

Pepper¹ as Imposter

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Introduction

“An imposter is commonly understood as a person who pretends to be someone else in order to deceive others” (Vogel et al., 2021: 3). This is the starting point of Woolgar and colleagues’ (2021) recent work on imposters, in which they explore how thinking with imposters can be a useful analytic for social theory, i.e. a tool or lens through which to observe social-material phenomena. In the book, they trace early sociological use of imposters to articulate (underlying and/or performative) social orders, and how impostering was initially seen as an example of deviation from the normal. In these early uses, examples of impostering could be interpreted for clues to which mechanisms held together the social order. However, their reworking of the term impostering moves the figure of the imposter to ‘center stage’ and uses it to explore indeterminacy, uncertainty and disorder, the frictions and disruptions that are actually central to social relations (Vogel et al., 2021: 4). Rather than using it to discover underlying normative mechanisms, this new use of impostering keeps the analytical focus on the messy practices of social relations but also encourages analysis of which other actors are collaborating in the impostering practices, and what purposes the imposter is supposed to serve.

For my discussion here, I will use impostering to focus on the messy and collaborative practices of the human-robot relation involving the robot Pepper. This will complement an analysis of

the power dynamics of (robotic) care. I find the analytic of the imposter is useful when combined with science and technology studies (STS) and feminist technoscience discussions of care to reveal the complexities of human and non-human actors and discursive concerns engaged in presenting robots like Pepper as solutions to the care needs of older adults in residential eldercare homes.

This combination of impostering and care is particularly relevant for the study of robots and their introduction to the social constellations of care, a place that Pepper is often imagined to inhabit sometime in the near future. But, as I will show, using the figure of the imposter to explore Pepper makes apparent how the robot is both an essential but not unassisted character in the production of (imagined) caring relations. These relations, which are often messy and muddled, involve more users and more desires than one often finds mentioned in robotics research. Using Pepper as an imposter in this analysis articulates the underlying relational (dis)orders of care provision and makes visible how much work is required to choreograph the provision of care. It also starts to unpack the entangled relation between Pepper as a figuration (a character in different imaginaries who is assigned roles in narratives of care and care provision) and Pepper as a research object.



Robots as imposters

Just like the imposters of the older sociological term (magicians, con-artists, forged art-dealers), robots can stir complicated emotions when we in the well-resourced North are asked to seamlessly integrate them into our daily lives. They mow our lawns and vacuum our floors. They park our cars and, in some imaginaries, even drive them. In disembodied form they decide what playlist of music we should listen to. They sit in speakers on our fireplace mantle, listening, and turn the lights on and off while logging our activities and speculating about potential purchases from snippets of overheard conversation. Some people think they are going to be able to fulfil our needs for friendship and intimacy (Strengers and Kennedy, 2020), and some robots already do, as Harrison found in her study of chat-bots on infidelity sites (Harrison, 2019).

For the last few years, I have been working with a team of colleagues on an interdisciplinary robot project, thinking about the ethics of care robots while doing ethnographic and interview-based studies of robots in development. Part of our study has involved collaborative work with roboticists, participating in their studies with the semi-humanoid robot, Pepper. These studies have engaged older adults supposed to follow a series of aerobic movements led by Pepper. Our roboticist colleagues have been interested in how Pepper could produce and read engagement. As social scientists, we worked with them in developing the studies and ethnographically observed as the research was conducted. We also paid attention to other things happening around us. We made notes about the way experiments were run, the smooth parts and the glitches, but we also made notes when the experiments were interrupted because the laboratory received visitors, for example a small group of managers from the local municipality who wanted to discuss the integration of robots into existing care configurations. For us, these disruptions were as much a part of our material as the studies themselves.¹

As a backdrop to this study, I have also been sensitive to the way Pepper is presented in various popular media and in care discourses as a solution to a bouquet of care needs predicted to appear in

the near future. In this paper, I will be reflecting on these imaginaries of Pepper as a figuration. A typical image of Pepper the care robot for older people shows Pepper standing in a room, leading a smaller group of older people in chairs through some arm-waving exercises. *The Times* (Cavendish, 2018) presented one such image, but a simple Google Image search will present many examples of this figuration.

Our larger study is informed by recent, ethnographic work on how robots are being developed, studies which have shown that the practices and imaginaries of engineers and designers are (still) helping to shape the types of robots that are developed to 'serve' us (Fischer et al., 2020; Robertson, 2017; Søraa, 2021). However, here I will also be drawing on work that explores the imaginaries and figurations of the robotic on the edges and outside of the lab (DeFalco, 2020; Rhee, 2018; Sparrow and Sparrow, 2006; Strengers and Kennedy, 2020; Suchman, 2007). There are many different constellations of sites which are currently developing robots and which are engaging different user imaginaries and landscapes: engineering laboratories; social robotics labs; commercial entities entangled with university research structures; municipal and regional innovation platforms with input to and from research groups. These constellations are often interdisciplinary collaborations engaging theories and methods from cog sci, psychology, design, linguistics, STS. Fischer et al. (2020) suggest that the sites of design impact the image-evoking activities used by designers and engineers. We have also seen this with the robotic work we have followed at a robotics lab, where Pepper is entangled in concerns that non-academic actors have (for example, the municipality's team of managers mentioned above). Thus, it is logical to suggest that the work done at these sites is also embedded in cultural discourses, in the hegemonic quadrant of power that frames our imaginaries, helps us imagine what is possible, and therewith impacts the research questions we can pose. Exploring these framings is thus important to understanding how our research takes shape and what robots it can produce.

The imposter as analytic for the robots

In wider social discourses about care robots, Pepper is often presented as a robotic solution to the problem of care for older adults. Occasionally, Pepper, or a similar humanoid-ish robot, is seen with out-stretched arms about to lift an older person or interact with that person one-to-one. But often, the images shown in newspaper articles, YouTube clips, and promotional materials are of Pepper leading aerobics classes for older people, sometimes in robotics labs but usually in care home environments. Pictures of Pepper helping lead exercise groups (usually focused on the upper body) are a stock representation of how Pepper is imagined to be addressing social needs today and tomorrow. It is not a coincidence that this imaginary made it into the robotics lab we collaborated with. Their research – and the research of many roboticists working with Pepper – is impacted by the question of how Pepper could react in a similar situation and is, as Suchman would put it ‘infused with its inherited materialities’ that afford limited conceptualizations of what the robot can do (Suchman, 2011: 119). For example, one nuance worth mentioning is that Pepper has no movable legs but does have movable arms, and leading an aerobics class for stationary human bodies is within the realm of possibilities for Pepper. Jumping around or shuffle dancing is not. When picking apart the nuances of Pepper as aerobics instructor, one can find the material limitations of the robot becoming entangled in our human encounters, both in promotional images and in the research done with robots.

Understanding ‘imposter’ in the earlier sociological sense, as a deceitful figure whose deception can reveal an underlying order, would highlight the work Pepper does when assuming some particular aspects of performing ‘aerobic instructor’, including producing roles for the often wheelchair-bound aged to perform (as wheelchair-bound and as aged) and the terribly enthusiastic and motivational frontstage mask that Pepper assumes when the robot unwaveringly smiles and flairs about its arms, encouraging the bodies in the wheelchairs to do the same. This understanding of Pepper as an imposter would also speak to the underlying distrust of

robots (machines) to provide something normally thought to belong to the human realm, care (c.f. DeFalco, 2020).

However, the image of Pepper teaching an exercise class can also be understood with an alternative sense of imposter – the kind that Woolgar and colleagues (2021) want to put forward. Such an analysis recognizes the intentional deception, but highlights that for it to occur, others in the room have to make a series of moves; that pepper-the-imposter is not just a version of Jane Fonda or Richard Simmons minus the pastel-coloured sweatbands and legwarmers. Observing Pepper through the new lens of the imposter could prompt questions about the concerns surrounding and awakened by those robotic arm waving exercises. Who is involved in being intentionally deceived? Why? Pepper as an imposter can provide insight to the “disorganized” social relations and cultural forms from which it is emerging. In the case of Pepper the aerobics instructor, those social relations are imagined to be in need of re-organization in a care home which is probably trying to readjust their care provision to economic efficiency demands in the face of (at least imagined) labour shortages. The Woolgar and colleagues’ analytic helps me look for these discursive moves behind the production of Pepper as an aerobics instructor by reminding me to find the actors making the moves necessary for the deception.

Seeing concerns in the care of robotic aerobics

The analytic of imposter reminds us that human/non-human constellations, networks, and/or entanglements are and have long been a part of care (DeFalco, 2020; Puig de la Bellacasa, 2011). We can use the imaginary of Pepper the imposter to probe the dynamic relations they are involved in.

For example, Pepper as aerobics instructor tries to get older adults to follow the arm motions that Pepper initiates. This happened in the experiments we observed, and is also prevalent in the visual and textual representations of Pepper. However, there is more at work than a mimicking of arm motions. Looking beyond the movement,

one can also discern a concern that much older adults in care homes are not exercising enough, that they are in imminent danger of just sitting still, staring out into space.

We can also read a concern that ‘activating’ older adults by hiring staff to lead exercise groups would require too many personnel resources. One can sense worry about the price (salaries? social guilt? employment policies? HR headaches?) of paying someone else to lead the interactions. These concerns become visible as one untangles elements in the knot of societal needs, care provision policies, and robotics research that produce Pepper the aerobics instructor.

One can also sense concern that the older people around us are socially isolated. Entangled with that is a reluctance to socially interact with them, ourselves. Note the enactment of the categories us/them, othering the aged. These different elements of the discourse become clearer when sensed through the figure of an imposter, and can trigger questions that go beyond the roles that an imposter may be making visible and instead ask about *whose* concerns these are, the care providers or the care recipients? It can even prompt the question: is the imagined user of the robot the resident being nudged into participating in aerobics or is the user the children of those residents? Or the municipality managers interested in developing the interaction to help provide care? Who are the people responsible for the residents? Is Pepper addressing the social needs of the care home residents or the guilty consciences of their children or the limited budgets of care provision institutions? Or all of them, together?

A related question of what social relations are being constituted when Pepper gets the older people to move their arms around in a coordinated way is: why is it important that these aged bodies are all gathered under one roof, comprising a target audience. In many of the images of Pepper circulating in care discourses, the people responding to Pepper are in a group. They are gathered together into a large room, all focused on the robot and doing just as Pepper tells them to do. They are disciplined – either by Pepper or (more likely) by the context that puts them into a collective home and demands they do as they are

told. In many such photos, people look like they were wheeled into the room by someone else and positioned in front of Pepper. Again, this speaks to the power dynamics in group care, and the power dynamics of eldercare or the care of other bodies which need assistance, a type of power dynamic which is exactly a node of tension, of not-necessarily-nice-or-benign care (especially when combined with technology) that STS work on caring has helped articulate (Latour, 2004; Lindén and Lydahl, 2021; Martin et al., 2015; Murphy, 2015; Puig de la Bellacasa, 2011). Pepper and the use of robots like Pepper in residential care shows that the dynamics of care are not always benign (c.f. Murphy, 2015) and that the introduction of a non-human into the loop can articulate practices of valuation and value which we otherwise have been wont to ignore (unless we’ve been working in nursing or theories of nursing care – where these valuation practices have been explored in depth (c.f. Allen, 2013; Hochschild, 1983; James 1992; Tronto, 1993)).

Research on care robots has also pointed out their purported future use as a replacement for human bodies of ‘undesirable’ or ‘uncomfortable’ colors/races/nationalities/classes in the care/cared for relationship (Benjamin, 2019; Robertson, 2017; Sparrow, 2020). Countries that imagine the impending demographic crisis of aged adults in need of care, but which do not have sufficient labouring bodies to care for those adults, imagine being able to provide this care with robots rather than through racialized immigrant labour (Robertson, 2017; Sparrow and Sparrow, 2006). It has been suggested that this imaginary is not going to work (Wright, 2023)

Of course, not everyone welcomes a future with Pepper. The dystopian imaginary of care robots as perceived by older adults has also been discussed (Sparrow and Sparrow, 2006) and reflections on the subjectivity ideally assigned to these robots (as a responsive but unobtrusive servant) explored (DeFalco, 2020; Suchman, 2007) – even as the use of caring technologies like voice operated assistants has been widely adapted (for an in-depth discussion, see Strengers and Kennedy, 2020; Sutton, 2020; Søndergaard, 2019; Søndergaard and Hansen, 2018). But the ‘utopian’ dream of Pepper helping untangle that knot of needs and

concerns about how to care for the older people in our lives seems still to be finding its way into our robotic imaginaries and our robotic laboratories.

Robotic constellations need work

If we understand an imposter as someone who is pretending to be someone else with the intent to deceive, this definition carries with it a sense of betrayal and deception. While that is a common theme in many science fiction works about robots (see *Origin* by Dan Brown, *Machines Like Me* by Ian McEwan, *Klara and the Sun* by Kazuo Ishiguro), and seems to be the goal with the life-like humanoid replicas produced by Hiroshi Ishiguro, this is hardly something that Pepper strives for. The smooth white plastic is vaguely shaped in a human form, and there is an unmoving face with eyes and mouth that gives a hint of humanness, but Pepper's design is in no way meant to deceive a user to think it is a human. Pepper is not an imposter like a magician or a con-artist. Pepper is a part of an impostering event, with other actors, wills and desires all messed up with Pepper's materiality.

This is why I find it useful to thinking of Pepper through the analytic of the imposter and at the same time engage the analytic together with the STS discussion of care and its discontents. Doing so produces a more actionable lens to view and articulate the other actors involved in producing the impostering event.

For example, we are asked to think of Pepper as the leader of the exercise moment. But often in such photographs, one can also see a human instructor live or on a TV behind Pepper doing the same exercise, complementing Pepper's instructions with practices of interfacing (Lipp and Maasen, 2022). One can see chairs and wheelchairs that Pepper's followers are sitting in and the way those body/chair hybrids allow some movements but not others. The room is also important, even if it becomes the background, with its closable doors that let the body/chair hybrids in and out at (someone's) will (Johnson/Latour, 1988), and the lights and heat or air conditioning that keep the human bodies comfortable. There is considerable material worlding going on to make the envi-

ronment which produces Pepper as an aerobics instructor. And, of course, this aerobics session is a session – with a beginning, middle and end, a dramaturgical arch that supposes that Pepper's presence in this narrative will transform the social order that existed in the room before they entered. One could even suspect the whole event was carefully staged.

However, when understanding imposters as “engines of indeterminacy, uncertainty and disorder,” (Vogel et al., 2021: 4) and thinking of Pepper the aerobics instructor this way, my analysis snags and slows down on the term indeterminacy, not deception. Pepper is definitely a robot, yes, but as an aerobics instructor, Pepper is also imagined to be a motivational speaker, role model, cheerleader and generally pleasant persona helping create a sense of enthusiastic movement in the collection of previously still bodies in front of the robot. Pepper articulates an indeterminacy – or a complexity – in what we imagine that aerobics instructor is actually doing. A mild sense of disorder is produced from Pepper's actions, with occasional smiles (only on the human faces – Pepper's smile is permanent, unchanging) and the waving of arms. This robot aerobics instructor is creating a stir... albeit a relatively slow-moving stir. They are revealing an instability. Stabilizing this disruption into a legible example of group exercise requires work; staging props, and captions to tell the viewer what they are seeing.

Now, to be fair, recognizing the work that is necessary to make anything even remotely resemble a stable social interaction with a robot is not new. Human Robot Interaction (HRI) researchers use an established experimental technique called ‘wizard of oz’ in which the researcher speaks for or remotely manipulates the robot (often behind a one-way mirror or curtain) to trick the human participant into thinking the robot is actually interacting with them. This is done because many robot interactions are theoretically interesting but practically difficult, if not impossible, given the current state of technology (Baxter et al., 2009; Rea et al., 2017; Riek, 2012). Suchman (2007, 2011) uses rich ethnographic observations of her interactions with MERTZ to show with STS terms how much a robot interac-

tion depends on the human participant or, more to the point, participants, in constellations of users, programmers, inventors, study designers, etc. In more recent work, Treusch uses this human participation in cobot research to articulate the complexities of practice (Treusch et al., 2020). STS gives us tools for thinking through this, for paying attention to the affordances of the material entanglements that engage bodies (of imposters and others) into contingent constellations that allow an activity to occur, ideas also taken up in design work, not least in the conversations about technological dis-affordances (Costanza-Chock, 2020).

In images of Pepper leading exercise classes and in the research we observed at the robotics lab, it becomes clear that other material artefacts play an important role in naming and shaming 'imposters' or in allowing them to 'pass,' and in staging them as subject objects (Suchman, 2011). This is something STS as covered extensively, with the relational turn and recognition of the way human and technological knowledge-objects are produced as intra-active phenomena (Suchman, 2007, 2011; Barad, 2007). One can assume that the group of older care home residents in this picture were told that Pepper was a robot who would be leading them through their exercises. One can also wonder at the technical limitations which led to this imaginary – an aerobics instructor – in a discourse about robots which is dominated by robots assisting the human labor force to increase efficiency and optimization. An aerobics instructor-robot in a care home seems almost, to use Treusch's term, an example of 'useful uselessness' (Treusch, 2020). Yet, there is Pepper, waving its robotic arms.

By thinking through Pepper the aerobics instructor as an imposter, I gain insights into the

disorganized social relations that are framing the robotics research engaging Pepper. But using this analytic can do more than produce insight. It can be an analytical lens that shows how Pepper is imagined to reconfigure the work of producing exercise for older people and why. This draws attention to the constellations of desires and wills, of reasons and resources, which are imagining robots in this way.

Doing so will allow us as researchers to challenge how the actors positioning Pepper and similar robots frame and inform robotics research, pointing out the political of what is often thought to be neutral, scientific robotics development. Finally, using this concept we can both draw from the theoretical discussions of relational work in STS, and also engage with our own affective responses to the emotional aspects of robotic care that are so present but so difficult to articulate as researchers. Impostering provides a poignant term to, in collaboration with insights from STS and feminist technoscience analysis of care, help articulate the ambivalence I have in my research; the unsettled feelings I have about the introduction of robots and the wary, almost unwilling attraction I note as I watch and imagine robots as care providers. By directing my attention to the messiness of care and its complex concerns, impostering combined with care can produce a vocabulary of resistance in the face of 'utopian' technological solutions to eldercare needs.

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Notes

- 1 Pepper is a white, plastic, $\frac{3}{4}$ -sized, almost humanoid robot. In addition to writing with the roboticists (Harrison et al., forthcoming), our analysis has also focused on issues like the valuation of care and emotions (Gleisner and Johnson, 2021; Arnelid et al., 2022), the responses expected and provoked by human-robot intra-actions (Harrison and Johnson 2023), the integration of social optics through intersectional categories in the design and analysis of robots (Garcia, 2021), and feminist methods for HRI (Winkle et al., 2023).