ILANA GERSHON AND JOSHUA MALITSKY
Indiana University

Actor-network theory and documentary studies

ABSTRACT
This article examines how science studies in general and actor-network theory (ANT) in particular can inform scholarship on documentary. More specifically, we argue that both ANT scholars and documentary scholars are faced with the question of how a particular set of interactions are transformed into representations of reality that can travel into other contexts with their truth value intact. The ANT perspective views putative truth as circulating through a series of networks shaped through specific interactions, and identifies the interlinking of the networks as crucial to the preservation of truth value across them. Furthermore, the ANT perspective provides tools for understanding how representations are transformed into facts through the labour of specific networks. We thus refuse sharp distinctions between documentary production, distribution and reception, and instead see all aspects as central to how documentaries themselves function as actants and representations.

The rise of postmodernism and post-structuralism unsettled many of the arguments documentary scholars have made about how films represent truth. In the aftermath of these transformative critiques, documentary scholars have been struggling to retain the political purchase of claiming the real while acknowledging the postmodern recognition that truth is socially constructed, in part through filmic representation. Jane Gaines addresses the challenge these critiques pose for the cinematic object perhaps most vulnerable to them – realist documentaries. Gaines writes, ‘Much of the challenge of the new

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Joel Snyder has noted that it was common in the middle of the nineteenth century to describe the sun as the agent of photography: "it is the task of the sun to draw the picture" (Snyder 2004: 193-221). See also Friedberg (2007), in which Friedberg points out that Niepce refers to his first photography as 'heliography' or sun-writing.

work on documentary has to do with finding a way to be both a champion of the critique of realism and a defender of the uses of realism' (Gaines 1999: 93). Documentary scholars are not the only ones faced with this particular dilemma. Science studies scholars, and in particular actor–network theorists, have also been exploring how to analyse the social construction of objectivity and facts while still recognizing that representations of truth are politically effective. In this essay, we discuss the analytical tools science studies scholars have developed, and explore their applicability to documentary studies.

THE SOCIAL CONSTRUCTION OF FACTS

Scholars who find actor–network theory (ANT) useful often share concerns with documentary scholars about how people construct truths and facts. Science studies scholars such as Latour, Callon and Law began to develop ANT in the mid-1980s, bringing a Foucauldian distrust of dichotomies to the task of analysing scientific practice (Callon 1986: 196-233; Latour 1987; Law 1982). When these scholars begin explaining their theoretical perspective, they often start by explaining the dichotomies they reject, in part because of their unease with being disciplined into a theoretical movement. To clear an analytical space, they reject dichotomies between self/other; material/semiotic; nature/culture; agency/structure; knowledge/power; active/passive; human/non-human; truth/falsehood. By rejecting these dualisms, ANT presumes that every thing and everyone is profoundly relational - that entities only have qualities, attributes or form as a result of their relationships with other entities. They apply this Saussurean insight ruthlessly to everything involved in producing scientific facts, not limiting this to language and the play of signifiers. In the following passage, Law explains how this rejection of dichotomies underlies the term actor–network theory:

[Actor-network theory] insists that social agents are never located in bodies alone, but rather that an actor is a patterned network of heterogeneous relations, or an effect produced by such a network. The argument is that thinking, acting, writing, loving, earning - all the attributes that we normally ascribe to human beings, are generated in networks that pass through and ramify both within and beyond the body. Hence the term, actor-network - an actor is also, always, a network

(Law 1982: 4)

Here Law delineates how ANT is fundamentally a theory of relationality, with the analytical task of figuring how these relationships condense in various people and objects. This radical commitment to relationality has four major conceptual consequences.

First, everyone and everything contributes to how interactions take place - in this sense, microbes are participants, or actants, as much as people. ANT scholars are unwilling to attribute agency only to scientists. Rather, every node in the network, or web of relationships, shapes the ways in which interactions in the network will occur, be the node a microbe, a sheep, a test tube or a biologist (Raffles 2002). In turning to documentaries, ANT theorists would call the sun an important actant in making images. The sun’s intensity affects how people squint, how hot they feel, how much they sweat. The strength and directionality of the sun’s light determines what can be filmed and how it can be filmed. The position of the sun, the clouds, the intensity of the rays, all are actants contributing to a film’s images.' To say the sun has agency is not to
say the sun is volitional, that the sun wills a particular shimmer as its rays hit water. It is, however, to insist that the sun and its activity must be taken into account when analysing the labour that goes into producing a filmic image. The same, of course, can be said of a lighting set-up – in addition to the quality, intensity and directionality of light, the lighting set-up transforms the way figures can occupy the pro-filmic space, shaping potential mobility in different ways than the sun does.

Because ANT theorists want to distribute agency as broadly as possible as an initial premise, they then must address the question: what labour goes into allocating responsibility and agency only to some actants and not to others? Figuring this out is the work of the analyst, who uses this question to map out the power relationships enacted in a given context. By refusing to determine who is the relevant actor prior to the analysis, ANT scholars end up exploring how social practices contribute to the labours of division that produce the aforementioned dualisms that often dominate scientific (and documentary) contexts.

Second, not all actants are the same. In part, the differences are a result of the different social and historical trajectories that shape the people and objects that comprise a network. Yet as importantly, the differences lie in the forms that the actants have – the sun is a different actant than the lighting set-up because of the differences in each actant’s physicality. The form in which someone or something exists in the world matters – that is, matter really matters. One’s material form helps determine connections to others in a network; the physical simultaneously shapes and limits the ways in which interactions can occur and unfold. Cinema scholars have long understood that the materiality of the pro-filmic space and the cinematic apparatus is central to representations. For documentary scholars this focus on materiality has been particularly acute, largely because of the documentary tradition of using a range of film and video formats, the often unpredictable filming conditions, and variable exhibition and distribution contexts. For example, documentary scholars have long known that what the film-maker can create is intimately tied to the material limitations of a particular camera. Winston takes this a step further, pointing out that these material limitations also presume specific social relationships, an insight that resonates with ANT theorists such as Akrich (1994):

[The lens] is ground to produce images with single-vanishing-viewpoint perspective according to Western representational codes. The camera to which it is attached has a viewfinder so small that it works (is focused, for example) most easily if individual faces are privileged [...] The machine is produced by Western individuals to photograph Western individuals.

And [...] colour film stock and the TV color system are designed by white people to photograph other white people. They are, literally, biased chemically or electronically against persons of colour.

(Winston 1995: 180)

Winston reminds readers that matter condenses social assumptions, and that the material limitations shaping how networks form are also always social (and in the case of the camera, Eurocentric).

Third, ANT insists on the performative nature of relations and the objects/people/actants constituted by these relationships. ANT scholars insist that
networks and actors are constituted by performance, that is, that they do not prefigure these enactments. Therefore, ANT theorists are also insisting that everything and everyone is uncertain, that relations and qualities are in principle reversible. If instability is the given condition, one must labour to create consistency and coherence. In this sense, performance is key to ANT as the source of durability. Durability is always an achievement, and needs to be analysed as such.

Similarly, documentary scholars such as Waugh have pointed out that people’s identities do not prefigure the moment of filming (Waugh 1990). One’s documentary identity is dependent upon the material and social conditions of production. It is also dependent on what ideas of selfhood and subjectivity are available. For example, one cannot interpret Timothy Treadwell in Herzog’s *Grizzly Man* (2005) as an obsessive recluse without an understanding of gender, oppositions between nature and culture, and social alienation. If the documentary identity seems contiguous with other selves and specific social assumptions, the question is what pre-production, production and post-production labour has gone into producing this apparent cohesiveness? Thus, the analytical question that ANT analysts and documentary scholars must resolve is: how do actants get performed and perform themselves into relations that are relatively stable? This focus on durability shapes the ANT lens for understanding power relationships, which from this perspective become indistinguishable from sustaining lasting relations.

Fourth, actants are all network effects; they are the nodes of a network that visibly condense the relations of a network, and in turn affect how the network functions and sustains. In this sense, the hyphen in ANT can be misleading, there is no distinction between actor and network. This is not to say, however, that all actants are equal. Every actant is heterogeneous, condensing disparate relationships. Yet not all heterogeneous actants have the same abilities to navigate networks or to move between different networks (Star 1991). *The Thin Blue Line* explicitly revolves around a network that makes one actant, David Harris, a far less appealing candidate for prosecution for a murder than another actant, Randall Adams. David Harris’ youth, community ties and personality all combine to help him navigate with fewer penalties this network of police, cars, lawyers, judges and milkshakes. Morris, by means of his film, exposes and transforms this network, ultimately encouraging this network to free Randall Adams from prison. Thus, the effects these heterogeneities can have are quite different for those who are privileged in particular networks, and those who are not. This is another way in which ANT scholars make power relations visible, by addressing the costs of particular networks for the actants navigating them.

These analytical moves all provide the armature for thinking about how truths and facts are constructed, both through scientific practice and, we suggest, through documentary films. The actor-network perspective encourages scholars to go further than asserting that facts are socially constructed by turning to knowledge circulation as the process through which the social construction of truths takes place. Information becomes facts by travelling through networks in patterned ways that imbue the piece of knowledge with authority and relevance. ANT scholars discuss how scientists have used public demonstrations, citations and styles of publication, among other strategies, to circulate information as facts (Latour and Woolgar 1979; Shapin 1995). The methodological question is to determine how a particular network circulates information as fact or truth, which requires analysing the structures of a network as well as how a network allocates authority and certainty.
Documentary scholars already do much of the work that an ANT perspective would request. What an ANT perspective would add is a reflexive engagement with the labour involved in producing effective documentary facts. That is, ANT provides a way of imagining documentary pre-production, production, post-production, distribution and exhibition practices as an integrated network for circulating knowledge. Currently, scholars discern patterns and structures within documentary texts. They analyse the distribution and exhibition patterns of films alongside other extratextual information (newspaper reviews, various advertising strategies, TV interviews by film-makers, and so on). They consider how the circulation of film-makers’ methodologies serves to authenticate or challenge the truth-claims of the films. All these aspects combine to enable documentary scholars to trace how the documentary itself condenses networks that are partially labouring to represent reality. In the following section, we discuss what ANT might offer documentary studies—what questions or concerns documentary scholars would raise should they take ANT seriously. In particular, we examine three aspects: (1) what questions a focus on circulation opens up for analyses of the documentary fact, (2) what an emphasis on actants brings to documentary studies and (3) how a concern with circulation shapes analyses of the indexical production of verisimilitude.

Circulation in documentary studies is usually thought of in terms of discrete distribution and exhibition processes. How the text has meaning, and for our purposes, in particular, how a text has truth-value is often divorced from the circulation of the text. The ANT perspective, instead, insists that circulation is at the heart of how the network functions, and thus how the documentary functions as a node in a network. As a consequence, to understand how information comes to be interpreted as facts entails understanding the processes of circulation underpinning how facts are made.

Historians of science Lorraine Daston and Peter Galison approach the issue of fact-making by examining the history of the concept of objectivity (Daston and Galison 2007). In her own article, ‘Objectivity and the Escape from Perspectival’, Daston argues that what currently constitutes a single concept of the objective fact is a fusion of three understandings of objectivity, each with its own meaning and distinct history—aperspectival, mechanical and ontological (Daston 1992). The scientific values associated with each discrete understanding of objectivity offer a flexible and sophisticated model for identifying multifarious strategies of factual inscription. Daston’s work provides insight into the reasons why certain strategies of documentary inscription might be deemed to be more factual at a given historical moment.

For Daston, nineteenth century natural scientists promoted a form of objectivity she calls ‘aperspectival objectivity’, which she defines as (from Thomas Nagel) ‘the view from nowhere’ (Daston 1992; Nagel 1986). This form of objectivity aims to eliminate individual idiosyncrasies by privileging the consensus of a community of scientists over individual viewpoints. By sanctioning a community’s perspective over an individual’s perspective, aperspectival objectivity, at first glance, seems the least likely form of objectivity to be relevant to documentary scholars. After all, film viewers and makers alike recognize that the apparatus locates the view literally in a camera, one most often controlled by an individual. This view is what Metz refers to as primary cinematic identification, a position the spectator adopts in which her vision is assimilated to that of the seemingly all-seeing and unmediated camera eye (Metz 1986: 49–56). Yet what Daston demonstrates is that aperspectival objectivity is produced through specific historical shifts...
in how scientists circulate knowledge. In particular, she argues that this form of objectivity emerged as part of a reorganization of scientific life that relied on an increased mobility and internationalization, whereby scientists' careers depended far more upon their contacts across borders and laboratory communities. Daston argues that the reorganization affected how scientists were conceiving of facts:

A perspectival objectivity became a scientific value when science came to consist in large part of communications that crossed boundaries of nationality, training, and skill. Indeed, the essence of perspectival objectivity is [stable] communicability, narrowing the range of genuine knowledge to coincide with that of public knowledge. Perspectival objectivity may even sacrifice deeper, more rigorous knowledge in the service of communicability.

(Daston 1992)

What becomes important about perspectival objectivity, from the perspective of documentary studies, is that this is a form of objectivity emerging at a particular historical juncture that privileges facts that travel easily, rather than facts too enmeshed in their local contexts.

In contrast with perspectival objectivity's emphasis on a community's shared perspective, mechanical objectivity stresses reliable, precise and endlessly repeatable representations. Daston and Galison argue that mechanical objectivity is inextricably bound to nineteenth century scientists' ideas of how machines functioned (Daston and Galison 1992: 81–128; 2007: 115–90). Unlike humans, machines could record phenomena tirelessly and consistently. They argue that 'where human self-discipline flagged, machines or humans acting as will-less machines would take over [...] freezing images from human interference' (Daston and Galison 2007: 120–1). Machines promised representations that transcended human physical limitations. It was not only human physical limitations that concerned these scientists. They also saw humans as dangerously subjective, and machines promised to transcend 'the universal human propensity to judge and aestheticize' (Daston 1992: 599). With these ideas about machines as the basis of mechanical objectivity, facts produced by machines were thought to travel without any attending baggage of human interpretation. Thus, mechanically produced representations such as photograms were seen as more compellingly factual and objective than hand-drawn representations. Facts that travel easily were equally important for scientists committed to mechanical objectivity, but for different reasons. For these scientists, facts' mobility indicated their legibility and reproducibility.

Daston's discussion of objectivity (and thus implicitly facts) points out that people's ideas about what counts as objectivity shapes their practices of fashioning facts. At the same time, their practices of circulation and professionalization shape their ideas about objectivity. It is not simply a question of what counts as a fact, it is also a question of what people consider important about facts that shapes how people circulate knowledge. There was a moment analogous to Daston's historical example for 1920s Soviet documentary film-makers and critics, and here we turn to it as a brief example of what scholars can learn about the documentary fact when examining the relationships between people's documentary ideologies and knowledge circulation.
Inscribing facts increasingly became a point of interrogation for art in the aftermath of the Bolshevik Revolution. Factography, in particular, was an ‘awkward and self-consciously technicist term’ designating an aesthetic practice concerned with the inscription of facts (Fore 2006: 3). The term emerged out of debates that took place most prominently in the journal Novyi Lef, debates that cut across the traditional divisions between the arts. The debates rejected the possibility that facts were copies of an ontologically more primary reality. Rather, factography was seen as a mode of praxis that understood the fact, in all its various manifestations, as something made or manufactured. Factography was, as Fore puts it, an ‘indexical art’ (Fore 2006: 8), that is, art that resulted from the process of production instead of existing independent of it. Whereas such principles unified practitioners of factography, there were in reality no established rules by which one was assured that the ‘factness’ accompanied the inscription.

In terms of documentary film, these concerns prompted what Mikhail Yampolsky refers to as a break from the Dziga Vertov-dominated phase to one in which Esfir Shub’s historical compilation method served as the model (Yampolsky 1991: 161).6 Lef critics such as Viktor Shklovsky and Osip Brik took exception to Vertov’s fast-moving, ‘metrical’ montage editing of short takes and artistic cinematography of ‘life-caught unawares’. They saw his work as distorting material reality and as incomprehensible to the masses. By contrast, they celebrated Shub’s method of making films in an archive with material already captured by others. They deemed Shub’s films more authentic, more objective, more legible than Vertov’s work, which for them was too intimate, too immediate, too spontaneous, too subjective. Shub’s method and form were seen as restoring authenticity to the film document. Part of what Shklovsky and Brik valued were her films’ popularity with the masses – the films’ documentary facts circulated easily. In this way, Shub became part of a broader project of consolidation, centralization and assertion of control in the Soviet Union following the tenth anniversary of the Bolshevik Revolution.

There are three aspects of Shub’s work that resonate with Daston’s points about the history of objectivity. First, her found footage method coordinated multiple perspectives and thus apparently limited her own subjective one. The community of fact-makers contributed to the facticity of the film documents just as a community of scientists was thought to be a precondition for scientific objectivity. Second, Shub provided a distanced perspective affording the viewer the possibility of greater intimacy and stability. She did so by means of considerably longer shots and longer takes, a style that contemporaneous critics saw as lessening the degree of the film-maker’s intervention between the camera (as machine) and the pro-filmic space.7 Third, Shub’s narrative structure ensured that the ideological and historical message in her films was easily legible to Soviet audiences. Shub edits her footage so that the motivation for inclusion is apparent to the viewer early in the shot. The length of her take continues after its meaning for the documentary argument has been established; this length allows for a Derridean supplement to the argument (Derrida 1976).8 In contrast to Vertov, Shub’s supplement, this polysemy of rampant indexicality, always emerged in her films after the readability of its historical narrative. In short, for her contemporary critics and viewers, Shub’s syntax and semantics provided new and appropriate filmic techniques for establishing and circulating facts.

We have been discussing how documentary ideologies are recursively engaged with the ways in which circulation transforms information into facts.

6. The key films are the three compilation films Shub made during 1927–1928: The Fall of the Romanov Dynasty (1927), The Great Way (1927) and Lev Tolstoy and the Russia of Nicholas II (1928), especially the first two. Lev Tolstoy has not survived.
7. This method was in fact inaugurated in the USSR by Vertov some years earlier. See, for example, his Anniversary of the Revolution (1918) and History of the Civil War (1921), each multi-reel historical films that exist now only in parts.
8. For an analysis of the particular ways in which Shubian aesthetics offer this possibility of greater intimacy and stability to the critics of the Novyi Lef, see Malizkis (2010).
9. For Derrida, the supplement is a thing that either adds or replaces, accretes or substitutes for the original and whose meaning is always undecidable. See Derrida (1976).
Michael Chanan argues persuasively that one of the reasons for the commercial and political success of Álvarez and other post-revolutionary Cuban fiction and non-fiction film-makers was their ability to engage audiences by working within familiar genres and yet simultaneously stretching the accepted limits of convention and therefore transforming viewing habits. See Chanan (2004).

We turn now to the possibilities afforded to documentary scholars when one takes seriously the position that all beings and objects, whether constructed as volitional or not, are active contributors to the network, that is, when they are all actants. This involves refusing to take objects as simply standing for particular symbolic meanings or information, but rather viewing objects as structuring engagements in their own right. To illustrate this, we turn to two examples of how microphones assisted or stymied Fidel Castro in his attempts to persuade others to be part of his socialist network.

Fidel Castro is famous for giving extremely long, fervent, animated speeches. The length of Castro’s speeches posed a challenge for Cuban newsreel and documentary film-makers, who anticipated audiences accustomed to watching Hollywood films. In response they had to develop numerous and flexible strategies for representing speeches (Chanan 2004). Santiago Álvarez opted to emphasize the moments that bracketed these speeches in his early 1970s documentaries chronicling Fidel Castro’s trips abroad. Álvarez captured Castro incessantly fondling, manipulating, working the microphones that serve to amplify these speeches, a practice for which he is well known. The microphone in Álvarez’ De América soy hijo [...] y ella me debe (I am the son of America [...] and I am indebted to her) becomes an accidental solution to the quandary of representing Castro and his long-windedness as captivating and meaningful for film audiences.

De América soy hijo [...] chronicles Fidel’s tour of Chile in 1971. It is a 3-hour and 15-min film dominated by two aesthetic strategies. The first is an array of extended observational sequences of Fidel preparing for and giving speeches, casually answering questions, fixing stage props, posing for photo opportunities and generally milling around. The second consists of collages of historical and ethnographic footage narrated with poetic voice-overs, sequences that frame the extended realist observations. Over the course of the film there are three or four instances when the microphone on stage resists Fidel. The microphone may keep its volume down or its height too low, or Fidel may want to remove it from its stand. Each time someone volunteers to help, each time he denies the assistance and fixes it himself. It is within this context that the audience encounters a scene in which Fidel and Salvador Allende share the stage. Fidel speaks first. When Allende follows, he struggles to reach his mouth up to the microphone (Allende was significantly shorter than Fidel). His face is barely visible. The moment is rife with humour and unease. Time slows down. The microphone continues to thwart Allende. Though not immediately visible, Fidel becomes the imaginary vector, the possible solution. We wait to see whether he will reappear on stage and adjust the microphone. He does. Some chuckling ensues. Fidel humbly returns to his place on the side of the stage and Allende continues with his speech. Fidel has tamed the microphone. While Santiago Álvarez captures Fidel as microphone tamer, in our next example, Marker depicts how Castro fails to subdue the recalcitrant Soviet microphone.

Both Marker and Santiago Álvarez focus on the power dynamics at work in the politics of international socialism. Marker, however, is less concerned with the content of Castro’s speeches. Instead, in A Grin Without a Cat (Le Fond de l’air est rouge) Marker concentrates on the ways objects perform subtle forms of communication between socialist powers. Marker’s 1977 film is both elegy and examination of the failures and successes of radical leftist politics in the previous ten years. Like De América soy hijo [...], A Grin Without a Cat is a long film, originally running 4 hours and released in two parts. It is a collage-based
found footage film, with its length depending more on its sprawling scope than on extended observations. Just as for Álvarez people’s interactions with microphones became a filmic solution to the dilemma of long speeches, so too for Marker interactions with the microphone become a filmic solution to a quandary of documentary historiography. Marker privileges ‘rejected, unused materials, offcuts and outtakes’ rather than recontextualizing previously seen material (Lupton 2005: 140). Marker faced a common dilemma of relying solely on found footage. Using already presented and circulated material involves using material previously captured for other people’s purposes (Arthur 1999–2000; Sjöberg 2001; Skoller 2005). Incorporating this material can limit the film-maker’s effort to fashion a historical documentary argument when the pre-circulated found footage aims to create a contemporaneous narrative of power. For Marker, the rejected material, the abandoned fragment, can reveal the interactions that were considered irrelevant and inappropriate, and thus can be illuminating for his attempts to unravel prior historical narratives. *A Grin Without a Cat* offers a model of historiography that posits the abandoned fragment as appropriate object for articulating the uneven dynamics of historical change.

The microphone became a significant actant in some of Marker’s found footage of Castro’s visit to the Soviet Union. In a comical sequence, Castro is seen in a number of speeches fidgeting with multiple microphones. The voice-over describes Castro’s habit of toying with microphones as he speaks. The sequence concludes with Castro speaking in the Soviet Union, using a Soviet microphone set-up. Soviet microphones are not Cuban microphones. He tries to lift one. It does not budge. He tries another. No luck. He continues with his speech, visibly flustered. The Soviet microphones will not bend to his manipulations. The microphone stymies his efforts to incorporate it fully into his network; the microphone refuses to assist Castro as he attempts to fashion a public out of Soviet audiences. In Marker’s hands, the microphone asserts itself as part of the network of Soviet socialism, not Castro’s conception of international socialism.

These two microphone examples reveal that thinking about actants means thinking about the pro-filmic space of representation differently. ANT-informed analyses of documentaries would focus on the ways in which objects also shape historical events. ANT is a methodology that, in addition to its other theoretical interventions, allows scholars to refuse one of the major principles of capitalism – commodity fetishism. Its focus on objects can become political critique precisely because in understanding objects as actants, it refuses to take objects as commodities, that is, as objects without histories of production and distribution. Thus, ANT’s methodology enables scholars to attempt to avoid re-inscribing their own (capitalist) assumptions about objects while simultaneously paying attention to others’ assumptions about and interactions with objects.  

ANT also speaks to concerns that documentary scholars raise, such as how indexicality is produced and sustained in circulation. However, because ANT scholars are principally concerned with how scientific networks produce ‘truth’, they tend to emphasize how meaning is made stable. In Bruno Latour’s *Pandora’s Hope*, he explores how certain indexical elements keep their referents stable as they move from context to context. To understand this process, Latour follows a team of scientists as they take soil samples in the Brazilian forest. He explores in great detail how they remove bits of soil, recording each location with enough markers that ideally anyone could return to that site and locate where the soil was removed. The information on the soil is then transformed into numerical data, again through techniques that should allow
anyone to 'read' the information back into the soil samples. As the scientists bring the soil and its descriptions into each new context, they attempt to ensure that the referents can be traced through each context back to the original location in the Brazilian forest. In analysing this example, Latour argues that scientists construct reversible indexicalities, and that for signs to be able to represent truth in a scientific network, the referents must exist as a stable chain that point in both directions as the referents move between contexts. He argues: 'For this network to begin to lie – for it to cease to refer – it is sufficient to interrupt its expansion at either end, to stop providing for it, to suspend its funding, or to break it at any other point' (Latour 1999: 76). In short, what is important for Latour is recognizing the labour that goes into constructing reversible indexicalities.

In Kino-eye, Vertov offers an instance of how documentaries have engaged with the scientific project Latour outlines of creating facts through reversible indexicalities. Yuri Tsivian notes the connection between Vertov's work and science and explains how such a framework illuminates Vertov's overall project.

We need to return to Vertov's rejection of literature in favour of science. Clearly, this was another way of saying that fact, not fiction, is cinema's true subject matter, but the analogy with science stretched beyond that – in Vertov's view the mission of cinema was not to present facts but to explain them [...] The very way in which a scientist ties facts together [...] is different from a writer's way of spinning plots [...] As we relate things, we look ahead; as we explain them, we move backwards [...]. The ambition of Vertov's cinema becomes not to show but to think – that is, to disclose invisible connections between things.

(Tsivian 2005: 10, 13)

Vertov's Kino-Eye, Tsivian argues, demonstrates Vertov's contention that cinema is uniquely capable of making the 'invisible connections between things' apparent. In Part One of the film, Vertov reverses time as a way of distinguishing the value of a piece of meat for sale in the worker's co-operative from one for sale at a private market. The sequence begins with some Young Pioneers (Soviet version of boy/girl scouts) and one of their mothers separately inquiring about the cost of a piece of meat at a private market. The Pioneers then put up a sign urging people to buy meat from the co-operative. The mother sniffs the meat, walks away and reads the sign. The Kino-Eye then reverses time as a way of showing both the alternative (and socialist) market and demonstrating the production process of the co-operative. The fresh, quivering meat becomes recognizable as a bull. His entrails are returned. His hide is reattached and he comes back to life. From the stockyards he is loaded onto a train (itself always already directionally reversible). He is sent back to the countryside, where cattle farmers raise him and the other members of the herd. The piece of meat from the co-operative is better not just because it is fresher, but because it was produced through socialist practices. The reversal serves a dual purpose. First, it explains the connection between things by relying on temporalized metonymies to represent (Marxist) truth in a network of production. And second, it acknowledges the social construction of facticity by exposing its own process of cinematic (factual) production – not in a relativistic way, but to insist that scientific fact is imbricated with political truth. Vertov is in dialogue with contemporaneous scientific assumptions about fashioning facts when endeavouring to depict the realism underlying meat.
CONCLUSION: THE DOCUMENTARY NETWORK

ANT, and indeed science studies in general, has developed techniques that can help documentary scholars uncover how truth is socially constructed. Both ANT scholars and documentary scholars are faced with the question of how a particular set of interactions are transformed into representations of reality that can travel into other contexts with their truth value intact. The ANT perspective makes the circulation of putative truth a question of how different actants contribute to shaping a network through specific interactions. What ANT scholars provide are techniques for sidestepping the ontological question of truth entirely and focusing instead on truth-value. In other words, what the ANT perspective offers are techniques for understanding how representations might be transformed into facts through the labour of specific networks.

Taking ANT seriously for documentary scholars would thus involve recognizing that a documentary’s truth value emerges from all actants and interactions in the documentary’s ‘life history’, from the initial stages in which the film-makers begin to negotiate where and with whom to film – or to collect actualities – to the viewers’ and critics’ discussions of the film they have viewed. The ANT perspective on documentaries would involve refusing sharp distinctions between documentary production, distribution and reception, and instead seeing all aspects as central to how documentaries themselves function as actants and representations. Equally importantly, it would also require documentary scholars to locate themselves within the documentary network, reflexively accounting for how their own analytical labour contributes to the ways the network operates. This is part of the politics of ANT – no position in the network is innocent or sacrosanct.

The ANT perspective would encourage documentary scholars to view all technologies as condensed social scripts. Every piece of technology supposes a range of competencies and causal narratives about how people interact with each other. To a certain degree, every technical object contains a morality play about how people and things should interact, encouraging some forms while discouraging others. In analysing the social relationships that objects condense, Madeline Akrich writes: ‘new technologies may not only lead to new arrangements of people and things. They may, in addition, generate and “naturalize” new forms and orders of causality and, indeed, new forms of knowledge about the world’ (Akrich 1994: 207). For documentary scholars, this would mean paying attention to the social relations presumed in the designed actants throughout the documentary network – the cameras, the microphones, the projectors and the role of emerging digital media technologies.

ANT focuses scholars on addressing how and when these relationships revolve around questions of truth. In doing so, ANT enables documentary scholars to address in productive ways why documentary films are taken as distinct from fiction films. For example, when realism is discussed in fiction film, it tends to be discussed as a shifting aesthetic; that is, that what counts as realism in fiction films changes in different historical periods. Meanwhile for documentaries, the claim on the real has been consistent. In fiction films realism is often posed as an aesthetic question, whereas in documentaries it is often (unwittingly) posed as an ontological question, a notion many documentary scholars have challenged, especially those interested in highly politicized documentaries (Walker and Waldman 1999: 1–35; Lesage 1984: 223–51; Juhasz 1999: 190–215; Gaines 1999: 84–102; Kaplan 1984: 212–22; Kleinhans 1984: 318–42.). In short, combining these frameworks allows
scholars to re-figure how documentary films function as a genre – as well as to distinguish among different documentary sub-genres – and the methods one might use to analyse documentaries from their origins on.

In this article, we argue that one needs an historical and cultural imagination for analysing documentary aesthetics. Even the aspects most commonly taken to be formal or mechanical are always already inflected by the historically and culturally specific ways people understand documentaries to represent truth. The changes in documentaries often manifest historical transformations in norms of what counts as truth as well as of the techniques by which one makes such truth visible. In short, no strategy for fact-making is universal or universally effective. By depending on people’s documentary ideologies for persuasiveness, documentary fact-making contains the traces of power relations underpinning the coeval regimes of truth. Thus, we advocate drawing a nuanced map of the power relations that enable particular processes of representing to purport to capture historical reality.

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**CONTRIBUTOR DETAILS**

Ilana Gershon is Assistant Professor in the Department of Communication and Culture at Indiana University. She is a cultural anthropologist who studies how people’s media ideologies affect their use of new media.

Contact: Department of Communication and Culture, Indiana University, 800 East Third Street, Bloomington, IN 47405, USA.
E-mail: igershon@indiana.edu

Joshua Malitsky is Assistant Professor in the Department of Communication and Culture at Indiana University. He is a film scholar who studies the role of documentaries in nation-building in post-revolutionary socialist states, in particular the U.S.S.R, Cuba and Yugoslavia.

Contact: Department of Communication and Culture, Indiana University, 800 East Third Street, Bloomington, IN 47405, USA.
E-mail: jmalitsk@indiana.edu