Understanding Sociomateriality through the Lens of Assemblage Theory: Examples from Police Body-Worn Cameras

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Completed Research Paper

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Abstract

IS researchers have used several theoretical lenses, singly or in combination, to shed light on IS phenomena. Such development is encouraged as a necessary ingredient in the intellectual endeavor to build a cumulative tradition. We continue in that endeavor by introducing assemblage theory to provide a lucid elucidation of organizations as social machine assemblages. We provide examples involving the use of police Body-Worn Cameras to illustrate the potential of assemblage theory as a philosophical foundation with the facilities and flexibility to advance understandings along a continuum of configurations of social and material interactions in organizations. Our research contributes to the IS knowledge base by demonstrating how assemblage theory accommodates the oppositional swings in the agency-structure debate, and add clarity to the notion of sociomateriality, a new and evolving area of IS scholarship. Additionally, we augment DeLanda's presentation of assemblage theory to improve its appeal and amenability for IS research.

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Introduction

The central role that theory plays in explicating phenomena related to the IT artifact is not in doubt (Gregor 2006; Bacharach 1989, Orlikowski and Baroudi 1991), and the centrality of IS in the socio-economic life of people and organizations is not in dispute (Orlikowski and Iacono 2001). But what theory can be used to explicate certain IS phenomena is often debated (Cecez-Kecmanovic et al 2014, Leonardi 2013, Scott and Orlikowski 2013, Mutch 2013). At the heart of these debates is the ontological status of entities of interest: be they social, material, socio-technical, or sociomaterial. A recent example is the debate concerning the utility of sociomateriality as an approach that affords novel explanations of IS phenomena. This debate has pitted agential realists who conceive of a so-called *strong sociomateriality*[1], against critical realists who conceive of a *weak sociomateriality* (Jones 2014, p. 917; Mutch 2013). The battle lines have adopted ontological postures that preclude certain explanations and understandings from consideration, and countenance little or no cross-pollination of ideas. Specifically, proponents of critical realism privilege a socio-technical approach over sociomateriality, and consider the philosophical underpinnings of agential realism as a "shaky foundation", calling it a "wrong turning" (Leonardi 2013, Mingers and Willcocks 2014, Mutch 2013). As Mutch (2013) contends: "approaches, particularly those grounding their work in the philosophy of Karen Barad, have some key weaknesses which make them less useful in approaching some combinations of the social and the material that characterize contemporary organizational life" (p. 28).

Proponents of agential realism (Orlikowski 2007, 2010; Orlikowski and Scott 2008) on the other hand, have taken a stance that there is no separation between the social and the material, asserting that "there is no social that is not also material, and no material that is not also social" (Orlikowski 2007, p. 1437). To make their point, they contrast the non-essentialist relational ontology of agential realism against the essentialist project of critical realism. We take the position that there is value in pursuing both claims, although the likely outcome of the debate will be to agree to disagree. To preempt such an outcome, we propose Assemblage Theory as an open tent that affords accommodation for both agential and critical realist viewpoints regarding sociomateriality, while also providing the analytical resources to understand the world of IS in sociomaterial terms. Our focus will be to demonstrate that a sociomaterial approach is not a special case. Rather, it is everywhere in the everyday practice of IS and organization work. What is needed is a theory that can provide a base for conducting, explicating, and understanding sociomateriality research. That theory, in our view, is Assemblage Theory.

Accordingly, the goal of this paper is two-fold: 1) to introduce assemblage theory and demonstrate how its ontological clarity privileges a lucid elucidation of organizations as machinic assemblages wherein heterogeneous human (social) and material (technical) components interact by exercising their actual capacities through relations of exteriority; and 2) to employ the analytical resources of assemblage theory to conceptualize sociomateriality, using cogent examples from the recent implementation of Body-Worn Cameras (BWC) in several Police Departments in Colorado. To do that, we will undertake a construction project of assemblages at different scales, from the personal (police officer and BWC) to the organizational (police department). In line with assemblage theory, this construction project can be approached from the bottom-up as well as from the top-down, for its ontological foundation rejects Hegelian totalities[2] and the notion of a seamless structure. Our research contributes to the IS knowledge base by introducing assemblage theory to accommodate the oppositional swings in the agency-structure debate, and add clarity to the notion of sociomateriality. We demonstrated how both a strong agency-structure duality and a constitutive one derives from an analysis of the distinctiveness (or lack thereof) of the roles played by an assemblage's form of content and form of expression in the face of ongoing processes to stabilize/destabilize the assemblage. Furthermore, we highlight the concept of "capability/capacity" to explain away the value-laden proposition of human and nonhuman agency. Finally, we augment DeLanda's concise and

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[1] Strong sociomateriality holds that the social and material are inseparably entangled and mutually constitutive of each other. It subscribes to a non-essentialist relational ontology of agential realism, which asserts that "agencies are not attributes of either humans or technologies but ongoing configurations of the world" (Leonardi 2013, citing Barad 2003, p. 818). Weak sociomateriality, on the other hand, assumes the "inherent distinction between human and material agencies while simultaneously denoting their synergistic interaction" (Cecez-Kecmanovic et al 2014, p. 813). Its philosophical underpinning is in critical realism, which assumes that "structure logically predates the actions that transform it, and that structural elaboration logically postdates those actions" (Leonardi 2013, p. 68).

[2] A totality as conceptualized by the philosopher, Georg Hegel, is akin to a seamless organismic whole or unity, in which "there is a strict reciprocal determination between parts" (DeLanda 2006, p. 9).

approachable presentation of assemblage theory with original formulations from Gilles Deleuze and Felix Guattari (the theory's creators) to illustrate its repertoire and facility for sociomaterial and other IS research approaches. This augmentation will improve the theory's appeal and amenability as a viable lens that IS and organizational scholars can use to explicate IS and organizational phenomena.

The rest of this paper is organized as follows: Section II introduces assemblage theory, its topological features and ontological claims. Section III uses the resources of assemblage theory to conceptualize sociomateriality; Section IV presents instances or scenarios of sociomateriality in the police department assemblage; Section V constructs the police department and police officer as assemblages of the social and the material; and Section VI summarizes and concludes the discussion.

Assemblage Theory

As a practice theory, the main interest of assemblage theory is not to interpret phenomena, but to explain how human and non-human parts function together to drive our experiential phenomena. It strives to explicate how a multitude of heterogeneous human and non-human parts enter into composite relation and how they co-function as a whole. Given the practical nature of these questions, assemblage theory inevitably starts with redefining the ontological status of human subjectivity and non-human materiality to construct a social theory.

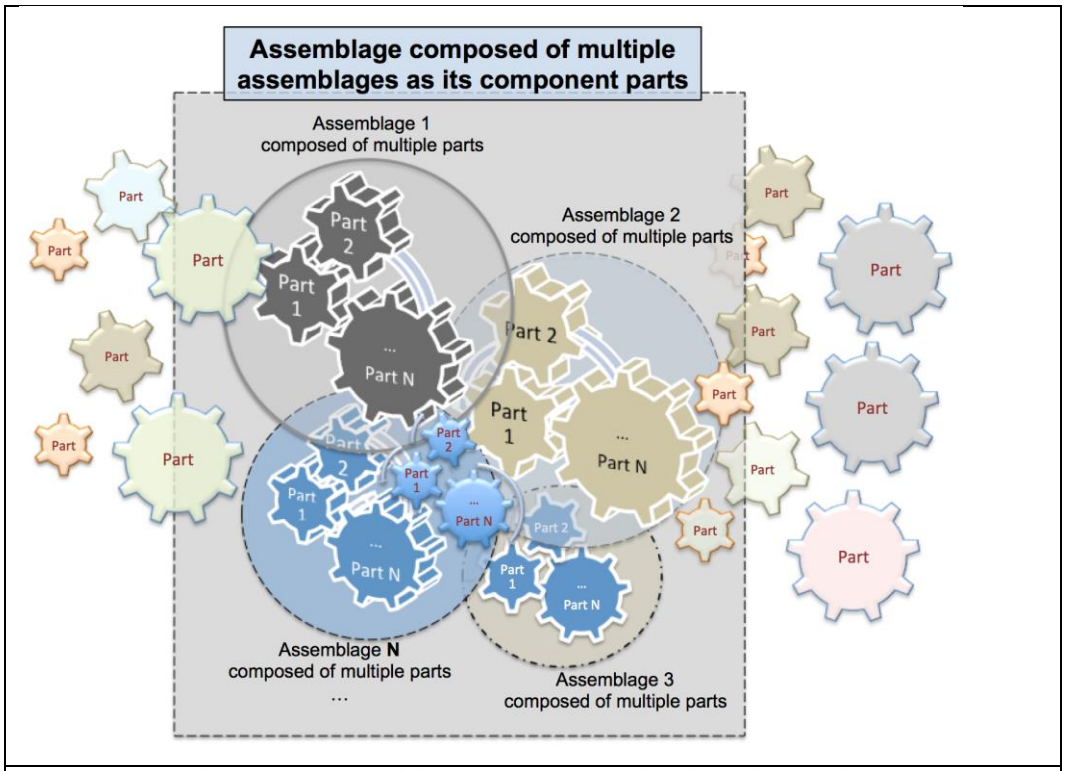

Figure 1. Assemblage as an Organizational Machine

In assemblage theory, "thing" (depicted as many parts in Figure 1) is not an "inert object" at all, "[b]ut the object itself is force, expression of force" (Deleuze 1983, p.6)[3]. Thing has agential capabilities to act upon

[3] *In this paper, for a better reading flow, object, part and thing are used interchangeably. One caveat is that it is important not to consider 'object' as opposed to human 'subject.' Rather, at the ontological level, 'object' or thing can indicate any entity, be it human or non-human, so long as it has agential capabilities to affect other object-thing-subject. That is, as far as object can exert its own capability to affect others, object can be seen as a performative subject in that it can express its capability to act upon. In fact, defining object from the view of capability (to affect or to be affected) is a unique characteristic of Deleuzean practical philosophy.*

the actions of other parts. In Figure 1, depending on the connection one part makes with another part, its own capability as well as the overall composite capability of the assemblage can change. If a part enters into relationship with another part that agrees with each other's characteristics, then its own and overall composite capability of the assemblage will be enhanced. This is a case of a good encounter in that the parts are well assembled to function as an improved whole. In contrast, if the characteristics of the two parts don't agree with each other, then it is a badly assembled connection, which will lead to decreased capability (Deleuze 1988, p. 48-51).

When looking at an object from the view of *what it can do*, not from the view of *what it is*, every object is a *partial object*. This is because its performative capability can change depending on the capability of other objects it may encounter. If an object gets assembled with other agreeable objects, then its composite capability will increase. If not, its composite capability will decrease. Therefore, from the practical view of what an object can do, an object is always a "partial object," because its capability is in an indeterminate state, being open to constant change depending on other objects that it may encounter (Deleuze and Guattari 1983, p. 1-8, 42-50).

In fact, defining things (be they human or non-human) from the view of force (or capability or agency) is essential to understanding what assemblage theory aims to do. As a new ontology, its primary goal is to create a scaffold to subvert the limitation of the term *structure,* which has been a fundamental concept in traditional social theories (Dosse 2011, pp.223-240). That means, while both structure and assemblage contain human subjects and nonhuman objects as their constituent parts, their implications are radically different. The main difference is that, while (human and nonhuman) parts in structure are static, stable, and therefore easily exchangeable with other parts, parts in assemblage are dynamic, complexly connected to other parts' movements and not easily exchangeable. Therefore, in assemblage theoretic view, adding a new part into an incumbent assemblage or replacing an old part with a new part require the additional processes of de-configuration, configuration, and re-configuration of the assemblage until the newly formed assemblage is stabilized. As a new social model, assemblage functions like a *machine,* rather than stays like a *structure*. In that regard, assemblage is interchangeable with the famous concept of social machine in the literature of Deleuze and Guattari (Deleuze and Guattari 1983; 1987).

The machinic assemblage model enables us to move away from the structural assumption that "one operates in the object, and the other in the subject" (Deleuze and Guattari 1987, p.5) by erasing the line of "distinction between object (remaining always the same outside of man) and subject (trying to reach and know it)" (Kim 2013, p.2). In this practice view, the binary opposition between subject and object is just an analytical line to raise questions like 'what *is* subject and what *is* object'. In assemblage theory, the focus is more about relational as well as ontological issues in that it raises questions like 'what human subject and nonhuman things *can* do and how they *co-function*'[4]. Reflecting the original French meaning of *agencement,* which is translated as *assemblage* in English, gives a clear sense of what assemblage is. It is the "arrangement of parts of a body or machine," "fixing (fitting or affixing) two or more parts together," "the act of fixing and arrangement itself, as in the fixtures and fittings of a building or shop, or the part of machine" (Phillips 2006, p. 108).

There are many definitions of assemblage theory. We will use the following quote, which captures most of the essential elements, to describe a few key ideas of assemblage theory. In an interview, Deleuze explains assemblage as follows:

> "[Assemblage is] … a multiplicity which is made up of heterogeneous terms and which establishes liaisons, relations between them, across ages, sexes and reigns – the different natures. Thus the assemblage's only unity is that of a co-functioning: it is a symbiosis, a 'sympathy'. It is never filiations which are important, but alliances, alloys; these are not successions, lines of descent, but contagions, epidemics, the wind." (Deleuze and Parnet, *Dialogues II, cited in DeLanda 2006, p. 121, note 9).*

Part-to-Whole Relationship: An assemblage is never just a determinate part or a determinate whole. It is always in a part-to-whole relationship in which the capabilities of component parts inhere until their capacities are exercised by interacting with the capabilities of other component parts. Similarly, the

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[4] Deleuze even restates the statement of "God exists" as "God-form functions" (Deleuze 2012, p.107). This is a good example of raising a practical question in assemblage theory.

properties of the whole are not mere aggregates of the properties of the component parts, but emerge as a result of interactions among component parts. A multitude of heterogeneous component parts work together to form an assemblage, and an assemblage expresses a bundle of forces as a composite expression of connected parts. Once multiple parts are assembled and begin to function together, there emerge new singular properties of an assemblage, and the assemblage can function as a component part of a larger assemblage. For this reason, an assemblage is not just an aggregation of multiple parts. Rather, once an assemblage is formed, its properties are not reducible or decomposable into the properties of its individual parts. It follows that an assemblage is a dynamic entity, whose properties defy *a priori* determination. That is why, in Figure 1, the boundary lines of assemblages are depicted with dotted lines to indicate that the boundary of an assemblage can be redrawn with an entrance of new parts into an assemblage.

The properties of irreducibility and decomposability are what set assemblages apart from other part-to-whole relationships, such as totalities. As Deleuze and Guattari (1987) point out, assemblages are "never unifications, never totalizations, but rather consistencies or consolidations" (p. 507). And since, depending on the type of interactions, component parts of an assemblage may exercise their capacities differently, the assemblage is always an emergent entity.

Relations of Exteriority: As a dynamic social model, assemblages are characterized by multiple relations of exteriority. As stated in the above quote, connections with other component parts are "never filiations which are important, but alliances, alloys." Filiations are characterized by hereditary and successive "lines of descent" within a same species, like from children to parent to grandparent etc. The successive and linear connection is inevitably represented as the backward regression to the origin and a forward progression to the end, where there is no space for connections of heterogeneous parts and emergence of new assemblages. It is a line of homogeneous connections. This insight comes from studies on evolutionary history that dynamic culture and history have emerged when a tribe interacts with different tribes – be it through marriage, war, or alliance – by exchanging mates, materials, food and different knowledge etc. (Deleuze and Guattari 1987). Therefore, in the above quote, Deleuze emphasizes that assemblage is more about "alliances, alloys" between heterogeneous parts, not successive filiation. In other words, an assemblage operates like a rhizome by expanding its connections in multiple ways.

Being heterogeneous multiplicities, assemblages are characterized by relations of exteriority, which implies a certain autonomy for component parts in that they have agential capabilities to affect and/or to be affected. That is, the relation between component parts of an assemblage may change without the terms necessarily changing. (In mathematical terms, one can say that $x + y = z$ or $x = z - y$. Or it can be expressed like dy/dx as a change of one component part in relational to other component part). Good examples for the relation of exteriority include the evolution of modular software that can be detached from or plugged into other systems through application programming interfaces (APIs), or what Yoo et al. (2010) called "the layered modular architecture" in IT infrastructure. A major implication of this is that component parts of one assemblage may be detached and plugged into another assemblage, where its interactions may or may not be the same (DeLanda 2006, p. 10). And, its interactions are expressed as a bundle of different capabilities.

Micro-Macro scale*:* For as long as social theory has existed, dissolving the chasm between micro and macro analysis of social phenomena has been a perennial challenge. Social science disciplines have traditionally sidestepped this challenge by channeling discourses towards a specific scale—micro or macro. Economics, for example, has abstracted a rational individual, making utility-maximizing decisions in isolation, as a methodological escape to micro-reductionism, while in sociology, social structure is abstracted as a macro-reductionist device to study society. In contrast, assemblage theory provides a framework to link the micro-macro divide by accounting for the successive embedding of *smaller* assemblages within *larger* assemblages, and elucidating the connections between them, wherein each assemblage affects the assemblages with which it is interacting, while also being affected by the larger assemblage. From Figure 1, we can see that multiple assemblages with multiple component parts, work as components parts for a larger assemblage. The depiction of the micro-macro relationship is in a relative scale, depending on the locations and connections of component parts. As DeLanda (2006) observes: "assemblages, being wholes whose properties emerge from the interactions between parts, can be used to model any of these intermediate entities: interpersonal networks and institutional organizations are assemblages of people; social justice movements are assemblages of several networked communities; central governments are assemblages of several organizations; cities are assemblages of people, networks,

organizations, as well as a variety of infrastructural components, from buildings and streets to conduits for matter and energy flows; nation states are assemblages of cities…" (p. 5). This is a powerful practice lens that "directs attention to how macro-phenomena are constituted by micro-interactions, and how those micro-interactions, in turn, are shaped by macro influences and effects" (Schultze and Orlikowski 2004, p. 88).

***Tetravalence**:* To understand assemblages, we need four variables. Deleuze and Guattari (1987) specify the four variables thus: "[T]he assemblage is tetravalent: (1) content and expression; (2) territoriality and deterritorialization" (p. 505), and further suggest that "the concrete rules of assemblage thus operate along these two axes," which we visualize as Figure 2. The horizontal axis describes the roles the component parts of an assemblage play, and the vertical axis defines the processes at play on the assemblage in a specific "milieu."

The horizontal axis reiterates Deleuze's (1983) idea on object-part-thing that "the object itself is force, expression of force" (p. 6). He argues that every component part in an assemblage has two inseparable dimensions: (1) materials as its 'content' and (2) forces or capabilities as its 'expression'. Therefore, in assemblage theory, in order to analyze the role of a component part that functions as a whole, we need to look at both how its materials are formed (i.e., form of content) and what they express (i.e., form of expression). Obviously, when one component part enters into relation with another component part, we need to observe how materials and expressions of various component parts will function together to de-/re- compose a new whole of an assemblage. It is worth repeating that the "assemblage no longer presents an expression distinct from content" (Deleuze and Guattari 1987, p. 505). Therefore, we label its inseparability as "material expressivity"[5] in Figure 2 below.

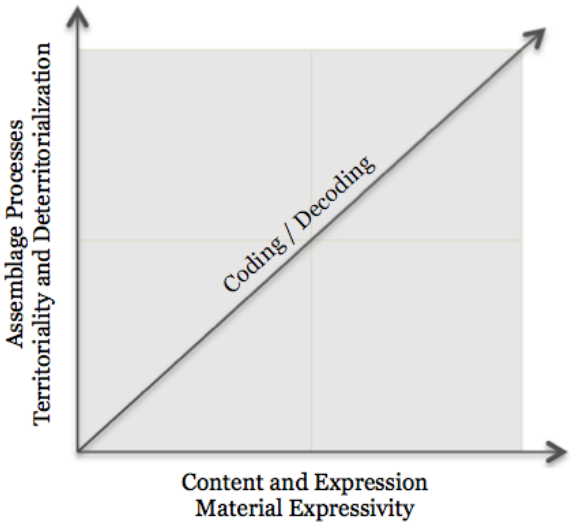

Figure 2. Tetravalence of Assemblages

The vertical axis depicts the processes that arise when multiple and heterogeneous component parts interact with each other. The processes always arise in the middle of specific "milieus." (Deleuze and Guattari 1987, p. 505). Therefore, recognizing the current "territoriality" is critical in the analysis of the assemblage. The expression of "territory" exhibits the aspect of Deleuzian practical philosophy. The French etymology of *terre,* which is translated as 'earth,' 'land,' 'ground' in English, indicates that an understanding of assemblage should originate right from the material ground that it is currently situated, and, therefore, it is important to understand how the introduction of new component parts into the current territory will de-/re-territoritorialize (i.e., de-stabilize or re-stabilize) the currently territorialized zone. Essentially, the vertical axis describes the variable processes characterizing an assemblage at any point in space and time—

[5] *DeLanda coined the expression of "material expressivity." For its practical implication and usage, refer to https://lebbeuswoods.wordpress.com/2009/01/05/manuel-delanda-matters-4/. (Accessed May 7th, 2016).*

processes of deterritorialization in a territory. The process of territorialization stabilizes the assemblage and gives it its identity, by "increasing its degree of internal homogeneity or the degree of sharpness of its boundaries." (DeLanda 2006, p.12). Every assemblage has a territory that envelopes it (Deleuze and Guattari 1987, p. 503). Therefore, to understand the dynamics of an assemblage, it is essential to recognize that the "territory is just as inseparable from deterritorialization as the code from decoding" (Deleuze and Guattari 1987, p. 505). In that regard, while Figure 2 is drawn as a rigid two by two matrix, in fact, those four variables work on a continuum like as in chemical interaction and reaction, which is clear in the choice of Deleuze and Guattari's expression of "tetravalence".

It is worth emphasizing that in assemblage theory, to analyze the role of component parts in an assemblage, we need to look at both how its materials are formed (i.e., form of content) and what they express (i.e., form of expression). Deleuze and Guttari (1987) later develop the form of expression into a "*semiotic systems*" that afford conditions for communications between various component parts (including human and nonhuman ones), and elaborate the form of content into a "*pragmatic system"* that affords an ontological condition for action and reaction between various components (p. 504). Therefore, analyzing an assemblage always involves explicating the play of the double articulation between the form of content and the form of expression.

A form of content is defined as a "complete state of things" that forms a visible contour, and manifests itself through operations of connected material components (for example, technology artifacts and arrangement of various devices). The form of expression is defined as "a set of statements" that collectively form an invisible contour, and manifests itself through operations of various linguistic (e.g., human expressions) and non-linguistic expressions (e.g., computer algorithms, mathematical formula, or work process) (ibid, p. 66). These two concepts are useful to understand the dynamics of modern organizations where IT infrastructure is essential for its everyday practice. Moreover, the materialist understanding of objective thing has significant importance in that it restores the downplayed status of material technologies in organizations, and highlights the importance of arranging, assembling, configuring, and governing various technologies as a set of things (i.e., form of content) and as a set of statements (i.e., form of expression). In assemblage theory, technologies are no more inert tools that can be employed by human agency. They are bundles of capabilities that can affect upon and to be affected by others, be it human or non-human.

Figure 2 articulates an additional axis that depicts a coding/decoding process. This articulation is a simplification device employed by DeLanda (2006) to account for Deleuze and Guattari's synthetic process, which is the coding that acts upon territorialized assemblages to yield strata or the flip process of decoding that produces deterritorialization. [6] In organization and society, coding/decoding is effected by constitutions, charters, ordinances, regulations that spell out the rights and obligations associated with formal roles. However, the notion of Deleuze and Guattari's coding/decoding goes beyond such humanistic examples of coding/decoding, which Lazzarato (2014) classifies as "signifying signification" processes (p. 113-125). As a process that spells out order and strata during the (de-) terrioritorialization processes, they highlight machinic coding processes executed through various "diagrams, programs, budgets, management indicators, accounting figures," computer algorithms, system access procedures, authentication and authorization processes etc., which Lazzarato (2014) classifies as "a-signifying signification" process since "they do not speak [like human] but function" (p. 115). The essence of the co-functioning of *the signifying signification and asignifying signification* process is to consider that human and nonhuman materials work together to synthesize organizational territory by rendering economic codes, social codes and political codes that govern the relational dynamics among heterogeneous component parts.

The following heuristic, constructed from DeLanda's presentation[7], demonstrates the relationships among the synthetic processes of an assemblage. The process of territorialization, which is the first synthetic process, has distinct form of content and form of expression, while coding, which is a second synthetic process, acts primarily on territorialized assemblages. Considering an organization as an assemblage, this is how the heuristics works: An organization with low territorialization (blurred boundaries) and low coding

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[6] The third dimension deviates from Delueze and Guattari's formulation of assemblage theory. While we retain it to simplify the discussion, we revert to Deleuze and Guattari's language of a double articulation (of a first and second synthetic process). This original formulation is, in our view, more amenable to a conceptualization of sociomaterial assemblages, which we describe later.

[7] Presentation to the European Graduate School (2011), www.egs.edu/manueldelanda

(loose organizational structures) is essentially deterritorialized (destabilized, contingent and emerging); whereas an organization with sharp boundaries (high territorialization) and low coding has the characteristics of an assemblage (roles, processes and coding). On the other hand, an organization with sharp boundaries (high territorialization) and high coding is a strata. The three layers[8] resulting from this heuristic can be used to conceptualize sociomateriality from the point of view of assemblage theory (see Figure 3). The amenability of an assemblage to a decomposition of its component parts into "form of content" and "form of expression," exemplifies the analytical capabilities of assemblage theory, while the synthetic processes of territorialization and deterritorialization demonstrate the emergent nature of its parts to whole relationship. Buchanan (2000) further explains that the double articulation of the assemblage "logically succeeds one another but in actual fact take place simultaneously" (p. 12, cited in Price-Robertson and Duff 2016, p. 64). The first articulation is a process of selection and grouping, while the second is a process of congealing or "actualization of potential" (Price-Robertson 2016).

Table 1: Synthetic Processes of Assemblages		
Territorialization	**Degree of Coding**	**Result**
Low	Low	Deterritorialization
High	Low	Assemblage
High	High	Strata/Territory

Ontological and Epistemological Claims

Having introduced the basic topological features of assemblages, we now discuss at a conceptual level, the amenability of assemblage theory as a lens for studying and explicating IS phenomena; in particular, sociomateriality. Following Orlikowski and Baroudi (1991), we employ Chua's (1986) framework, which articulates three sets of beliefs as fundamental to our researching and understanding of the world around us. Specifically, these entail 1. Beliefs about the phenomenon or "object" of study, 2. Beliefs about the notion of knowledge, and 3. Beliefs about the relationship between knowledge and the empirical world (Chua, 1986, p. 604).

Beliefs about Physical and Social Reality

Beliefs about physical and social reality deal with the "essence of phenomena under investigation" (Orlikowski and Baroudi 1991). The extension of the notion of assemblages to encompass both material and social entities, gives assemblage theory its realist credentials, and asserts an ontological stance that is committed to a mind-independent existence of reality (DeLanda 2002, 2006). This is not to say that social entities exist independent of human minds; rather, they exist independently of the conceptions humans may have of them. That is, the theories, conceptualizations and models humans develop to study social entities can be objectively wrong. The commitment to a conception-independent reality of social entities is shared by agential realism (sociomateriality). Assemblages are constructed out of all-inclusive objective historical processes, including cosmological, evolutionary, and human history (DeLanda 2006, p. 3). Furthermore, as DeLanda (2006) points out: "the ontological status of any assemblage, inorganic, organic or social, is that of a unique, singular, historically contingent, individual" (p. 40). That is, social entities such as, "institutional organizations, urban centers, or nation states are…not abstract totalities, but concrete social individuals with the same ontological status as individual human beings but operating at larger socio-temporal scales" (DeLanda 2002, p. 147). Such an ontology, which eschews logical classification of entities (for example, classifying animals into Genus, Species, Individual; or countries into first world, second world, third world), is said to be relational or flat, and non-essentialist (DeLanda 2006, Scott and Orlikowski 2013).

[8] *The layers depicted in Figure 3 are for illustrative purposes only. The processes acting on an assemblage at any given time are dynamic and fluid, resulting in an emergence or becoming that is difficult to tell apart (Deleuze and Guattari 1987).*

Beliefs about Knowledge

In assemblage theory, language plays an important role in conveying meaning and acquiring knowledge, but that role is not constitutive. Thus, it is accepted that sensemaking is conveyed through means other than language alone. Non-linguistic forms of expression, called *a-signifying semiotics* by Lazzarato (2014), such as dress, diagram, computer systems access procedure, authentication process etc., all convey meaning and are equally important. The epistemological model advanced by Deleuze recognizes the "genesis of subjectivity" as an alternative to "the thesis of the linguisticality of experience" (DeLanda 2006, p. 47-48). In this model, "principles of association" and "principles of passion" are both important as means to organize and establish relations among ideas (ibid p. 49).

The methodological framework of assemblage theory is based on historical empiricism, which holds that social and material entities can only be understood historically, through an analysis of what human and nonhuman components can do and how they can co-function as a whole Thus, as Price-Robertson and Duff (2016) explain, "the properly *empirical* task is to demonstrate how assemblages of differing scales are actually produced (or made) in a given set of circumstances, rather than to treat scalar units such as "family," "community," "city," or "region" as necessary methodological presuppositions" (p. 70). DeLanda (2006), further clarifies that analytical, empirical work with assemblage theory, must be causal, "concerned with the discovery of the actual mechanisms operating at a given spatial scale" (p. 31), which includes linear, quasi- and non-linear causality.

Relationship between Theory and Practice

Assemblage theory affords a link between theory and practice through its emphasis on causal analysis rather than logical analysis (Delanda 2006). Because each assemblage is the product of a historical process, the theory lends itself to questions requiring a processual analysis. Furthermore, assemblage theory is not apolitical. Both Deleuze and Guattari held strident leftist political views and saw the post-war intellectual project of state philosophers as subservient to the state's capitalist interests. As such, assemblage theory affords analysis and explanatory tools to counterbalance undue state burdens on the masses.

Conceptualization of Agency-Structure Dualism in Assemblage Theory

Deleuze and Guattari employ a machine metaphor to transcend the limitations of the agency-structure duality. The machinic assemblage model enables us to move away from the rigid "distinction between object (remaining always the same outside of man) and subject (trying to reach and know it)" (Kim 2013, p.2). In this practice view, the binary opposition between subject and object is just an analytical line to raise questions like 'what *is* subject and what *is* object'. In assemblage theory, the focus is on questions pertaining to 'what human subject and nonhuman things *can* do and how they *co-function*. Nevertheless, we can derive conceptualizations of agency-structure in assemblages. We do so by situating the discussion within an appropriate layer of assemblages, as depicted in Figure 3 below. The layers of the assemblage are produced through a second synthetic process involving coding/decoding of a territorialized assemblage.

Deleuze and Guattari's Assemblage Theory accounts for both a strong duality and a constitutive one. As discussed above, assemblage theory parameterizes two roles and two processes, which define a space of possibilities from which structure and/or agency may be temporally augmented, depending on the degree of coding/decoding of the assemblage (Deleuze and Guattari 1987, p. 505). For example, a highly coded assemblage evinces distinct form of content (realm of action) and distinct form of expression (realm of structure), akin to a strong duality. The homogenous nature of such an assemblage (for example, a sclerotic government), can provoke agentic political action for change. During an intensive process of change, the assemblage can become decoded, losing its identity and presenting a form of content and form of expression that is no longer distinct. Thus neither structure nor agency is privileged. Rather, each or both will become evident in the manifestation of a solution to a problem or sets of problems.

Over the past several decades, successive debates and critiques concerning the agency-structure dichotomy in the fields of IS and Organizing have shifted from technological determinism to social constructivism. Leonardi and Barley (2010, p.3) lamented these theoretical swings by invoking the notion of cultural antinomies in anthropological studies and suggesting that IS scholars "integrate by devising ideologies or theories that embrace both poles of an opposition simultaneously, as in the Taoist notion of yin and yang."

Social constructivists, such as Giddens (1984), attempt to resolve the agency-structure dualism by proposing mutual constitution, whereby social phenomena are the product of both structure and agency (Jones and Karsten 2008). In the case of Actor-Network Theory (ANT), which espouses a social realist ontology akin to AT's, the actualization of "actants" (human and non-human actors) as core entities, betrays a materialistic sensibility. Much of the debate and controversy surrounding ANT revolves around its claim that "non-humans have agency" (Latour 1996, Sayes 2014). While assemblage theory also extends agency to nonhumans, it distinguishes between human agency and nonhuman agency by ascribing affect and desire to only humans, and ascribing gene coding to only organic entities (DeLanda 2006).

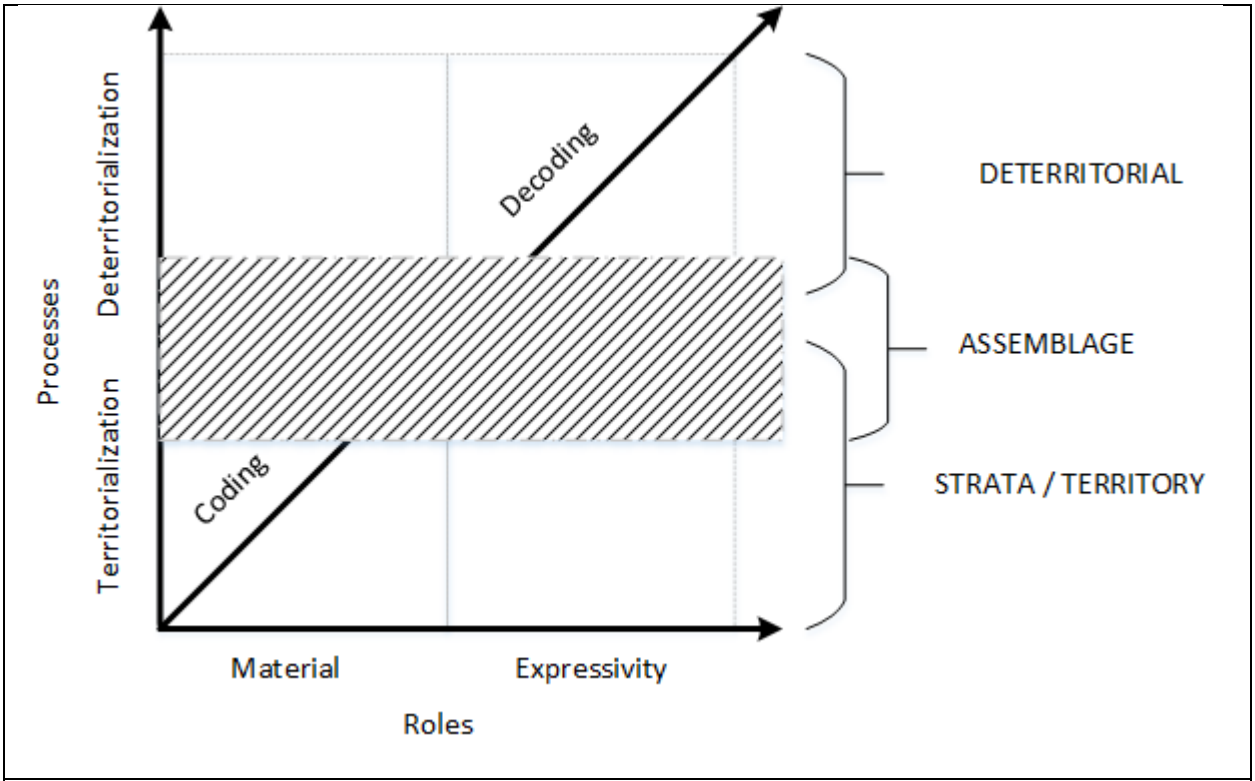

Figure 3: The Layers of an Assemblage

The recent debates on socio-technical systems and sociomateriality suggest that theoretical integration of the agency-structure debate is still an unresolved question. Assemblage theory provides the tools and analytical resources to transcend the agency-structure debate. As Buchanan (2015, p. 390) points out, "in practice, the assemblage is the productive intersection of a form of content (actions, bodies and things), and a form of expression (affects, words and ideas). The form of content and the form of expression are independent of each other–their relationship is one of reciprocal presupposition (one implies and demands the other but does not cause or refer to it…)." This articulation not only attends the polar extremes of agency and structure, it also countenances the various configurations of a form of content and a form of expression along a continuum between these two poles (Deleuze and Guattari 1987, DeLanda 2006). As such, analysis of phenomena evocative of a strong duality or of a constitutive duality is distinctively possible in assemblage theory. Additionally, the concept of an assemblage allows IS scholars to address issues at any level of analysis (micro, meso, macro, etc.), using the same analytical resources within the same theoretical framework. More importantly, by focusing on the actual capabilities/capacities emanating from component parts of an assemblage, assemblage theory attempts a resolution by channeling the oppositional forces of yin and yang into chi, the immediate synthesis of the multiple.

In the next section, we demonstrate how assemblage theory's transcendence of the agency-structure duality affords a conceptualization of socio-technical and sociomaterial assemblages.

Socio-Technical Systems Assemblages

The development of a socio-technical systems approach has been attributed to the work of the Tavistock Institute of Human Relations in the 1950s (Cecez-Kecmanovic et al, 2014, Mutch, 2013), which sought "to emphasize the interrelatedness of technological and social systems" (Ibid, referencing Bjorn-Andersen et al. 1982). Recently, IS researchers with a philosophical bent towards critical realism, have appropriated the socio-technical systems approach to emphasize the ontological distinction between the social and technical (Cecez-Kecmanovic et al, 2014, Mingers and Willcocks, 2014, Mutch, 2013), and uphold a strong duality between the social (represented as structure) and material (represented as technology) (Leonardi, 2013). In critical realism, the relationship between agency and structure is that of an analytical dualism (Bygstad et al. 2016), where social structure exists independently of human action. As Mutch (2013) concludes in his polemic on sociomateriality: "there is considerable value in adopting a non-conflationary approach at the level of the perspective, informed by the philosophical resources of critical realism, to the novel phenomena represented by socio-material systems" (pp. 38).

Ontological differences notwithstanding, the analytical resources of assemblage theory can be deployed to conceptualize socio-technical systems. Such a conceptualization fits within the second synthetic process of assemblages, which yields strata. The process of stratification evinces a strong duality of structure and action, which is the accepted conceptualization of socio-technical systems (Leonardi 2013). Stratification is a process of "hardening" or actualization of the potential of the assemblage through successive coding and high territorialization. In the strata, component parts regain distinct roles depicting a form of content (physical and material things, including technological artefacts, reflective of action) and a form of expression (codes and constitutions reflective of structure). However, Delueze and Guattari (1987) consider strata as "the work of God" (p. 505), which is to say that such a highly differentiated duality can only be approximated in practice. Institutional organizations like the Military or a police department, may come close to this approximation. Furthermore, strata is not a state of permanence. The same processes of decoding and deterritorializing that are present in assemblages also act on strata, eventually opening it up to interaction with other assemblages, or changing its identity. Thus, there is a temporariness and precariousness associated with strata, much like an assemblage. Accordingly, from the point of view of assemblage theory, a socio-technical approach cannot be privileged over other approaches as the only pathway to investigate the complex relationship between the social and material in organizations. Other approaches are possible; sociomateriality being one of them.

Sociomaterial Assemblages

The notion of sociomateriality entered popular discourse in IS due in large measure to the writings and research of Wanda Orlikowski and Susan Scott (Orlikowski 2007, Orlikowski and Scott 2014, 2008, Orlikowski and Scott 2015). Driven by a determination to neutralize the privileging of human over material aspects in organizational research, Orlikowski and Scott (2008) wrote: "Going forward, we suggest that further work is needed to theorize the fusion of technology and work in organizations, and that additional perspectives are needed to add to the palette of concepts in use. To this end, we identify a promising emerging genre of research that we refer to under the umbrella term: *sociomateriality*. Research framed according to the tenets of a sociomaterial approach challenges the deeply taken-for-granted assumption that technology, work, and organizations should be conceptualized separately, and advances the view that there is an inherent inseparability between the technical and the social" (p. 434). Deleuze and Guattari (1983, 1987) present concepts of social machine, technical machine, and abstract machine that carry connotations of sociomateriality. The term machine is introduced to overcome the limitation of the term structure in social studies. As mentioned before, while both structure and machine contain human subjects and nonhuman objects as their constituent components, their implications are different. In structure, components (human and nonhuman) are static, stable, and therefore, exchangeable, whereas in machine, they are dynamic, complexly connected to other components' movements and therefore, not easily exchangeable. Thus, while the structure model is static, the machine model is dynamic. The advancement of social theory based on the dynamic machine model privileges the examination of organizational dynamics where heterogeneous human and nonhuman components are complexly connected to operate as an assemblage. Using the machine concept for the study of organizational dynamics, where digital technologies exist as critical components of the organizational machine, researchers can move away from the structural assumption that "one operates in the object, and the other in the subject" by erasing the line

of distinction between object and subject (Deleuze and Guattari 1987, p. 5). This, in essence, is sociomateriality.

In assemblage theory, sociomateriality can be operationalized from the point of view of the on-going processes of deterritorialization and decoding acting upon assemblages. According to Deleuze and Guattari (1987), "the territoriality of the assemblage originates in a certain decoding… and is just as necessarily extended by lines of deterritorialization… following these lines, the assemblage no longer presents an expression distinct from content, only unformed matters, destratified forces, and function" (p. 505). Deterritorialization processes can result from the introduction of a new technology component in an organization, which will inevitably accompany new forms of content (the technology and attendant material components for its deployment), and new forms of expression (manuals, procedures, protocols, work standards, reporting hierarchies, etc.). The imposition of these new forms of content and of expression on top of existing routines has the potential to open up the assemblage to new opportunities, which can be transformative and beneficial, or destabilizing and catastrophic.

Jones (2014) identified five key notions of sociomateriality. We use these notions to determine how they are conceptualized in assemblage theory.

Table 3. Notions of Sociomateriality and Socio-technical Systems Conceptualized in Assemblage Theory

Concept	Sociomateriality	Socio-Technical	Assemblage Equivalent
Materiality	A process of materialization enfolding in material-discursive practices of IS development, implementation and use (Cecez-Kecmanovic et al 2014)	The arrangement of an artifacts physical and/or digital materials into particular forms that endure across differences in place and time (Leonardi 2013)	Initial articulation of distinct form of content and form of expression and the fusion of both in subsequent articulation
Inseparability	Inextricable entanglement of the social and the material (Jones, 2014)	Enactment of a particular set of activities that meld materiality with institutions (Leonardi 2013)	Second articulation involving processes of decoding and deterritorialization resulting in inseparability
Ontology/ Relationality	Relational ontology that dissolves analytical boundaries between technology and humans (Jones, 2014); / Interiority of relations	Layereded ontology accepting of essences (Bygstad et al. 2016) / Exteriority of relations	Realist social ontology that rejects essences and treats social, natural and inorganic entities as independent of human conceptions of them; Exteriority of relations
Performativity	The idea that certain utterances have the capacity to achieve social outcomes (Jones, 2014)	Predominantly linguistic means of sensemaking	Form of expression includes both linguistic and non-linguistic components
Practice	The entanglement of technology and everyday practices (Cecez-Kecmanovic et al 2014)	The space in which social and material agencies become constitutively entangled through the process of imbrication (Leonardi 2013)	Assemblages at various spatio-temporal scales

Constructing the Police and Body-Worn Camera[9] Assemblage

The introduction of Body Worn Camera (BWC) technology in police departments has created, intentionally or not, what we call a "hybrid" police officer. That is, a human police officer fitted with a BWC, resulting in a constitutive and entangled human-machine relationship. While, for the sake of convenience, we can discern a sharp separation between material and human components of a hybrid police officer, compelling and contentious questions require a sociomaterial analysis at the police and BWC assemblage. For example, the very question about whether BWCs play a predominantly law enforcement (material) role, or a predominantly legitimization (expressive) role, depends on who you ask. From a police department's point of view, BWCs are a law enforcement tool (material), useful for identifying and documenting evidence that could be used for prosecution in a court of law, or adjudicate the merits of citizen complaints against police officers. From a community activist's point of view, BWCs are a legitimization (expressive) tool, needed as a check and balance mechanism to ensure that police authority is not exercised at the expense of individual rights and freedoms. Hence, the true essence of BWC is not given, but emerges from its constitutive entanglement in the practice of police work, which is contingent on the orientation of the observer and the observed. To use assemblage theory for the study of organizational dynamics involving the deployment of BWCs, it is necessary to focus on how agential capabilities of BWCs affect upon and are affected by the human components of the police officers wearing them. For instance, police interactions with citizens have for a century been verified solely by accounts narrated by police officers based on their memories. In most cases, if there is a discrepancy between the officer's and the citizen's account of an interaction, the officer's account has been taken for granted. Recently, with the record and playback capability of BWC, the human's capability to memorize and narrate interactions is not taken for granted unless it is now corroborated by BWC's audio-visual evidence. As such, trust for a police officer's capability to memorize and narrate is now challenged and reconstituted by the technological capability of BWC and its inseparability from the evidence documentation and presentation processes. The use of BWC is also challenging essential police department practices including internal affairs investigations, police officer training, and supervision processes.[10] The following scenario demonstrates sociomateriality in practice with police BWCs.

Constitutive Entanglement of Police and Body Worn Camera Assemblages

Imagine a police officer ("Officer P") on foot patrol in the downtown of a great American city. Leering through an alley, Officer P noticed what seemed like a drug deal in progress. He adjusted his glasses and walked in the direction of the two suspects, one of whom is a notorious drug dealer known to police. A sentry informed the two men about the approaching police officer. The dealers bolted in different directions and Officer P gave chase. After two quick turns, Officer P lost track of the suspects. Exhausted and exasperated, he went back to his police cruiser and typed in a report. That was three years ago.

Now, imagine Officer P again in the same alley, observing the same transaction with the same suspects. This time when he adjusted his glasses, he activated the attached BWC. The camera automatically saved the last 30 seconds of recording in the buffer, which captured the exact moment that the drug exchange occurred, and snapped a picture of the drug dealers. At the end of his shift, Officer P unclipped the camera from his uniform, docked it to a charging station, which autonomously uploaded the audio/video footage to a cloud-based Digital Evidence Management System. Officer P tagged the uploaded video as a "case" and titled it as "suspect at large."

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[9] *Body-Worn Cameras (BWC) are small video cameras—typically attached to an officer's clothing, helmet, or sunglasses—that can capture, from an officer's point of view, video and audio recordings of activities, including traffic stops, arrests, searches, interrogations, and critical incidents such as officer-involved shootings.*

[10] *This description is based on the account of Police Chiefs using BWCs.*

At the computer room in the investigations department, a detective ("Detective D") was browsing uploaded videos tagged as "case" when Officer Ps video flashed on her computer screen. Using the image-matching software on her computer, Detective D queried the suspect's image against millions of images stored in a centralized image database and obtained a perfect match. This gave her the contact information of the suspect as well as other details, including criminal history. Armed with this record, the suspect was apprehended and charged to court. At the trial, the prosecutor called no human witnesses. Instead, the attention of the judge and jurors was focused on a 60" flat screen monitor connected to the Digital Evidence Management System in the Cloud. On the basis of the clarity of the video images and the self-identification of the suspect on the screen, a conviction was returned. Welcome to the era of BWCs in law enforcement[11].

The implementation of BWC technology has altered the sequence of investigative events. First, the availability of video evidence from BWC serves to corroborate officer accounts of events. Second, the officer now dictates a more accurate report based on a review of the video evidence and references the footage, which expedites the work of detectives. Third, knowledge of the existence of BWC evidence causes the suspect to plead guilty instead of face trial. Thus, officer patrols and investigative processes have become reconstituted by the social awareness of the human agents involved, and the material affordances of the BWC technology. None of this analysis would be possible if we disentangle the "hybrid" police officer into its constituent components. Without its human host, a BWC lacks the mobility that differentiates it from a CCTV camera or even an in-car dashboard camera. And, without the BWCs augmentation of the officer's sight, hearing, and memory, he'd be no different than Sir Robert Peel's officers of 19th Century England.

Clearly, an assemblage theory analysis avails the opportunity for us to piece together these disparate events (assemblages) into one whole. If the goal of the police department is to provide safety for all citizens, its work is not complete when the patrol officer captures the image of the drug dealer. Similarly, the work of the detective is not complete when the suspect was apprehended. And the work of the court relied not only on what has been discovered and presented by the police department, but also citizen jurors. Therefore, using the "hybrid" police officer assemblage, the police department assemblage, and the court assemblage, we can compose the entire sequence of events into one assemblage, or decompose into smaller assemblages. While each assemblage tells a complete story of its capacity to do what it does, we need the complete assemblage to tie the various events to the goal of the police department.

Constructing the Police Department as a Social Machine Assemblage

While Deleuze and Guattari (1983, 1987) created the concept of assemblages to reject the idea of Hegelian totalities, the concept can be usefully applied to analyze social organizations at any scale (DeLanda 2006). Conceptualizing the assemblage as a social machine, Deleuze and Guattari (1983, 1987) argue that, for a social machine to operate as a whole, it needs both technical machines and human components as its constituents. Given that organizations need and co-evolve with material components like digital technologies, desktop, application, and computer network etc., the capabilities of technical machines and humans are inseparably interconnected and work together like small and large cogwheels in a social machine. Thus, the capability of each component, whether nonhuman or human, affects the capabilities of other components and the overall capability of the organizational machine. This conceptualization captures the essence of a police department as an organization comprised of heterogeneous social (human) and machine (material) components that function together as a whole for the fulfilment of a defined mission.

The police assemblage is characterized by distinct material and expressive roles. Like all assemblages possessing a command structure, "the expressive role is played by those components involved in the legitimization of authority, while the material role is played by components involved in its enforcement" (DeLanda 2006, pp. 87). In a police department, components involved in enforcement include, patrol cars, criminal database systems, electronic white boards, crime mapping systems, crime labs, buildings, body-worn cameras (BWC), etc. These enforcement components (material or technical machines) work according to predefined programs and continue to function until mechanical failure. While a technical machine cannot fix and recover from a failure by itself, social (organization) machines can do so by leveraging the capabilities of its human components. Social machines are thus flexible, spontaneous and transformative

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[11] As of December 2015, about one third of U.S. police departments have implemented body worn cameras (BWC). http://fox6now.com/2015/03/02/one-third-of-united-states-police-departments-using-body-cameras-theyre-expensive-so-are-they-worth-it/ (Accessed May 8, 2016).

(Deleuze and Guattari 1983, p. 141). Elements involved in the legitimization of police authority include municipal charters, ordinances, organizational charts, reporting hierarchies, operational policies and procedures, etc. All of these elements work together as discursive statements (be they written, verbal, or cultural) for the achievement of the police mission. Thus, just like an assemblage, component parts of a police department, play distinct material and expressive roles. Table 4 lists examples of material and expressive components of a typical police department, including components that play both a material and expressive role.

Table 4. Composition of a Police Department as an Assemblage

Organization Assemblage	Material (Form of Content)	Expressive (Form of Expression)
Defined as:	A complex state of visible things	A complex set of statements
Configured as:	Technical Machine	Social Machine
Characterized as:	Non-discursive and visible	Discursive, invisible, and articulable
Organizational example of a police department	Layout of offices, Furniture, Equipment, Crime labs, Databases, Body-worn cameras, Weapons, Uniforms, etc.	Governing Charter, Ordinances, Hierarchy, Operations and policy standards, Uniforms with insignia, Computer use policy, Authentication and authorization processes to access IT infrastructure etc.

As an institutional organization, the police department is a highly coded, highly territorialized, and homogeneous assemblage. The homogeneity of the department arises from highly coded operational procedures and routines (forms of expression), reinforced through regular training and professional socialization. So much so that every police officer in a department is expected and required to comport and act in a certain way. Like all assemblages, various processes of deterritorialization are always at work to destabilize the police assemblage, by challenging its legitimization and authority. External social processes such as crime sprees and mass demonstrations, and internal processes such as corruption and nepotism, political meddling, and gross incompetence, all serve as deterritorialization processes that require action to re-territorialize and stabilize the assemblage. For example, in the case of internal processes such as corruption and nepotism, unionization of police ranks can reterritorialize the assemblage. In all these cases, introduction of measures that increase transparency and accountability, such as the deployment of technologies like BWCs, can help reterritorialize the assemblage. The machine concept of Deleuze and Guattari is useful for analyzing the dynamics of a police department where advanced digital technologies are essential components for the operation of the organizational machine. The machine concept enables us to focus on the changes that occur when many human components (e.g., institutional policies) and nonhuman components (e.g., body-worn cameras) are inseparably and dynamically interconnected for the social machine (i.e., police department) to work as a functional whole (Lazzarato 2014). The approach is unique from existing organizational and social theories where the capabilities of digital technologies have been downplayed as "…inert tools employed by human agents" (Rose et al. 2005, Deleuze 1988, Orlikowski 2005, Orlikowski and Scott 2008).

Examples of Sociomateriality in Police Work

Based on our initial analysis of the police BWC assemblage, we identified three specific examples of sociomaterial entanglement in police work. We present these examples to demonstrate how the deployment of BWC technology in a police department, transforms and reconstitutes the situated practice of police work.

Table 5. Examples of Sociomaterial Assemblages with Police Body Worn Cameras

Before Use of BWC	With BWC Technology	Sociomaterial Assemblage
Evidence-Chain of Custody: Physical evidence is stored in a property room with labelled shelves and bins. Users need authorization for access. Once authorized, they have access to other evidence not necessarily pertaining to their case. The integrity of the evidence depends on the integrity of the authorized user	Digital evidence is stored in the Cloud. Digital Evidence Management System (DEMS) provides audit capabilities for verification. When an officer needs access to digital evidence, they must first be configured with a username and password, and granted appropriate access rights and privileges. After that, the DEMS authenticates the configuration before granting access.	In order to meet the needs of the criminal justice system, neither human nor technology is privileged in their configurations for managing digital evidence. The system is configured to allow access to particular configurations of users. Users leave a trail for whatever they access and how they access it (e.g. copy, print, download etc.). Chain of custody can be audited
Citizen-Officer Interaction: Officer prepares report of an encounter after the fact through recollection from memory and linguistic narration of verbal and non-verbal communication during the encounter. This account is privileged and taken for granted even though the citizen also has capabilities for recollection and narration	Officer reorients posture to ensure that encounter is captured by BWC. After the encounter, officer reviews the encounter through an app on a blue-tooth connected mobile phone. A synopsis is dictated as report and the BWC footage is tagged, titled and referenced in the synopsis.	With the record and playback capability of BWC, police officer's capability to memorize and narrate interactions is augmented and corroborated by BWC's audio-visual evidence. As such, trust for a police officer is now challenged and reconstituted by the technological capability of BWC and its entanglement with the evidence documentation and presentation processes.
Officer Training and Supervision: Training and supervision were separated in time and space. Training was standardized for all officers, and performance evaluations are mostly subjective based on generalized criteria	Training is targeted based on actual performance of officer on the field. The supervisor is "virtually" present at all times during an officer's shift, and can objectively evaluate performance by reviewing BWC footage	Need for spatial proximity or co-presence between supervisor and officer is eliminated. Relationality of officer and supervisor is mediated by the technology

The above examples demonstrate how the introduction of BWCs reconstituted the everyday practice of police work, and provide evidence of sociomaterial assemblages through the mutual entanglement of the work of the police officer and the work of the technology (BWC). Both human and non-human components have to exercise their capacities for the sociomaterial assemblage to perform as required. For example, without the mutual entanglement of the supervisor and the BWC, officer supervision and evaluation would remain tasks separated in time and space. From an assemblage theory perspective, the relationality between officer and supervisor is clearly afforded by BWC technology, resulting in the expansion of management knowledge (Orlikowski and Scott 2008, pp. 464).

Conclusion

We set out to propose assemblage theory as another lens in the social realist tradition that can accommodate conceptualizations of sociomateriality, without abandoning or diluting its core foci. We demonstrated how the ontological foundation of assemblage theory supports the pillars of sociomateriality, and discussed the analytical resources that make such a project feasible. We provided examples from our initial studies involving the use of BWCs in police departments to illustrate the potential of assemblage theory as a

philosophical foundation with the facilities and flexibility to advance understandings along a continuum of configurations of human and material interactions in organizations. A foundation designed to withstand unpredictable currents is necessarily flexible, allowing a certain amount of sway to keep the structure anchored to it intact. Assemblage theory allows this sway by using relations of exteriority to account for the complex interactions between assemblages at successive scales.

Using examples from the implementation of police body-worn cameras, we illustrate how assemblage theory can be applied to analyze sociomaterial entanglements in mission-driven hierarchical organizations. Our research contributes to the IS knowledge base by introducing assemblage theory to accommodate the oppositional swings in the agency-structure debate, and add clarity to the notion of sociomateriality. We demonstrated how both a strong agency-structure duality and a constitutive one derives from an analysis of the distinctiveness (or lack thereof) of the roles played by an assemblage's form of content and form of expression in the face of ongoing processes to stabilize/destabilize the assemblage. Furthermore, we highlight the concept of "capability/capacity" to explain away the value-laden proposition of human and nonhuman agency. Finally, we augment DeLanda's concise and approachable presentation of assemblage theory with original formulations from Gilles Deleuze and Felix Guattari (the theory's creators) to illustrate its repertoire and facility for sociomaterial and other IS research approaches. This augmentation will improve the theory's appeal and amenability as a viable lens that IS and organizational scholars can use to explicate IS and organizational phenomena.

IS researchers have used several theoretical lenses, singly or in combination, to shed light on IS phenomena. Theoretical grounding is a necessary part and parcel of the intellectual endeavor to build a cumulative tradition. Because most of the theories employed in IS research are often borrowed from other reference disciplines, such as economics, sociology, and psychology, their ontological origins are not always fully appreciated or are sometimes selectively employed (Currie, 2008). Still, other scholars have argued that the very interdisciplinary nature of IS, requires IS research to be broad, focusing on the transformational impact of technology (Agarwal and Lucas, 2005), rather than relevance (Benbasat and Zmud, 1999). Theory provides a common thread that binds together the various strands of thought, as well as define a common language and ontology to guide inquiry. After much of the debate and rancor on the identity crisis within the IS field (Benbasat and Zmud, 2003; Agarwal and Lucas, 2005), Greg or (2006) called for "a fresh approach to the foundations and identity of our discipline, focusing on the nature of our theory as a fundamental issue" (pp. 635). We submit that Assemblage theory can get us closer to that goal than we've ever come.

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