Actor–Network Theory

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Abstract

Actor–network theory (ANT) began at the end of the 1970s as an attempt to account for scientific activity without distinguishing a priori between its so-called social and technical aspects. The concept of actor–network captures the idea that for any actor to act, many others must act as well. In other words, action is shared with a multitude of people and things – for, indeed, things play a part in our collective lives. Actors, whether individual or collective, whether human or not, are therefore a mystery whose constitution must be explained; they are not at all the obvious starting point of action. Those few premises have had a significant impact on some organizational communication scholars, in particular those interested in interorganizational networks and partnerships, in questions of agency, or in the ability of communication to constitute organizations.

Keywords: agency; communication theory; interdisciplinarity; materiality; science and technology studies

Organizational communication has been influenced by many theoretical perspectives and research traditions. Many of them were not initially intended for the study of organizations, communication, or their relationship. In the same way, actor–network theory (ANT), which has been gaining traction in particular among scholars interested in the constitutive power of communication, began as a theory for the study of science and the work of scientists. In fact, as discussed below, it is

only recently that actor–network scholars have acknowledged the importance of communication, and the organizational relevance of their own theory. However, this lack of explicit attention to communication processes has not stopped organizational communication researchers from borrowing insights from ANT. For instance, some of them are exploring ANT's suggestion that social entities do not pre-exist the joint work of a multitude of beings that brings them into existence and the ways in which that opens up new directions for organizational communication research. This idea, along with its reliance on a meticulous ethnographic methodology, has made ANT a powerful lens for the study of communication's role in the constitution of organizations and other phenomena within and around organizations.

After an overview of ANT's core ideas, this entry will review some of the uses of the theory in communication studies more broadly, before focusing on three particular applications of ANT in organizational communication: networks, nonhuman agency, and the link between communication and organizations. The entry concludes with a discussion of some of the most common critiques of ANT and future research directions in this area.

Central tenets of ANT

Offering an outline to actor–network theory is difficult, as it has taken several forms throughout the decades. Although it is now commonly used as an alternative sociological theory, ANT initially emerged as an approach to the study of science and scientific activity in Latour and Woolgar's *Laboratory Life* (1979) and then in Latour's *Science in Action* (1987). Since then, ANT has been associated with a critique of conventional sociology, with works in the sociology of economics, in environmental theory, and in the philosophy of knowledge. A common thread through all of ANT's incarnations is its insistence that any apparently single actor is already a network of many others that act as well. ANT borrows from French narrative theorist A. J. Greimas the term *actant*, by which it highlights the fact that the ability to act is not a feature of one's nature (i.e., being a human, an object, or anything else), but rather a relational feature; said otherwise, an actant is anything that makes a difference in a situation. Although

many misinterpret actor–network theory as a theory of actors or actants embedded in a network, in fact it is a theory of actants *as* networks.

The development of actor–network theory was influenced by British sociologist of knowledge David Bloor's call for a "strong programme" in the study of science and knowledge, according to which failure and success should be studied in the same terms, rather than supposing that scientific success is attributable to intrinsic scientific progress while failure is explained by "social" factors. For ANT scholars, this was interpreted as a call to refrain from taking shortcuts through social explanations; if any such things played a part in the success or failure of a scientific project, then that impact should be witnessed concretely in the work of the scientists and engineers. Latour's colleague at the Paris Mines School, Michel Callon, first introduced the notion of actor–network while he was studying a 1980s project to create the first French electric car. The project was eventually abandoned, and Callon used the term actor–network to account for the plethora of heterogeneous elements (oil prices, political concerns, technical issues, etc.) that failed to align in favor of the project. The electric car, in that sense, could be an actant in its own right only inasmuch as it brought together and stabilized the many different actions and interests that allowed it to come into being. The notion of actor–network, hence, draws attention on the fact that a seemingly unitary and coherent actant is in fact the always-provisional stabilization of heterogeneous others that make it up. Action, in other words, is always *mediated*: one actant's ability to act lies in the action of others. As Latour's (1996) famous maxim goes: "when one acts, others proceed to action" (p. 237).

A key feature of actor–network theory is its agnosticism to the nature of the things, people, principles, etc., that contribute to the actant's makeup and agency. ANT authors regularly resort to the word "heterogeneity" to point out that researchers must be careful not to hold assumptions about the nature and identity of the people and things that may play a part in any given action or situation, or about their alleged "intentionality." Indeed, nonhumans (probably the theory's signature notion) also *make a difference*, and ANT gives credit to any being, irrespective of its nature, that has an effect in the situation under study. ANT's agnosticism is an extension of the notion of symmetry, in the sense that what is

technical and natural should be explained in the same terms as what is social or cultural. In practical terms, this means that researchers should refrain from switching theories according to what aspects of reality they describe; rather, they should "follow the actors," whose reality consists in a ceaseless hybridization of so-called social, technical, natural, and other elements. Said otherwise, the work of "purifying" reality into neat categories is that of (some) researchers, not that of the people who actually deal with the world on a daily basis.

Yet, actor–networks, in most cases, seem to be simple and unitary; or, following the theory's jargon, they are *black boxed*. This expression captures the idea that we experience many of the objects – but also people – we interact with only to the extent that they provide us with some expected output. For instance, the computer screen displays my word processor file; the woman at the grocery store scans the item I want to buy; the street light turns green after a short while. Otherwise, they are opaque to us: it is only when there are breakdowns that we become aware of the vast network of electronic pieces, wires, lightbulbs, training, emotions, etc., that is involved in the smooth running of each of those seemingly simple "things." ANT stresses that this apparent seamlessness and smoothness is the outcome of complex interactions and much labor, rather than the natural state of facts. For ANT, the process of reopening black boxes is not only a practical issue facing actors – for instance when minority employees attempt to resist well established managerial practices and tools – but also a methodological challenge for researchers. ANT studies look for ways of revealing the generative intricacies that constitute and stabilize technical and social reality. One common strategy, for instance, is to focus on moments of sociotechnical controversy, when networks are interrupted and when their composition becomes problematic again. For instance, in *Acting in an Uncertain World*, Callon, Lascoumes, and Barthe (2009) studied the controversy over mad cow disease to show the limits of delegative democracy, which makes assumptions about the way our societies are constituted and excludes the technical and scientific aspects of our collective lives. Another way of opening up the black box of actor–networks consists in following ongoing projects, either in real time or after the fact through historical and documentary evidence. It is in that sense that actor–network theory has proved powerful to

analyze the construction not only of scientific facts or technology, but also of collectives, organizations, and other social groupings. This foray of ANT into social theory is justified given that, through the notion of actor–network, it has always acknowledged action's collective character. An innovation of ANT's social theory is, precisely, its refusal to speak of an already present society, or of pre-existing structures. For ANT, for instance, there is "no group, only group formation" (Latour, 2005, p. 27). Collectives, structures, and organizations must be accounted for from the perspective of the "flat land" of interactions, that is, from observable actions and encounters. Otherwise, if already structured institutions and social entities are invoked to explain collectives, those accounts run the risk of being tautological.

Of particular interest to communication scholars is actor–network theory's insistence on a series of semiotic notions, which have led it to be either applauded or, on the contrary, criticized. For instance, one of the key concepts of actor–network theory is that of "translation." In fact, ANT is sometimes referred to as the *sociology of translation*. Translation consists in one particular actor (or a black boxed actor–network) being able to act as the spokesperson for the many others it manages to enroll in a particular program of action. The action of others, in other words, is carried out or expressed through the spokesperson who acts as the visible face or audible voice of the actor–network. Translation allows making the action of actor–network equivalent in other places or times, or at different orders of magnitude, for instance when a graph translates the action of invisible bacteria, or when an ethnographer writes about geographically or culturally faraway places. Translation, of course, is never perfect, and always includes an element of betrayal. This is why, for researchers, actor–networks need to be unfolded and revealed: the noisy and messy multitude is disciplined and kept tidy as long as its actions are translated into a neat and smooth running program of action. That being said, the spokesperson may be contested, and cracks may appear in the apparent unity of the actor–network.

Relatedly, ANT literature has insisted on the idea that a material artifact – for instance a piece of technology – is "inscribed" with a "script," which means that the said artifact carries the more or less explicit intention of the engineers or

designers that conceived it. For instance, a seatbelt that automatically positions itself over the driver's chest is inscribed with a certain sense of morality, that is, that drivers cannot be trusted with their own safety. There is a certain amount of controversy over whether notions such as inscription – but also related concepts, such as "circulation," "mediators," or "scripts," as well as ANT's reliance on A. J. Greimas's narrative theory – are to be taken metaphorically, or literally. In other words, is ANT a theory of the action of humans and nonhumans, or rather a theory of the way that action may be described, written, and textually circulated? For example, although Latour conducted work on the rhetoric and semiotics of academic writing, and even though he has insisted on the need for a theory of enunciation, which may suggest that he is indeed interested in a more linguistic version of ANT, his British colleague John Law suggests "material-semiotic relationality" as the name for ANT's underpinning assumptions about reality; here, however, "semiotic" should be understood to refer to the mutual definition and shaping of a given network's elements, rather than a study of signs and meaning. Beyond hair splitting, how ANT uses this "semiotic" vocabulary matters, precisely, for the status it gives to materiality and its ability to have agency. It can therefore be said that ANT and communication seem to have a natural affinity, at least in sharing a common vocabulary, but the actual correspondence may be different depending on the role ANT gives to those terms, and to what version of material agency one is willing to admit.

The apparent alignment between ANT and communication is further complicated by the fact that the theory has not been explicitly looking at the specific role of communication, whether as a way of actualizing its many concepts (translation, inscription, mediation, etc.) in the negotiation of sociotechnical controversies, or in the construction of social entities. For instance, it was only in 2008 that Latour first entered a dialogue with communication scholars as part of an International Communication Association preconference on organizational communication (see Latour, 2013), followed by a piece in the *International Journal of Communication* (Latour, 2011). If it took a little while for ANT to engage with communication, communication scholars, for their part, have shown interest in actor–network theory since the mid-1990s, and this is also true of

organizational communication researchers. In the next sections, we will take a look at the way communication studies more generally has borrowed from actor–network theory before looking at the ways in which ANT has influenced more specifically the field of organizational communication.

ANT and communication studies

Given ANT's origins in the study of science and technology, it is natural to find in its application to the field of communication a similar emphasis on technology, including new media. Indeed, several communication technology and new media researchers borrow from ANT. This is the case, for example, in the earlier work by new media and cyberculture scholar Thierry Bardini, where he used ANT's notions of scripts to account for the way technology "inscribes" a particular understanding of its end user. For Bardini, ANT allowed a different perspective on the conception of technology, especially in the 1980s context, which was dominated by economic perspectives, including Marxism. The theory allowed a vision of the work of engineers that extended beyond considerations of progress, scientific breakthroughs, or economic viability; rather, the focus was on their actual work, including the concrete ways in which they could envision the usage of the technology they were designing. Interestingly, Bardini diverted from ANT in later writing. Siles and Boczkowski (2012), in a similar way, draw from ANT and similar theories to propose that the user generated content of new media plays a part in shaping the technology itself. Drawing on the notion of assemblage (which could be roughly equated to that of actor–network, even though it has a history of its own), they show that the technology, as a whole, extends beyond its materiality proper and includes its uses and the content that is created in those uses. What they call a "texto-material" approach allows fully acknowledging the user's engagement with technology, rather than separating the technological conception of new media devices and platforms from their use. The object of study, here new media, is seen to be in the making – to be evolving as users and software change.

     In parallel with a focus on technology proper, some researchers have concentrated on sociotechnical controversies from communicational perspectives.

This is the case, for example, of Benoit-Barné (2009), who studied "material recalcitrance" through the example of a hydroelectric dam – along with its various technical features that measure water levels – that would not let itself be defined by a power company's official discourse (about an alleged imminent drought), thus contradicting it. Her study constitutes a potent example of nonhuman agency in sociotechnical controversies, as it shows that human discourse may be contradicted by nonhuman action. Besel (2011), for his part, showed how a particular graph in a controversy regarding climate change became "black boxed" by some, that is, perceived as nonproblematic and natural, while others – climate change skeptics – attempted to reopen that black box. Besel's account of the events illustrates ANT's argument over the need for important resources to reopen black boxed facts and technologies, and reveal again the intricacies of the actor–network.

ANT has also found its way into studies of journalism, where it has been useful in accounting for journalists' changing work practices, in particular with respect to technology. The theory allows embracing the heterogeneity of journalistic work and recognizing the many things that make a difference in that field. For instance, Rodgers (2015) has studied the way the technical details of a piece of software – a Toronto, Canada newspaper's content management system – play an important part in the work of newsroom personnel and in their ability to deliver timely news. Rodgers argued that, contrary to official accounts and to studies that limit their scope to the "effects" of technology, the system's development is ongoing and is intertwined with organizational logics, as the system, rather than being unitary, is an actor–network comprising different components as well as their different uses in various portions of the corporation. ANT allows the author to delve into the system's "messy" history, rather than sticking to coherent after-the-fact narratives. Actor–network theory, indeed, allows stressing that boundaries are blurry and the result of the stabilization of an actor–network.

ANT and organizational communication

Although communication theory more broadly has mostly borrowed from ANT's discussions of technology and of the heterogeneity of action, organizational communication has embraced a wider array of the theory's notions, and it has done so in more varied ways. In particular, it has appropriated ANT's original treatment of the concept of networks. Organizational communication has also more exhaustively showed the diverse spectrum of nonhumans that may be at play in organizations, in addition to technology. More importantly, some studies have relied on ANT to bridge the gap between communication and organization, and show how interaction and communication "scale up" to constitute the collectives that we call organizations. In doing so, they have revealed the power of actor–network theory for the study of the communicative constitution of organizations (CCO): how documents, notes, emails, whiteboards, slide presentations, and other "technologies" contribute to organizing processes in their ability to carry speech (and the deeds that are accomplished through speech) through time and space, which allows communication to act beyond the specific situation of its production. The work of adapting ANT to organizational communication, and in particular to CCO, was helped by the fact that actor–network theories had already pointed out that social entities are not just floating out there, but require their very existence to be explained from the minutiae of everyday (inter)actions. Many organizational communication scholars therefore found in ANT not only a theory of nonhuman agency, but also a theory of the social that could, to some extent at least, serve as a basis for their theorizing.

Networks

As mentioned earlier, the notion of "network" in ANT takes on a particular meaning: it is not a theory of people or things connected in networks (say, telecommunication networks, or social networks), but rather a theory of actants *as* networks. In other words, it puts the emphasis on the fact that any action is already shared with others. However, that sharing may (but does not have to) take the form of a concrete network, in the more conventional sense of the word. The presence of the word "network" in the theory's name has led some to privilege

studying this sharing of action within such conventional networks, including
interorganizational networks. For instance, LaVigne (2003) used actor–network
theory to document the creation of a homeless information management system in
New York State and its correlative constitution of a network of hitherto weakly
linked organizations and agencies. The system not only described existing
relationships between funding agencies, nonprofit organizations, shelters,
childcare services, and many others, but also created new relations among them
(for instance, in establishing a duty to report on their activities) and with the
state's homeless population. The unique ANT flavor of LaVigne's study lies in the
fact that the computer system *creates* the network that it claims to describe: in
other words, technology has organizing properties in its ability to relate people,
shelters, agencies, and programs together. Similar studies have been conducted,
for example in studying the constitution of interorganizational networks that exist
to provide health services to various clienteles or to exchange strategic data
between businesses and institutions, or in establishing research and development
partnerships. Actor–network theory is particularly resorted to when the network
under study is constituted through technological means: for instance, online
advertisers are united in a formal association, but also through the sharing of
online behavior tracking technologies (Beck, 2015). To a large extent, the actor–
network theory literature proper also provides examples of interorganizational
networks and their communication practices surrounding technological
challenges: this is the case with Callon and Law's (1992) study of the many
organizations and government agencies involved in the (aborted) project of
designing a British military aircraft.

Nonhuman agency

One of the concepts from actor–network theory that organizational
communication has put to the greatest use is that of nonhuman agency. This has
been done through an acknowledgement of the role of technology in
organizational settings, but also through a broader recognition that agency is not
limited to human beings, but is shared with, among others, documents and
numbers. On the technological front Taylor and Van Every (1993) used Callon and

Latour's discussion of translation to account for the way technology and materiality provided durability and visibility to the organizational "macro-actor." The macro-actor is not of a different "level" than other beings; it is not "larger" or more encompassing than so-called individuals. Rather, it is a horizontal assemblage of these individuals, with a spokesperson who provides them with the ability to act and speak collectively. More recently scholars have recognized ANT as a candidate theory to account for technological change and its contribution to the constitution of organizations, as well as the role in coordination practices of technology's and humans' shared agency (see, e.g., the work of Paul Leonardi). In other words, ANT allows accounting for the way the heterogeneity of information technology grants its homogeneity to organizations.

In addition to technology, organizational communication scholars have also acknowledged the contribution of other forms of nonhuman agency. In particular, there has been a focus on what has been named "textual agency," that is, the ability of texts of all kinds – documents, contracts, procedures, flyers – to make a difference in situations. For instance, Cooren (2004) gives the example of a note: a worker can say that she reminded herself of something with a note, but it is equally true to say that it is the note that reminded her of something. Deciding which part of the worker–note hybrid *really* acts is a matter of debate, rather than an intrinsic property of action. A similar argument was made in Brummans's (2007) poignant work regarding a euthanasia declaration and its contribution to decisions regarding end-of-life treatments.

Though not involving documents as such, other examples of nonhuman agencies include the various ways in which things are measured in organizations. Accounting and various budgeting practices, when looked at with an ANT friendly lens, prove to be not only quantitative descriptions of organizational processes, but also constitutive of those processes. Accounting, by ensuring that equivalence is maintained throughout temporal and spatial chains of inscriptions, also allows organizational constitution and (tele-)action. The work of Bertrand Fauré and that of Paolo Quattrone are examples of ANT inspired research on numbers in organizations. Besides accounting, literature has also identified how ANT allows recognizing other effects of numbers in organizations: for instance, a

measuring stick that decides which children receive nutritional care in a Doctors Without Borders (Médecins Sans Frontières) camp (Cooren & Matte, 2010) or a table drawn on a blackboard that indicates whether children are sick (Cooren & Bencherki, 2010).

The link between communication and organization

Actor–network theory is central to a certain number of perspectives in organizational communication that claim that communication is constitutive of organizations. ANT, indeed, allows stressing the way materiality (including technology, documents, etc.) allows the passage from singular and ephemeral episodes of communication to apparently larger and stable organizations – what the organizational communication literature refers to as "scaling up." Thanks to the contribution of material things in organization, communication can leave its context of production and act elsewhere and at another time, and thus weave together space and time.

An original import from ANT into organizational communication is a focus on action, rather than people, as the unit of analysis. Indeed, as Barbara Czarniawska (2004) suggests, organizations may be better understood as *action nets* that are woven together through narratives. In particular, Latour draws on Greimas's concept of "programs of action" to account for the way different actants may pursue aims that translate each other into a common collective action. In our field, this has led to the suggestion that the imbrication of programs of action corresponds to the incorporation of individual narratives into an organizational metanarrative or into an *authoritative text* (Kuhn, 2008).

ANT inspired approaches have also explored the ways in which material entities, including texts, have organizing – but also *dis*organizing – effects. This idea is based on earlier work by Taylor and colleagues on the idea that organizations are constituted through an interplay of text and conversation. Text, the argument goes, stabilizes conversations, which in turn allow giving a voice to texts in the current situation. Although Taylor and others suggested the idea as early as 1996, its influence is still felt today. More recently, Latour's notion of "matters of concern" has been used in organizational communication to account

for the way things – issues, objects, documents, etc. – may become active again in the current interactional scene (see, e.g., Cooren et al., 2015). Indeed, the notion highlights the idea that one of the ways in which "facts" – for instance a particular strategic threat – act is by being expressed as concerns and picked up by others as such in conversation.

Even though it is always delicate to sort researchers into schools and traditions, it is probably accurate to describe many of the people who have been mentioned so far as (loosely) belonging to what has been called the Montreal School of organizational communication, which shares with other approaches the view that communication is constitutive of organizations. The originality of the Montreal School lies in part in borrowing from ANT its focus on the role of materiality in the constitution of the social, meaning that documents, technologies and other "things" – including meeting minutes, sticky notes, whiteboards, emails, and many others – help our conversations endure and carry them to other places and other times. This means that material things of all kinds allow our decisions, plans, judgments, forecasts, and other language acts to have effects in other places and at other times. Recognizing the role of material things in the constitution of our organizations has led Montreal School researchers to refer to the latter as "plenums of agencies."

ANT critiques and future research directions

It is interesting and perhaps indicative of actor–network theory's fit with organizational communication that very few critiques of ANT come from within our discipline. Critiques that have been formulated elsewhere, however, may be relevant for organizational communication scholars and hint at possible future directions for students and researchers.

A first, classical critique of ANT is that it is unable to think critically about the realities it describes. Said otherwise, it is not interested in power related issues, or in the historical conditions of power. For instance, ANT has been accused of accounting for the formation of networks, but failing to explain their dynamics once they are formed and their effect on the distribution of power. ANT friendly perspectives, it is said, omit reflection on the consequences of technology,

as well as on the structural and cultural contexts where it is constructed. This omission of power issues may come from ANT's theory of agency, which ascribes agency to people and things essentially, without questioning that capacity to act – even though, the critique goes, agency is made possible by all sorts of social factors that ANT disregards. Interestingly, although many have raised concerns over ANT's lack of attention to issues of power, others have accused it of the exact opposite: science, knowledge, and pretty much anything else become the battleground of opposing agencies, with no real truth to be found, as Amsterdamska pointed out in a widely cited article unambiguously titled "Surely You Are Joking, Monsieur Latour!" (1990). Rather than regretting such a "political ontology," Alcadipani and Hassard (2010) point out that ANT's explanation of the way things are "assembled into being" (p. 423) provides the potential to "de-naturalize" the organizations and collectives that we take for granted. In other words, ANT warns against the trap of assuming that the way we organize our shared lives and labor is the only possible way. Latour himself notes that for ANT, power is not something that serves to explain reality; on the contrary, the theory is interested in understanding how power is done, without presuming who or what has power. In other words, for ANT, power should be studied in actu, that is, in its actual performance.

Other critics have taken issue with the role ANT gives to nonhuman "actors" in the name of the "general symmetry" it calls for. This is connected to the issue of intentionality, as well as to related questions of human dignity and of what should deserve to be called an "action." ANT, it is said, denies the fact that only humans can transform society, that only such acts deserve to be called actions. It may be correct that humans interact with nonhumans, but both types of agency cannot be analyzed in the same terms. More vehement attacks include accusations of a return to hylozoism (the belief that inanimate objects are alive). The argument against ANT revolves around the notion of intentionality, that is, whether action should be willful; answering yes to the question amounts to limiting agency to humans. This argument also comes from within organizational communication; in particular, questions arise regarding whether nonhuman agency can be meaningful (McPhee & Seibold, 1999). McPhee, and more

generally the "four flows" tradition of CCO, follow Giddens's structuration theory, where agency supposes not only intentionality but also reflexivity and contextual knowledge, which prevent the attribution of action to nonhumans. Furthermore, agency for Giddens (1993) is not only to have acted in some way, but also to possess the capacity to "have acted otherwise" (p. 81), which implies a form of decision or choice, which has no correspondence in ANT.

Another issue that has been raised with respect to ANT, as reported in Bardini (2007), is that of its ambiguous relation with reflexivity. Indeed, ANT's program to show that science and technology are practical achievements is imperfectly applied to ANT scholars' own descriptions of their observations. How that could be achieved without a sort of infinite regression is not yet settled and deserved further consideration. Although some scholars find a solution in adopting writing practices that highlight their own uncertainties and limitations, others straightforwardly reject the need for them to be reflexive about their own research.

A last critique concerns the "semiotic" character of ANT, as has already been described above (see Bardini, 2007). Indeed, by using – whether metaphorically or otherwise – a language borrowed from semiotics, and in particular from Greimas's narrative theory, ANT runs the risk of reducing everything to text and to "scripts." Rather than studying materiality and the role of technology, for instance, the theory may very well be studying their description in talk, or the written procedures that are inscribed in/on them. This critique is of particular relevance to us here, as it has been extended to include the Montreal School of CCO, whose members, the argument goes, by drawing on the notion of matters of concern, have been studying materiality only to the extent it is "textualized" through its evocation as a concern to participants in meetings and interactions.

Finally, with some exceptions, the relationship between ANT and organizational communication has been mostly one way. However, there are many avenues for organizational communication, and perhaps CCO in particular, to contribute to ANT in return. For instance, CCO, as an alternative take on organizations, is in a good position to formulate just the kind of critical insight

that could feed back into ANT and serve as a response to those who believe the theory lacks the ability to tackle issues of power. Indeed, by viewing organizations, factories, and other workplaces as continuous achievements, rather than stable and fixed entities, CCO scholars may provide ANT with the means to show its ability to question the taken-for-granted character of work relations, including power relations, especially to the extent that materiality may play a part in constituting and stabilizing those relations. As organizational communication continues to borrow from ANT, it will need to provide answers to the critiques with which the latter has had to deal. For instance, should our discussions of organizations give privilege to human intentionality and dignity? How can we reconcile our interest for the role of technology with an original treatment of power issues? These, and many other questions, are not only deterrents to but also exciting opportunities for creative organizational communication research moving forward. Recent work in organizational communication is already suggestive of an engagement with materiality beyond its "textualization" (see Putnam, 2015, on the discourse–materiality relationship). In the same vein, continuing our engagement with ANT and related theories may also lead us to reconsider what we mean by communication: attempting to include nonhumans in the equation may be an opportunity to devise a theory of (organizational) communication that is not limited to human language. Furthermore, organizational communication research may want to consider ANT not only in terms of technology or materiality, but also – and perhaps more importantly – as a theory of shared agency, as its very name suggests. Indeed, ANT scholars have been insisting that the human/nonhuman divide does not hold, and yet in our interpretation of the theory, we have reified the divide more than ever. Approaching ANT from the idea that agency is shared may help us reconsider issues of organizational action, membership, belonging, and other situations where the locus of agency is contested or confused, without splitting the world into any given categories in advance.

References

Alcadipani, R., & Hassard, J. (2010). Actor–network theory, organizations and
    critique: Towards a politics of organizing. *Organization, 17*(4), 419–435.
    doi:10.1177/1350508410364441

Amsterdamska, O. (1990). Book review: Surely you are joking, Monsieur Latour!
    Science, Technology, & Human Values, 15(4), 495–504.
    doi:10.1177/016224399001500407

Bardini, T. (2007). Retour sur une (d)ébauche: Une problématique
    communicationnelle du changement technique. *tic & société, 1*(1).
    doi:10.4000/ticetsociete.245

Beck, E. N. (2015). The invisible digital identity: Assemblages in digital
    networks. *Computers and Composition, 35*, 125–140.
    doi:10.1016/j.compcom.2015.01.005

Benoit-Barné, C. (2009). Reflections on science and technology controversies,
    material recalcitrance and empty reservoirs that suddenly become full. In
    S. Jacobs (Ed.), *Concerning argument*. Washington, DC: National
    Communication Association.

Brummans, B. H. J. M. (2007). Death by document: Tracing the agency of a text.
    Qualitative Inquiry, 13(5), 711–727.

Besel, R. D. (2011). Opening the "black box" of climate change science: Actor–
    network theory and rhetorical practice in scientific controversies. *Southern
    Communication Journal, 76*(2), 120–136.
    doi:10.1080/10417941003642403

Callon, M., Lascoumes, P., & Barthe, Y. (2009). *Acting in an uncertain world: An
    essay on technical democracy*. Cambridge, MA: MIT Press.

Czarniawska, B. (2004). On Time, Space, and Action Nets. *Organization*, *11*(6),
    773–791. http://doi.org/10.1177/1350508404047251

Law, J., & Callon, M. (1992). The Life and Death of an Aircraft: A Network
    Analysis of Technical Change. In W. E. Bijker & J. Law (Eds.), *Shaping
    Technology/Building Society: Studies in Sociotechnical Change* (pp. 21–
    52). Cambridge, MA: MIT Press.

Cooren, F. (2004). Textual agency: How texts do things in organizational settings.
    Organization, 11(373–393). doi:10.1177/1350508404041998

Cooren, F., & Bencherki, N. (2010). How things do things with words: Ventriloquism, passion and technology. *Encyclopaideia, Journal of Phenomenology and Education, 14*(28), 35–61.

Cooren, F., & Matte, F. (2010). For a constitutive pragmatics: Obama, Médecins Sans Frontières and the measuring stick. *Pragmatics and Society, 1*(1), 9–31. doi:10.1075/ps.1.1.02coo

Cooren, F., Bencherki, N., Chaput, M., & Vásquez, C. (2015). The communicative constitution of strategy-making: Exploring fleeting moments of strategy. In D. Golsorkhi, L. Rouleau, D. Seidl, & E. Vaara (Eds.), *The Cambridge handbook of strategy as practice* (pp. 365–388). Cambridge, UK: Cambridge University Press.

Giddens, A. (1993). *New rules of sociological method: A positive critique of interpretative sociologies.* Stanford, CA: Stanford University Press.

Kuhn, T. (2008). A communicative theory of the firm: Developing an alternative perspective on intra-organizational power and stakeholder relationships. *Organization Studies, 29*(8–9), 1227–1254. doi:10.1177/0170840608094778

Latour, B. (1987). *Science in action: How to follow scientists and engineers through society*. Cambridge, MA: Harvard University Press.

Latour, B. (1996). On interobjectivity. *Mind, Culture, and Activity, 3*(4), 228–245. doi:10.1207/s15327884mca0304_2

Latour, B. (2005). *Reassembling the social: An introduction to actor–network theory*. Oxford, UK: Oxford University Press.

Latour, B. (2011). Networks, societies, spheres: Reflections of an actor–network theorist. *International Journal of Communication, 5*, 796–810.

Latour, B. (2013). "What's the story?" Organizing as a mode of existence. In D. Robichaud & F. Cooren (Eds.), *Organization and organizing: Materiality, agency and discourse* (pp. 37–51). New York: Routledge.

Latour, B., & Woolgar, S. (1979). *Laboratory life: The social construction of scientific facts*. Beverly Hills, CA: Sage.

LaVigne, M. (2003). *Mobilizing actors in an intergovernmental collaboration : an actor-network theory approach*. State University of New York at Albany, Albany, NY.

McPhee, R. D., & Seibold, D. R. (1999). Responses to the finalist essays. *Management Communication Quarterly, 13*(2), 327–336. doi:10.1177/0893318999132009

Putnam, L. L. (2015). Unpacking the dialectic: Alternative views on the discourse–materiality relationship. *Journal of Management Studies, 52*(5), 706–716. doi:10.1111/joms.12115

Rodgers, S. (2015). Foreign objects? Web content management systems, journalistic cultures and the ontology of software. *Journalism, 16*(1), 10–26. doi:10.1177/1464884914545729

Siles, I., & Boczkowski, P. (2012). At the intersection of content and materiality: A texto-material perspective on the use of media technologies. *Communication Theory, 22*(3), 227–249. doi:10.1111/j.1468-2885.2012.01408.x

Taylor, J. R., & Van Every, E. J. (1993). *The vulnerable fortress: Bureaucratic organization and management in the information age*. Toronto, Canada: University of Toronto Press.

Taylor, J. R., Cooren, F., Giroux, N., & Robichaud, D. (1996). The communicational basis of organization: Between the conversation and the text. *Communication Theory*, *6*(1), 1–39.

Further reading

Contractor, N., Monge, P., & Leonardi, P. M. (2011). Multidimensional networks and the dynamics of sociomateriality: Bringing technology inside the network. Network theory (special section), *International Journal of Communication, 5*, 39.

Czarniawska, B., & Hernes, T. (Eds.) (2005). *Actor–network theory and organizing*. Malmö, Sweden: Liber and Copenhagen Business School Press.

Fauré, B., Brummans, B. H. J. M., Giroux, H., & Taylor, J. R. (2010). The calculation of business, or the business of calculation? Accounting as organizing through everyday communication. *Human Relations, 63*(8), 1249–1273. doi:10.1177/0018726709355658

Latour, B. (1986). The powers of association. In J. Law (Ed.), *Power, action and belief: A new sociology of knowledge?* (pp. 264–280). London, UK: Routledge.

Lenoir, T. (1994). Was the last turn the right turn? The semiotic turn and A. J. Greimas. *Configurations, 2*(1), 119–136. doi:10.1353/con.1994.0014

Leonardi, P. M. (2011). When flexible routines meet flexible technologies: Affordance, constraint, and the imbrication of human and material agencies. *MIS Quarterly, 35*(1), 147–168.

Plesner, U. (2009). An actor–network perspective on changing work practices: Communication technologies as actants in newswork. *Journalism, 10*(5), 604–626. doi:10.1177/1464884909106535

Quattrone, P. (2004). Accounting for God: Accounting and accountability practices in the Society of Jesus (Italy, XVI–XVII centuries). *Accounting, Organizations and Society, 29*(7), 647–683. doi:10.1016/j.aos.2004.03.001

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