

Title:

For an Archaeology of Swarming Machines. Genealogy and the Politics of Media Dissent Beyond Representational Metaphors

Abstract:

Following the presentation of a paper at the XV MAGIS – Gorizia International Spring School, this article focuses on some of the theoretical premises that the legacy of postmodern thought offers for the understanding of contemporary forms of media resistance. In particular, it centres the attention on so-called ‘digital swarms’ that, also known as Distributed Denial-of-Service (DDoS), are one of the leading ‘weapons’ in the politics of digital media and network dissent. However, in the literature on hacktivism, these ‘swarming machines’ are predominantly defined via an analogy with direct action, implying assumptions based on humanist epistemologies, which limits their politics as a matter of representation. With the objective of offering a possibility to move beyond the limits of such a metaphorical impasse, genealogy is suggested as a critical approach to link, through ideas of nonlinearity and difference, postmodern thinking and media archaeological investigations.

Keywords:

Media Archaeology; Critical Genealogy; Digital Swarms; Non-representational theory; Media Theory;

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For an Archaeology of Swarming Machines. Genealogy and the Politics of Media Dissent Beyond Representational Metaphors.¹

Introduction:

One of the main concerns of postmodern thought has been the understanding and conceptualisation of power beyond its strict comprehension as a form of exercised force. Nowadays the question extends its relevance, since digital media and networks have increasingly become a ‘battlefield’ where the emergence of novel power relations is constantly faced by new forms of resistance. Gilles Deleuze, in his own personal homage to Michel Foucault, offers a valuable indication of where we should look to identify the relations of power that are preponderant in our time.² According to Deleuze, locating ‘the basis of the “struggles” of each age, and the style of these struggles’ is essential to comprehend the diagrammatic of current power mechanisms.³

Nevertheless, contemporary studies on the politics of media dissent seem to avoid engagement with some of the outcomes of postmodern thought, and especially with the precious challenges to humanist epistemologies. Rather than definitively liberating from the falsity of dualisms, the fallacious superiority of enlightened reason, and the impossible separateness of representation, very often academic studies of media resistances remain enmeshed in these controversial metaphysical presuppositions – as if Foucault’s *Les Mots et Les Choses* had never been published.⁴

So-called ‘digital swarms’ – also technically known as Distributed Denial-of-Service (DDoS) in the field of computing – are a form of communicational disruption that, in recent years, has hit the headlines of the major news media of the world.⁵ Thanks to the digital media actions of hacktivist

¹ This article follows a paper that was presented at the Media Archaeology Section of the XV MAGIS – Gorizia International Spring School in April 2017. The symposium focused on the legacy of postmodernity – how postmodern thinking still influences contemporary research in the field of media studies and, in particular, how it resonates in novel and not fully structured ways of studying digital media and networking technologies, as it can be in the case of the archaeological study of media.

² Gilles Deleuze, *Foucault*, trans. by Seán Hand (Minneapolis, London: Minnesota University Press, 1988), p. 44.

³ Ibid.

⁴ Michel Foucault, *The Order of Things. An archaeology of the human sciences*, trans. by Alan Sheridan (London, New York: Routledge, 2005); first French edition 1966, first English edition 1970.

⁵ A critical discussion of the application of the concept of swarming to the specific case of DDoS is beyond the scope of this paper. Clearly, the idea of the swarm comes from the collective behaviour of non-human animals, particularly insects, non-metaphorically expressing the emergent capacities of a multiplicity that acts following a common movement. In the practical and theoretical developments of DDoS as a form of political dissent, the ‘Electronic Disturbance Theatre’ was the first group to openly use the concept of swarm (in parallel to that of the ‘flood’); see for instance Ricardo Dominguez, ‘The Ante-Chamber of Revolution. A Prelude to a Theory of Resistance and Maps’, *Ctheory*, (November, 1998) <www.ctheory.net/articles.aspx?id=203> [Accessed 04 December 2015]. Arquilla and Ronfeldt were amongst the first to use the idea of swarms for postmodern, internetworked conflicts (what they call Netwar); see John Arquilla and David Ronfeldt, ‘The Advent of Netwar (Revisited)’, in *Networks and Netwars. The Future of Terror, Crime, and Militancy*, ed. by John Arquilla and David Ronfeldt (Santa Monica: Rand, 2001), 1-25. For an analysis of swarms, in parallel to other concepts such as networks and multitude, as a mutation of the modern tradition of body politics that coherently links technological, social and biological realms, see Eugene Thacker, ‘Networks, Swarms, Multitude’, *Ctheory*, 18, (May 2004) <<http://www.ctheory.net/articles.aspx?id=422>> [Accessed 01 August 2017]; Eugene Thacker, ‘Networks, Swarms, Multitude. Part Two’, *Ctheory*, 18, (May 2004) <> [Accessed 01 August 2017]. For a development of these analyses that critique the celebratory voices of network decentralisation, highlighting the condition of contemporary conflicts within a symmetrical opposition between networks as well as offering the possibilities for “counter-protological”, asymmetrical practices, see Alexander R. Galloway and Eugene Thacker, *The Exploit. A Theory of Networks*, (Minneapolis, London: University of Minnesota Press, 2007). For a discussion of swarms as a form of cultural technique that followed the development of ethological studies from biology to computer sciences, resisting methods of analytic investigation, see Sebastian Vehlken, ‘Zootechnologies: Swarming as a Cultural Technique’, *Theory, Culture & Society*, 30.6 (2013), 110–31. My use of the concept of digital swarms, or my preferred choice for ‘swarming machines’ follows a conceptual line that moves from the first ideas of the EDT to those of Galloway and Thacker, as well as openly employing the transversal relationality of the Deleuzo-Guattarian

networks such as ‘Anonymous’, internetnetworked swarms have become one of the key ‘styles’ of contemporary struggles within digital cultures: an instance of political dissent that is actualised through digital media and networks. More relevantly, digital swarms are an example of the problems that might arise when a complex phenomenon concerning media technologies is approached via the paradigm of representation. Indeed, since their surfacing as a form of media resistance in the ‘90s, swarming disruptions have been read and described via an analogy with politically motivated direct action, framing and limiting their politics as a matter of media visibility.

The objective of this article is to cast light on some of the epistemological assumptions that a non-representational approach to the politics of media dissent might foster in order not to fall back into the limits of humanist-oriented paradigms. First, a brief introduction to the specific case of digital swarms, without entering into the details of ongoing research in the field, is needed in order to outline the argument. Second, I focus on two key aspects of the media archaeological approach that, being informed by the precious legacy of postmodern thought, avoids the cul-de-sac of representation-oriented analyses of digital media and networks – particularly of swarming media actions of resistance. Finally, I propose the critical method of genealogy as an opportunity to challenge the remains of modernist reasoning, offering a precious line of connection between postmodern thinking and the archaeological study of media.⁶

Digital Swarms as Direct Action: Media Metaphors and the Limits of Representational Paradigms

The ‘Denial-of-Service’ (DoS) is one of the leading ‘weapons’ amongst the contemporary forms of digital media dissent. In the field of computing – particularly in network security – DoS is generally regarded as ‘a devastating attack’ that ‘can cause major and very visible disruption to our world’.⁷ As such, it is commonly considered by computing analysts as a tangible threat, one that is able to disrupt the entire internetnetworked infrastructure on which advanced capitalist societies rely.

Media actions in the form of DoS are actualised to obstruct access to a network or data host, making it impossible to reach a determinate Internet resource for its users. For a temporary period, such media disruption makes unavailable the services that are offered by a specific server on the Internet. In the last decades, DoS have arisen as one of the most employed and disputed tactics to block and disrupt an internetnetwork resource. In fact, DoS has a tangible capacity to interrupt the interconnections of the chosen target. In addition, it can be actualised through a broad range of networked media such as emails, peer-to-peer networks or telephony (as happens in the voice over Internet Protocol – VoIP – configuration). Further, DoS media actions have progressively become more elaborated thanks to the creativity and developments of their practitioners.

Despite the fact that different social actors with various motivations can undertake DoS ‘attacks’, the history of this form of media dissent is contentious, extending beyond the strict actuality of contemporary times. Doubtless, this media action of resistance is the most discussed in the literature on ‘hacktivism’, due to its political facets and economic consequences.⁸ Since the 1990s, the actualisation of DoSes has been postulated as a non-violent and aesthetic form of political

‘machine’ (see footnote number 10 below); it aims, as such, to stress the non-anthropomorphic and inhuman character of these form of media dissent, emphasising as well a common vital and materialist consistency that fosters an agential realist position; for details see Alberto Micali, ‘Hacktivism and the Heterogeneity of Resistance in Digital Cultures’ (unpublished doctoral thesis, University of Lincoln, 2016).

⁶ Applying the proposed approach to the study of this particular form of media dissent is beyond the scope of this paper. However, the interested reader might find details in Alberto Micali, ‘Towards a Nonlinear, Material History of Digital Swarms’, *Internet Histories: Digital Technology, Culture and Society*, 1.3 (2017), 238-257.

⁷ Jelena Mirkovic, Sven Dietrich, David Dittrich and Peter Reiher, *Internet Denial of Service: Attack and Defense Mechanisms* (Upper Saddle River: Prentice Hall PTR, 2004), foreword, par. 3.

⁸ Tim Jordan, and Paul A. Taylor, *Hacktivism and Cyberwars: Rebels with a cause?* (London: Routledge, 2004); Molly Sauter, *The Coming Swarm. DDoS Actions, Hacktivism, and Civil Disobedience on the Internet*, (New York, London: Bloomsbury, 2014).

opposition that could be ‘performed’ on the Internet, namely theorised in terms of ‘cyber strikes’ or ‘electronic disobedience’.⁹ However, along with the mass commodification of digital networks, the deployment of ‘swarming machines’ (especially when politically motivated) began to be condemned, and later was declared illegal in legislation.¹⁰

According to a broad classification, the main technical feature of digital networks distinguishes the centralised version (DoS) from its distributed one: the Distributed Denial-of-Service (DDoS). Within the distributed topology of a network such as the Internet, this distinction characterises the origin of the attacking packages. Instead of being actualised via a central node, data is deployed through distributed and decentralised modalities, exploiting many nodes on the network. This creates a multiplicity of connections coming from a wide set of directions: an internetworked ‘swarm’ of data. Moreover, another technical variation depends on the executability of the swarm; that is, the difference between the automated origination of requests, as for instance happens when specific software is employed to assemble and deploy requests from a large number of computing machines, and the client-side launch of the action, when the contribution of each computer is crucial to its realisation.

Since its emergence as a form of media dissent, the first practitioners and academic readers of hacktivism have theorised and investigated this swarming form of mediation and, particularly, its possible political uses. During the 1990s, the two main groups involved in organising forms of protest in the form of DoS attacks were the Italian, Florence-based ‘Strano Network’ and the American ‘Electronic Disturbance Theatre’ (EDT). The leader of the former group, the academic and artist Tommaso Tozzi, was the first to think and propose the idea of a ‘virtual strike’ (later renamed ‘Netstrike’), before actualising it in December 1995 against ten French governmental web addresses; French government that was contested because of the nuclear experiments in the Pacific Ocean.¹¹ In parallel, EDT began to employ the same media tactic in order to support the struggles of Chiapas, developing in 1998 ‘FloodNet’, an automated script that directed swarms against the main websites of the Mexican Government.¹²

The actualisation of early swarming machines for political reasons was accompanied by their first theorisation. Both groups proposed their forms of media dissent as the re-organisation and re-arrangement of activist demonstrations, such as strikes, boycotts, marches or blockades, within the emerging global networked infrastructure. On the one hand, the emphasis for Strano was on the participatory and communicative, political potential of these media actions – reflecting the inclination of the group for supporting cyber-rights and the democratic promises of networking technologies. On the other hand, EDT equally centred its attention on the activist and participative possibilities of digital swarms, bringing attention to the originated performance, that is, the theatrical capabilities provided by the Internet-as-a-stage.¹³

⁹ Arturo Di Corinto and Tommaso Tozzi, *Hacktivism. La Libertà nelle Maglie della Rete* (Rome: Manifesto Libri, 2002).

¹⁰ I use the word and concept of the ‘machine’ as it is openly theorised and used by Gilles Deleuze and Félix Guattari throughout their work; that is beyond its strict comprehension and individuation as technological apparatuses. The machine is particularly central in the work of Guattari, who attempts to resist the structuring and despotic forces of language and universal normativity via the open connectivity of the machine. For details and examples, see Gilles Deleuze and Félix Guattari, *A Thousand Plateaus. Capitalism and Schizophrenia*, trans. by Brian Massumi (Minneapolis: University of Minnesota Press, 1987); Félix Guattari, *Chaosmosis. An ethico-aesthetic paradigm*, trans. by Paul Bains and Julian Pefanis (Indianapolis: Indiana University Press, 1995); Félix Guattari, ‘On Machines’ trans. by Vivian Constantinopoulos, *Complexity*, 6, 8-12; Félix Guattari, *The Anti-Oedipus Papers*, trans. by Kéline Gotman (New York: Semiotext(e), 2006); Gerald Raunig, *Tausend Maschinen: eine kleine Philosophie der Maschine als sozialer Bewegung*, (Vienna: Turia+ Kant); Maurizio Lazzarato, *Signs and Machines. Capitalism and the Production of Subjectivity*, trans. by Joshua David Jordan (Los Angeles: Semiotext(e), 2014).

¹¹ Di Corinto and Tozzi, *Hacktivism*.

¹² For a more detailed chronology see Tatiana Bazzichelli, *Networking. The Net as Artwork* (Digital Aesthetics Research Center, Aarhus: Aarhus University, 2008).

¹³ For details about Strano Network, EDT and their theorisations and practices of “Netstrikes” and “FloodNets”, see Strano Network, *Net Strike – No Copyright – Et(-): Pratiche antagoniste nell’era telematica* (Bertiolo: AAA Editions,

The first academic studies on hacktivism embrace this theoretical position, laying the foundations of their analyses on the analogical reading of DDoS forms of media dissent as direct action. Tim Jordan produced some of the first academic research in the Anglo-American literature that openly recognised the emergent phenomenon, dedicating part of the investigation to the swarming media actions in question, and offering later a more focused study on hacktivism.¹⁴ In Jordan and Paul Taylor's proposal, the media actions of Strano and EDT are conceptually posited within a trend of 'mass action hacktivism'. As such, they underline that, in the phenomenon of hacktivism, 'the popular politics of direct action has been translated into virtual realms' and, as regards DDoS media actions, that these are 'the most direct attempts to turn "traditional" forms of radical protest, such as street demonstrations, into forms of cyberspatial protest'.¹⁵ Likewise, in the other most comprehensive study on hacktivism, Arturo Di Corinto and Tommaso Tozzi echo the perspective of considering digital swarms as a rendering of street protests in the electronic realm.¹⁶ This is a line of argument that moves its theoretical premises, without being questioned, to the more recent accounts on the topic: as in *The Coming Swarm*, 'DoSS as direct action' is openly employed to approach the issue as a 'functional metaphor'.¹⁷

The metaphorical reading produces a fallacious reading of a complex sociotechnical phenomenon, whose politics is framed and limited as an issue of media visibility: a symbolic act that is assumed to be separated from the entangled relationality that co-constitutes it.¹⁸ The assumptions of the analogy between this set of media actions and street political ones presupposes a humanist misreading that considers technical objects as mere prostheses of the human-animal: tools to represent human culture and, in this case, to bring forth rationally a political cause. The metaphorical reading is deeply enmeshed in a representationalist paradigm that uses representations as bridges to fill the gaps that exist in the fallacy of dualisms. Within representationalism, media – and the disruptive processes of mediation that are stake in digital swarms – are separated from their social, cultural and political context, and their intelligibility appears to be exclusively related to signifying semiotics: a symbolic plane of rational meanings. Cyber and street, symbolic and real, online and offline, media and society: these ontological divisions are at the core of the analogy with direct action, evidencing the limits of the metaphorical assumptions. As analogies, swarming mediation withdraws as a container to be filled by a representation (the political issue of the day), favouring a technologised view of social activism or a politically oriented construction of media hacking; missing, then, the key vital and material aspects of the disruptiveness that is at stake in the actualisation of political resistance through digital media and networks.

In his seminal critique of humanism, Foucault recalls that analogy has played a key part in the organisation of the production of knowledge at least since the end of the XVI century.¹⁹ 'Its power is immense, for the similitudes of which it treats are not the visible, substantial ones between things themselves; they need only be the more subtle resemblances of relations'.²⁰ Analogical thinking has

1996); Ricardo Dominguez, 'Electronic Disturbance: An Interview', in *Cultural Resistance: A Reader*, ed. by. Stephen Duncombe (London, New York: Verso, 2002), pp. 379-396.; Stephan Wray, 'Electronic Civil Disobedience and the World Wide Web of Hacktivism', *Net, Work, Art*, 4.2 (1998); Stephan Wray, 'The Electronic Disturbance Theater and Electronic Civil Disobedience', *The Thing*, 17 June 1998 <www.thing.net/~rdom/ecd/EDTECD.html> [accessed 01 May 2013]; Coco Fusco, 'Performance Art in a Digital Age: A Live Conversation with Ricardo Dominguez', *Institute of International Visual Arts*, London, 1999 <www.thing.net/~rdom/nyu/PerformanceArt.doc> [accessed 15 June 2013]; Coco Fusco, 'On-Line Simulations/Real-Life Politics A Discussion with Ricardo Dominguez on Staging Virtual Theatre', *TDR: The Drama Review*, 47.2 (2003), 151-162; Graham Meikle, *Future Active. Media Activism and the Internet* (New York: Routledge: 2002).

¹⁴ Tim Jordan, *Activism!: Direct Action, Hacktivism and the Future of Society* (London: Reaktion Books, 2001); Jordan and Taylor, *Hacktivism and Cyberwars: Rebels with a cause?* (2004).

¹⁵ Jordan and Taylor, *Hacktivism*, pp. 1; 68.

¹⁶ Di Corinto and Tozzi, *Hacktivism*.

¹⁷ Sauter, *The Coming Swarm*, pp. 42-46.

¹⁸ Micali, 'Towards a Nonlinear, Material History of Digital Swarms'.

¹⁹ Foucault, *The Order of Things*.

²⁰ Foucault, *The Order of Things*, p. 24.

a field of application that is universal, and – not by chance – the privileged point of this space of exercise is man: who is in proportion to and beyond all the existent. ‘He is the great fulcrum of proportions – the centre upon which relations are concentrated and from which they are once again reflected’.²¹ Analogical correspondence is situated at the heart of representation: it is a repetition that mirrors the word through the anthropocentric prejudice of sameness, relating to the otherness of the existent in a hierarchical and oppressive manner.

With the objective of offering a possibility to approach digital swarms beyond the metaphor of direct action, I discuss below two key theoretical premises of postmodern thought that mark a recent and not-fully developed approach to media: media archaeology. These assumptions involve ideas about difference and nonlinearity, and crucially they find their place in the critique of genealogical investigation that, connecting media archaeology with some epistemological postulations of postmodern thinking, I argue offers a chance to challenge representational readings of media, and particularly digital swarms. The most concrete potential for such a media archaeological-inspired analysis is, more specifically, the development of a materialist understanding; one that fosters a posthuman position, decentralising agency from the hierarchy of the human subject and acknowledging contemporary forms of media resistance beyond a spectacular visibility that neutralises the vital intensities traversing their politics.²²

Media Archaeologies and the Legacy of Postmodern Thought, or the Differencing Nonlinearity of a Critical Genealogy

The history of the media is not the product of a predictable and necessary advance from primitive to complex apparatuses. [...] Instead of looking for obligatory trends, master media, or imperative vanishing points, one should be able to discover individual variations. (Siegfried Zielinski, *Deep Time of the Media*)

The archaeological study of media approaches and considers media and mediation by implying some of the legacies of postmodern thought. It offers, as such, a way out from the impasses of metaphorical readings. In particular, 1) media archaeologies challenge the qualitative depletion of differences, rethinking the processuality of mediation in terms of remediation of the old in the new.²³ Moreover, 2) it contends humanist theological reasoning, fostering a nonlinear, anti-progressive comprehension of human-technological ensembles. These two tied divergences characterise a genealogical critique that, reframed by French readers of Nietzsche such as Foucault and Deleuze,²⁴ is one of the key analytical tool of media archaeological research. Crucially, genealogy moves beyond representational deadlocks, rediscovering what Zielinski calls the ‘deep time’ of media: a nonlinear, long temporality that meets the differencing movement of histories through deviations and breaks, estranging and de-familiarising with modernist images of media ‘evolution’.²⁵ Then, I argue, genealogy is a functional tool to study the politics of digital media and

²¹ Foucault, *The Order of Things*, p. 26.

²² The posthuman twist I am proposing to approach swarming machines, is reminiscent of the one offered by Parikka on computer viruses; see Jussi Parikka, *Digital Contagions. A Media Archaeology of Computer Viruses* (New York, Washington, D.C., Baltimore, Bern, Frankfurt am Main, Berlin, Brussels, Vienna, Oxford: Peter Lang, 2007).

²³ For a conceptualisation of remediation as an open process of re-proposition and re-actualisation of older media forms in new ones, see Jay D. Bolter and Richard Grusin, *Remediation* (Cambridge, MA: MIT Press, 1999); for the development of this concept and its application in a non-representationalist framework see Richard Grusin, *Premediation: Affect and Mediality after 9/11* (New York: Palgrave Macmillan, 2010), esp. Ch. 3.

²⁴ Michel Foucault, ‘Nietzsche, Genealogy, History’, in *The Foucault Reader* ed. by Paul Rabinow, (New York: Pantheon, 1984), pp. 76-100; Gilles Deleuze, *Nietzsche and Philosophy*, trans. by Hugh Tomlinson (New York: Columbia University Press; 1983).

²⁵ Siegfried Zielinski, *Deep Time of the Media. Toward an Archaeology of Hearing and Seeing by Technical Means*, trans. by Gloria Custance (Cambridge: MA, London: MIT Press, 2006).

network dissent, since it provides a materialist comprehension of digital swarms that is not related to the analogy with direct action.²⁶

Thinking of media archaeologically means researching contemporary media cultures by employing visions, knowledge(s) and experimentations emanating from the past. This permits the study of contemporary network cultures at a practical and theoretical level, beyond the specificity of digital media and networks. In fact, in the case of media archaeologies – because of the relevancy given to materiality and time – these cultures appear stratified, allowing unique rediscoveries of technologies from the past in parallel with the growing obsolescence of present ones.²⁷

To begin with the first point (1), archaeological readings are not a simple re-propositioning of the old in the new. Archaeological readings stress the necessity for ‘qualitative’ more than ‘quantitative’ readings and studies of media forms and processes. Whilst the contemporary capitalist culture of newness establishes the paradigm of ‘New Media’ as the novel frontier of the advancement of media technologies, the qualitative attention to variations emphasises the continual depletion of the differences of the subsumed forms. This, in a vitalist, entangled and materialist, philosophical perspective that appraises the natural-cultural continuum, is a reduction of life forms as mediation: the drastic reduction of biological differences in media-natures.²⁸ In this sense, media archaeologies – ‘an-archaeologies’ or ‘variantologies’ if we adhere to the multiple lines opened by Zielinski – challenge qualitative exhaustions, pointing towards the superseding of traditional modernist and humanist readings of media and mediation as well as implicitly disputing with contemporary big data epistemologies.²⁹

Furthermore, and in connection to point 1, the approach of media archaeology also acknowledges the nonlinearity of historical movement, accounting for the ‘theological’ progression of media history (2); what Zielinski diagnoses as ‘*psycopatia medialis*’.³⁰ Archaeological investigations are applied to a past of mediation and media apparatuses beyond their strict actuality, critically underlining the obsessive idea of progress that characterise contemporary societies. In this sense, media archaeologies critique the linear celebration of the progression of human-technological assemblages. They attempt to overcome the anthropocentric prejudice of dualist separations, implicitly disputing with the elevation of the human-animal from nature by means of technological prostheticity.³¹

²⁶ As I have demonstrated elsewhere, a genealogical approach to digital swarms points toward a different provenance for these media actions that is not direct action. For details, see Micali ‘Towards a Nonlinear, Material History of Digital Swarms’; and Micali ‘Hactivism and the Heterogeneity of Resistance in Digital Cultures’.

²⁷ Jussi Parikka, *What is Media Archaeology?* (Cambridge: Polity Press, 2012). On cultural stratification see Deleuze and Guattari, *A Thousand Plateaus*, esp. chap. 3. For an historical philosophy of stratification see Manuel De Landa, *A Thousand Years of Nonlinear History* (Cambridge, MA: Swerve/MIT Press); first edition 1997.

²⁸ Without entering here into the details of neo-materialist perspectives, overviews can be found in *New Materialisms. Ontology Agency and Politics*, ed. by Diana Coole and Samantha Frost and Frost (Durham, London: Duke University Press, 2010); and in *New Materialism: Interviews & Cartographies*, ed. by Rick Dolphijn and Iris van der Tuin (Ann Arbor: Open Humanity Press, 2012). Regarding the natural-cultural continuum (naturecultures), this is a key assumption of post-humanist thought and details can be found in Donna Haraway, *The Companion Species Manifesto* (Chicago: Prickly Paradigm Press, 2003); Roberto Marchesini, *Post-Human. Verso nuovi modelli di esistenza* (Turin: Bollati Boringhieri, 2002); and Rosi Braidotti, *The Posthuman* (Cambridge: Polity Press 2013). On its development the direction of media and mediation, see Jussi Parikka, *A Geology of Media* (Minneapolis, London: University Of Minnesota Press, 2015) and Rosi Braidotti, ‘The Critical Posthumanities; or, is Medianatures to Naturecultures as Zoe is to Bios?’, *Cultural Politics*, 12.3, 380-390.

²⁹ Zielinski, *Deep Time of the Media*. With the expression ‘big data epistemology’, I do not exclusively mean the centrality of big data in contemporary ‘digital’ societies. Rather, I would like to stress the key position that the extraction and interpretation of big data has in so-called ‘digital humanities’ and in related ‘digital methods’. Indeed, these emerging field of research and methodologies do not take care of entangled relationality, dis-acknowledging the performativity of research as well as re-institutionalising problematic hierarchies between its subjects and objects. In this sense, they follow a particular movement that attempts to overcome the boundaries between so-called hard and soft sciences, but do so by re-proposing all the limits of humanist and representationalist paradigms.

³⁰ Zielinski, *Deep Time of the Media*, p. 8.

³¹ One of the key, implicit assumptions of humanist epistemologies is that man separates himself from nature through technology (i.e. fire). This anthropocentric position is at the heart of the false dualism between nature and culture, and

Nonetheless, the archaeological approach to media is not homogeneous, nor does it present exact boundaries to the way media can be studied. Despite the fact that a wide group of theorists can be ‘archaeologically’ read as precursors, media archaeology does not have master theorists, as it comprises a field of study characterised by experimentation and ‘nomadism’: it is a work-in-progress.³² However, according to Parikka, two inspirational theoretical contributions can be identified within the broad set of studies addressed by media archaeologists.³³

On the one hand, there are Foucauldian archaeologies – which introduced the opportunity to research the conditions of knowledge that lead to the emergence of specific discourses, practices, concepts, opinions, etc. This, in the early work of Foucault, means investigating the set of contingencies that are able to affirm and sustain the existence of certain knowledge(s) and powers – that is, the shifts of epistemic conditions and their capacity to constitute the emergent subjects of knowing.³⁴ On the other hand, there is Friedrich Kittler, who addressed Foucauldian archaeological methods by further implicating and suggesting the centrality of technological systems, especially in their material possibilities.³⁵

Setting aside the influence of Kittler, for the purpose of this article, I will close this section by briefly focusing on the Foucauldian contribution. Indeed, it offered a precious mode of historical investigation that productively provides an escape route from the impasses of the metaphorical reading of digital swarms. This is the Nietzschean genealogical mode of inquiry, which is a significant reference for the archaeological questioning of media and mediation, having equally the capacity to bring central questions about the introduced ideas of difference (1) and nonlinearity (2). In particular, having introduced Foucault as an essential reference, I will now centre my attention on his discussion of genealogical readings as well as implying some comments developed on it by Deleuze.³⁶ The argument supports the idea that genealogy deals with the plurality of historical movement by fostering a disruptive, differentiating and accidental perspective: one that decisively accounts for nonlinearity and difference, providing – for this reason – the possibility to approach the politics of media dissent by avoiding some of introduced limits of humanist epistemologies.

Genealogy is, for Nietzsche, a method of tracing the lines of descent back to the conditions that made something possible. This is a historical and critical method that allowed his readers, such as Foucault, to reconsider excluded readings, reemploying and rehabilitating minor traits of history. Foucault outlined various focal points of the genealogical approach in Nietzsche.³⁷ Some of these are essential to account for a non-representationalist method that takes on an archaeological analytics of media actions such as digital swarms. In fact, genealogy approaches history through a non-progressive and anti-theological mode of inquiry, searching, conversely, for ruptures, absences and small, disregarded facts.

Rather than seeking an (metaphysical and absolute) ‘origin’, it is an excavation oriented to the searching of ‘provenance’ and ‘emergences’. It is an investigation that points towards the fragmentary, the heterogeneous and the externality of relations instead of observing immobility and conformities. This means it is not overly directed toward continuities without interruptions, which

fosters a Promethean perspective that assumes technologies as mere ancillary objects of the human subject. For details see Marchesini, *Posthuman*.

³² *Media Archaeology. Approaches, Applications, and Implications*, ed. by Erkki Huhtamo and Jussi Parikka (Berkeley, Los Angeles, London: University of California Press, 2011).

³³ Parikka, *What is Media Archaeology?*.

³⁴ Michel Foucault, *The Archaeology of Knowledge*, trans. by Alan Sheridan (London, New York: Routledge, 2002); Foucault, *The Order of Things*.

³⁵ Friedrich A. Kittler, *Discourse Networks, 1800/1900*, trans. by Michael Metteer and With C. Cullens (Stanford: Stanford University Press, 1990). Friedrich A. Kittler, *Gramophone, Film, Typewriter*, trans. by Geoffrey Winthrop-Young and Michael Wutz (Stanford: Stanford University Press, 1999). See also Jussi Parikka, *What is Media Archaeology?*; and *Kittler Now. Current Perspectives in Kittler Studies*, ed. by Stephen Sale and Laura Salisbury, (Cambridge and Malden: Polity Press, 2015).

³⁶ Foucault, ‘Nietzsche, Genealogy, History’, pp. 76-100; Deleuze, *Nietzsche and Philosophy*.

³⁷ Foucault, ‘Nietzsche, Genealogy, History’.

derive from a single, original point, but rather toward the nonlinear and distributed proliferation of occurrences. In this sense, genealogical queries tend to:

locate the accidents, the minute deviations – or contrariwise, the complete reversals – the errors, the false appraisals, and the faulty calculations that gave birth to those things that continue to exist and have value for us; it is to discover that truth or being does not lie at the root of what we know and what we are, but the exteriority of accidents.³⁸

In addition, reading the genealogical approach as followed by Nietzsche in studying morality, Deleuze suggests the presence of a ‘differential element’ that lays at the ground of Nietzschean critical project on the origin of values.³⁹ According to Deleuze’s remarks, this origin cannot be assumed to be singular, since such a presupposition would refuse the quality of the forces at stake, limiting and misjudging their actual and virtual potency. As such, genealogy discovers origins as a series of conditions that are processes and relations based always on difference. In this sense, the pluralistic objectives of genealogy, as well as its modalities of investigation, are oriented towards the related understanding of an unstable state of differences – a set of forces that, actively or reactively, do not answer to the metaphysical question *par excellence*, ‘what is it?’, rather than questions of ‘who?’.⁴⁰

A genealogical account allows, then, to approach the politics of swarming machines by avoiding the trap of the temporal proximity of events, such as when emphasising only the last deployed digital media ‘attack’ as the ultimate progression of a lineage of digital weapons. On the contrary, it is emergence that characterises the casual play of episodes, functioning as an irruption and encounter of forces. A genealogical investigation is anything but teleological, since – again following Foucault – ‘[t]he forces at play in history do not obey a destination nor a mechanics, rather the chance of struggle’.⁴¹ Hence, employing a genealogical approach that fosters such an accidental nature, the resulting history of media will be formed of a history of multiplications, a history of histories, of discontinuities. This is a media archaeology that goes beyond a mere linear and homogeneous chronology; a differencing archaeology that through the critique of genealogy explores the different forces that conditioned the emergence of certain forms of media actions, moving – as such – from their mere analogical understanding.

Conclusion

Some of the crucial developments of postmodern thought still have a significant resonance in contemporary media studies. These assumptions play a key part in avoiding the limits of a representational comprehension of media and mediation, as well as offering precious modalities to approach and study complex socio-technical phenomena beyond the mere re-proposition of sameness through metaphorical readings. Genealogy, in particular, is a method that critically advances the study of disruptive media processes such as so-called digital swarms. Genealogical critique shapes an archaeological-inspired research that does not look for impossible origins, pointing towards fragmentary conditions, episodes and variations that do not mirror the phenomena in question, and as such challenge humanist paradigms.

From the paradigmatic position of humanist epistemologies in the study of media, with their related representationalism and dualistic patterns of thought, is possible to indicate the evident limits of the contemporary understanding of so-called digital swarms. As I have argued here, a productive way to overcome these dead ends can be found in the valuable inheritance of postmodern thought – and particularly in genealogical accounts, which are centrally at stake in

³⁸ Foucault, ‘Nietzsche, genealogy, history’, p. 81.

³⁹ Deleuze, *Nietzsche and Philosophy*, p. 2.

⁴⁰ Deleuze, *Nietzsche and Philosophy*, p. 75-8.

⁴¹ Foucault, ‘Nietzsche, genealogy, history’, p. 88 (*trans. mod.*).

archaeological approaches to media. More precisely, it is by fostering ideas of nonlinearity and difference that genealogy challenges the quantitative annihilation of heterogeneity and the falsely progressive movement of history.