Anthropology & Aging
Journal of the Association for Anthropology & Gerontology

Multivalent moves in senior home care

From surveillance to care-valence

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Abstract

Recent studies of care argue that it is a relational phenomenon, whereby human and nonhuman entities enter into transformative relations. In this light, different entities of care potentially mediate one another in practice, sometimes with surprising and unforeseen effects. In this article, I trace a similar argument. Drawing on ethnographic material from Sweden and the United States, I proffer that careful attentions to older people at home produce multivalent moves with transformative effects. Increasingly, such attentions encompass new technologies to monitor and observe aging bodies. On this topic, the healthcare literature often invokes the idea of care surveillance. Certainly, surveillance can offer a valuable analytical purchase in the study of care. Yet, care attentions are not always straightforward. Rather, the moving around of aging bodies with technologies can obstruct and transform care and its attentions. At the same time, care attentions can also obstruct and transform aging bodies and their technologies. I argue that the existence of these multivalent, somatechnic moves challenges the notion of surveillance in care. To strengthen this argument, I draw on STS-inspired anthropological studies of care. In turn, I also develop the heuristic term "care-valence". The key advantage with this term, I proffer, is that it offers an analytical compliment to the notion of care surveillance and helps refocus the analysis on multivalent moves in care.

Keywords: *Aging Bodies, Care Technologies, Home Care, Surveillance, Sweden, United States*

Anthropology & Aging, Vol 36, No 2 (2015), pp. 145-163
ISSN 2374-2267 (online) DOI 10.5195/aa.2015.105

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Introduction

The gerontological literature indicates that many seniors prefer to live at home in familiar surroundings to avoid long-term institutionalized senior care. Home-based care for seniors and related notions like "aging in place" have intrinsic appeal for seniors, professionals, policy makers and the public at large (Ball et al. 2004; Boldy et al. 2011; Vasunilashorn et al. 2012). The prominence of home care for older people links to a range of interrelated issues. Scholars point to the desire for independence among seniors, healthcare staff shortages, escalating healthcare costs, pressures to improve healthcare systems, user-centered services, changing family structures, urbanization as well as the rise in noncommunicable diseases including diabetes and dementia (Tarricone and Tsouros 2009). A web search confirms a plethora of private and public sponsored services, policies and programs. Undoubtedly, home care is big business. One recent estimate puts the annual home care expenditures in the United States alone at 72 billion dollars (National Association for Home Care & Hospice 2010).

These political and economic trends have also spurred the development of new technologies for senior home care. A WHO director has equated the interest in home care technology as a return "back to the future" with the aim to "explore, exploit and implement an old idea with today's knowledge and new means" (Bariçs, in Tarricone and Tsouros 2009: vi). Here, "new means" refers to the research and development, as well as the implementation of home care technologies, and coupled with the reconfiguration of healthcare coordination and delivery. A key interest is how new and emerging technologies can augment existing home care situations.

Nevertheless, home care remains a complex phenomenon, which entails multiple medical and social challenges. As Tarricone and Tsouros argue, "[…] clearly attributing defined outcomes to a given intervention or technology is difficult, even when it is isolated from all the other delivered services and external factors are controlled for" (2009:30). In practice, the use of technology can produce new and multivalent effects that may also diverge from the design intentions and motivations for such use. Some anthropological and STS-inspired scholars discuss these effects as a process of mediation and where the implications of technology are not always clear. For instance, Ianculescu and Parvan (2011:183) point out that new forms of information and communication technology (ICT) situate new opportunities to assist and empower seniors. Yet, they also argue that ICTs paradoxically risk the increase of exclusion among seniors, in terms of how this technology can transform traditional forms of information access—for instance, seeking medical advice. In another study, Wigg (Wigg 2010; in Mort, Roberts, and Callén 2013) shows how technology used to monitor wandering seniors with dementia can lend a sense of safety and security in one arrangement, but in another context can dehumanize seniors. Mort and colleagues

Vol 36, No 2 (2015) ISSN 2374-2267 (online) DOI 10.5195/ aa.2015.105 http://anthro-age.pitt.edu

(2013) also demonstrate how "surveillance technology"—namely telecare systems—in the UK and Spain can produce dependence, insecurity and coercion. Such findings contradict the assumption that technologies for care consistently enhance independence, security and empowerment. This evidence clearly shows that technologies for care may introduce ambiguous or multivalent effects.

In this article, I trace several ethnographic vignettes that concern how attentions in senior home care relate to the multivalent mediations of aging bodies with technology. I am particularly interested in the multivalent effects that emerge with visual and hands on attentions to aging bodies with technology. Secondly, I suggest that these effects have direct implications for the idea of surveillance in care. Surveillance is a deep-seated and often a broadly employed concept, particularly when technology is in focus. Here, for instance, one finds the use of labels like "surveillance technology" (e.g. Niemeijer et al. 2010; Milligan, Mort, and Roberts 2010). However, in contrast, I suggest that the idea of care as mediation challenges the idea of surveillance in care. As an analytical compliment to the notion of care surveillance, I propose the notion of "care-valence". This heuristic term, I suggest, adds another way to think through the multivalent somatechnic effects that often emerge with care attentions.

My analysis draws on several stints of ethnographic fieldwork in the United States and Sweden, which I carried out intermittently during 2007-2008 and 2010-2012. This work includes semi-structured interviews and participant-observations in situations of senior home care. Initially, I conducted ethnographic interviews with approximately twenty seniors in each country. Follow-up visits with key informants offered opportunities for further, in-depth participant-observation on repeated occasions—roughly a dozen in total, six in each country. The senior participants typically lived alone but with some form of home care assistance. When available, I traced interactions between home care workers and family members. In addition, I joined participants in activities outside the home, including shopping trips and medical appointments.

A European research project with the aim to support the future design and development of "ambient intelligent" telecare technology for senior home care framed this fieldwork and my research interests. Ambient intelligence is a term for the artificial capacity to sense and respond to environmental cues and human expectations without direct human intervention. For instance, ambient intelligent lighting is designed to adjust automatically to different human events like a party, meal, bedtime, or home emergency. The project required ethnography to determine how ambient intelligent technologies might augment daily practices in senior home care. It also aimed to inform design assumptions about such practices. Thus, an entry point for my fieldwork was the use of new technology for care, including telecare. Eventually, in later fieldwork, I shifted my focus from technology design to anthropological concerns about social-technical interactions as they relate to care and its movements.

Care as somatechnic mediation[1]

> *If the [research programme] seeks to provide contextualisation in order to understand the "social and human dimensions" of the new technologies, it has to be because the electronic technologies themselves are already depicted as "decontextualized". In other words they are imagined as having the power to communicate and convey information*

> *stripped of the encumbrances of social relations, and physical limitation on travel*. – Marilyn Strathern[2]

> [The body is] an interface that becomes more and more describable as it learns to be affected by more and more elements. *The body is thus not a provisional residence of something superior—an immortal soul, the universal or thought—but what leaves a dynamic trajectory by which we learn to register and become sensitive to what the world is made of. Such is the great virtue of this definition: there is no sense in defining the body directly, but only in rendering the body sensitive to what these other elements are. By focusing on the body, one is immediately—or rather, mediately—directed to what the body has become aware of.* – Bruno Latour[3]

These two quotes consider the ontological becoming of different entities. Strathern writes about technology and how assumptions about its use and purpose tend to go unquestioned. She urges us to consider how technology simultaneously is mediated by and mediates contextual practices. Similarly, rather than a stable or well-defined thing, Latour suggests that the body is a fluid and sensitive entity open to effects and affects in its world. In other words, if we make analytical assumptions about categories like the body and technology we risk missing the mediated ontological possibilities that emerge with movements in practice. The distinction between the body and technology may not be as fixed as we might like to think. Such ideas inspire this article. It represents my efforts to think through how care attentions might produce somatechnic differences. To proceed, allow me to start with an ethnographic passage from my fieldwork in senior home care. This cconcerns the difficulties that emerge when care attentions focus moving aging bodies with technology.

Robert is in his early nineties, and Beth, his adult daughter, is in her early sixties. They live in a mid-sized US city, with about 200,000 inhabitants. It is a hot summer day. The fan is blowing from a corner of the room as we sip on glasses of iced-tea. Robert and Beth are on good terms and Beth speaks frankly about her dad's situation. Beth explains that she wants to support her dad's independence and his own decision-making, but sometimes she does not agree with his choices. One of his favorite activities is a walk to the store, about a mile away. He uses a wheeled walker but his telecare system does not function beyond the confines of his house. Robert knows this but persists.

> Beth: Dad is still very independent and capable of taking care of himself. I want him to continue his independence and make his own decisions but his walks to the store concern me because his [telecare] emergency bracelet… if he falls…

> Robert: It's no good.

> Beth: Right. It only works in the house. That sort of independence is worrisome to me. Dad is capable of walking with his [wheeled] walker but it would just be nice to have some way of knowing where he is. Sometimes when dad takes the bus to the city he'll let me know. He's even gone to the beer festival! If he calls me and says I am taking the bus over, then I always ask him to please call me when he gets there so at least I know where he is. At least with his bracelet on at home I feel a lot safer, but when he leaves and goes other places I worry about him falling. I get nervous if I've called him two or

> three times and don't reach him. If it's a nice day and it's not too hot he might be outside. I'll try to call him again in an hour. When he finally answers I'll say, "I am glad you finally answered the phone because I was on my way over to check on you!" He goes up and down those basement steps all the time.
>
> Robert: It's good exercise.

Robert fractured his hip the year before, when he fell trying to maneuver his wheeled walker up the back steps to his house. Initially he ignored the pain and kept his planned meeting with the local Grange, a US-based agricultural advocacy organization, where he is a longstanding member. The next day, when the pain became unbearable, he told Beth about the incident. She promptly took him to the hospital where he was treated. Robert then moved into a local assisted living facility. He wanted to move back home but his condition demanded institutional care. He lived in the senior housing facility for several months before returning home. Once home, he revisited his old patterns. Although Robert knew the risks, he continued to walk to the grocery store. On the way, he negotiated heavy traffic, several busy intersections and occasional bad weather. Beth worried about what could happen to him and wondered if her dad always used the best judgment: "Sometimes I think he thinks he's still 50 or 60 years old!" For his part, Robert had agreed to call Beth before he left and again when he returned, but Beth noted that sometimes he forgot.

This ethnographic passage offers one example of how attentions to bodies with technology in senior home care can mediate multiple effects. For instance, with the walker's support, Robert could attend to his desire for exercise. Yet, while this device enhanced his mobility, it also produced several dangers and negative outcomes. The walker played a part in Robert's fall, and thus his hospitalization and transfer into assisted living. In addition, although the telecare system was installed to enable attentions to Robert's daily condition and the ability to respond to emergencies, outside Robert's house it offered no help. This added to Beth's sense of discouragement about knowing her father's whereabouts and daily health condition. Robert did have a phone that he could use to check in with Beth, but occasionally he forgot or simply did not wish to inform her.

On closer analysis, however, it is not "the technology" alone—independent from its connections with "the body" that produce these multivalent moves in Robert's care. Rather, it was the body-walker or somatechnic arrangements that intervened. These somatechnic combinations did not simply produce positive outcomes. They also added to Beth's anxiety and played a central role in Robert's transfer from his home into assisted living. In other words, the somatechnic effects that emerge with care attentions are multivalent in their implications. Here I wish to turn to another discussion with one of my informants to nuance this idea further.

Meet Evelyn, in her late 70s. She is an articulate, US American woman who lives alone in a two-story house which is increasingly difficult for her to maintain. She cannot afford formal home care so she does the best she can on her own with what she calls her "equipment" as well as the occasional help from friends. She suffers from a number of chronic ailments, including type II diabetes. To help control the diabetes she must test her blood sugar level regularly for inconsistencies:

> Evelyn: When I get up in the morning, unless it's to pick up the phone to check on my bank balance, I always test my blood sugar. Then I test my blood pressure level with my sphygmomanometer. Then I know whether or when or how much medication that I have to take. Then I may eat a morning meal. That is a rather complex decision for me because I have to balance my blood sugar reading of the morning and my limited budget for food. If the morning reading is within the so called target level range, which is another way to say "normal" even if you don't have diabetes. Then depending on how much I feel I know about the glycemic index of what I've eaten and the fiber and all those things, I might test it after my first meal. I might not test it again until later depending on whether I feel odd or have done something weird about whether I did or didn't eat or I haven't had any exercise, which is frequently good.

Here we see how this device interrelates with her efforts to sustain her life at home and so-called independence, despite her difficult situation. However, sometimes things do not go as planned. Evelyn also gives an example of what happens when this technology does not produce the anticipated effect:

> Evelyn: I have three of these blood-testing kits. I keep one upstairs, one downstairs, and one in my purse. Last weekend I got these extraordinary elevated readings. That was after I had a visit from my niece and my nephew and they wanted to go to a fancy restaurant. I couldn't just sit there and say, "Well no, I can't eat this. I can't eat that" you know. So at first I wasn't surprised to have a slightly elevated reading. But then I took my oral anti-diabetics and that's a problem because you're supposed to take them with food otherwise they nauseate you. What you're trying to do is reduce the effects of food. There are a lot of times when I am just nauseated all the time. But anyway, instead of going lower they went higher. I thought, Oh my God, I guess I my diabetes has gone terribly advanced and I am about to have to go on insulin and the whole thing, you know.

While this is an example of what happens with device failure, it also offers an illustration of how technology used for care can generate multivalent experiences and perceptions of the body. Evelyn had never had a device fail. Initially she trusted its elevated reading. Had she not eaten correctly? Was her diabetes entering a more advanced stage? Then it dawned on her that perhaps the machine was not working right. When she realized it may have failed she compared her levels by testing her blood with another machine, which produced a reading within the target range. However, she remained anxious until she could confirm her glucose levels in person with her doctor.

As Mol (2000) points out, these diagnostic or "self-monitoring" devices do not simply register facts about the body in a passive manor. They also achieve agency in use. What does this agency look like? Mol argues that self-monitoring devices do not necessarily erode corporeal sensations but rather they augment or mediate them, and thereby alter the body's ontology or what the body is in the process of care. She explains, "[S]ome patients with diabetes don't feel (e.g.) 'dizzy' or 'light in their head'—they feel 'hypoglycemic'" (2000:16). In addition, Mol suggests that the use of these devices "does" the body as a set of measuring practices which amounts to self-disciplining or regulation (2000:18). In addition, I suggest that care attentions entail a degree of discipline, so monitoring devices further add to the somatic disciplining or

regulating already present in care. In other words, such technological effects pronounce a given dimension(s) or frequency of the body, which then becomes available for the focusing of care attention. Following Mol, together with the blood glucose tester, Evelyn's attention to her bodily sensations were mediated as an act of measuring. This accentuation or intensification is similar to Martin's (1992) argument of a "stretching" or "wrenching" of the body into a particular form and akin to Mol's (2002) thesis on the "body multiple."

How such devices determine normality in care is an additional point to consider. Mol (2000) argues that such devices not only help users achieve normal glucose levels but they also adjust what matters as "normal" in the first place. Evelyn, for instance, became concerned when her reading was above normal after eating out with her relatives, which was already a special event. In this case, medical knowledge hedges what counts as a normal body. Yet, achieving normality is not as straightforward or common as designers of healthcare devices or medical practitioners might assume. For instance, at one point in our conversation, Evelyn rejected the notion of a "normal" day. Normality for her was an obscure and tentative issue:

> Evelyn: There is no normalcy. I mean there really isn't. It depends. Like when I was preparing for our appointment today. Last night was Fourth of July and I knew that there would be bombs bursting in air and I wouldn't get to sleep very early. Once upon a time, I would have disciplined myself to stay in bed for as close to eight hours as possible but the sun rises at five o'clock now. I was probably asleep by midnight. With my diabetes, I frequently have to get up during the night to urinate. Then it's hard to get back to sleep again and then soon I feel the need to get up again. By that time, I am so tired trying to figure out whether to sleep or if I can that I have to decide. I have to take in all these factors.

Here we see how Evelyn, her disease, the time of day, a national holiday, the need and difficulties of sleep, et cetera, all come together to create an evolving arrangement or collective that mediates unexpected multivalent effects. These, in turn, require additional and ongoing attentions and adjustments. A related point here is also how this challenges the idea of "self" care. Evelyn is not fully in self-control of her attempts to negotiate care attentions. Rather, they amount to tinkering or experimentation with her arrangement. This involves the negotiation of attention to her diseased and aging body—as she explains in response to my follow up question about sleeping patterns:

> Evelyn: Today I thought I would stop going by the old rules of how many hours you're supposed to sleep a night. Instead I should realize how different the energies are if the sun is up at five o'clock in the morning and doesn't set until nine at night. Then it's easier to understand from the atmospheric experiences when there's no sun at all. […] So there really is no normal It depends. It depends because sometimes us old people have to take a nap or lie down for a little while in the afternoon. But then we're up later than we would be otherwise. So I think of sleep in chunks of time. If I manage to get to bed at what once would have been a reasonable hour, anywhere from 9:30 to 11:00, and if it took me a half hour to sleep then I would hope to sleep until 7:30. I very seldom accomplish that but I try. When things get sufficiently interrupted I try to balance what I do by responding to those interruptions to keep things as level as possible.

Above Evelyn defines her care attentions as a process of "balancing" home care arrangements. This is akin to what I have already discussed as tinkering and adjustment. Later in the interview, she develops this point:

> Evelyn: I've had diabetes for 18 years. Type II noninsulin-dependent. My maternal grandmother had diabetes and she had a terrible time with it but they know more about it now. So I am very conscious about that. […] I've been studying diabetes at length for almost two decades and the theories change, and the marketing pressures change, and the places to buy food change. I enjoy the study but then again it's a lot of balancing. Balance with what the nutritional guidelines seem to be and what the prices are and how much gasoline you have and how far can you go to buy the food. Now my microwave is also broken and I have no money to fix it. So part of the difficulty is that all my equipment has been breaking down and that relates back to the poverty thing.

For Evelyn then, her care is not simply a matter of injecting insulin or sleeping a certain number of hours. Rather, it amounts to an on-going attempt to balance a range of entities, all of which are in a constant moving relation to one another. These include her diseased body but also the changing medical perspectives on diabetes, her location, her economic situation, and even seasons of the year. Here care attentions mix with somatechnic relations that include her equipment and her body—both of which have a tendency to break down. To focus care attentions in this way is to relate to the on-going collaborative arrangements of care.

This section has illustrated how moves for attending to aging bodies with technology create collective human and nonhuman care arrangements. In these collective movements of care, the body does not emerge a passive entity. Evelyn's diabetic body acquired different agential potentials. This emphasis is akin to Latour's argument that being in a body is to understand how it is "'effectuated', moved, put into motion by other entities, humans or non-humans" (2004:205). By the same token, nor does technology emerge as an entity with straightforward effects. Like Robert's walker, Evelyn's use of her self-monitoring device mediated her bodily attentions and produced an array of different effects. Thus, in the movements of care attention bodies and their technologies emerge as categorically and ontologically unstable. Together they enter into tensions that require tinkering, experimentation and balancing. The next section explores what this tinkering of multivalent somatechnic relations though collective attentions might imply for the idea of surveillance in care.

Care surveillance?

In discussions about the dynamics of care and its attention, especially monitoring and observation, some scholars appropriate the concept of "care surveillance". This concept also figures in discussions about the adoption of new information technologies, including telecare and the "smart" home. Nevertheless, the relation between care and surveillance can seem oxymoronic (McIntosh et al. 2010). Care conventionally denotes a sense of respectful attentiveness and concern for the wellbeing of others. Surveillance, on the other hand, can evoke the dystopian imagery of an Orwellian society where privacy and wellbeing are undermined. Surveillance may suggest a view from afar, while care focuses attentions up close. Moreover, surveillance typically occupies an objective and removed stance, while the notion of care resonates with a subjective, close-up view. In this section, I touch on some of these inherent conceptual challenges between

care and surveillance. This will help establish the ground for an additional way to think through the empirical-conceptual play of multivalent somatechnic moves with attentions in care.

Michel Foucault's work is an important influence in surveillance studies and the notion of care surveillance in particular. Foucault was interested in how surveillance extends authoritarian controls in hospitals and other institutional settings including schools and prisons. He argued that the surveillant gaze can "discipline" and "normalize" power and knowledge relations in a wide range of settings. For instance, Foucault remarked: "Is it surprising that prisons resemble factories, schools, barracks, hospitals, which all resemble prisons?" (1995:228). Along these lines, Foucault developed the idea of the "Panopticon," based on Jeremy Bentham's architectural design for surveillance in prisons and other institutions. Foucault employed the panopticon as a social-material metaphor for analyzing the potentials of perpetual surveillance with technology. He also linked this to effects on things like bodily conditioning and the construction of subjectivity.

While Foucault's ideas are still influential in surveillance studies, some scholars critique the notion of panopticism for insufficiently characterizing the complexities of contemporary surveillance practices (Dubbeld 2006). Contemporary or post-panoptic surveillance studies are rich with new terms and concepts, which aim to compliment or correct panoptic notions of surveillance, especially its more dystopian versions. Bruno Latour's "Oligopticon" is one example. Latour describes the Oligopticon as a site or arrangement that generates narrow and discrete views, rather than a complete, panoptic view of everything. In his words, oligoptica "do exactly the opposite of panoptica: they see much too little to feed the megalomania of the inspector or the paranoia of the inspected, but what they see, they see it well […]. From oligoptica, sturdy but extremely narrow views of the (connected) whole are made possible—as long as connections hold" (2005:181).

Stemming from the critique of panopticism and revised conceptions of surveillance, interest in the overlap of surveillance and care has offered additional avenues for exploration. For instance, David Lyon, a leading scholar of surveillance, argues that surveillance is best understood as a dynamic process that intertwines the logic of care and the logic of control (in Walsh 2010). Christopher Gad and Peter Lauritsen (2009) echo this view in their study of Danish fisheries inspection. They explain, for instance, how fishing inspectors invoke a sense of care in their work. This includes concern about the wellbeing of fish and the environment, but also the fishermen when they need help. The authors conclude that control and care do indeed overlap in practices labeled as surveillance.

Some scholars of care make similar claims. For instance, in her study of telecare in Swedish senior home care, Anna Essén (2008) proffers that surveillance and control are both inherent to care. At the same time, Essén acknowledges that these categories are empirically and conceptually difficult to distinguish in practice. In their study of telecare in UK senior home care, Christine Milligan et al. (2010) make an analogous point. They argue that all types of care involve surveillance, whether technologically mediated or not. Yet, Milligan et al. also stress that the context of use, including the agency of care subjects, makes the view of surveillance contingent (2010:27). In other words, the notion of surveillance is relative and depends on how various entities relate and move together, from one moment to the next. Allow me turn to an ethnographic passage from my fieldwork to develop this point further.

It is early. The smell of coffee fills the air. I have joined a group of Swedish senior home care workers as they prepare for their daily rounds. The care workers service older people living in two adjacent villages and those living in the in-between rural areas. Before starting out in teams of two, they reserve a few minutes to sit down to chat. Four of them sit around a wooden dining table, drinking coffee. One of the care workers keeps a transparent plastic folder beside her on the table, with the schedule of all the allotted home care tasks. The folder remains closed during their discussion, yet nevertheless present. Out of interest, I ask how they divide the work between themselves and decide who goes where. The care worker with the folder notes that they check the client schedules before their rounds, but that they rarely consult the schedule otherwise. "We know all our clients," one worker adds. They have worked with them many times. In addition, they explain how they alternate their rounds every week between the two different villages. "Otherwise" they remark, "we have no real perspective." This makes their work less monotonous, but it also supports their collective decision-making about the ongoing efforts to adjust attentions to the changing needs of their clients.

In this passage, there are certainly examples of monitoring and observation that could pull the analysis towards the notion of care surveillance. Yet, when it comes to the actual doing of hands on care, I suggest that something else happens. For instance, the care workers suggest that without the moving around to adjust their attentions they would lose perspective on what they actually need to do. This is similar to Beth's efforts to shift her attentions on her father's constant travel. Here I think it is clear that the notion of surveillance in this specific situation gives way to a more nuanced or multivalent dynamic once we shift the analytical focus to what actually happens in the movements of care—when the practitioners attempt direct contact with seniors and their aging bodies in and around the home. How might we explore this multivalence further? How does it emerge in practice through the hands-on movements of care? One analytical possibility is to turn to the question of perspective.

Perspective in medical and healthcare research generally comes in two varieties: the professional / medical perspective and the lay / patient perspective. The mainstream medical perspective typically focuses scientific or biomedical concerns on disease and the human body. Here the body is stabilized as the primary object of inquiry but separate from patient concerns. At best, the patient appears in the form of statistical categories or behavioral labels. To address such issues, medical anthropology and other related disciplines have for some time promoted the patient perspective. Jeanette Pols (2005) suggests that the patient perspective—which she also points out is a topic of inquiry in its own right—has largely served to compliment medical knowledge, particularly the relation between illness and disease. A critique of this contrast would be that the medical perspective figures patients (and their bodies) as objects for knowledge, while the patient perspective approaches patients as knowledgeable subjects. Yet, a more significant outcome, according to Pols, is the acknowledgement of multiple and even ambiguous or multivalent realities that emerge in practice. In this light, Pols questions the relevance of searching for unified perspectives. In particular, she argues that this search tends to overlook the performativity (she also employs the terms co-production and enactments) of people and things as they come together in different care situations.

The passage with the Swedish care workers resonates with such arguments. Consider the use of client schedules. Healthcare administrators produce these schedules in an attempt to match client needs with the formalized spatial, temporal, and financial constraints of healthcare. As a care technology, these schedules should guide the care workers' attentions in the

performance of their tasks and routines. In this way, the schedules could be understood as an extension of a healthcare or medical perspective, situated by medical knowledge and the political-economic regime (e.g. New Public Management). Yet, the client schedules do not offer the exclusive view on how senior home care gets done in practice. We can also find perspectives aligned with the care subjects or clients. For instance, the care workers discuss their attempts to move around to locate perspectives of their clients' needs, which they must also balance with their scheduled care tasks.

Yet, these attempts to gain a patient or client perspective are not the same as achieving one. At best the care workers' efforts amount to an ongoing work-in-progress. Their work may draw on different so-called patient perspectives but their views do not amount to a distinct perspective. It is certainly not the distant view of panoptic surveillance. Their attentive views are negotiated, limited, ephemeral, and closer to what Latour defines as oligoptic. The same point also holds for the so-called patient perspective itself. For instance, Evelyn explains how she struggles on a daily basis to negotiate attentions to her body, which she must balance with a full range of other entities including her equipment. There are also examples of how care attentions mediate the medical perspective. For example, if we include the care schedules as a technological extension of the medical perspective, we can see how care attentions also mediate this perspective.[4]

Moreover, these movements of care have mediated my own analytical perspective. Initially, in the early stages of writing this article, I retained the notions of perspective and surveillance. Yet, in the careful analysis of care and its attentions such notions have become less tenable or useful. In their place are mediated and emergent kaleidoscopic views, surfacing and submerging with the doing of care. Notions of perspective and surveillance remain important, but my point is that we require additional terms that can better attend to the transformative multivalent moves of care.

The handful of studies I present above relate to care in surveillance but, equally, surveillance in care. A few general points emerge. For one, these studies suggest that care and surveillance overlap on the issue of control. Yet, while this is certainly a valuable insight, I question whether the topic of control invites a focus on the multivalent effects that I find in my material. Perhaps the study of control in care surveillance is more concerned with Foucauldian arguments about panoptic surveillance rather than care itself. In other words, rather than show how surveillance and care mix with the issue of control, I propose it is worth considering situations where control is less evident. These same studies also proffer that care and surveillance tend to blend to the point of indiscernibility in practice, thereby making it difficult to analytically distinguish such terms as distinct categories. Nevertheless, I assert that it remains worthwhile to pursue the study of care, as Annemarie Mol (2008) suggests, in and on its own terms. While I will not deny that surveillance or control exist in practices of care, I propose we can consider additional terms that remain faithful to the logic of care itself.

As I see it, a productive approach is to trace how human and nonhuman elements mutually mediate or "tinker" (Mol 2008) one another in practice. This entails analytical attention to what Evelyn describes as the "balancing" of different entities. In addition, rather than a adopt a more static perspective or surveillant view that assumes a singular static quality of things, we can shift the analytical focus into how movements of care attention in practice perform or enact subjects and objects. This approach is spearheaded by scholars, like Mol, who study the emergence of ontological difference. She writes:

> If practices are foregrounded there is no longer a single passive object in the middle, waiting to be seen from the point of view of seemingly endless series of perspectives. Instead, objects come into being—and disappear—with the practices in which they are manipulated. And since the object of manipulation tends to differ from one practice to another, reality multiplies. (2002:5)

If one endorses this idea of ontological multiplicity—that the reality of a thing is different in different practices—then I suggest room opens up to reconsider assumptions about attentions in care, including notions like surveillance and perspective. For one, the idea of an unobstructed view on a singular reality becomes dubious. In other words, once we establish that the reality of a given entity such as a body or technology can become multiple in different practices, I maintain that all forms of care attention—visual or otherwise—relate to the doing of ontological difference which in turn challenges notions like perspective and surveillance. In the next section, I pursue this line of argument to further ground my proposal of care-valence.

Towards care-valence

To further explore care attentions and how they mix with somatechnic relations I wish to return to Robert and his use of telecare. One day Robert and I sat down for a chat in his kitchen. However, as he sat he misjudged the distance from the chair, slipped off, and fell backwards onto the floor. Surprised and concerned, I quickly asked about his condition and tried to help him back into his chair. Laughing from embarrassment he said: "Just take my hands!" Concerned that his hands and wrists might be too weak, I took him in my arms instead and lifted him back up into the chair. Once we had both calmed down, I asked him what he would have done if I had not been there to help him. He explained, with some hesitation, that he could have called someone like his daughter. Then I asked him about his telecare pendent. He admitted that he was not wearing it:

> Robert: My daughter would get after me because she wants me to wear it all the time. But when I'm out in public like I was this morning I don't like to bother with it. Sometimes it gets in the way. But I usually wear it. Honestly though, I'm too independent to call anybody. I can inch my way over from the kitchen to that recliner chair over there and then inch my up by putting my shoulders against it and pushing myself up. Or if I'm in the bedroom I can get the rocker up against the bed and inch my way up to the bed. I want to do that by myself because I don't want to everybody to know I'm falling.

As I noted above, my interest in the relation between surveillance and care stemmed initially from my fieldwork on the use of telecare emergency response systems in senior home care. These systems—which some scholars define as surveillance technology—are installed to enable more effective emergency response and reduce the risks of living at home like falling. It typically consists of a wearable alarm button, in the form of a wristband, necklace or pendant, connected wirelessly to a radio intercom, and wired into the landline telephone. This wireless design has a limited radius that effectively encompasses the home living areas and the immediate outdoor surroundings. If the client experiences an accident or stress, he or she may push the button to contact the emergency responder. The responder first attempts to establish verbal communication with the client via the intercom in order to inquire about the severity of the call.

These devices have been in use for several decades in both countries. Technically, they comprise similar components and design. Given these similarities, one would typically expect similarities in their effects and use. However, I found a stark contrast in their use between the US and Sweden. Like Robert, some US participants questioned the use of telecare. They noted concerns about becoming a burden to their family or friends, disturbance of their privacy, as well as the additional costs of the telecare system. A key example is Robert's disuse of his device due to his concerns about privacy and becoming a burden his family. However, I did not come across such hesitations among my Swedish participants. This difference, I proffer, relates to the different ways connect these telecare devices connect into the existing local care arrangements.

In the US, older people typically become customers and pay monthly fees for their telecare emergency response system. Moreover, their calls route to a national emergency call center located many miles away. The call responder determines the severity of the call and attempts to contact the family member or friend previously established in the customer's profile. It also happens that the responders contact the appropriate local emergency services.

In Sweden, public healthcare providers typically include telecare as a part of the home care services. In this arrangement, seniors become connected as clients rather than customers. Some of my Swedish participants even cited that it was their right as citizens of the national welfare system to access good healthcare and new technologies such as telecare. In addition, unlike in the US where emergency calls route to a call center potentially hundreds or thousands of miles away, the local Swedish care workers are the first to respond to client calls. Thus, Swedish seniors are often familiar with the person or persons who answer their calls, which I think helps explain what I perceive as the acceptance of this technology.

With this comparison, differences in terms of the use and effectiveness of technology for care emerge. In Sweden, some senior participants linked the adoption of telecare to notions about citizen rights to good healthcare. However, among my US participants I did not find these kinds of associations. Instead, I found how seniors use (or rather disuse) telecare to veil or screen their body as a stable (rather than unstable) entity. Admittedly, this is anecdotal evidence but my aim is not to quantify this comparison. Nevertheless, I suggest it supports the argument for the emergence of different multivalent somatechnic mediations in care. It also lays open conceptual assumptions both about technology and surveillance. For instance, if technology produces one set care attentions in one situation, but a different set in another, is it correct to generalize such devices as surveillance technology? I will return to this point below. First, I wish to present one additional example which further illustrates how collective care attentions can mediate technology and vice versa. Again, I draw on my work with Robert and Beth.

> Beth: We just don't always have time to read the paper and when we do read it we spend too much time reading it. One day we just asked if we could borrow my dad's. The paper became a really good way to check in on him. It offers an excuse to get over there. I hate to spend money for the paper if it's not going to be used, so it works really well.
>
> Peter: And you suggested it? He was already getting a paper?
>
> Beth: Yes, he likes to read it. It's a part of his afternoon.
>
> Peter: And the decision to share it with the neighbors—how did that come about?

Beth: We just offered it to them. We knew they weren't getting it and wondered if they'd like it.

Peter: What is your relationship with them?

Beth: Oh it's good. We have great neighbors. We have close relationships with a lot of them.

In the above passage, Beth explains how a daily newspaper became a way to negotiate or mediate care attentions. Robert pays for the paper, which he has delivered in the morning. Then, later in the day, Beth retrieves the paper but uses the opportunity to check in on her dad in an unobtrusive way. In this way, she is able to respect her father's daily routine. On the other hand, because Robert buys the paper, it offers him one way to assert his sense of independence. It becomes a gift to Beth, which she then passes on to her neighbor.

Obviously, there are multiple issues one could explore here. For instance, it shows how the senior home care collective is distributed beyond the home and augments community relations. The most important point for my argument, however, is how an object—the newspaper—becomes transformed as a "technology" for care attention. However, this form of care technology does not provide the unobstructed view of surveillance. Rather, it mediates and tinkers with care attentions. Certainly, Beth could check in on her father in more deliberate ways. Yet, the beauty and simplicity of this mediated homegrown care technology is in how it resonates with the mutual respect found in other aspects of their relation. This example also challenges the assumption about care as a one-way flow from giver to receiver. Here care is a negotiated and mutual affair, with multiple frequencies of giving-taking.

Moreover, this multivalent mediation does not only concern technology. It also concerns how and when care attentions to the aging body occur. This observation resonates with the other ethnographic passages including Evelyn's blood glucose monitor, Robert's use of the telecare device, and his wheeled walker. Depending on how care attentions are situated, Robert's body-walker arrangement could emerge strong or weak, mobile or immobile, stable or unstable. Certainly, these situations challenge the potentials for a care surveillance—panoptic, oligoptic, or otherwise. Instead, I suggest what occurs in my examples are somatechnic effects of care attention, which mediate its entities in multivalent ways. These entities include both technology and the body.

Recent years have seen in a significant increase in the anthropological and sociological literature on the body (e.g. Lock and Farquhar 2007; Hoeyer 2013). While this literature focuses the body in relation to issues like subjectivity, selfhood or embodiment—with both poststructuralist and phenomenological approaches—the category of the body itself (and the aging body even more so) typically remains untouched or implicit (Hoeyer 2013). Offering a similar critique, Janelle Taylor suggests that there is a prevalent "tendency to presume, rather than ask, what a body is and where its significant boundaries are located" (2005:749). In this light, Mol and Law (2004) proposes that analytical attention to the body we do or enact in practice offers a means to cut through the objective/subjective dichotomy between the body we have (as an object of medical knowledge) and the body we are (part of the fleshy subjectivity that make us persons).

These observations help refocus analytical attention on how bodily realities—but also other preconceived categories such as technology—emerge in different ways through situated relations. The so-called "ontological turn" in anthropology and other social sciences offers another source of inspiration. A prime example is Mol's (2002; 1999) focus on what she terms "ontological politics." Mol explains: "If the term 'ontology' is combined with that of 'politics' then this suggests that the conditions of possibility are not given. That reality does not precede the mundane practices in which we interact with it, but is rather shaped within these practices" (1999: 75).

To take a "politicized" ontological turn in the study of the body or technology is to question how these preconceived entities "matter" in practice, as fluid or contested categories. Attending to the different ways care attentions mediate or materialize its arrangements offers an approach on somatechnic relations as an ontologically multiple affair, with multivalent objective-subjective combinations or versions. In other words, to take an ontological turn in questions about the body and technology in care is to focus on how such boundaries become (re)done, through the movement of care attention. This is a different concern than the study of surveillance in care, which I suggest tends to fix ontological boundaries between observer and the observed, or subject and object. To better focus analytical interest on the multivalent somatechnic effects produced with care attentions, I develop the concept of care-valence as a compliment to studies of surveillance in care in the remainder of this section.

The OED offers several meanings for the term "valence". First, it can imply an extraction, for instance an herbal extract used in medicine. Similarly, it refers to a veil or screen—such as a thinly woven fabric or drapery attached lengthways to a canopy, altar-cloth, or the like (cf. valance). Second, it means a bond or bonding force, such as chemical or psychological / emotional attraction and repulsion. Third, it indicates valor and courage; including valency, which relates to strength, power, vigor, capacity, significance and importance. Hence, the term valence is itself multivalent. These three differences (or valences) in the term valence—namely screening, bonding, and encouraging—offer inspiration for my concept of care-valence.

Care-valence as "screening" concerns the double-sided ontological filtering-extraction of somatechnic difference that can emerge with care attention.[5] Of course, in an explicit way, digital screens are used frequently in senior home care and healthcare more generally. Evelyn's monitor, for example, comprised a digital display screen. Yet, rather than simply an invisible bystander or innocent conveyer of knowledge, we also saw how her monitor played an active role in guiding Eveyln's bodily attentions. It actively participated by shaping her diabetic body in particular ways, for instance as in a measurable and numeric entity. In this way, screens can organize care attentions but they also cut away particular attentions or views while creating and connecting others. Care-valence as screening, then, offers a conceptual or metaphorical extension of this process. It helps to depict the coming into being of different relations and how these can mutually and ontologically "tinker" aging bodies with technologies in ways that produce but also limit their presence as entities for care. Robert's non-use of his telecare device offers another example of screening as a subtractive process. In this situation, the telecare device helped to screen out or veil his fall, which displaced care attention that might otherwise focus on his condition. Evidence here also suggests how the telecare device itself became screened out as a care technology. Again, my point is that care-valence as screening is a way to think through the mediating and transformative somatechnic relations that can surface with care attentions. In other words, it emphasizes the cutting away and filtering of care arrangements.

While care-valence as screening emphases the filtering-extractive process, care-valence as "bonding" stresses the gathering together or "becoming with" (Haraway 2008, see also Strathern 1996) of somatechnic relations through care attentions, which amount to different ontological effects. The somatechnic relations explored in this article all suggest instances of bonding. For example, Robert's somatechnic body-walker arrangement is a bond that was created through care attentions, and in turn generated multiple somatechnic effects. Another example is how Robert and Beth's newspaper bonded not only their own care attentions but also extended this relation into the wider community.

Lastly, care-valence as "encouragement" concerns the bravery, courage, or capacity in care that nudges, coaxes, urges, and otherwise tinkers or adjusts attentions. Thus, this third form of care-valence is closely akin to what Mol and others argue is inherent in the logic of care, in contrast to the logic of surveillance or control. Care-valance as encouraging is also a way to emphasize the "affective" (cf. Massumi 2002) dimension in care. As Puig de la Bellacasa argues, "[U]ltimately thinking with the notion of care does illuminate the affective aspects of knowledge politics. The tensions of care are present in its very etymology that includes notions of both 'anxiety, sorrow and grief' and of 'serious mental attention'" (2012:212). In other words, care attentions comprise and effect somatechnic relations filled with tension, and these also match with attempts to encourage. In other words, to think of care-valence in purely material or visual terms would be to overlook the deeper affective structures that underlie and inevitably sustain care and its attentions.

Concluding Remarks

This article opens by noting the significance of new technology development for senior home care. At the same time, it also stresses how the relationship between technology adoption and care for older people at home remains a complex affair. To better understand this complexity I propose the need for more nuanced conceptual tools. In this light, the article takes up the case of surveillance in care, which is also often used to label technologies for care including telecare.

Some scholars proffer that control and surveillance are integral to care. At the same time, scholars of both care and surveillance acknowledge that these terms are conceptually and empirically difficult to distinguish. There is evidence, for example, that surveillance gives patients a sense of comfort and empowerment, rather than simply disempowerment or worry. Idioms like "watching over" or "looking after" also illustrate this blur between care and surveillance. Given this complexity, I proffer that this distinction does not fully express the complexities that emerge in practice. While surveillance remains an important concept, I question if it accounts for the full range of multivalent effects that emerge with care. An analytical focus on attentions to aging bodies with technology offers a provisional starting point for rethinking this distinction. This includes a focus on tinkering and adjustment in practice, which Mol relates specifically to the logic of care itself.

The logic of care entails thinking through how attentive movements in care mediate or tinker its relations, including between bodies and technology. It rests on a symmetrical understanding of technology and humans. This symmetrical view approaches technology as a deeply social phenomenon and one that is fundamentally entangled with humans. This view is prominent among scholars in STS-inspired anthropology and post-feminist philosophy of technology including scholars like Karen Barad, Donna Haraway, Bruno Latour, John Law,

Annemarie Mol and Marilyn Strathern. This is distinct from the standard or literal view, which frames technology as a predominately material category consisting of artifacts, objects, systems, techniques and machines that are well removed from the social sphere. Popular and scientific accounts generally adopt this standard view. This article clearly represents an effort to challenge this standard view and contribute to a symmetrical analysis of how senior home care attentions mediate human and nonhuman relations—in other words, bodies and technologies.

To better focus the multivalent somatechic effects that can emerge between the logics of surveillance, control and care I proffer the heuristic term care-valence. This is an attempt to better situate the analysis of care in and on its own terms or logic, distinct from the logic of surveillant control. I develop this term by considering its different multivalent dimensions—screening, bonding and encouragement—which I argue offers a more integrated understanding of the mediating capacities of care attentions. As such, I intend care-valence as a compliment to the notion of care surveillance. The key advantage with this term is that it helps refocus analytical interest onto the mediating, generative or performative effects and affects of care.

Acknowledgements

I am grateful to the following people. Casper Bruun Jensen, Randi Markussen and Antonia Walford offered valuable comments on early drafts of this article. A departmental seminar at the University of California Santa Cruz was also instrumental, and included Jason Alley, Mark Anderson, Don Brenneis, Nancy Chen, Susan Harding, Andrew Mathews, Heather Swanson, Anna Tsing and Matthew Wolf-Meyer. A special note of thanks goes to Don Brenneis for suggesting the term valence. In Sweden, Annika Capelán and Mats Utas gave constructive input on the final draft. The European Commission's Marie Curie Actions programme (grants 14360 and 249322) provided the financial support for fieldwork.

Notes

1. Here I use this term to reference the emergent relations between bodies and technologies that come about with care attentions. I draw on Sullivan's and Murray's term, which they explain serves "to highlight the inextricability of soma and techné, of 'the body' (as a culturally intelligible construct) and the techniques (dispositifs and 'hard technologies') in and through which corporealities are formed and transformed. This term, derived from the Greek sôma (body) and τέχνη (craftsmanship), supplants the logic of the 'and', suggesting that technés are not something we add or apply to the body, nor are they tools the embodied self employs to its own ends. Rather, technés are the dynamic means in and through which corporealities are crafted, that is, continuously engendered in relation to others and to a world" (2009, 3). Sullivan and Murray are thus heavily indebted to scholars like Donna Haraway, Teresa de Lauretis, Michel Foucault, Judith Butler and Martin Heidegger.

2. Strathern continues: "The idea that human artefacts may be abstracted from human life can only point to the missing "context"—it cannot specify or describe it. And when one comes to describe the missing dimensions (so to speak) one will realise of course that the technologies have also created their own" (2000, 53-54, original emphasis, references omitted).

3. With reference to the philosopher William James, Latour continues: "This is my way of interpreting James's sentence: 'Our body itself is the palmary instance of the ambiguous'" (Latour 2004, 206, original emphasis, references omitted).

4. See Lutz (2013) for further discussion of care scheduling and its mediations.

5. See Winthereik et al. (2011) for further deliberations on "screens".

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