

# Performative research: A Baradian framework

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## Summary

This paper stresses the importance of materiality in accounting and organization studies. Accounting and organization studies have overlooked the ways in which accounting and organizing is bound up with the material forms and spaces through which humans act and interact. To incorporate the materiality concept in accounting and organization research, an agential realism research approach is proposed in this paper (Barad 2007). The paper concludes that agential realism can at least make three contributions to the literature. First, Baradian studies can contribute by illustrating the importance of material relations in the constitution of accounting and management practices. By interrogating the rich variety of materialities involved in the practices of measurement or making of innovation, Baradian studies expand the methodological choices available to practice-theoretic accounts of accounting or innovation work. It is the entanglement of *many types of matter* that perform and affect (sometimes in a disruptive way) the making of accounting measures or innovation. Second, Baradian studies can contribute by reframing the causal relations from which accounting measurements and innovations are made. Baradian studies can illustrate the intra-dependencies that exist between the things represented and constituted, and the representations made. Finally, Baradian studies can contribute by illustrating the ways in which properties of abstract concepts and ideals (e.g. liabilities, innovation) are the consequence, not of human-based practice, but of socio-material re-configurings.

## Practical relevance

It is not only humans that practice accounting measurement, albeit in a manner mediated, enabled or constrained by non-humans; rather, it is matter in and of itself that has been shown to engage in and affect measurement practice.

## 1. Introduction

This paper emphasizes the importance of materiality in accounting and organization studies. Accounting and organization studies have generated important and valuable insights, but have overlooked the ways in which accounting and organizing is bound up with the material forms and spaces through which humans act and interact (Orlikowski 2007). To incorporate the materiality concept in accounting and organization research, an agential realism research approach is proposed in this paper (Barad 1998, 2003, 2007). This approach challenges the deeply taken for granted assumption that the social and the material should be conceptualized separately (Orlikowski and Scott 2008). One could make the statement that all action that constitutes accounting and organizing is no more or less social than it is material (Leonardi 2013). An integral way of understanding the roles of humans and non-humans, of the material and the discursive, and of natural

and cultural factors in scientific and other practices is important (Schweber 2008). To this end, this paper will elaborate on Barad's agential realism and the contributions of other authors regarding Barad's work.

The paper is organized as follows. After an introduction to the performative research approach (section 2) and the notion of performativity (section 3), section 4 describes the ontology of Barad's agential realism. To clarify the different concepts mentioned in this paper, section 5 discusses some examples from prior accounting and organization research. The final section provides a conclusion and discussion, including suggestions for further research.

## 2. Performative studies

Although mainstream positivistic (ostensive) research has been very useful, it has limited the range and type of problems that have been studied and the research methods that

have been used (Chua 1986; Boedker 2010). Whereas ostensive research presumes that the world exists of predefined building blocks ('black boxes'), performative research provides insights in how these black boxes are assembled (Boedker 2010). Performative research assumes the social is fluid: social objects take on shape and form during processes of translation (Boedker 2010). The objects are performed by people and the hands through which they travel. Therefore, the observations take place only 'in action'. This extension of ostensive research can gain new theoretical insights because it does not assume knowledge exists a priori, like ostensive research does (Van der Meer-Kooistra and Vosselman 2012; Boedker 2010). "In the performative lens, there is no fundamental formula or universal truth to predict what comes 'before' and what comes 'after' or to know with certainty which object determines the form of another" (Boedker 2010, p. 599). So, ontologically, performative research assumes knowledge and reality are emergent and inherently unstable – in a constant state of flux (Boedker 2010).

Moreover, whereas ostensive research assumes that power (or agency) is located in individuals, performative research acknowledges that the power to act also resides in non-human actors as they are related to other actors; non-human actors have the power to interactively transform social life and human action (Boedker 2010).

The paradigmatic shift from ostensive research to performative research has brought the concept of performativity to the fore. According to Hansen (2011), performative research creates, maintains and modifies ostensive knowledge in much the same way that speaking creates, maintains and alters a language.

### 3. Performativity

The notion of performativity<sup>1</sup> is extensively examined by Butler (1993). She developed the concept of gender performativity, which characterizes gender as the effect of reiterated acting: dependent upon a social audience. Butler (1993) analyzes the body entirely within a linguistic framework, she assumes language determines the body as phenomenon (Nijhawan 2008). Language was granted its own agency and historicity and everything turned into a matter of language: the linguistic turn, which came to dominate the social and humanistic sciences from the middle of the 20<sup>th</sup> century and onwards (Barad 2003, 2007, p. 132; Strand 2012). This performative understanding of discursive<sup>2</sup> practices challenges the representationalist belief in the power of words to represent preexisting things (Barad 2003, 2007, p.133). Discursive practices define or make possible what counts as meaningful (Højgaard and Søndergaard (2011), so, what one understands as reality is conditioned by collectively constructed discursive meaning in language (Lenz Taguchi 2010).

"Language matters. Discourse matters. Culture matters. There is an important sense in which the only thing that does not seem to matter anymore is matter" (Barad 2007, p. 132).

Barad questions why language and culture granted their own agency and historicity, while matter did not. Butler's theorizing of materiality is not broad enough (Barad 2007). Matter is still seen as passive and immutable (Barad 2003). In trying to understand how matter comes to matter, (i.e. how matter gets its significance) Barad (2003, p. 808) proposes a 'material turn', which builds on the linguistic turn in philosophy and social theory, but without giving up on what one has learnt so far (Lenz Taguchi 2010): a "specifically posthumanist notion of performativity – one that incorporates important material and discursive, social and scientific, human and nonhuman, and natural and cultural factors".

## 4. Agential realism

### 4.1. Introduction

Agential realism is a performative perspective which aims to understand the complex processes constituted by a number of human and nonhuman forces and is a radical version of 'new materialism' (Strand 2012) that is interested in the active role of the material world, culture and agency, and artifactuality (Lenz Taguchi 2010). However, agential realism goes beyond performativity theories that treat the social and the material as distinct and largely independent spheres of organizational life, which excludes many possibilities in advance (Barad 2013). These performative theories (such as Actor-Network Theory; Latour 2005) uphold a difference between humans and nonhumans and enact 'them' as pre-existing entities that are 'assembled' (Strand 2012; Wagner et al. 2010). This does hold the category 'human' fixed. According to Barad (2007, p.183), a human/nonhuman distinction cannot be hardwired into any theory that claims to take account of matter in the fullness of its historicity. Giving up this distinction can gain considerable analytical insights, and sensitizes us to a different set of issues and influences than we have tended to focus on. Material objects are interwoven with, and inseparable from, social activity (Orlikowski 2007). Therefore, one has to focus neither on the material nor on the subject, but on the inbetween (Lenz Taguchi 2010). Because of this entanglement of agents and to overcome the problem of the human-centeredness, Barad emphasizes the inseparability of 'objects' and 'agencies of observations' (Barad 2017, p. 114). This means the contours of material agency are never known in advance: material agency is temporally emergent, just as human agency (Lenz Taguchi 2010). The social and the material are constitutively entangled in everyday life (Orlikowski 2007; Barad 2003; Leonardi et al. 2012, p. 33; Schönián 2011). Humans and other-than-humans are entangled agencies that establish each other as well as being created themselves (Barad 2007, p. 33).

Agential realism theorists study the research subject in its dynamic and multiple sociomaterial (re)configurations and focus on achieving a comprehensive understand-

ding of practices. The entanglement between human and nonhuman actors and the practices they constitute involves intensive research on situated activities. So, because users and context influence how the artefacts enact, artefacts enact differently in different practices. The artefact's 'existence' is therefore dependent on the time and space of observing (Lenz Taguchi 2010). Sitting on a certain chair, for instance, in a certain space with specific human, nonhuman organisms and matter will regulate how, what and when we might say or do things, or not say or do. The challenge for organization and accounting scholars is to figure out how to take seriously the recursive intertwining of humans and nonhumans in practice (Orlikowski 2007).

#### 4.2. Intra-activity

Barad (2003, 2007) gives meaning to the not preexisting existence of entities by using the term intra-actions. The notion of intra-action recognizes that distinct agencies do not precede, but rather emerge through their intra-action. Phenomena come to matter through specific intra-actions rather than interactions. The notion of interaction presumes the prior existence of independent entities, according to Barad. *"Interaction [...] comes to assume a separation of individual agentiality / doings: as something preceding interaction"* (Barad 2007, p. 33). It is this non-preexistence that differs agential realism from Actor-Network Theory (ANT), as noted by Orlikowski (2007). Agency is thus a matter of intra-acting; it is an enactment, not something that someone or something has. *"It is important to note that the 'distinct' agencies are only distinct in a relational, not an absolute, sense, that is, agencies are only distinct in relation to their mutual entanglement; they don't exist as individual elements"* (Barad 2007, p. 33). So, using ANT terms, agencies interact with each other, which can be described as the enactment of agencies. Using Barad's words, agencies intra-act with each other, which can be described as the entanglement of agencies. Intra-acting ensures a phenomenon is continuously in the making and it is therefore not possible to come up with a definite form of the phenomenon.

According to Barad, the moment of analysis determines the outcomes of the research. The 'being' of the phenomena (figure 1 (Strand 2012, p. 70)) is dependent on history (the before), on the moment of the analysis (now) and on the future (next). The triangle (figure 1) is a set-off that captures both the focus on the 'now-ness' and the 'time-span' out of which such a 'now-ness' is most commonly theorized as emerging. The figure explicates the sequential mode of present action. A current 'Now' moment of (inter)action is here understood as having an immediate antecedent in the moment just past and as having an immediate consequent in the moment to come. This 'before-now-next' timespan concerns sense-making where the claim is that we always contribute to an ongoing situation on the basis of what happened just before and what we do now shapes the possibilities for the next action (Strand 2012, p. 71). It is important to account

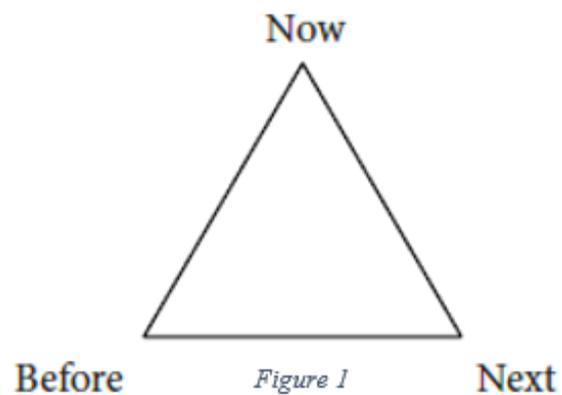


Figure 1.

for every 'possible' actor: nonhuman and human forces, including discourse, matter, subjects, technology, space, and time (Højgaard and Søndergaard 2011). The amount and content of these possible factors can change through time and space. The notion of intra-action, thus, opens up a space for material-discursive forms of agency.

Agential realism takes into account the discursive and material nature of social practices. As is said, Barad reconfigures time and space as active parts. More precisely: subject, object, body, time and space are not independent entities but components for and of each other (Strand 2012). To broaden the performative account, Barad proposed to rethink the notions of discursive practices and material phenomena and the relationship between them. So, in Barad's framing of how matter matters time and space are also treated as very active transformative agents in the processes of becoming as she offers a rethinking of those as co-constituents as they do in quantum physics. Barad thus provides such a (fresh and thus more) qualified 'new settlement' (Strand 2012). Time, space and matter intra-relate as mutually constituent forces (Strand 2012).

#### 4.3. The essential traits of Baradian thinking: an example

To make a clear distinction between former ways of thinking and the Baradian way of thinking, Lenz Taguchi (2010) describes an example concerning pedagogical research in which she contrasts three different ways of describing an activity and 'gaining knowledge' about this activity (Kocher 2010). In her example, she has studied some student-teachers making a clay figure *"that is about as big as your own hand – or larger – and is standing on one leg"* (Lenz Taguchi 2010, p. 52). The students made a figure out of clay and had to take notes on their findings regarding 'new' knowledge: how the quality of the clay is influenced by the temperature of the students' hands or the influence of adding water, for instance. After discussing the results, the students thought they had contributed to 'true (scientific) knowledge'. The entities, students and clay, are separated from each other and the students become observers of the world (Lenz Taguchi

2010; Barad 2007). This way of thinking is called ‘Being-in-the-world’ by Lenz Taguchi. ‘Being-in-discourse’ is the second way of thinking which follows the ‘linguistic turn’. In this phase, the female students were questioning the fact that all figures were males, while the assignment was ‘neutral’. The students agreed that this was caused by the taken for granted notion of human: one sees a man as sign for ‘human’ in general. Furthermore, the students conclude that what is possible to say, depends on their access to different discourses, which in its turn will influence their ability to look at the clay figure from different ways. *“When discussing the clay [the students] used what they understood as a more feminine language from familiar worlds of cooking, baking, dance and literature, rather than more difficult scientific words that more specifically define the qualities of the clay in the language of physics and mathematical geometry”* (Lenz Taguchi 2010, p. 55). This discursive way of looking at the world assumes a reality ‘out there’ which remains separated and does not recognize the clay as ‘having agency’ (Lenz Taguchi 2010, p. 55): *“What is embraced in the discursive paradigm is the idea of being and knowing as completely textual/discursive”*.

The former two paradigms observe the clay figure as ‘dead matter’. The third, ‘being-of-the-world’ paradigm (also mentioned by Strand (2012)) focuses on the process of becoming, the intra-action between the clay, the students’ hands and temporal limitations of the students and the clay: *“What becomes a ‘clay man’ is the result of different matters making themselves intelligible to each other with all their potentialities and temporal limitations, in a specific series of events with specific preconditions. The clay is in a process of becoming with and an embodied thinking in the discursively enacting hands of students. Simultaneously the students’ discursively thinking hands are in a process of mutual becoming – becoming with the clay”* (Lenz Taguchi 2010, p. 60). This agential realists’ way of looking at the originating of phenomena, thus, incorporates discursive, as well as other agencies’ influences. This practical example of Lenz Taguchi tries to explain differences between agential realists and former theorists. Using the different perspectives produces different kinds of knowledge, according to Lenz Taguchi (2010), depending on the ontological and/or epistemological perspectives we bring with us in our usage of it.

#### 4.4. Apparatus

Barad furthermore develops the notion of apparatus to refer to the specific material-discursive practices that help to constitute phenomena through producing knowledge about them (De Vries 2013; Strand 2012). So, apparatuses are boundary-making practices that focus observations on one thing instead of another. Apparatuses can be described as the ‘tools’ by which we produce knowledge (Lenz Taguchi 2010) and are used by scientists to get to know the world. Apparatuses are not passive instruments of observation, they are material-discursive practices that

create differences and delimitations and thereby creating phenomena (Højgaard and Søndergaard 2011). Leonardi (2013) describes this as machines, developed by scientists, to capture a phenomenon. So, matter can be known differently depending on the apparatus it is known through (Højgaard and Søndergaard 2011). As the apparatus used to measure a phenomenon is not ontologically distinct from the material being measured (Parkins 2009; Orlikowski 2010), the measurement apparatus can never be thought of as objective or independent from the scientist. Barad describes apparatus as the condition of possibility of humans and nonhumans, in an ideational concept, but also in their materiality. According to Barad (2007), an apparatus can be understood as taking part in a process of ‘material (re)configurations of discursive practices’.

The apparatus is part of the process of constructing meaning. Examples of apparatuses are photographs, documentation or video films. The observer or the researcher chooses how to take a photograph or how to ‘describe’ something in documentation. The moment of taking the actual picture is important, the quality of the photograph, the angle of taking the photograph, which way the camera is turned to or which part of a process is documented or not. All these factors determine what kind of documentation or photographs are produced and which conclusion can be drawn from these. The observer can be constrained by the quality of the photograph if it is enlarged on the computer or cannot observe something that did not ‘fit’ in the picture. Consequently, the apparatus becomes an active agent in the production of knowledge. It *“offers constraints on or limitations to what is produced as knowledge, and even produces exclusions of ways of knowing, depending on what we are able to conceptualize and understand in terms of meaning-making”* (Lenz Taguchi 2010, p. 67).

Contrasting with Cartesian (or Newtonian) thinking<sup>3</sup>, in Barad’s thinking the observer or researcher cannot be seen as distinct from the apparatus of observation he or she uses (Barad 2007). Agential realists have to take into account how their engagement with the artifact of their examination enacts with the phenomenon (Strand 2012). So, the observer is intertwined with the apparatus, which can be the camera to take pictures or make video films, but also the way of documentation. The observer determines the way of analyzing and subsequently the ‘translation’ process into words on paper: experiences are ‘coded’ into documents (Lenz Taguchi 2010). According to Barad (2007) knowing, or acquiring knowledge does not come from standing at a distance and representing something, but rather from ‘a direct material engagement with the world’ – the entanglement of observer and apparatus. Therefore, it is important to always include the observer in our picture of the world, according to Schweber (2008). Both human, nonhuman, some whom are already known and others have yet to emerge, can contribute to an effect on the phenomena in the future. According to Lenz Taguchi (2010), the observer and the apparatus for observing together construct what Barad would call a specific constructed (agential) ‘cut’.

#### 4.5. Agential cut

In order to study phenomena, one still has to make a difference between ‘social’ and ‘material’. This distinction has to be made because it is impossible to study the entanglement effects of two phenomena without making a distinction between them. Agential realists claim that these differences made are a result of an ‘agential cut’ (Leonardi 2013; Warfield 2016). *“It is through these agential cuts and through specific intra-active practices that boundaries, categories, and ‘properties’ of phenomena are established, and it is also through these cuts that specific concepts – specific material-discursive articulations of the world – become meaningful”* (Højgaard and Søndergaard 2011, p. 346). This distinction has to be made because it will be impossible to conclude something if *“everything around us affects everything else, which makes everything change and be in a continuous process of becoming”* (Lenz Taguchi 2010, p. 15). The agential cut is continually produced in the intra-action inbetween an object and the agencies of observation: the apparatuses and the observer (Barad 2007). The cut is a ‘temporary constructed distinction’ between agencies (Lenz Taguchi 2010). In fact, there is no essential distinction between the object, the apparatus and the researcher or observer, according to agential realists’ thinking, but the observation will produce this ‘constructed cut’. This constructed cut is needed to study a phenomenon.

Jolink (2014) studied the Engagement Management System (EMS) and its entanglement with its users and through his observations he ‘constructed’ a cut between humans or users and the material aspects of EMS, like the dashboards. Barad (2007) emphasizes that one cannot understand the causal relationship between apparatuses and phenomena produced as a relationship between isolated objects. It is a relationship based on agential intra-action. In order to study a phenomenon, one must understand which agential cuts between intra-actions produce the differences and properties that create the effects – together and in relation to one another (Højgaard and Søndergaard 2011).

Lenz Taguchi (2010) summarizes the preceding as: the ‘cut’ between the subject and object – what is observed – is enacted in the situatedness of a particular observation, using a particular apparatus of observation, rather than being inherent or fixed. So, one describes the observed phenomenon as ‘reality’, which is actually the image or meaning emerging from intra-activity taking place between the observed object, the apparatus and the observer.

### 5. Agential realism research: two examples from the accounting and organization studies literature

Fiedler et al. (2017) argue that accounting measurement is a socio-material practice where much work is undertaken by non-humans. Their empirical context is Australia’s first

cap and trade carbon market. This market came into effect in 2012 (*‘Clean Energy Act 2012’*). The Clean Energy Act gave rise to a legal obligation that required organizations to purchase and surrender to government one emissions permit for every tonne of greenhouse gases. The legal obligation to surrender permits generated financial liabilities accounted for as provisions. However, because permits were valued in the first years of the market’s operation at a fixed price of \$23, changes to the value of an organization’s emissions liability arose, not through changes to the way in which the liability was measured, but rather through changes to the way the emissions were measured. The measurement of emissions was undertaken by means of the methods, standards and coefficients of the *National Greenhouse and Energy Reporting Act 2007*. Drawing on Barad’s work, Fiedler et al. (2017) illustrate how diverse, vibrant materialities in the form of, for instance, legislated measurement standards, the fixed market price for carbon, gases, air pressure systems, bore holes, and measuring instruments collectively enact both emissions and the expected emissions liability. Also, the paper of Fiedler et al. (2017) reworks the traditional notion of causality assumed in accounting measurement. The *cause* of the measurement, the emissions, and its *effect*, the expected emissions liability, are shown to no longer be pre-existing entities with fixed causal relations. Instead, emissions and the expected emissions liability *intra-act* and co-produce each other simultaneously as both are formed via measurement practices. Through such intra-action, both matter and particular meanings (in terms of financial worth and consequences) are forged and privileged.

The measurement of emissions by engineers is found not to precede the recognition, measurement and subsequent valuation of an emissions liability by accounting. Emissions do not exist, as a separate entity prior to accounting. Emissions do not *cause* the liability. Rather, the emissions liability and the emissions emerge as determinate entities, through their intra-action in configurations of measurement practice. Emissions/emissions liabilities are not a fixed essence but rather an ongoing dynamic of intra-activity (Barad 2007, p. 206; Fiedler et al. 2017, p. 4). *What* the emissions/emissions liabilities become, is an effect of the dynamic ways in which materialities relate. How matter is configured, the ways in which matter relates in measurement, matters to the becoming of the emissions/emissions liability. For some types of measurement configuration, matter relates with a degree of impenetrability, either resisting or participating in measurement and the enactment of emissions/emissions liabilities, but doing so with obstinacy. Such configurations resist change (Fiedler et al. 2017, p. 4). Carbon dioxide emissions/emissions liabilities enacted when fossil fuels are combusted, for instance, materialize in configurations that include the molecular structure of petroleum products, the liquid state of petroleum, the vessels and invoices within which petroleum is held and the engines within which petroleum is combusted. In relation to one another, these materialities affect a

stability that allows carbon dioxide emissions/emissions liabilities to be measured with a degree of consistency. For other types of measurement configuration, the ways in which matter relates compels a change to measurement (Fiedler et al. 2017, p.4). Accounting, in the form of the emissions liability, is accordingly allowed to interfere with and becomes entangled in the matter to affect a reconfiguration of that matter. When such reconfiguring occurs, new relations emerge, measurement practices shift and emissions/emissions liabilities are enacted differently. Methane emissions/emissions liabilities enacted when methane escapes during the open cut mining of coal, for instance, materialize in configurations of coal seams, wind speed, gas concentrations and instrumented measuring vehicles. In relation to one another, these materialities affect a particular methane emissions number. The entanglement of the emissions liability with the emissions number, by means of the fixed \$23 carbon price, places a value or weight on that number. Where this number crosses a certain threshold, methane emissions/emissions liabilities no longer materialize in configurations of coal seams, wind speed, gas concentrations and instrumented measuring vehicles. Rather, they materialize in configurations of coal seams, gas bearing layers of variable thickness within the coal seams, gas content and density, bore drilling equipment and bore holes. In relation to one another, these materialities affect methane emissions that are measured differently and that, in intra-action with the emissions liability, are now valued differently (Fiedler et al. 2017, p.5).

Choices are made as to the types of matter that will constitute an emission/emission liability, as well as the types of value or meaning that will be privileged, and the one affects the other. Measuring is a meeting of the 'natural' and the 'social'. It is a locally situated practice from which 'matter' awards 'meaning' in the form of the emissions/emissions liability enacted; and from which meaning determines matter (Barad 2007, p. 67; Fiedler et al. 2017, p. 5). Such choices are about both inclusion and exclusion. In choosing measurement configurations that enact particular materializations of the emissions/emissions liability into being, choices are also made to not enact others. In choosing to enact or give significance to certain meanings, other meanings are lost. The practice of measurement is therefore a process of privileging. Accounting could be said to perform in the making of the atmosphere (Fiedler et al. 2017, p. 5).

Pecis and Panourgias (2013) contribute to the organization studies literature by introducing Baradian concepts in the analysis of innovation, and by empirically exploring the entanglements of matter of different kinds and their influence on the making of innovation. Such intra-activities are illustrated through the use of data derived from an ethnographic study in a biomedical research centre. They illustrate that the process of becoming a biomedical researcher is an entanglement of matter's agencies: biomedical objects require actors to be constantly engaged in a learning process; a specific precision of handling matter

as researcher's misconduct could result in contamination; a strong passion towards work; and a commitment to finding innovative outcomes, such as a cure to certain pathologies. From this, the nature of the relation between objects and actors is co-constitutive: matter defines behaviors the researcher needs to implement, and at the same time the researcher manipulates matter. In so doing, matter and human actors mutually concur in constituting their sociomaterial identity. In this way, the identity matter purports to sustain through its relation to the embodied self is one which is entangled to material and social practices, and human agency is just a part of this "constituent entanglement of materiality and sociality" (Shotter 2014, p. 33; Pecis and Panourgias 2013, p. 14).

Pecis and Panourgias (2013) demonstrate that the elements of the process of materialization are various: from the researcher's body to the spatial allocation (laboratories), from animals to material substances (radioactive waves, cells, and more). This entanglement emerges at the level of identity constitution, but also in the constitution of the elements fundamental in the innovation process. As a junior researcher explains, matter can impact the outcome of the experiments in the making of innovation:

*"Sometimes postponing a decision, especially with animals, can bust all the results or compromise the animal. If you wait two or three days the animal dies or else"* (Pecis and Panourgias 2013, p. 20). So, matter not only constitutes the researcher's identity but in an intertwined way the researcher constitutes matter. This intra-activity of matter is for Barad (2007, p. 33) a "mutual constitution of entangled agencies". This is a crucial point in the processual understanding of innovation: innovation as a phenomenon emerges through the intra-actions of several agencies (the researcher's body, the substances involved in experiments, the research practices and techniques, the technological instruments, among others) that are socio-material. This means that no separation between the social and the material can be assumed. Highlighting the entanglement of elements is a way to sustain a conception of phenomena formed by components whose boundaries are defined by 'agential cuts':

*"It is only through specific agential intra-actions that the boundaries and properties of "components" of phenomena become determinate and that particular articulations become meaningful."* (Barad 2007, p. 148). A phenomenon such as innovation is ontologically inseparable, but composed by distinguished entities which form the phenomenon in their intra-actions (Pecis and Panourgias 2013, p. 20).

## 6. Conclusion and discussion

Agential realism can at least make three contributions to the literature. We illustrate this by the work of Fiedler et al. (2017). First, Baradian studies can contribute by illustrating the importance of material relations in the constitution of accounting practice. Prior ANT-based account-

ting literature has tended to focus on the human as the ‘end consumer’ of the non-human. The purpose of the non-human was still perceived as structuring the practice of the human. By interrogating the rich variety of materialities involved in the practice of (e.g. emissions) measurement, Baradian studies expand the methodological choices available to practice-theoretic accounts of accounting work. It is the entanglement of *many types of matter* (e.g., the components embodied within emissions) that perform and affect (sometimes in a disruptive way) the making of accounting measures. Second, Baradian studies can contribute by reframing the causal relations from which accounting measurements are made. Baradian studies can illustrate the intra-dependencies that exist between the things represented and constituted, and the representations made (see also Edwards 2012). For instance, emissions were found time and again not to exist independent of their representation by the emissions liability (Fiedler et al. 2017). Emissions were a consequence of their intra-action with the liability. Finally, Baradian studies can contribute by illustrating the ways in which properties of abstract concepts and ideals (e.g. liabilities, emissions or the atmosphere) are the consequence, not of human-based practice, but of material re-configurings. For instance, time and again matter is shown to interfere with and determine how a liability comes to be valued and therefore measured. However, the measuring is not done by the accountant (Fiedler et al. 2017). It is done by the coal seams, by the high and low pressure systems, by the need to maintain survivable conditions for miners, by the representative sampling, by the bore holes, by the laboratory sampling. It is these things that determine how a liability should be measured, which liability will be measured, and which emissions will be measured. What a ‘liability’ or what ‘emissions’ comes to mean, how they are valued, is something that comes into being as the configurations of matter from which they are derived settle (Fiedler et al. 2017, p. 34).

Agential realism thus offers an interesting and promising avenue for further research on materiality and performativity in accounting and organization studies (Jackson and Mazzei 2012). The Baradian framework de-

serves more empirical application in these domains. For instance, the focus on *matter* provides a means by which to connect worlds such as those of engineering or science to accounting, and to show their relevance to one another (Fiedler et al. 2017, p. 35). Nowhere is this more needed than in areas of environmental, social or integrated accounting and reporting. If these are ever to be fully “integrated” into mainstream accounting and reporting, it is precisely the *effects* of matter that need to be understood in order to be filtered through into their financial form (Fiedler et al. 2017, p. 35).

Central to Barad’s (2007) proposal of a sociomaterial, performative, understanding of practices, is the view that all the matter around us, and within which we ourselves have our being, has agency, and consequently we need to take account of the fact “that knowing does not come from standing at a distance and representing but rather from *a direct material engagement with the world*” (Barad 2007, p. 49). And it is in this sense that *matter matters* to us: our “seeing” things, “hearing” things, “making sense,” and “talking of” things, are all material practices, involving the entanglement of our material bodily processes with those of the material world (Shotter 2014, p.36). We are not separate agents, but “participant parts” within and of an indivisible, continually unfolding, stranded, flowing whole, able to set the boundaries that matter to us within it in one way at one moment and in another way the next (Shotter 2014, p. 36).

As a short summary to recap agential realism and to conclude this paper, a quote regarding Barad’s theoretical framework:

*“Agential for the conceptualization that everything does something, that everything is performative and has agency – nothing is delimited, everything is always in intra-activity with something else, and Realism as the concept for the fact that the agentiality has real effects”* (Højgaard and Søndergaard 2011, p. 345).

Barad (2007) states one cannot speak about ‘words’ describing the world, but about discursive practices entangled with material phenomena. Instead of describing something as a ‘thing’, one has to look at material phenomena as relations that have a performative nature and have real effects.

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## Notes

1. The notion of performativity assumes a phenomenon is created by the world where it exists. It often refers to the capacity of words or language to act an action or to create and construct a phenomenon.
2. Discursive practices refer to the original word ‘discourse’. “It refers to stretches of language above the level of the sentence in conversations or written texts” (Young 2009, p. 2). According to Barad (2007, pp. 146–147), discourse is “not what is said; it is that which constrains and enables what can be said”. Analyzing discursive practices has to be done by incorporating the global context of action and the communicative resources that participants employ in local action. According to Young (2009), it is important to pay attention to how employment of resources

reflects and creates the processes and meanings of the community in which the local action occurs, instead of only paying attention to the production of meanings.

3. "Idea about distinct and inherent borders between the 'object' that is observed and the 'observer': the observer has agency and is active, and the observed has no agency and is passive" (Lenz Taguchi 2010, p. 70).

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