Bounding Practice

How people act in sociomaterial practices

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1 Sociomaterial practices

What does it mean to act in a competent manner in sociomaterial practices? When I read Bratteteig and Verne’s (2012) paper “Conditions for autonomy in the information society: Disentangling as a public service”, published in this issue of the Scandinavian Journal of Information Systems, I was intrigued by the approach to investigating the enactment of the Scandinavian democratic information society as sociomaterial practices. If we are to open up the black box of what the increased digitalization of all types of communication between citizens and government might bring, sociomateriality as an analytical tool is an opportunity for us to increase our awareness toward essential challenges and complexities otherwise neglected in socio-technical studies. This is not to say that increased digitalization does not support efficient and timely handling of routine issues from citizens. It certainly does, and personally I really appreciate the decreased time and effort I need to spend on such matters. Instead my argument is that increased digitalization also create a black box around otherwise complex interrelations between society, technology, law, and the practices of citizens. This makes it difficult for citizens to interact in a qualified manner with the ‘system’, since we are not educated to manage the complex interwoven networks that are covered up by the smooth surfaces of websites.

Bratteteig and Verne provide inspiring empirical examples that depict the complexity involved in the communication practices between government and citizens. They propose making evident the differences between the two sociomaterial concepts—entanglement and imbrication—and suggest that disentanglement describes the process by which sociomaterial practices are addressed to create space for action and change. My interest is how practitioners disentangle and act within sociomaterial practices. But, in opposition to Bratteteig and Verne, I will argue that their suggestion to make the distinction between entanglement and imbrication has embedded the dichotomy of the social and the technical, from which they do not escape in their
analysis. For example, they state: “an imbrication to refer to something where the elements are visible or available as distinct, and can be handled separately from each other as well as from the imbrication as a whole. The ‘overlapping patterns’ of human and material agencies indicate that a stepwise procedure will be suited to disentangle them” (Bratteteig and Verne 2012, p. 64). Their interpretation of imbrication involves the existence of different types of entanglement and claims that some types can be solved in a stepwise manner. Moreover, they give the impression that it is possible to make visible distinct elements, which can be separately manipulated and solved. However, sociomateriality takes as its foundation that all practices are entangled, and that distinct elements can never be understood outside the sociomaterial practices; thus, a stepwise approach would be impossible. Therefore, I argue that their analysis does not embrace the complexity that a sociomaterial analysis must entail. Instead, I will suggest an alternative perspective on sociomateriality, which can help us comprehend how people act within sociomaterial practices—and which can help us when we want to understand how people act with all kinds of material artefacts in practice (Bjørn and Hertzum 2011). I refer to this perspective as bounding practices and suggest this as our way toward sociomaterial-design (Bjørn and Østerlund 2009; Østerlund and Bjørn in progress).

2 Making sense of sociomaterial practices

Why is it so difficult to make sense of sociomaterial practices? The ontological foundation for sociomateriality specifies practice as the connections holding together heterogeneous actors, artifacts, and activities (Law 2004). It refers to the entwined nature of the social and the material, and how these two are inseparable, constitutively entangled (Barad 2003; Orlikowski and Scott 2008). Sociomateriality offers an analytical lens where neither artifacts, nor people, are single entities with inherent properties. Instead people and artefacts become bounded in practice. “Becoming bounded” has a double meaning—namely to bind together, as in hyphenated-structures, and to set the boundaries for what makes the entity, as in [bracketing structures]. What makes an artifact is not pre-given. Instead entities emerge by enactment in practice. Now, if we agree that practice is a sociomaterial tangle, which cannot simply be picked apart, then how do people manage to act in competent ways? If all is related and each time we dig deeper into one practice, one black box, the complexity increases and new ground emerges, how can anyone every accomplish anything in such a messy reality? How do government practitioners manage to complete their tasks? And how can we use the sociomaterial perspective to think about information systems? Donna Harraway suggests thinking about the sociomaterial tangle as a ball of yarn in her famous video where she “reads the national geography and talks about Koko the gorilla” (Haraway 1987), with each string representing one cut down into the practice; if we follow this one string we can see how this entity is tangled into many other strings, each adding to the understanding of the one string. Each string comprises people and technology. Not until we carefully examine each string can we make out what the boundaries might be for the particular practice. The bounding of the particular practice becomes the string we selected; however, we are always well aware that the string only represents one small part of the whole tangle. Technologies
and people are connected together; however, it is difficult to see what then makes the entities. What makes the boundaries for the entity if these are not pre-given?

In sociomaterial practices we separate out the particular entities we are studying. Since no clear distinctions between technology and people pre-exist, part of the practice is to create the boundaries for the entities we study. What is made present or absent in the sociomaterial practices makes a difference for how we can investigate the strings interconnecting government officials, citizens, and technology. This includes studying how practitioners construct their professional practice and identities in relation to each other, as well as how we as researchers construct our research practice and identities. In this way, my view on sociomateriality includes reflections on both the practitioners we study as well as the research method we apply. If we are to take on the sociomateriality as a perspective to study practice, it entails that we as researchers must also think about our own practice as sociomaterial. However, in this paper I focus on the sociomaterial practices of the practitioners.

3 From disentanglement to bounding

Bratteteig and Verne suggest conceptualizing how people handle sociomaterial practices as disentanglement, whereas I suggest thinking about sociomaterial practices in terms of bounding. Examining the empirical examples in Bratteteig and Verne, we see how the practitioners bound important practices, data, information, and technologies relevant for the task at hand. For practitioners to be able to make sense of the particular parts of the sociomaterial world, the aim is not to dismantle, since this would be an impossible task. Instead the aim of the practitioners is to bound together what is relevant for the particular task by pulling together technology, data, people, artefacts etc., which all serve a purpose and have a relation to solving the task at hand. The bounding approach as an analytical lens to make sense of sociomaterial practices also changes the academic perspective on the design of technologies, which becomes part of the sociomaterial practices. For example, the bounding concept would suggest that government officials as well as citizens should have technologies that support the bounding process, as in bringing together dispersed information, knowledge, and technology, taking into account the differences in people’s agency and autonomy. The question then becomes, what makes the multiplicity of the entity we investigate? What needs to be bound? In the case from Bratteteig and Verne about the single father who needs a new tax card, the bounding might result in an entity comprising [newly-single-father-two-kids-low-income-bad-phone-connection-database-information/etc.]. I choose to use a hyphenated structure to make visible that the bounding results in the creation of a particular entity that comprises multiple relations critical for the particular task. I am bracketing the entity to illustrate that it is not a large number of relations; instead it is one multiplicity—everything that is inside the bracket is included, excluding all other sociomaterial relations. One example of something outside the bracket might be the mother who divorced the newly-single-father—or maybe the mother is also an important relation. It is critical that what becomes the entity is dynamic and that it depends on the bounding of the people involved. So the next question might then be, what people are involved? Again, this depends on the situation. In the case of the [mother-calling-on-behalf-of-the-daughter-who-has-made-a-complaint-about-tax-
debt-and-has-been-living-at-multiple-addresses], at first the actors involved are the tax officer and the mother; however, it quickly becomes evident that to solve the issue the daughter is an important actor, as is her access to the official registry of addresses. The mother and the tax officer are not able to solve the task, but it becomes clear what relations are missing and could not be bound together to solve the problem at this stage. Moreover, we also learn that this issue is not simply that the citizen should have better access to transparent information. Conversely, we see how it is part of the complexity in the sociomaterial practices of the tax officers not to reveal information about addresses, etc., even though the relation to place of residence is critical to solving the problem. So, the people involved in handling the sociomaterial practices might be one or multiple, depending on the task at hand. To be able to act competently in the sociomaterial practices, practitioners must be able to bound practices.

Bratteteig and Verne incorporate the concept of imbrication, referring to the arrangement of distinct elements in overlapping patterns, and they suggest:

“that the notion of *imbrication* refers to an entanglement that can be disentangled by a stepwise sequence of choices and actions, where the understanding of how the elements are woven together makes a basis for (or points to) steps of actions, or addresses them separately and still as a part of a complex interplay.” (Bratteteig and Verne 2012, p. 52)

I argue that sociomaterial practices cannot be understood through stepwise sequences. Disentanglement cannot be achieved in a stepwise manner. Instead each string of yarn will always be interwoven in multiple other practices with increasingly complexity. Therefore, my suggestion here is to think about the process of distanglement as a bounding activity where the involved actors negotiate what should be included or excluded from the particular sociomaterial practice. No one person has the full insight, since such a full picture does not exist. The ongoing sociomaterial practice is interlinked in all possible political, economical, technological, personal, professional, etc., sociomaterial relations. Therefore, Bratteteig and Verne’s usage of the tile metaphor, which implies that such a complete and neat surface exists, is problematic.

Instead of thinking about processes of disentanglement, we should talk about bounding activities where the involved actors negotiate what is included and what is excluded from the particular sociomaterial practice. The ongoing sociomaterial practices are interlinked in all relevant relationships, such as political, family, economic, etc., and yet interwoven with technology-use-practices.

Thinking analytically about bounding activities and tax work includes acknowledging practices where competent actors bound around what is relevant for the task at hand. They create boundaries for what makes the entity: They bracket the entity. Each string includes some aspects while excluding others. However, keeping to the task at hand is critical for the competent tax officer, since this determines what makes the entity—the bounding of what is relevant to solve the task. As Bratteteig and Verne (2012) also point out, tax work requires competences and analytical capabilities.

So when Bratteteig and Verne write how the different complexities in the tax-tasks might increase and explain how the task can go from imbrication toward a ‘knot’, I agree that different problems have different types of complexities. However, analytically I would explain it differently—namely, as depending upon the task. The bounding of the sociomaterial practice (what is included as relevant or excluded) might be more or less easy to create. In some situations, the
citizen can solve the issue alone by interacting with the website. However, in more complex cases the work of the experts is required, for example, when the citizen calls a very competent tax officer, who then resolves the issue right on the spot. Here the tax officer bound a ‘string’ (a hyphenated or a bracketed string), which is unique in its contribution and effect. If a junior officer had answered the call, he or she would not have been able to bound such a string and the issue would not have been resolved. Yet in other cases the sociomaterial practices of tax work require several actors with different competences to accomplish the work: The tax officer knows the technology and the law; the mother knows her daughter has a tax problem; and the daughter (missing from the telephone interaction) has essential information about her address. Without all the actors and their sociomaterial practices, it is impossible to solve the task.

4 Bounding practices

My take on sociomateriality questions how it makes sense analytically to make distinctions between entanglement types and strategies. Where Bratteteig and Verne view entanglement as reverse engineering with the aim to identify the source of the problem, they claim that such “a logical end” for the problem exists—that it is possible to identify a clear source of the problem. By contrast, when thinking about sociomaterial practices in terms of bounding practices, no such logical end exists; instead sociomateriality depends on the boundings created by the actors, as well as upon the actor(s) creating the particular bounding.

So when Bratteteig and Verne write: “The sociomaterial assemblage of tax needs to be opened up for detailed scrutiny in order for the taxpayer to understand the material agency of some of its constituents” (Bratteteig and Verne 2012, p. 67), I do not disagree with their recommendations for “openness” and transparency within the tax websites bringing autonomy to the citizen. Instead, the issue is that large transparent websites with all the information will not solve the problem of complicated cases where citizens are unable to navigate and handle the complexity of the technology as well as the law. Investigating the Danish tax website, for example, I would judge that the complexity is quite high, and that you can find pretty much all the information there. However, it takes a trained tax officer to really navigate to solve the complex cases. Adding to such websites does not reduce the complexity for the citizen, instead it adds to the complexity of navigating and solving issues.

The sociomaterial analysis helps us to acknowledge that citizens need to be able to call tax officers because they need competent guided bounding in complex cases. When highly complex tax organizations are the foundation for digital society, such as in Scandinavian countries, this task can only be done by experts who are trained to bound and make present information relevant for the particular case.

Bratteteig and Verne suggest that:

“knowing (to some degree) how the entanglement of law and technology works will make it possible to analytically separate human and material agency, and by disentangling change the view of the technology from an entanglement to an imbrication. This will open up for an understanding of if and how a dire situation can be changed, helping a user to go from seeing the situation as “so overwhelmingly difficult as to seem impossible”
(Rose and Jones 2005, p. 29) to a more empowered position.“ (Bratteteig and Verne 2012, p. 68, my emphasis)

I am reluctant to believe that the user will be empowered to separate analytically the human and material agency through knowing, to some degree, the entanglement of law and technology. Actually, I would consider this impossible. Sorting out the sociomaterial practices of tax in the Scandinavian countries demands the highly competent knowledge of experts. It is not enough to be able to read the law, since understanding the law includes understanding the inseparable complex sociomaterial infrastructure, including knowing who has access to what kind of information, both technically as well as socially. I agree that the inseparability of the sociomateriality in tax practices easily becomes overwhelming and might cause citizens to give up. It is indeed very overwhelming and does not immediately make sense to the untrained eye. Thus, it will in many cases be impossible for the citizen to bound relevantly for the particular case at hand, knowing which string to pick to identify all the relevant information related to the tax law, the current social situation, the technology, and the economic situation, etc., and then to bound it all together solving, in some cases, the unidentified issues. In the case of the single father, it is critical that he can call the tax officer. This case might appear simple initially, but in practice solving the issues includes making sense of the bad quality of the telephone conversation as well as the requirement of extra information from the database just to be able to identify the problem.

So, while I agree that the Scandinavian governments’ websites for tax returns could be improved and that the perspective of autonomy is a well-suited approach to do such work, I am less convinced that the solution for us to understand such complexity can be viewed as the two-by-two matrix presented in “Table 2: Entanglement types and disentangling strategies at the time of the call” (Bratteteig and Verne 2012, p. 66). Here the authors combine complexity—in the table entanglement types – and disentangling strategies, where no easy link exists between the two. Instead I suggest that sociomaterial practices are always processes of negotiations—they are never fixed and there are multiple spaces between—and in a design perspective we need to support collaborative actors when bounding together the essential information solving the task at hand.

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6 **References**


