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The ontology of presence and participation in Critical Psychology, affinity space theory and agential realism

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Abstract
In the German-Danish Critical Psychology developed by Klaus Holzkamp, Ole Dreier, Ernst Schraube, and many others, participation is a key term. Subjects emerge in- and through their acting in the world; in and through their participation in social practice(s) whereby they themselves change the context. However, the theory, especially in older versions, also focuses on an embodied first-person perspective, taking the 'standpoint of the subject' as their shibboleth and defining characteristic. In a time where humans are involved in multitudes of fluctuating and ephemeral connections proliferating through the increased use of- and connectivity provided by computers of various shapes and sizes - laptops, tablets, smartphones, etc. this notion of physically bounded subjects and practices is challenged. We argue that it becomes more difficult, and perhaps even counter-productive, to always attempt to understand participation from the standpoint of the subject in bounded contexts. We will be using posthumanist inspirations and a critique and development of the classic theory on communities of practice to destabilize and discuss the concept of participation in Critical Psychology.

Keywords
digital engagements, critical psychology, agential realism, posthumanism, affinity spaces, digital prosthetics, affinity spaces

We take our point of departure in Critical Psychology, because we find that it offers relevant and promising theoretical grounding and conceptualizations for understanding human subjectivity and participation. Our aim is then to look into

how the theory can be developed to offer a helpful and timely approach to understanding a world where participation has become a much more fluid and transitory concept. This is also what led James Paul Gee to suggest his critique and development of Communities of Practice into his concept of Affinity Spaces:

> In my view, the key problem with notions like "community of practice" is that they make it look like we are attempting to label a group of people. Once this is done, we face the vexatious issue over which people are in and which are out of the group, how far they are in or out, and when they are in or out. … What I want to suggest instead is that (at least sometimes) we start with "spaces" and not groups. (Gee, 2004, p.78)

This is a reasoning we will take up later in a move to challenge how to think about participation and context, before we key in Karen Barad to attempt for a new understanding of participation in a decentered version of Critical Psychology. As the title of this article suggests, we will primarily be looking at the "who" and "what" of participation. Or in other words, we will try to de/stabilize the concepts of subject and context in ways that might better allow them to be useful for understanding participation in a world where subjectivity could be said to become distributed by an embodied connectivity through digital devices. The aim is not to completely dissolve subjectivity or the subject, rather it is to expand the unit of analysis.

The digital human?

Looking at the titles of many books and articles on the topic of how new digital technologies are affecting us, many seem to be performing a few things before you even read the first sentence (e.g.: Chen, 2011; Oblinger & Oblinger, 2005; Palfrey & Gasser, 2008; Prensky, 2012; 2001a; 2001b; Rosen, 2007; Small & Vorgan, 2009; Tapscott, 2009; 1998). Looking at the titles of these texts, there seems to be a clear idea of digital technology playing a very important role in shaping people - particularly a new 'digital generation'. The digital technology even seems deterministic for the generation in the titles and content of the texts – it is 'grown up digital', or even 'born digital', as if the baby emerging from the womb comes out wearing Google glasses and with built-in Wi-Fi. Whether the author is stressing positive or negative effects of growing up surrounded by digital technologies, the culprit is invariably the Internet, video games, social media, etc.

Basically, the argument goes that TV shows today have more simultaneous plot lines than before, that video games require more from the player, and that

the Internet offers such a vast complexity that the human brain has had to develop to deal with the new reality (Johnson, 2005; Prensky, 2001a; 2001b; Small & Vorgan, 2009). The book "iBrain – Surviving the Technological Alteration of the Modern Mind" written by M.D. in neuroscience Gary Small and Gigi Vorgan in 2009, gives a further description of how, *"Besides influencing how we think, digital technology is altering how we feel, how we behave, and the way in which our brain functions."* (p. 2) and describes how "*we are witnessing the beginning of a deeply divided* brain gap *between younger and older minds – in just* one *generation."* (p.3). Some authors are directly citing research in neuroscience on how our brains adapt to the stimuli it is presented with, and how it is most malleable in early childhood, others are merely arguing that people will always be highly influenced by their surroundings in their identity-formation.

Throughout the research and the books, articles, etc. on humans and digital media there are many concerns and hopes. Those we will not go into in this paper. However, the amount of literature on the subject as well as the popular focus in various media on it make clear, that it is relevant and important to be able to understand and theorize about how digital media and technologies and humans are entangled.

Common for the authors on this topic, whether they are positive or negative, are descriptions of how (primarily) young people today are increasingly connected and present on various social media and digital platforms. This resonates with empirical data we have seen across multiple projects, where we have both witnessed and had described to us how young people are simultaneously and constantly connected to and present in multiple contexts or spaces. They might be sitting with friends or family in a physical location, while being active on Facebook, Snapchat, Instagram, several chat-services and more, where multiple conversations and lines of communication are open and active at more or less the same time. Hansen (2011) argues for a generation, where place is of little importance, but synchronicity is of huge importance. Several other authors (e.g. Chen, 2011; Small & Vorgan, 2009; Tapscott, 2009; Teo, 2013) make the same argument or show it based on data, that (young) people are expected, and expect others, to respond almost immediately at all times. This makes the digital-device-as-connectivity into an extension of the space we are present in, as Tapscott (2009, p. 89) says of the "Net Generation", as he calls them:

> They like to be in touch with their friends on their BlackBerrys or cell phones wherever they are – on the street, in the store, or at work. It gives them a sense of virtual community all day long. It makes them feel like they have a friend in their pocket. (2009, p. 89)

This idea of a digital 'co-pilot', an extension of self, is what we want to be able to theorize better about. The types of descriptions found in most of the referenced literature tend to focus on generalized "traits" of an entire generation, and undervalue individual experiences of living in digitally mediated times, leaving out important insights, while making overgeneralizations about, and potentially pathologizing large parts of the population. We therefore turn to theories that on the one hand focus on subjective experience, and on the other hand are sensitive to the ways in which digital technologies and media are at work in everyday life.

The always-already-there subject

Critical Psychology is a vast body of theory, but the discussions in this chapter will focus mainly on the concepts of *subjectivity* and *participation*, since these are the concepts that are most fundamentally challenged by new digital technologies.

First, we will discuss subjectivity. According to Holzkamp, subjects act in order to sustain their means of living long term (Holzkamp 1979; 1985). Subjects act on the grounds of their perceptions of their objective conditions, as well as on the emotional and cognitive valorization of the subjective meanings of these surroundings; the surroundings posing material possibilities and limitations for the subject (Dreier, 2008; Holzkamp, 1979; 1985; Osterkamp, Holzkamp-Osterkamp, 1991) we may further see humans as acting in-, and across specific contexts where conditions in one context has bearing on the subject's actions in another context. In each context every subject has a personal perspective that is an effect of their personal positions and locations in the context.

In Critical Psychology, the human subject is seen as the foundation, conceptualized as both something that emerges from its participation in and with the world, and as something 'always already there' (Nissen, 2002). Critical Psychology is conceptualized as 'research from the standpoint of the subject' – it is a "subject science". It takes the subject and its subjective experiences to be a methodological and ethical à priori for an empirical-practical approach (Nissen, 2002, p. 74). Especially in the classic Critical Psychology developed by Holzkamp, there is a strong dichotomy between subject and structure – the subject emerges and exists in participation with, but is also bound by and within an overall societal context of 'objective conditions'. This dichotomy has been loosened in later iterations (e.g. Nissen, 2002), but remains an axiom of the theory.

However, when working with connectivity, methodological and theoretical issues emerge. We might see subjects that are apparently not participating in the

context at hand; or rather, their participation is seemingly passive while they are engulfed in their mobile devices. We might see the same people participating simultaneously in several different, physically non-present contexts via different social media. Thus, the delimited, local, physical context steps in the background of mediated, virtual contexts dispersed across a vast space.

Bounded context

Jean Lave and Etienne Wenger's work on situated learning and Communities of Practice together with Critical Psychology both rest on the same basic ontology and explicitly refer to each other (Dreier, 2003; Lave, 2003; Lave & Wenger, 1991; Nissen, 2002). The main differences in our reading of the theories, is that Lave and Wenger have developed their theory more on Communities of Practice and (social) situated learning, where Critical Psychology has focused more on the 'subject-side'. In both theories the subject is defined by participation in social practice, but where Communities of Practice focus on the development of a theory based on understanding the types of contexts that the subject participates in, Critical Psychology focuses on what the participation means for the subject, and how the subject negotiates participation in so-called 'life trajectories' (Dreier, 2008; Wenger, 1998).

> Modifying the term, I define a social context of action as a delineated, local place in social practice that is re-produced and changed by the linked activities of its participants and through its links with other places in a structure of social practice. (Dreier, 1993b; 1994 op. cit. Dreier, 2008, p.23)

Our focus here is not on individual subjects, but rather on, what this framing would call the participation in, and formation of, communities of practice and trajectories of participation. At the same time, the 'human subject' emerges from participation in the world, and is thus not separate from the world - it exists as a "person-in-the-world" (Nissen, 2002; Tolman, 1994). In the same way, the 'social contexts' come into being through the relations created by participants in social practice. So, though it could be argued that there are traces of the subject-object divide being reproduced, it is also being destabilized and blurred, and thus can resonate with the STS approach.

Critical Psychology is, however, a humanist theory with an anthropocentric view of the world. This is made clear in the focus on the first-person perspective as an epistemological axiom:

> On the one hand human experiencing, feeling, thinking, acting with and in the world, are always sociomaterially mediated processes (through language, others and the social and technological world); on the other hand, they are always someone's processes. They exist only from the point of view of a subject that has them, and in this sense, they always exist in a perspectival mode, and therefore in the first-person perspective. (Schraube, 2013, p. 9)

In other words, the psychological dimensions of the subject are only accessible from the point of view of the subject her/himself – whatever I feel or experience is my feeling or experience – this points to an ontological subjectivity, since it exists because of the subject, if there were no subject, there would be no feeling or experience. Yet, this does not make the feeling or experience any less real – *"The fear experienced by an individual really exists and, in this sense, is an objective fact; though an objective fact accessed in a subjective form."* (Schraube, 2013, p. 9). The subjective form of the fact means that it is only indirectly available to others, through reports or language. Thus, the first-person perspective rests on the realization that there are important facts that are ontologically subjective, and that all experiencing and acting happens from a particular (first-person) perspective, which means that all meaning gained and reasons for acting are ontologically subjective. As this is understood from the Critical Psychological ontology of the subject as emergent in social practice, the first-person perspective should not be seen as a solipsistic view (Schraube, 2013).

However, we are still stuck with a bounded subject in a delimited, physical context. To resolve the issue of digitally mediated contexts we draw on James Paul Gee (2004) who has coined the term Affinity Spaces as a development of Communities of Practice that moves some of the focus from the human subjects to the creation of 'spaces' that they can participate in. In Gee's understanding, technological infrastructure is at the core of analysis in the shape of "portals" and "mediators". In Critical Psychological terms these infrastructures might be likened with objective conditions or with context. Thus, it is fairly congruent with Critical Psychology, especially with newer developments by Ernst Schraube (2009; 2013), where things are included as 'materialized action'. We shall return to these developments below.

Technology as other

Since classical critical psychology has no explicit theory of technology, Schraube has worked on conceptual development of the theory to grasp technology. He draws on the same basic understanding of subjects, participation, and grounds for

action as the aforementioned authors, but he expands the theory to include a specific understanding of technology, specifically in relation to the conduct of everyday life (Holzkamp, 2013; Schraube & Marvakis, 2015; Schraube, 2017). Rather than referring technology to the objective conditions en bloc and thus making it invisible, which is often the case in critical psychological analyses, that mainly focus on human action and historical-societal conditions, he conceptualizes technology as "materialized action" (Schraube, 2009).

Using especially mobile digital media poses some challenges to the notion of the human as the centre of analysis. While participation in the local, situated context at hand may be minimal, participation may be intense in affinity spaces with participants spread across the world. While some of the actions performed with a smartphone may be analyzed as frozen action, for instance e-mail which replaces physical mail, and the physical practice of distributing mail from one person to another, other practices cannot be reduced in the same way, since they represent whole new forms of interaction. Thus, smartphones represent more than merely frozen action, since they can perform actions that would not be possible without them or perform known practices in places where they were not performed before. One may participate on several social media at the same time, while checking email and watching a movie. Thus, several actions are folding into the local situated context, which may be a social gathering, a cafe, or in the seclusion of one's own home. If we look at participation as local and situated in delimited context, we may only see people "alone together" and "always on" (Turkle, 2008; 2011), to whom Schraube also refers (2009). In this case we will see real conversations and togetherness in the room replaced with mediated conversations in mediated contexts. Thus, we might unwittingly establish a hierarchy of relations where proximity is equated to intimacy, and face-to-face conversation is related to authenticity; whereas distance is equated to alienation and mediated conversation is related to inauthenticity. This is not Schraube's intention, but in his analyses, he still focuses on the personal reasons of the human subjects for acting with technology. In Schraube's understanding of technology, although technology actively shapes human action, locally, situated humans, and their conduct of everyday life remain at the center of analysis. This delimits our ontological focus to what we can actually ask people about, and excludes us from asking for instance the smartphone about the ways in which it participates in shaping people's lives.

To sum up: In critical psychology, what is present is a human subject with personal meanings and grounds for action, but technology is at best a substitute for human action resulting in a widening of human agency, but still a tool or a condition in service of the subject. What is emphasized, even in materialized action is the human subject as the onset and end goal of action, thus limiting

analysis to the bodily presence of human subjects in a given, delineated, physical practice.

However, when we are dealing with distributed subjects, critical psychology tends to hit a snag. Who is participating in what? We need ways of thinking that can include technologies and materiality in a fuller, and more nuanced way, and we lack an understanding of how subjects can exist, if they are distributed and flow in and through a multitude of proliferating, ever-changing, partially simultaneous and fluid contexts.

As we argued in the beginning of this article, (young) people are simultaneously participating in multiple context across digital and analog modes of being. To develop a way to better theorize these engagements and distributed subjectivity, we will first de/stabilize context (the *what*) and then the body boundaries of the subject (the *who*) that constitute the participation.

Unbounding context

To de/stabilize the context we first turn to Affinity Spaces. James Paul Gee developed the term "Affinity Spaces" while criticizing traditional schooling, and pointing to how video games can construct good learning (Gee, 2004; 2007). Later, he has further developed and expanded it along with others, such as Elisabeth Hayes, and Sean Duncan who co-edited the anthology "Learning in Video Game Affinity Spaces" from 2012.

In their conceptualization of the 'affinity space' there is some (re)production of the binary distinctions between humans participating *in something* as separate entities interacting. However, technology functions as portals and generators of content. Further, the theory falls within the same basic understanding as Lave and Wenger and Critical Psychology, where the subject is seen as emergent in praxis. Later, we will argue for a more posthumanist view using Karen Barad, where we challenge the a priori distinction between human and non-human/technology. For now, we will define an affinity space as a gathering of human subjects and technology constructing a relatively stable space collected around an affinity or an idea, which is enacted by these actors, generators and portals.

Gee (2004) describes a portal as that which gives access to the space, and a generator as that which creates the content of the space. Gee also states that there are no binaries in this – a portal can be a generator and vice versa, and "… *it is degrees that are often of most importance here …"* (Gee, 2004, p. 83). In this way, portals can be websites or services, such as YouTube, Instagram, Wikipedia, etc., while these are all also generators. Users can be generators, as

well as portals in the sense that they can introduce to other portals. Portals and generators gather and create content that create affinity spaces in an emergent process, much as participants form and are formed by communities of practice, but with the difference that both portals and generators can be human as well as non-human. In our reading, therefore, in affinity spaces humans and technology stand in a more symmetrical relation than in critical psychology.

Most importantly, the affinity space allows a decentering of the 'human subjects' as participants, and allows us to see the *what*, that we are tracing, as a loosely defined and fluid space, or perhaps more accurately, a constellation of spaces. 'The Internet' becomes the portal, the generator and the gathering trope of a multitude of (affinity) spaces, which is, of course, also simultaneously what constitutes 'the Internet' in the first place. 'The Internet' both allows and is the materialization of actions, thoughts and ideas in texts, pictures, and videos, collected in playlists, collages, albums, sites, etc. This is what is enacted every time anyone presupposes or refers to the digital space.

> Online affinity spaces offer their participants the opportunity to participate pseudonymously, or even anonymously, a feature that makes "membership" difficult to establish and "belonging" into a moot point. In addition, the nature of online media allows the number of participants to scale in these spaces into the thousands, well beyond the population constraints of off-line environments. As participation in online affinity spaces continues to increase, membership becomes an increasingly nebulous concept in many circumstances. It goes without saying then that membership cannot be the central organizing metaphor for understanding identity transformations and learning in many online affinity spaces. (DeVane, 2012, p. 183)

Ben DeVane discusses identity and social learning in affinity spaces in his contribution to the aforementioned anthology edited by Duncan & Hayes (2012). Here he destabilizes the notion of membership, which is central to the social situated learning of Lave and Wenger. He argues that identity-formation is much more complex when it comes to 'participation' in affinity spaces, especially in regards to those that are online. Further, he uses the meaning of the word 'member' as an argument against membership:

> Membership, as a term, implies a sense of permanence and belonging. While it is often used to refer to a person belonging to a club or institution, it is rooted in description of components of the body. Being a "member" implies belonging to a public body like a club, and suggests an enduring relationship between the member and the body. (DeVane, 2012, p. 182)

Thus, in affinity spaces, both 'the what' and 'the who' of participation are blurred. Affinity space theory has its advantages in the unbounding of the what, but simultaneously 'the who' is dissolved to such a degree that it practically disappears. We need a workable concept of subjectivity in order to conceptualize participation in unbounded affinity spaces. We will therefore plug in Agential Realism to re/discover the subject before we turn the above metaphor of membership on its head to redefine member and membership in ways that re-actualize Critical Psychology as a (more) useful way of theorizing digital engagements.

Re/bounding the subject with technology

Mobile, digital media call for an approach that can grasp what we see. We see distributed and fluid participation and we want to be able to address it without throwing out the subject with the bath water. We see subjects acting simultaneously in-and out of digital space, across platforms and across the World, and thus we need to work out concepts for understanding subjectivity as not necessarily embodied. Further, we find a need to look for ways of understanding intimacy without proximity, and authenticity without presence. In order to accomplish this, we introduce an approach that takes the distribution of subjectivity in socio-techno-material entanglements to new limits. The science philosophy of Karen Barad (2007; 2012) offers a way of thinking about subjectivity that is radical in the sense, that it de-stabilizes the subject completely in order to re-stabilize it in what she calls agential cuts.

Karen Barad's *agential realism* (Barad, 2007) draws heavily on Niels Bohr's quantum physics, Foucault's understanding of power, and Judith Butler's concepts of performativity in her approach to science studies. At the onset, she claims, everything in the universe is entangled, constantly *intra-acting* to form reality, as we know it. By using the term intra-action, she distances herself from inter-action which she refers to as two separate entities influencing each other. For Barad there are no a priori separations in the world. Everything is entangled across space and time, and comes continually and constantly into existence as separate entities, as re-iterations, in what she calls *agential cuts.* Many of Barad's concepts use a slash to illustrate the simultaneous double nature of the concept. By for instance using dis/entangled, she points out that things are entangled, and come to being as entities in one move (see below).

To understand, what an agential cut entails, we need to take a tour into quantum physics and how to understand light. Barad takes her onset in the *double-slit experiment,* performed by Thomas Young in 1801. Up until that

point, light was understood as particles. Light particles bombarded objects and particles are reflected from them. A way of illustrating this is to look at light and shadow, for instance light falling on a wall through blinds. Where the light is blocked by the bars of the blinds, there will be dark stripes; whereas there will be light stripes where the light passes through the slits. This can be considered proof that light has the form of particles. However, Thomas Young discovered that by first shining a light source through one slit, and then through two slits, he could produce a wave pattern, which ought to be impossible, since waves can overlap, and two particles cannot occupy the same space at the same time.

This brought on a dispute which lasted more than a hundred years between believers in light-as-particle and those who believed in light-as-wave; an unresolvable dispute, since both experiments can be repeated with the same outcome indefinitely. Bohr's Columbus egg was to enroll the observation into the equation. The observation of light-as-particle or light-as-wave, he claimed, would produce exactly that which it was designed to produce. He proposed a completely different logic, namely that before measurement, light was neither particle nor wave, but *undetermined*. What could be determined was the *phenomenon* light-as-particle or light-as-wave, and this phenomenon included the measuring device, as well as the observer. What determined the quality of light was the *apparatus* which was designed to measure light as either particle or wave. In Bohr's understanding, according to Barad, light has no pre-existing quality; it arises only in measurement.

Barad then uses the term apparatus in conjunction with Foucault's concept for power producing processes, which he calls *appareil* or *dispositif*. Thus, an apparatus in Barad's terms could be seen as a socio-material-discursive "measuring device" that measures, and thereby produces certain qualities or agency in whatever is being observed.

Barad moves her argument further, and makes this into her *onto-ethico-epistemological* claims that she holds true for anything in the universe. Until something is determined as an entity, its nature is indeterminate. This determination, or delimitation happens in what she calls *agential cuts*, and these happen constantly and continually. Everything comes into being by observation, also the observing entity which is itself being observed. Here, it is important to understand that for Barad observation does not have to be optical, nor does it have to be conscious. This process she calls *cutting-together-apart* or *agential cut*. In the agential cut entanglements become dis/entangled, separate, delimited, bounded. Since the cuts happen constantly everywhere, entities, such as subjects, appear to be relatively stable over time. However, they are not so by default or à priori. Taking this claim on to understanding subjectivity, a subject cannot be understood as a pre-existing entity, but as a specific cut, an agentiality, in time-

and-space, as a time-space-mattering coming out of the infinity of socio-material-discursive entanglements.

This understanding of subjectivity differs radically from the one presented in critical psychology where the subject (albeit in a dialectic relation to the World) is set a priori, and at the centre of action. Furthermore, a fixed understanding of context as bounded cannot be upheld. A context is not delimited à priori but rather, it also emerges from entangled relations in specific cuts, as time-space-mattering. The qualities of a subject or context arise in the specific cut. If we look at the opening scene of this article again in this light, we are no longer talking about subjects and context but of entanglements, apparatuses and time-space-mattering. The point is not, however, that there is no world prior to observation, but that we cannot determine it before. Rather than setting contexts and subjects as the starting point of analysis contexts and subjects will arise from the empirical analysis.

Applying agential realism to for instance people sitting over their smartphones in a cafe, allows us see people using these technologies as more than bounded subjects, not interacting in a delimited context. In Barad's terminology (2007) what occurs in a given moment is a phenomenon. A phenomenon is the sum of socio-material-discursive entanglements that are visible at a certain time, and a certain place. In such a phenomenon we see buildings; smartphones, portals; generators; bodies; furniture; doors and windows; social media; discourses of subjectivity, proximity, alienation, intimacy, authenticity, and participation; time-together, and time-apart; and so forth coming together in a specific apparatus that cut the people together-apart as mobile phone- and social media users in specific ways.

The people emerge analytically as entangled agencies in a large apparatus, containing both present and past. Continuous iterations and re-iterations of subjectivity are going on in this situation where the beginning and end of the context dissolve. Techno-material elements are intra-acting in this apparatus: The internet, Facebook, mobile phones, Wi-Fi connections, operating systems are all entangled. Furthermore, all sorts of content might present: TED talks, music, photos, articles, and commentary posts cutting specific agencies as consumers of same content.

Agential realism challenges the ontology of presence, and participation. These concepts take on different meanings in the light of entanglement. The boundaries of the context blur, since what is making up the context is not necessarily present, and the boundaries of the context is re-iterated through agential cuts, the context itself making up particular agency of bounding activity.

What is present in a given moment is an agentiality. Agentiality is a process of cutting-together-apart potentiality in specific socio-material-discursive

apparatuses that emerge in intra-action, rather than in inter-action between bounded entities. In Barad's understanding, everything in the universe is entangled, constantly re-iterating each other. This applies for material, as well as socio-discursive agentialities. So, everything and everyone in the empirical observations are agentialities in line with other agentialities. However, since the cut is also discursive, discourses, like those of the authenticity of presence, and the intimacy of proximity, also take part in the cut.

Drawing on Barad we see humans (and everything) a priori as intra-acting agencies, rather than a priori bounded subjects. There is no a priori context in which a subject has a position, rather subjects and contexts emerge in the cutting-together-apart of agentiality.

Expanding the analytical frame

As we have seen, Critical Psychology understands human subjects as relatively bounded, and participating as such in delineated, local, social practice. There is something to be had from the idea of participation as the change agent of subjectivity, as Dreier conceptualizes it (2003) but with an a priori understanding of the subject as participating physically in locally bounded contexts, digital media easily turn into alienating entities that cut off people from one another and from authentic participation, and thus from changing their life circumstances.

Critical psychology offers interesting ways of examining practice, and, rather than pathologizing the subject, it understands action as reasoned. However, it has its limitations when it comes to conceptualizing subjects that are participating in contexts outside their physical boundaries, or that are mobile without moving; that are present, but not embodied. It thus holds the potential for hidden normativity hailing physical presence over mediated presence, as we have discussed above.

Affinity Space Theory offers an understanding of participation that is more fluid. Rather than understanding participation in context, Gee (2004, 2007), and DeVane (2012) understand participation as the content emerging through portals and generators, where technology and content are put at the centre of analysis. However, human subjects disappear into the background, or are dissolved completely.

So, we need to reintroduce the subject into the equation. Taking a different approach, Agential realism offers analytical tools that promise to grasp socio-material-discursive entanglements of distributed communities and connectivity.

In our Barad-inspired approach of seeing bodies as *"... phenomena that acquire specific boundaries and properties through the open-ended dynamics of*

intra-activity." (Barad, 2007, p. 172) we find the conception of membership interesting as a metaphor. We do not see it in a sense of permanence and belonging between two separate entities, such as the common understanding of being 'a member of a club' might indicate but rather as being a member, a part of the body, attached and intra-active with 'the internet' seen as a 'body'. In this reading developing 'membership' becomes a matter of embodiment. The metaphoric body-boundaries of the 'human subject' becomes fluid, and is shaped by that which it is made to be constructed of. This resonates particularly well with a point Barad (2007) makes regarding how prosthetics and wheelchairs are 'part' of the disabled bodies:

> It is when the body doesn't work – when the body "breaks down" – that such presuppositions generally surface. It is often only when things stop working that the apparatus is first noticed. When such (in)opportunities arise the entangled nature of phenomena and the importance of the agential cut and their corollary constitutive exclusions emerges. (Barad, 2007, p. 158)

Barad is here referring to research on how the wheelchairs or prosthetics of disabled people are not separate from their body until they break down, and thus become separate. This should be seen in the same way that any other part of the body can break down – if you break your arm, it becomes other to the (able) body, it becomes a hindrance, the boundary is created by the arm being broken, in the same way that it can be created by the prosthetic breaking. Or here, by the ICT being absent or not working (as we want it to). This also goes for the community of practice or affinity space. If access and social interaction is denied, either for technical or social reasons, we become aware of the social, and that we have been dis-membered.

The digital-technology-as-connectivity is 'part' of our bodies, our subjectivity, our being. We can barely imagine a world without it; we get very upset when it does not work – like an able-bodied person might feel about his hands or eyes if they stop working. In addition, we generally do not spend much time considering how it works or what it means to us, in the same way that we might not usually consider our hands or eyes. We make this comparison not to equate a smart phone with eyes or hands, but rather to attempt to destabilize a common understanding of the body as bounded in a particular way, and open the door to considering the blurring of these boundaries. As follows from a Baradian approach, boundaries are not static, they are created and (re)configured. This is also not to say that the smartphone has become a ubiquitous, integrated, permanent part of our bodies, it is to point out a range of enactments constructing the digital technology in a certain way. It is a way that resonates with the 'digital

co-pilot' of Tapscott (2009), where access to the internet (materialized as the smartphone), is something integral to the participation and identity formation.

In this way, subjectivity becomes a matter of how we draw the boundaries, how we construct the human subject as other to something else. If subjectivity is shaped by the presencing of particular cuts of this heterogeneous, multiple and entangled body-as-assemblage, then it follows that the context(s) enacted in and by these cuts or assemblages are also constitutive of how that subjectivity looks.

Through this view, human subjectivity can still be constructed in a sense similar to that of Critical Psychology and situated learning, as emerging from the entanglement, facilitated by the ubiquitous assumption of the distinction between the human subject and other in modern thought, yet as de/stabilized, in/coherent and dis/continuous. Participation is created in, through and by the entanglements, and produces us in return. *Human participation can be seen as the gathering and destabilization of human subjects in entanglements where non-human actors proliferate, 'participate' and 'demand' to be more than tools, as they are embodied by us, and embodying us*, especially as traditional meanings of membership become problematic when talking of the 'online affinity spaces'.

In this paper, we have explored the concepts of subject and participation in relation to mobile, digital technologies. Critical Psychology has much to offer in the understanding of subjectivity and participation, but has shortcomings when dealing with the proliferating connectivity of especially the aforementioned technologies. The aim of this paper is not to do away with the subject and participation, but to expand the analytical frame, so that it may grasp the ways in which mobile, digital technologies are an integral part of modern life. Participation in/with technological networks becomes a matter of membership in socio-materially entangled affinity spaces that are de/stabilized through the participation of subjects that emerge for instance as mobile phone/users.

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