Tarleton Gillespie, Pablo J. Boczkowski and Kirsten A. Foot (eds.)

Media Technologies. Essays on Communication, Materiality, and Society, Cambridge, Massachusetts, The MIT Press, 2014, pp. 326

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One of the most recent and emerging strands in STS is the encounter with media and communication studies (media studies from now onwards), which also inspires this *Tecnoscienza* special issue. Such a fascinating and not linear encounter is concerned with looking at (new) media and mediation as technology–based, an inextricably material and not only symbolic process.

Beside coining a new term which identifies an emerging field of theoretical and empirical research, *Media Technologies. Essays on Communication, Materiality, and Society* proposes a multiplicity of sites and sights to look at the convergence and interconnection between materiality of artifacts, practice and politics on the one hand; meaning and discourse on the other. Actually, the various book chapters represent and account for a number of intersecting paths traceable between STS and media studies, making media technology a field of "hybrid" scholarship.

Gillespie, Boczkowski and Foot assemble a book whose format (essays plus commentaries; workshop devoted to build up a collected volume) is overtly inspired to an STS classic seminal work (*The Social Construction of Technological Systems*). The editors aim to question and overcome both the technological and the "socio-cultural" determinism, which inspired and characterized the field of media studies, especially the mass media but also, due to the mimicry occurring when innovations enter the stage of public discourse, early new media studies. On other hand, dissatisfaction with both technological and social determinism constituted the primary trigger for the emergence and consolidation of STS as a field.

By addressing the materiality of mediation as well as the social practices and meanings which sustain media technology, both the editors and the contributors of the collection engage with shifting from the binary discourse of media/technology impacting on society (and vice versa) to the multiple arrays and articulations of the material, the social and the cultural and their "concurrent realities", as Brunton and Fenton describe them in their chapter on hardware, infrastructures and superusers.

Overall, the collection accounts for the decreasing invisibility of technology in media studies and of media in STS, a path which starts and burgeons with the emergence and configuration of information and communication technologies, especially the rise of the Internet and digital social media.

The account starts from theoretical and epistemological reconstructions of the two fields (STS and media studies) and the ways they engaged

with materiality of technologies and media, as broadly illustrated by Leah Lievrouw. Her analysis points out how materiality has been addressed but not sufficiently articulated in media studies, and that the prevailing orientation towards meaning-making and socio-cultural dimensions still forces materiality to the margin of the field, which she qualifies as "an unfinished project" (24).

While emphasizing that there is no necessary equivalence between technological determinism and materiality, even if the two issues tended to overlap over time and studies of media and technologies, the whole book tries to argue and show that materiality does not exclude reference to texts, content, meaning, cultural forms and public discourse. These dimensions enter the STS stage in multiple ways and connecting them to materiality is one of the ambitions of the encounter and hybridation between STS and media studies.

Boczkowksi, a pioneer in bridging STS and media studies through his research on online journalism, and his co-author Siles attempt to go beyond the finished and closed provinces of established scholarship in media research, steadily identified by two binary frameworks: production/consumption and content/materiality. The two authors propose to adopt a cosmopolitan sensibility to go towards transdisciplinary analyses of the whole life cycle of media technologies.

In fact, focusing on materiality and doing it at the crossroads of STS and media studies means to address the specificity of media technologies which "are about the linkages between the symbolic and the material. That is, all technologies have a symbolic dimension, but media technologies have distinctive, material capabilities to embed, transform, and make accessible symbolic content (….)" (10).

The various chapters of the book focus on different parts of such linkages. Editors and contributors share the aim of overcoming barriers and fences which separated content from materiality (technology/medium), production from consumption, design from use, practice from discourse and so on.

The result is a material shift or material turn in the analysis of media technologies that configures the concept as very hybrid, heterogeneous and not univocal. Materiality is something which goes deep into the installed basis of technology and infrastructure, "close to the metal" (Brunton and Fenton); it is something which demands care, maintenance and repair: ordinary but not trivial practices, crucial and inextricable sites of innovation as world breaks down continuously (Jackson). And it can be retrieved even in apparently "abstract" concepts such as positive and negative liberty, which play an unexpected role in shaping the history of computing beyond its most popular (libertarian and utopian) versions, as shown by Kelty.

Beside the main focus on materiality and the material, few other concepts seem to bridge the diversity and variety of encounters between the material and the symbolic, production and consumption, design and use,

local practices and public discourses presented in the book. In particular, it is crucial the concept of infrastructure, both in an implicit and explicit way, starting from Lievrouw's model of mediation as a tripartite infrastructure constituted by artifacts, practices and social arrangements (and corresponding processes of reconfiguration, remediation and reformation).

Brunton and Fenton look at the material, social and discursive dimension of infrastructures such as Anonymous movement and Spam emergence and management, getting close to the hardware components which are necessary but not sufficient to understand infrastructure itself. Of course the concept is of the greatest importance to Bowker's analysis of academic knowledge and databases, and his concern about massive, mass-produced and standardized data whose main model of circulation is still the single-author paper.

Jumping (infrastructural) contexts is the key of Downey's historical, STS-oriented research on information labor in early electrical media and organizational technologies (telegraph, stenograph and libraries) which shows how networking characterized other new media of the past, well before what we refer to as digital and social media today.

Both Gillespie and Jackson, respectively looking at algorithms and repair, deal with different infrastructural dimensions. Gillespie shows the inextricable opacity of algorithms, an automated and legitimized mode of knowledge (a *logic*), which constructs public relevance and calculated publics, more and more in competition with an editorial model of knowledge (traditional, expert-based journalism). The installed basis of algorithms as infrastructure stays opaque, never fully accountable to users and even providers. Jackson unveils the deep and hidden power of repair practices, usually neglected in the study of innovation, indeed crucial to change and transformation of the world we inhabit as subject to continuous breakdown and restoration, which call for sustainability and ecological issues in infrastructures and beyond them.

In sum, it can be said that infrastructure, consistently with its etymology (*infra* means in-between) constitutes a central bridge to put STS and Media Studies together, not as a juxtaposition but as a combination, hybridation and reciprocal fertilization/openness (in Boczkowski and Siles' terms, a "cosmopolitan" approach or (in)sight).

Another *fil rouge* which can be traced is constitutively linked to infrastructure, namely invisible work and opacity/ambivalence of knowledge (Brunton and Fenton; Bowker; Downey; Gillespie; Jackson). As a counter-part, there is a visible and publicly relevant work, that of mass-media, techno freaks, gurus and politicians in associating new technologies and media with ideas of freedom and liberty, in both overt and implicit forms, as Kelty points out in his illuminating chapter on media, technology and political theory.

The scope and range of research in media technologies presented is very broad; both contemporary and historical cases are analyzed. Continuities and contradictions of knowledge and media infrastructures are

pointed out, e.g. the centrality of human labor for networking (Downey) and the opposite (complementary) automation of algorithms (Gillespie).

The fertile encounter between STS and media studies is evident through concepts like information labor (vs media broadcast/production); power users or superusers (vs designers/users); calculated publics (vs media audience). Such concepts emerge exactly from media technology as a cross-field convergence.

The book as a knowledge enterprise attempts to re-think about given classifications and infrastructures of disciplinary knowledge in two fields of established scholarship (namely, STS and media studies). As such, it is very much attuned with an STS sensibility, summarized by concepts like "mutual constitution", "co-construction" and "heterogeneous networks".

Indeed, as a scholar trained in Communication Studies then focused on STS, my critical remark after reading the book is that it embraces more of STS lessons than of Media Studies, despite the declared aim to make the two fields fertilize each other. This is an outcome that can be interpreted in different ways– it could be Media Studies scholars are more open "to be hybridized", or more cosmopolitan than provincial in their scholarship. It could also be that this STS-driven hybridation is the inevitable result of electing heterogeneous materiality (in an STS vein) as the starting and entry point of most contributions to the volume.

However, this leaves the main merit of the book untouched. It soundly succeeds in showing that materiality matters and is there, going beyond and against the resistant myth of immateriality and de-materialization as univocal, irresistible hallmarks of digital media technologies, eventually bringing the myth itself in the picture and connecting it to wires and cables.

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Nick Couldry
Sociologia dei nuovi media. Teoria sociale e pratiche mediali digitali, Milano, Pearson, 2015, pp. 288 [italian translation of *Media, Society, World. Social Theory and Digital Media Practice*, 2012]

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One of the most interesting debates in the field of Media Studies is about which role social theory plays. This debate stems from the critique of postmodernism and the disappearance of the social that usually afflicts cultural studies and thereby Media Studies. Trying to solve this problem, Nick Couldry makes a very delicate as much as fascinating intellectual move: the proposal of a socially oriented media theory (9). This proposal