Embodying Digital Spaces in a Clinical Encounter: A postphenomenological Analysis

Line Blixt, University of Oslo, Norway
Email: line.blixt@medisin.uio.no

Kari Nyheim Solbrække, University of Oslo, Norway
Email: k.n.solbrakke@medisin.uio.no

Wenche Schrøder Bjorbækmo, Oslo Metropolitan University
Email: bjorbaek@oslomet.no

Abstract

What is it like to interact in a clinical setting when a technological device is participating? This inquiry was conducted in a primary healthcare setting, with the aim of shedding light on clinicians' and patients' experiences regarding the use of a tablet-with-app, intended for a more systematic assessment, as well as electronic registration and storing of patient data.

In this paper, we present an account of four experiential exemplars of adopting an eTool in a clinical setting. The "faciality" of the digital device seems to be important to both patients and clinicians, as well as the interaction between them. The "face" can be used for engaging in conversation, addressing awkward topics, communicating, or inviting involvement. The face can also be used for just resting the eyes or lowering the gaze to maintain a low profile during the clinical encounter. Concurrently, the size, the shape, and the backside of the eTool's face can mediate distance.

We expand the notion of "screen sharing" and suggest that humans' ability to move from one mode to another and embody digital spaces in the clinical encounter seems enhanced by their ability to include the eTool's face in their interaction. This knowledge can be used in the development of digital tools for teaching, as well as for health professions.

Keywords: Postphenomenology, clinical encounter, technological mediation, digital spaces, multistability

Introduction

Setting: Adam, dressed for workout, comes to his first appointment with physiotherapist Patrick.

Patrick greets him, and says: "You remember that we talked on the phone about this research project that I participate in…?" Adam confirms with a nod. "The plan for today is to fill in all the data. I apologize – there are a whole lot of questions, and some might seem irrelevant, or a bit odd, but please answer as best you can." Patrick shows Adam how the application on the tablet works, where to press, and repeats the information regarding the possibility that some questions might seem "a bit strange". Adam moves his chair towards the plinth, which serves as a table during the time it takes to complete the registering, half facing Patrick, and half facing the tablet's screen. The registering continues throughout the session, and during the last fifteen minutes, Adam sits alone by the plinth, filling in answers while Patrick is working on his computer on the other side of the room. Adam asks: "Should I answer these questions as if I'm actually experiencing pain at the moment, although I am not, or should I answer more… like… superficially, or…?" Patrick turns towards Adam, pauses for a couple of seconds, and replies: "Well, you just have to answer as best as you can".

When he has pressed "Finished" on the last page, Adam gets up and places the tablet on the desk where Patrick is working. "So… is it next time I start training...?" Adam wonders, looking at Patrick. Patrick looks at the computer screen, struggling with the uploading of the data, which Adam and he just have completed, and replies, still facing his computer screen; "Umm…that will be next time! See you on Monday! – lowering his voice and murmurs "...now I just have to sort out this…". When Patrick looks up, Adam has already left the room, and is halfway down the corridor, on his way to the locker room.

With the anecdote above, we provide a glimpse into a project where we examine human–technology interactions. Specifically, we examine how patients and physiotherapists experience interacting with each other and at the same time interact with what we chose to call an eTool in the physiotherapy encounter. In our project, we attempted to study as detailed as possible the various interfaces and interactions, which were enacted and experienced, both as observed by the first author but also as reflected upon by the participants during interviews.

The digital device, which Adam and Patrick – names we gave them to protect their identities - handled in the encounter depicted above, was originally introduced to collect patient data for the purpose of building a database to describe a patient cohort. To facilitate the influx of data, a consortium of researchers and collaborating clinicians, The Research Program for Primary Health Care (FYSIOPRIM), reorganized some features of an application (app) for tablets. Originally, the app was intended for converting paper questionnaires to a digital format to reduce paper consumption at the clinic. After this reorganization of the app, a collection of standardized questionnaires and clinical tests were assembled as a package, systematized, and presented as a script for clinicians and patients to follow in their first clinical encounter. It was then used throughout the treatment course to take multiple measurements and obtain patient data aiming to build a database from this cohort. Along with the data-gathering procedures, another aim was to develop the tablet-with-app into a clinical tool to catalyze its use. We refer to this collection, organized in the app, as the eTool.

We aim to address and examine the integration of the mentioned digital device, the Tool, in a practical context. Data was generated from observations in clinical settings where patients, eTool and physiotherapists were present and interacted. Additionally, data was also generated from video recordings of some encounters, as well as interviews with patients and physiotherapists. Later in this paper, exemplars based on these data will be presented, reflected on and discussed. Inspired by Adams (2008), and Adams and Thomson (2011), we see and include the eTool as an agentic partner and thereby as a research participant. Research on impact and effects of using digital devices in health services is extensive, as underlined by a recent Cochrane review (Odendaal et al., 2020), which suggests the need for scalable and sustainable systems. To our best knowledge, though, actual experiences of adopting and using electronic, handheld devices in a clinical context have not been comprehensively explored. We aim to contribute to a broadening of such knowledge, and to contribute to the field of health technology assessment that inquires into the lived experiences and "soft impacts" (Kiran et al., 2015; Swierstra, 2015) of technologies, which enter clinical encounters.

Postphenomenology as Theoretical Foundation

This study is grounded in a postphenomenological framework. Especially, we lean on the contemporary philosophers Don Ihde (1990) and Peter-Paul Verbeek (2005) and their elaborations where they both underscore the significance of the relational aspects of human experience, that is, "the experience we have as *being* our bodies in an environment" (Ihde, 1990, p. 25). Verbeek (2005) builds on Ihde's thoughts and the relational ontology of the postphenomenological perspective and affirms that there is no such thing as "plain" experience without any "content." We are involved in relationships; we relate to other humans and to artefacts in a continuous exchange, and a technological omnipresence that we have become so acquainted to that we seldom reflect upon this trait of society.

In line with a postphenomenological framework, a technological device, like the eTool we took an interest in, can be seen as an active participant in these moments, acting in a dynamic exchange with the human actors. Based on this understanding of interactions between humans and technologies[1], we consider the eTool a multistable device or agent (Ihde, 1990), which can act and interact in multiple ways, and within multiple possible relations (Rosenberger, 2014). Ihde (1990) describes such relations as being, evolving on a continuum. On this continuum, the degree of transparency of the device shifts from *embodiment relations*, where the eTool blends in and is incorporated in the humans' activities in an almost unnoticeable way. Another way of inter-relating with the device, the *hermeneutic relation*, Ihde (1990) argues is more "thingly"; implying that the eTool is handled by the human agents and interpreted more consciously as a tool or an aid that provides means for interpretation and access. Yet another human-technology-relation,

---

[1] Two central premises of our investigation are firstly, that any technological device is non-neutral. Secondly, this particular technological, mobile, electronic device – the application for use on a tablet -, we investigated with a particular focus on interaction or interdependence with or between patient, therapist and eTool. Our aim is not to elaborate on issues regarding Technology in a general sense, but to elaborate on issues regarding mobile, electronic devices similar to the one we investigated. Thus we refer to 'technology' throughout the article.

which Ihde (1990) places on the continuum, is the *alterity relation*. Here, the transparency is different from an embodiment relation, it is opaquer, "semi-see-through", and the relation to the device resembles a relation to another human, though characterized by distinct technological aspects or features. The *background relations*, Ihde (1990) states, are formed in relations with technologies, which reside more in the periphery of our conscience, and we are not really *relating to them* as such.

Verbeek (2008) expands on the continuum, integrating also the notion of *intentionality* more explicitly in the human-technology relation. He states there is a need for a re-articulation of this notion, opening for the idea that technologies have their own intentionality as well. He suggests embracing the complexity of the interaction that occurs when humans adopt and use technologies and even considering the intentionality of "human–technology amalgams" (Verbeek, 2008, p. 394).

This interpretation of technology, influenced by pragmatism and poststructural epistemology, emphasizes that identifying any definite knowledge of what works and what does not with regards to relating to and using technological tools might be overly ambitious (Harman, 2010). However, in this project we build on existing research and investigate the things themselves. Thus, by addressing the practical aspects of technology use in the clinic, we can still aim to gain a deeper understanding of the lived experiences and meaning of the multiple - but certainly not infinite - ways of relating to the technological device depicted. Hence, in this paper we ask: what is the lived experience of physiotherapy for the human actors involved when an eTool is introduced?

Method

The physiotherapist participants were recruited via emails to a cohort of physiotherapists who were already participating as clinical associates of the FYSIOPRIM. The emails had attached consent forms to be signed by both physiotherapists and patients, who were all encouraged to contact the first author if they were willing to participate in the qualitative investigation as well. The patient participants were recruited by the participant physiotherapists.

All data were generated from April to December 2016 as close observations (Van Manen, 2014) of eight clinical encounters, where the eTool was involved in the interactions. After the first author observed each session, the patient and then the physiotherapist were interviewed. The interviews were conducted after the observations to enable the first author to elaborate, together with the patient or the physiotherapist, on anything that had struck her as vital to address, scrutinize, or conduct a deeper inquiry into during the observation. As the data generation progressed and more observations and interviews were completed, she was able to include those topics and themes that had surfaced or been developed by working with previous observations and interviews. During this phase, the first author involved her co-authors in developing preliminary analyses, discussing various ways to think of and rethink the interpretations of the materials.

The sessions with Thomas and Steve, Erica and Amanda, and David and Martin using the eTool were videotaped. Dora did not give us permission to videotape her clinical

encounter with physiotherapist Cornelia, and she did not want her interview to be audiotaped. All other interviews were audiotaped and transcribed. Dora's session, where the eTool was used, was a home-based physiotherapy assessment, while the sessions of Thomas, Erica, and David took place in physiotherapy clinics.

The video camera was mounted on a tripod placed near the wall and next to the chair where the first author would be sitting during the recording. The setup was checked before the session started, and the first author sat beside the camera for practical reasons. Beforehand, she had considered recording from a different position than from almost the same spot as she was sitting. That could perhaps have provided a wider perspective, which she had decided to take into consideration when preparing for each session. However, the practical solution was chosen for all the sessions, where the camera was placed within reach of its operating buttons, so she would be able to intervene without moving around in the treatment room should anything unexpected occur with the camera or should anything arise, that would prompt adjustments of the camera's position.

We are inspired by Verbeek's (2008) idea that technologies possess intentionality, and that amalgams of humans and technologies have a "cyborg intentionality". This insight we use to direct our attention to whether, and if so; how this technological intentionality is expressed in any of the exemplars. We attempt to investigate broadly the unfolding of events in the research materials by following Adams and Thompson's (2011) suggestion to "interviewing" the eTool as well. To interview an artifact "… is to catch insightful glimpses of the artifact in action, as it performs and mediates the gestures and understandings of its employer, involves others, and associates with other objects…" (Adams & Thompson, 2011). Inspired by some of the eight heuristics approach suggested by Adams and Thompson (2011), we *'listened' to the invitational quality* of the eTool (Heuristic 2, p. 739), we tried to recognize the *amplification/reduction structure* of the relations between the physiotherapists, patients and eTool (Heuristic 4, p 741), and looked for *untangling tensions* (Heuristic 7, p 744). Thus, we explored how the intentionality and the mediational character of the eTool could interact with the humans handling it and relating to it.

We chose to follow Max van Manen's (2014) and Susan Crowther and colleagues' (2017) recommendations to develop into anecdotes those moments in the materials that stood out as significant for shedding light on how the dynamics within a clinical encounter involving the inter-relation between a patient, a physiotherapist and an eTool evolve. The anecdotes or exemplars were developed from both field notes from the observations, video observations and interviews.

The exemplars are presented in italics to underscore them as excerpts from the generated materials. The first author identified the parts of the materials that she thought would elucidate the phenomenological themes that she wanted to elaborate on in order to answer the research question. Her co-authors then read and critiqued the drafts. Through that process, all authors contributed to the development, writing, and rewriting of the exemplars and collaborated in developing the analysis. The names of the patients and the physiotherapists are pseudonyms.

Embodying Digital Spaces

Becoming Mobile – What it Might Take

From observation notes:

> *Patient Dora is receiving home physiotherapy from physiotherapist Cornelia. They are doing the Timed Up & Go (TUG) test. Dora must do the test three times; her apartment is big, with living room and kitchen adjacent so there is open space for Cornelia to make a temporary track of 3 meters. As Cornelia is prompting Dora through the test, trying to have Dora walk as fast as she can back and forth in her kitchen/living room on the 3 meter-track, she uses a standard stopwatch, which she carries around her neck. I scribble 'ask about stopwatch in app' in my notebook, because I want to know whether Cornelia is aware of the stopwatch embedded in the app.*

> *In the interview with Cornelia, I ask her about why she used a standard stopwatch instead of the stopwatch embedded in the eTool. She explains:*

> *Well, when I use the standard stopwatch, I sort of have my hands free. The tablet is so big; I must use both hands to hold it. Should the patient trip or stumble, I must have my hands free to be able to assist her. So I enter the results of the test into the app when I get back to the office. That's my routine.*

In this exemplar, Cornelia is literally setting the eTool aside. One way of understanding this is that she relates to the eTool as an explicitly "unhandy" artefact. The technology as is designed to facilitate the clinician's work and streamline a function is not perceived by the physiotherapist to provide her that. Instead, the *device* –that is expected to enable efficient work – is becoming a hinder, a *thing* and a mere object that gets in the way for letting her work safely and smooth. Cornelia seems instead to experience a fruitful interaction involving the traditional stopwatch, Dora, and herself. In this situation she draws on her incorporated physiotherapy skills and does not feel the need to integrate the eTool in a, for her, established routine. The eTool's materiality – the square shaped, 14,9 inch touch screen, which is too heavy for Cornelia to hold with one hand and too expensive to be dropped on the floor should Dora stumble or sway during the test – is preventing itself from becoming relevant in this situation, so it is set aside for the moment. The eTool does not invite Cornelia to interact with it in the concrete situation, so said with Adams and Thompson (2011), its materiality and qualities sometimes renders it irrelevant.

> *After the testing and physical assessment, Cornelia and Dora sit down at the coffee table with the eTool. To begin with, Cornelia sits opposite Dora, reading the questions aloud, and entering Dora's answers. The "conversation" starts with Cornelia and the eTool facing each other and as they start working their way through all the eTool's questions, Dora asks Cornelia to repeat many of the eTool's questions in this part of the conversation. During the final part of the*

session, Cornelia keeps moving closer and closer to Dora, and ends up sitting next to her, holding the tablet so Dora can read the questions herself. Cornelia still holds the tablet and enters the answers. Dora now faces the screen, reads the questions, and nods or reads aloud with a softer tone of voice and with less hesitation than in the beginning of the registering session.

Later, in the interview, with Cornelia I ask her about her moving closer to Dora. She explains:

Well, during the assessment, it struck me that she [Dora] in fact understood more of this than I first expected her to. So I decided to move closer and let her read the questions herself.

In the adoption of the eTool and the way she handles the data entry together with Dora, again Cornelia seems to be drawing on her intersubjective abilities to let Dora in. Observing the session where the two complete the registering, the first author notices that slowly, the tone of both Cornelia's and Dora's voices become softer, and Dora starts replying with more confidence and clearer speech. A way to understand the development and change of interaction between Cornelia, Dora and the eTool is that Cornelia notices and acknowledges Dora's incremental engagement in the eTool's questions. To begin with, Cornelia is having a conversation with the eTool and Dora, but facing only the eTool. Cornelia then grasps the opportunity to involve Dora more in "facing" the eTool or in taking part in doing so. It is something about the "understanding", which Cornelia refers to, that prompts Cornelia to move closer to Dora. Wellner (2014, p. 308) has developed a fruitful conceptualization of a screen as a "face," particularly the "screen face's" ontological virtues or aspects. She states, "The 'face-iality' of the face lies not in its visible qualities but having a face and a façade makes it possible to interact with it" (Wellner, 2014, p. 308). When Dora is approaching and talking to the eTool and Cornelia at the end of registering, she seems more confident, with a clarified understanding. In a way, she incorporates the eTool as a participant in the encounter. Especially after Cornelia's invitation to approach the face of the eTool, Dora and the eTool become increasingly involved in the conversation. When both Dora and Cornelia are looking at the eTool's "face," the conversation between them becomes easier, flowing, and "natural." The eTool is not merely a thing anymore; it has evolved into a participant in the encounter. Had we interviewed the eTool about this encounter, it might have conveyed that it only takes a little bit of adjustment and interest to be able to exploit its possibilities more. Cornelia stabilized the situation, or *untangled tension* (Adams & Thompson, 2011) by introducing the face of the eTool and Dora to each other.

In the situation described above, both Cornelia's and Dora's "mobility" evolves, enabling them to communicate with each other, and in this evolvement, the eTool is helping. In this process, both humans become mobile as they complete the registering, and they do so by actively involving and being involved with the eTool's face during the encounter. The eTool must however be let in. Wellner (2014) calls this trait "becoming mobile," and she relates it to the human participants' capacity to move from a physical to a virtual or augmented space, as well as back and forth between the spaces, and not the least, to be able to maintain a position in more than one space at a given time. We also note that the "fit" of the eTool seems related to this type of mobility; the exemplar above we define as

a moment in our research material where the integration of the eTool in the practical therapy context appears to be involving and enabling.

Augmenting the Digital Space between Therapist and Patient

Patient Thomas is seeing physiotherapist Steve at the clinic.

> *Steve walks Thomas through the first questions in the eTool's script. He holds the eTool and moves it back and forth, showing Thomas the next item displayed on the screen, so he can read it himself. Sometimes Steve rephrases the formulations from the questionnaires. Thomas responds, telling Steve which alternative fits better. To start with Steve is the one who enters the answers onto the tablet, but at one point, he puts the tablet down on his desk, slides it towards Thomas and instructs him to "press" the keys himself; "You are the boss!" he tells Thomas. Thomas looks at Steve, lingering, holding his finger a few centimeters above the tablet's screen. Steve does not respond, he is looking at his computer screen. Slowly Thomas enters the remainder of his answers.*
>
> *In the interview, I ask Steve about this moment:*
>
> *I: I noticed that when you first started, you were holding the tablet, entering Thomas' answers, but then, at one point, you handed the tablet over to Thomas, so he could do it himself.*
>
> *S: Well, I wanted him to be more in charge of his answers. I think this is a way to make my patients more responsible. I like to think of the plans that we agree on here as a contract, and using this tool [the eTool] for that has been a positive experience. It sure helps to put things down in writing.*

In a similar fashion as Cornelia and Dora have done, Thomas and Steve change the way that they relate to each other and to the eTool during the encounter. Like the other moments depicted above, it is the physiotherapist who leads the "moving between", but all three participants seem to get involved and contribute their part. Involving the patient and the eTool seems to be an improvisation, albeit a systematic one. It could be understood as a process of being acquainted by augmenting the digital space created between the therapist and his patient. One difference between these two encounters can be described as becoming responsible. The two "strangers", Thomas and the eTool, are guided by Steve, the expert between them, to complete the registration without Steve's direct involvement. However, he remains in the room, at his desk. Steve is relying on his inter-relational skills, leaving Thomas and eTool to get more involved, perhaps, and facilitates the situation so the two can get to know each other better. Like Cornelia, in the example above, Steve *untangles tension.*

The difference between these two encounters can be described and understood as being about how much, how quickly, and to what degree the therapist gives the patient an opportunity to directly relate to the eTool and directly interact with it. Steve is really exploiting the traits of the eTool to convince Thomas of the ownership of the data, and thereby the "contract" between him and Steve. The inter-subjective space between the

therapist, the patient, and the eTool seems to be an evolving, enmeshed, and dynamic space in finding ways of relating to one another. The relational space seems to be developed and inhabited through careful and vigilant testing. Most of this acting, reacting, decision making, and prompting is initiated by the therapist, but both humans and the materiality of the eTool contribute to evolving the inter-relational space as we see it.

Facing the eTool to be More Comfortable

> *Patient Erica and physiotherapist Amanda are sitting by Amanda's desk – Amanda on her work spot in a rounded corner at her desk and Erica on a chair at the end of the desk.*
>
> *Amanda, directed to Erica, laughs and says:*
>
> *The funny thing about today is that I normally do the registering on my computer here, but what do you know? Today, my computer went black, so today, I must do it on the tablet. But it will not be a problem for you [Erica]; it is the same questions I will ask. Let's see if this [the tablet] will cooperate, now…*
>
> *Amanda shows Erica what the eTool's screen looks like, with the marked areas for pressing the touch screen. She turns the eTool around, so the eTool and Amanda are facing each other, and starts filling in the questionnaires. Amanda starts entering the answers, holding the tablet close and erect, so Erica is facing the backside of the tablet from where she is sitting.*
>
> *Erica has been leaning forward until this point. Now she leans back on the chair and responds to Amanda's questioning. Erica looks at Amanda. Amanda looks at the tablet's screen as she reads the various questions aloud, chooses Erica's preferred alternatives, and enters her answers on the tablet. Several times they must go backwards in the questionnaires or alter Erica's answers.*
>
> *Amanda keeps looking at the tablet's screen during the entire session, except for one swift moment when she raises her eyebrows a bit and directs her gaze towards Erica. Erica meets the gaze, but Amanda redirects her attention to the eTool's face.*

In this excerpt, we find that the most interesting feature is how Amanda is facing the eTool, while Erica is facing Amanda and the backside of the eTool. Both humans are engaged in each other's activities, quite literally, when they are dealing with the Patient Specific Functional Scale, a standardized questionnaire where Erica identifies functional activities she would like to get help from Amanda to be able to do, like walking to the city centre. They are both involved in defining Erica's "activity" so that it will match the formal demands of the questionnaire. At the same time, it is as if the two humans never actually "meet" during this session, or it is more as if there is an obstacle between them. The eTool, to which both relate, but in different ways, seems to get between them and in some way prevent them from *understanding* each other. At one point, Erica makes a joke,

but Amanda does not catch it. This moment we identify as a sort of *breakdown or accident*, in line with Adams and Thompson's (2011) interview method. In this meeting, there is no equal division and interaction between the participants and the moment of breakdown is the "failed comic relief". As Amanda announced in the beginning of the meeting, her PC had gone black, and she had to make a switch and do the survey in a way that she was not used to. Her habitual way of doing this kind of assessment had to be done a bit differently. Thus, as Rosenberger (2014, p. 382) argues, in order to relate to a particular technology (the tablet in our case), "one must take up a particular bodily and perceptual approach." To do things becomes a habit by practice, and gradually, it becomes a sedimented way of doing things, for instance, making an assessment guided by several standardized questionnaires. In line with Rosenberger's (2014) argument, any human–technology relation whose features are associated with a strong force of habit is deeply sedimented and by this, characterized by "unhesitation, resiliency and ease" (p. 376) in performing an assessment, for instance. In the exemplar, perhaps Amanda fixes her gaze on the eTool and relates to its faciality as a way of feeling more secure in handling the tablet since she does not feel confident in doing so. She is thrown into this unfamiliar situation of using the tablet instead of the PC and is forced to face the patient instead of the computer screen. On Erica's side, she is introduced neither to the eTool's face nor to Amanda's face, so she withdraws, and the conversation is marked by several misunderstandings. Inspired by Adams and Thompson (2011), the eTool might have experienced this situation as an *accident*, or a *breakdown* (pp. 743-744). Or perhaps the eTool would have reflected on the *amplification/reduction* aspects of this exemplar. Amanda seems so focused on the eTool's face that she "forgets" to relate to Erica and does not even hear Erica's attempts to joke. In other words, she fails – or chooses not - to "move between."

> *In hindsight, during the interview, Amanda tells me that using the tablet instead of the computer to register Erica's data "directed" her more towards Erica. "I was more like this…" She shows me with the front of her body directed towards me, and I understand that usually, when she does the registering with the patients, she sits with her back against the patient, facing the computer screen.*

> A: *I quickly decided, in a mutual understanding with my colleagues here, that we could sort of "downscale" the use of the tablet in the patient setting. We found out that it was OK to use the computer instead, then we didn't have to relate to this "extra" [the eTool]. (Laughs)… so I quickly found out that it was not a very good idea to present this to the patient the moment he comes in. A stranger.*

To put Amanda's experience into a postphenomenological framework, it seems that the eTool is dictating a different embodiment for her. It is as if she perceives the eTool, particularly the tablet with its specific functionalities, as a mere thing that involves different choices and "demands" compared with the PC. It becomes a thing-in-itself, as well as a thing asking for a certain way of interacting with it in an encounter. We can imagine that when this tablet is perceived as an "extra," it becomes difficult to integrate in a busy schedule. The perceived "unfit" connotations of the device perhaps reinforces Amanda's experience of the eTool as merely a "thing". What is also interesting is that Amanda experiences to be more faced towards Erica in this unfamiliar way of doing the

assessment. The tablet's properties allow a different bodily approach, not only between the physiotherapist and the tablet, but also between the therapist and the patient. Imagine a situation where Amanda is sitting in front of the PC and Erica is sitting behind her or possibly beside her. In this position, Erica would have had access to the PC's face. She might have then continued to lean forward, see the screen, and face the tool.

However, it is also interesting to ask why Amanda does not use the tablet as regularly as she does the PC. Does she feel that the eTool is asking her to become someone whom she is not quite ready to become? After all, she is meeting "a stranger" – Erica – and when the eTool feels strange and unfamiliar as well, the situation could pose too many simultaneous challenges. One challenge being the skill of "moving between."

Something about the eTool makes it feel like an "extra," despite the everydayness of the tablet. In the clinical setting, when using an app and a tablet, which Amanda says she has set aside until now, she is facing other and more complex tasks, and they require other skills. Learning the new practice with the eTool entails inviting both "Stranger 1" (the eTool) and "Stranger 2" (the patient). Perhaps it feels safer to practice on the eTool than on the human. Here the eTool is *amplified* while Erica is *reduced* and in this example an interaction between all three actors is never fully enabled.

Interference with the Interface

Setting: Patient David is seeing physiotherapist Martin at the clinic where Martin works.

> *David and Martin are doing the part of the registering where they fill in the questionnaires together. They sit on each side of the corner of the desk. Martin holds the tablet, with the screen facing him, and reads the questions aloud. He then turns the tablet, so the screen faces David, who now sees which alternatives to choose from. David presses the chosen alternative, while Martin holds the tablet.*

In this exemplar, David and Martin are never actually looking at the screen simultaneously. All the same, the impression of the way that they are completing the registration is that they share an understanding of the task. It resembles a "normal" conversation, as they work their way through all the questions, and they seem relaxed and focused on the tablet's face. It is as if they "share the screen."

> *During the registering of the data in the patient part, Martin sits at his desk, next to David, and works at his computer. I can see the computer screen from where I am sitting. He starts by finishing the journal notes from the session with David. It takes him only a couple of minutes to do this. Then he tells David that some of the questions in the app might seem a bit awkward or out of place, but he should answer as best as he can. David replies "OK" and continues the registering. After that, Martin checks his schedule for the remainder of the day. Then he logs off the computer. After a couple of minutes, he turns to David again and says that there are "a whole lot of" questions. David nods, with his eyes fixed on the tablet's screen, and continues the registering.*

> *In the interview afterwards, David confides in me that when Martin talked to him during the registration, he was distracted. "He made me lose my concentration," David explains.*

In this exemplar, there is quite a *lack* of "faciality" and no obvious screen sharing, as opposed to when they filled in the data together earlier. Here, Martin is working on *his* screen, and David is working on another.

> *In my interview with Martin, I ask him if he usually does the registration this particular way. Interestingly, he tells me that normally, he lets the patient sit in the waiting area and fill in the "patient part."*

Thus, it is just because the first author is there and has asked permission to videotape the session that he thinks it would be better to let the patient stay in his room, respecting the privacy of the other patients who are present. Therefore, he ends up doing it in a new fashion. The mode of screen sharing when David and Martin are working together is a striking contrast to what is played out when they are working on separate screens. It is not that they are directed towards different machines; in a way they did not work on the screen simultaneously in the above depicted event either. However now they are simply not directed at each other. Martin is getting impatient – he is not used to wait for the patient doing the patient part, and David gets distracted. Becoming adept in using the technology and thereby embodying the eTool takes on many challenges. Like Amanda reflects on, she is relating to a "stranger" the first time she meets a patient. During a clinical encounter, is it not so that we must test and try out another's limits, boundaries and inclinations?

Bjorbækmo et al. (2018, p. 27) argue, "In professional encounters, the shared dimension of the experience demands that both parties continuously displace themselves. It requires both professional and patient/student to shift position and move towards the other in order to maintain and develop the collaboration." This displacement could be the moving between, and the shifting of positions means the ability to create digital spaces together, involving the patient, the physiotherapist, and the eTool. Displacement can also refer to the necessity of withdrawing, letting the other take charge of the interaction. In this last situation, where Martin interrupts David's interaction with the eTool, it can be imagined that he does this because he is in an unfamiliar situation regarding the eTool. Usually, he does not sit beside his patient when the latter is registering. We argue that this exemplar is a typical representation of what we call an "interference with the interface," and it exemplifies technologies' "soft impacts" on practices. A crucial insight regarding soft impacts could be that it takes practice to integrate technologies into practices.

To summarize our findings, "becoming mobile" seems to be characterized by an ability to invite both the technology and the Other in. Also in line with our findings, the onus will most likely be on the therapist, to enable the dynamic between the two humans and the eTool. This shifting between modes we argue is a feature of the research material, which provide glimpses into the practice with a device that sometimes "things" while also provides transparency and flow. The feature sheds light on the inter-dynamics at play between two humans and a technological device during physiotherapy sessions. Our analysis illustrates how "mobility" can evolve – from keeping the eTool's "face"

exclusively to oneself to realizing or trusting that the other human "understands" the eTool so well that it deserves inclusion in the digital space. This, in turn, could lay the foundation for experiencing the "faciality" of the eTool. To embody digital spaces within the clinical encounter is a skill, which must be facilitated and acquired through structured training.

Technology Appropriation is not a Straightforward Matter

Empirical work that inquires into how technologies affect the context in which they function sheds light on the "differentiated and local manner" (Verbeek, 2005, p. 5) that technology appropriation tends to take. In this inquiry, we have sought to search deeper into the "doing aspects" of technology implementation in order to address salient features within the scope of technologies' soft impacts (Kiran et al., 2015; Swierstra, 2015). The soft impacts identified through our research involve both enabling and constraining, involving and alienating relations between eTool and humans. Research that deploys postphenomenological frameworks and similar investigations that apply connected methodologies contribute to the overall image of a complex and situated relation between technologies and users. The lesson learned from our investigation is that there is no recipe or formula to follow in order to secure a successful implementation of digital devices. Rosenberger (2009) emphasizes how "the device" changes our relationship with it, as well as with other humans. As the analytical work with the observation notes, the video recordings, and interview materials progressed, we took an interest in what Ihde (1990, p. 79) refers to as "the fit" of technologies. We perceive this as intertwined with the intentionality concept in many ways. The degree of the experienced transparency of the eTool, when technologies fit, is helpful in a way that we almost do not notice it. We have displayed the non-neutrality of the eTool through the exemplars and our analysis. In our study, the onus seems to be on the therapist. Much relies on the therapist investing in learning the various elements of the eTool to be able to integrate it into practice. Thereby, the therapist includes the patient in a natural manner, while still being able to provide the therapy, which must remain the most important feature of the encounter.

More explicitly, our findings shed light on a feature that we have conceptualized as "moving between." This is inspired by Wellner's (2014) contemporary tool analysis, particularly her concept of "becoming mobile." In our analysis, moving back and forth seems to be a skill that both clinician and patient might possess, which we perceive as something that will have an impact on the dynamics of the clinical encounter. Including the eTool as a participant also sheds light on the significant part played by the technology. We argue that the question of how to build on this knowledge to enable the development of sustainable devices for the clinic or for teaching contexts, to name just two, is important to investigate across disciplines, involving users, developers, and stakeholders.

We expand on the notion of "screen sharing," which is traditionally thought of as clinician and patient looking at the same screen at the same time. We argue that technologies that come with a screen can be designed and used much more actively as a participant with a face. Various body-screen modalities could then be investigated to find

out how digital yet minimally obtrusive technologies, or even ubiquitous technologies, could exist in transparent ways in practical contexts, like the one that we have studied.

We conclude this elaboration of our study by citing Wellner (2014), who sums it up aptly:

> Consequently, the becoming of "I", "technology" and "world" is not comprised of separate changes that necessarily happen at once and in the same manner. It is a becoming in which each component shapes and is shaped by the others, a transductive process that erodes the borders between them.(p. 148)

The process can be afforded by reciprocal displacement of all participants, human as well as non-human. This displacement can be facilitated through planned and structured efforts. Concerning the practical use contexts, such facilitation and structure is possible to manage, however, it is no straightforward endeavour.

References

Adams, C. A. (2008). PowerPoint's pedagogy. *Phenomenology & Practice, 2*(1)*, 63–79.

Adams, C. A., & Thomson, T. L. (2011). Interviewing objects: Including educational technologies as qualitative research participants. *International Journal of Qualitative Studies in Education, 24*, 733–750. https://doi.org/10.1080/09518398.2010.529849

Bjorbækmo, W. S., Evensen, K. V., Groven, K. S., Rugseth, G., & Standal, Ø. F. (2018). Phenomenology of professional practices in education and health care: An empirical investigation. *Phenomenology & Practice, 12*(1), 18–30 .

Crowther, S., Ironside, P., Spence, D., & Smythe, L. (2017). Crafting stories in hermeneutic phenomenology research: A methodological device. *Qualitative Health Research, 27*, 826–835. https://doi.org/10.1177/1049732316656161

Harman, G. (2010). Technology, objects and things in Heidegger. *Cambridge Journal of Economics, 34,* 17–35. http://hdl.handle.net/10.1093/cje/bep021

Ihde, D. (1990). *Technology and the lifeworld: From garden to earth.* Indiana University Press.

Kiran, A. H., Oudshorn, N., & Verbeek, P. P. (2015). Beyond checklists: Toward an ethical-constructive technology assessment. *Journal of Responsible Innovation, 2*, 5–19. https://doi.org/10.1080/23299460.2014.992769

Odendaal, W. A., Watkins, J. A., Leon, N., Goudge, J., Griffiths, F., Tomlinson, M., & Daniels, K. (2020). Health workers' perceptions and experiences of using

mHealth technologies to deliver primary healthcare services: A qualitative evidence synthesis. *Cochrane Database of Systematic Reviews, 3*, CD011942.

Rosenberger, R. (2009). The sudden experience of the computer. *AI & Society, 24,* 173–180. https://doi.org/10.1007/s00146-009-0190-9

Rosenberger, R. (2014). Multistability and the agency of mundane artefacts: From speed bumps to subway benches. *Human Studies, 37,* 369–392. https://doi.org/10.1007/s10746-014-9317-1

Swierstra, T. (2015). Identifying the normative challenges posed by technology's 'soft' impacts. [Etikk i praksis]. *Nordic Journal of Applied Ethics, 9*, 5–20. https://doi.org/10.5324/eip.v9i1.1838

Van Manen, M. (2014). *Phenomenology of practice. Meaning-giving methods in phenomenological research and writing.* Left Coast Press.

Verbeek, P. P. (2005). *What things do: Philosophical reflections on technology, agency, and design.* Penn State University Press.

Verbeek, P. P. (2008). Cyborg intentionality: Rethinking the phenomenology of human-technology relations. *Phenomenology and the Cognitive Sciences, 7,* 387–395. https://doi.org/10.1007/s11097-008-9099-x.

Wellner, G. (2014). The quasi-face of the cell-phone: Rethinking alterity and screens. *Human Studies, 37,* 299–316. https://doi.org/10.1007/s10746-013-9304-y