experience, and it is in the intentional experience that space is constituted. Thus the "here" of the own body is the zero point of orientation in the space. Equally the space arranges itself in relation to my "here" in top/bottom, front/back, right/left, and near/far (see Hebert, 2012, 56ff.).

Even though Ernst Cassirer was not a phenomenologist in a strict sense, he has contributed important considerations to the relationship between space (constitution), experience, and affect. Following Bösel's reconstruction, Cassirer shows that the mythical relation to space is bound to physiological differentiations such as top/bottom, front/back, and right/left. More importantly, these differentiations are structured by emotional or affective values:

> The principle of differentiation occurs as an affectability that allows to distinguish sites, districts or areas that are perceived as particularly powerful from the rather inconspicuous places in space. (Bösel 2018, 144 [translation by author])[6]

Bösel emphasizes that already in protoreligious and cultic practices—as examined in Cassirer's "Mythical Thought"—the demarcation, the act of limitation, is accomplished as a kind of space-modulating activity. The separation of interior and exterior space "... does not only have the

5 I do refer here mainly to two expositions/explanations. Firstly I follow Saskia Hebert's reconstructions of phenomenological notions of space for the context of architecture (see Hebert 2012, 53–112). Secondly I am referring to Bernd Bösel's habilitation thesis *Die Plastizität der Gefühle: Eine genealogische Kritik der Affektverfügung* (Bösel 2018).

6 "Als Differenzierungsprinzip tritt dabei eine Affizierbarkeit auf, die es erlaubt, als besonders machtvoll empfundene Stätten, Bezirke oder Gegenden von den eher unauffälligen Stellen im Raum abzusetzen."

power of space division, but also of highlighting, if not constituting, a special atmosphere" (Bösel 2018, 145 [translation by author]). That means: limitation is an affective differentiation of space, which is actively created. This applies to sacred rooms, but Bösel extends this double operation with Heidegger to inhabited/residential rooms. Accordingly, both Cassirer and Heidegger share the assumption of a "foundation of the inhabited space in the basic act of enclosure" (Bösel 2018, 146 [translation by author]).

In the paper "Building, Dwelling, Thinking" (Heidegger 1971) Heidegger expatiates on the intertwining of building (as the act of actively creating a place) and dwelling. Accordingly, building as construction is what makes living possible in the first place. Furthermore, according to Heidegger, the etymology of the word Bauen/building refers to staying as well as to cultivating and sparing as in the sense of agriculture.[7]

> The old word *bauen*, which says that man *is* insofar as he *dwells*, this word *bauen* however *also* means at the same time to cherish and protect, to preserve and care for, specifically to till the soil, to cultivate the vine. Such building only takes care—it tends the growth that ripens into its fruit of its own accord. Building in the sense of preserving and nurturing is not making anything. (Heidegger 1971, 145 [italics i.o.])

Building and dwelling coincide, whereby the Gothic word for dwelling/Wohnen emphasizes the experience associated with it:

> *Wunian* means: to be at peace, to be brought to peace, to remain in peace. The word for peace, *Friede*, means the free, das *Frye*, and *fry* means: preserved from harm and danger, preserved from something, safeguarded. (147 [italics i.o.])

Conversely Heidegger's concept of dwelling is linked to his concept of being-in or being-in-the-world (as a mode of Dasein): "To be a human being means to be on the Earth as a mortal. It means to dwell" (145). In this sense, being-in-the-world means to inhabit the world, to make the world habituated and to experience equally protection and freedom. In turn "… dwelling itself is always a staying with things" (149). In this way it is based, as Hebert argues, equally in the unconscious, pre-reflective, active handling of things (see Hebert 2012, 63–64). Thus dwelling might be characterized as

7 On the etymological interconnections between building, living, being and cultivating, see also the entries on "bauen," "Frieden," "frei" and "wohnen" in Kluge (2011).

a performative act grounded in an action context.[8] It is strongly related to everyday activities, bodily routines, and habits.

Thus the condition of dwelling is the limitation as an active and affective space division, differentiating between an inside and outside space. The inside space becomes an inhabited space, a "living room" and a home through performative acts and routines grounded in actions, making the space familiar/habituated.

The reference to the context of action opens up another aspect of what constitutes home, dwelling, and living. Getting back to International Human Rights Law, the inside is not only a familiar place, but a protected place— it is supposed to be protected against state interference. This protection against interference opens up a space of freedom and self-determination. Saskia Hebert argues with reference to Bernhard Waldenfels:

> The apartment as an own space is separated from the surroundings as a foreign space. Within the boundary that separates the outside from the inside, the protected private space is created: "My" apartment (a way of speaking that I also use when I am not the owner but rather "inhabitant") is the place, where, within certain limits, I am free to do whatever I like. (Hebert 2012, 68 [translation by author])

Thus the inhabitant has control over the space, allowing them a certain freedom of action. One's own home is therefore a familiar place, and a self-determined place, a place that one can have at one's disposal by acting.

This means that a home—and the experience of being-at-home from a phenomenological point of view—modulates dwelling as a creation of an "own" space grounded in action contexts—these encompass habits and daily routines as well as the freedom to do what one wants, which necessitates a certain self-determination in acting. The repeated performative acts of dwelling resonate with caring in the sense of cultivating, sparing, and preserving. The aspect of self-determination resonates with a "classical" understanding of autonomy. In such a "classical" approach, autonomy is characterized as self-determination or self-government that is based on the rational mind and free will of a "self" or subject—which includes it being independent of external forces or coercions. Although the freedom to do whatever one wants does not equal rational driven

8 "Das Einräumen der Orte, bei Heidegger durch Um- und Wegräumen der Dinge ergänzt, ist ein *performativer* Akt, der das Wohnen wesentlich in einem *Handlungszusammenhang* gründet" (Hebert 2012, 64 [italics i.o.])

self-government in all aspects, both forms of self-determination include the aspect of not being surveilled.

To put it very pointedly: the autonomous rational universal (male) subject is—since Descartes—formed as an interior almost independent of the outside world. In and through its thinking, it processes and evaluates the impressions that enter from the outside to its inside. In addition, and this is crucial, it has a reflective relationship to itself, it can think about itself. At the same time, the Descartes subject has far-reaching control over what steps from inside to outside, be it as statement or expression. Similarly, the private sphere associated with housing is conceptualized as an interior independent of external powers, in which the responsible citizen processes impressions and information about the external world and internalizes them in opinions about or attitudes towards the world. What is decisive, especially for the formation of political will, is that this space is largely protected from state intervention. The (politically) mature citizen has control over what moves outside.

Of course, the notion of the self-contained autonomous subject is not tenable in this way, and even Descartes' philosophy includes aspects of being interwoven with and affected by the outside world. Historically, a different understanding of the connected, and thus affected and relational, subject can be drawn from Leibniz via Spinoza, Bergson, and Merleau-Ponty to Deleuze. More recent concepts of relational autonomy also emphasize that the rational, universal subject does not exist.

> The critiques emphasize that an analysis of the characteristics and capacities of the self cannot be adequately undertaken without attention to the rich and complex social and historical contexts in which agents are embedded; they point to the need to think of autonomy as a characteristic of agents who are emotional, embodied, desiring, creative, and feeling, as well as rational, creatures; and they highlight the ways in which agents are both psychically internally differentiated and socially differentiated from others. (Mackenzie and Stoljar 2000, 21)

Accordingly, the self-relationship is not to be thought of as autonomous and isolated from others.

> One's relationship to oneself, then, is not a matter of a solitary ego reflecting on itself, but is the result of an ongoing intersubjective process, in which one's attitude toward oneself emerges in one's

> encounter with another's attitude toward oneself. (Anderson and Honneth 2005, 130–31)

In more recent media studies on what can be described as the infrastructure of living, it has become apparent that the inside space is by no means closed off from the outside space. On the contrary, exchanges have long been taking place between the inside and the outside: sewage/water, gas and electricity lines, radio and telephone break through the separation. In contemporary discourses, the intrusion of the "new" media such as radio and telephone was addressed particularly under the aspect of surveillance and intrusion into the private sphere (see Kammerer 2014).

An early example of the outside–inside connection is the electrified doorbell, as Florian Sprenger demonstrates in the essay "Elektrifizierte Schwellen. Zur Kulturtechnik der Klingel" (Sprenger 2015). He refers to the signal technology possibilities in households described by the Kaiserliche Telegraphen-Inspektor (Imperial Telegraph Inspector) Oskar Canter and locates these in the context of logistical control:

> According to Canter, electrical alarm systems occupy the thresholds of a house to report their crossing, door locks can be locked remotely, and thermometers in control systems indicate the temperature of remote rooms. Contacts are activated and circuits are opened or closed so that the desired event of ringing, chiming or lighting occurs. … All these processes serve to regulate the flows of invited and uninvited guests, of energies and objects—or at least to suggest measures for this purpose. Entering the house by passing the threshold becomes an act monitored from a distance; the intruder can be stopped at the threshold, controlled or even let in automatically. (Sprenger 2015, 208–9 [translation by author])

However, and this is crucial, control over the intrusion into homes with telephones "around 1900" is greatly reduced. Following on from Walter Benjamin's *A Berlin Childhood around 1900* (Benjamin 2006), written in the 1930s, Sprenger describes:

> According to Benjamin, no one can escape the ringing of the bell, which disturbs a world-historical epoch during the midday sleep, no wall, no door stops it. In the era of the domestication[9] of electricity, the

9 With domestication, Sprenger refers to Silverstone's concept of "domestication," which describes how "new technologies" are incorporated into the everyday lives of users, especially through their utilization in the domestic environment (see Silverstone and Hirsch, 1992).

> thresholds and the transmission of electricity modulating space and time also change the status of the house as the "other" of the world—as the place where the world is turned into its opposite, because inside and outside are redefined and intertwined here. (Sprenger 2015, 215 [translation by author])

With regard to my thoughts on the relationship between dwelling and autonomy, as it is modulated in the "infrastructure" of the smart home for medicine, it can be said that the smart home seems to reverse external–internal relationships. The relationship between dwelling as experience and being-in the world is shaped by the fact that the living person has control over the interior. On the one hand, s/he obtains this in a pre-reflexive action context, handling the domestic environment and dwelling in the rooms. On the other hand, the protected interior also gives the residents a certain freedom in their actions and decisions. This goes hand in hand with the fact that control over the interior consists of (or is imagined as) determining what enters or leaves the living space.

With the smart home and its monitoring, this is inverted: it is not so much a question of whether and what enters from the outside to the inside. Rather, the interior moves outwards, in the form of the measured representation of living-as-a-habit. Autonomy is equated with the ability to live alone, i.e., to care for oneself (and the home). The aspect of autonomy, which is connected with decision and freedom of action (and which is bound to privacy), is suspended.

3. Care Services—Entering the Inside

From the perspective of the developers of the smart home for medicine, this suspension may not be so decisive, since it applies to people affected by depression or dementia in old age.

> Where our mind is often considered the core of our existence as independent, self-directing individuals, dementia tends to be portrayed as involving a loss of self. This depiction effectively makes people with dementia invisible as persons and easily leads to a "malignant social psychology" (Kitwood 1997, 4) that further undermines their personhood by stigmatization, infantilization and objectification. (Kamphof 2016, 164)

Kamphof's research is interesting for my purposes because she has undertaken qualitative ethnographic research of situated practices in the context of telecare. In the Dutch pilot project, apartments of elderly dementia

patients were equipped with smart technologies that are very similar to the technologies and evaluation principles described above.

Kamphof accompanied the work of the caregivers ethnographically and examined how the handling of technologies affects care relationships. Following Kitwood Kamphof understands "dementia care as 'person work' " (Kamphof 2016, 165) and emphazises the close connection of "perceptive attention to the needs of frail elderly people with ethical respect for their unique personhood" (166). Following on from the meaning of the word respect as seeing again, Kamphof examines

> how processes of technologically mediated *seeing again* and of care's tinkering take shape in a specific compound in Dutch homecare, and how respect—or disregard—for clients as persons is part of emerging care practices. (166)

Kamphof describes the conditions of success for monitoring-supported care: first of all, patients must accept that their home and their behavior are measured:

> Clients have to refrain from meddling with the sensors, they have to entrust themselves to the system and the observation of caregivers, and allow these to bring up issues. The system asks them to be, at the same time, generally aware of the security provided, but to forget its presence on a daily basis. (174)

The caregivers, in turn, must become engaged in monitoring and read into the data patterns:

> Caregivers mentioned being struck by the observed consistency of patterns displayed by their clients. Habits, in this view, are not dull conformity to norms, but an expression of being able to live in-the-world and a vital part of our embodied identity.
>
> Lifestyle monitoring thus operates in a field of tension between the inherited and normative and individual being-in-place. Seeing rhythms connects the quantitative where and when, detected by sensors and algorithms, with qualitative aspects of bodies living in space. Detecting rhythms is not computing averages; it requires observers to open their body to the resonance of emerging patterns … . Within the monitoring compound, the observing body open to rhythms … is a composite of technology and the sensibility of human caregivers. (169)

Ideally, the data streams or data patterns mediate between the people in charge and the people being looked after. People with dementia can hardly

name what they have done and only partly express what their needs and desires are. With reference to the data streams, however, their behavior can be named and it is possible to derive their needs or wishes from the data.

> Increasing familiarity, both with the system and their client, makes them recognize specific patterns as typical for their client. When discussing data displays, they often referred immediately to particular situations. Hermeneutic perception, with the help of contextual knowledge and imagination, thus turns into an embodied feeling of clients through the system. (177)

The crucial point is that this technology is embedded in a structure of care relations in which the results of monitoring are the basis for "negotiations." The carers read the results, allowing themselves to be affected by the everyday life of their care recipients on a rhythmic level, so to speak. In this way, caregivers can also strengthen the freedom of action for an "autonomous dwelling," which threatens to disappear through the orientation of data processing to the norm of habit. Ideally, they allow a reflective access to the behavior of the resident, thus empowering him or her to work on their own personhood and opening up opportunities for intersubjective negotiation.

Regarding the affective transformations taking place in this form of computer-aided autonomous dwelling, I would like to offer the following conclusions: the technical-medial infrastructure of the smart home relates to dwelling, autonomy and care (services) in a specific way. In particular, their non-conscious registers are addressed: here living is considered as a habit, which also includes practices of self-care and autonomy as living-by-oneself in the lanes of regular and "normal" activities.

The domestication of surveillance and monitoring is being justified by economic-liberal arguments—elderly people want to be able to live by themselves and this wish can only be realized through care IT in an affordable way. The technical-normalizing access (see Angerer and Bösel 2016) to autonomous living occurs in turn on a level of non-conscious processes, on the level of habits, pre-reflective contexts of action, and affective qualities. In this approach, aspects that have to do with autonomy as self-made decisions in an unsupervised space are particularly neglected.

Within this regime, carers are able to create leeway because they can interpret the deviations from the normal and the habitual—which are regarded as markers for a loss of autonomy in technical monitoring. However,

this interpretation mainly takes place at the level of empathy with data patterns, as an aesthetic affirmation, so to speak.

It remains to be asked whether such shifts to the level of the affective really are reservoirs of resistance. Maybe it is time to open up new registers.

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