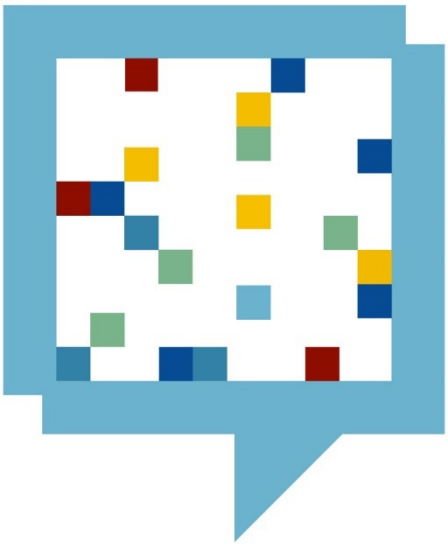

# EUMEPLAT

## European Media Platforms: Assessing Negative and Positive Externalities for European Culture

Horizon 2020 “Europe in a changing world – Inclusive, Innovative and Reflective Societies”, Research and
Innovation, Call Innovation 10/2020: *Evolving Media Landscapes and Europeanisation*
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## Work Package 5, Task 5.2 Choices and Aglorithms: Literature review

**A Working paper by Sandra Abdulhaková & Miloš Hroch**

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## 1/ Structure

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| > Better democracy<br><br>Has a voting structure, which can be viewed as a democratic model | By accessing pages, people give 'likes' to them and it suggests that the one page with more clicks than the other is more relevant, this "click signal" is used by search engines to determine exactly what people would want so they could give them exactly what they wanted. (For example: Google)<br><br>"The fact that a Web page linked to another page could be considered a "vote" for that page." p.43<br><br>Pariser, E. (2014). *The filter bubble: how the new personalized web is changing what we read and how we think*. Penguin Books. |
| > Reproduction of inequalities & capitalism (the former hopes lost)<br><br>Mimics social inequalities + Inherently a capitalistic model | "Many of these models encoded human prejudice, misunderstanding, and bias into the software systems that increasingly managed our lives." p.12<br><br>O'Neil, C. (2016). *Weapons of math destruction: how big data increases inequality and threatens democracy* (First edition). Crown.<br><br>Search engines and platforms prioritize content in a way that promotes their own business interests over their competitors'.<br><br>Noble, S. U. (2018). *Algorithms of oppression: how search engines reinforce racism*. New York university press.<br><br>"It is now increasingly recognized that machine systems built to be objective and unbiased do indeed discriminate along familiar human lines, reproducing or amplifying social differences and inequalities." p. 2-3 (quote spans over two pages)<br><br>"The truth is that society is deeply, structurally unjust and unequal, and that technologies are part of these structures, the question is whether our algorithms should accurately reproduce inequality or work to change it." p.3<br><br>"These scenarios are typically presented as developing from an economic or political crisis emerging as a consequence of widespread automation, whether this is imagined in the near future or as currently underway. However, the social (re)engineering of inequality need not be contingent on some |

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| | ‘new Industrial Revolution’ where robots replace human labor. Automated systems already distribute various goods and effects unequally, or are complicit in the reproduction of long-established inequalities. The future, in this sense, promises more of the same; control over sociotechnical systems will be used to further concentrate power along already-dominant lines.” Referencing: (Bastani, 2019), (Clifford, 2021),& (Zarkadakis, 2020) p.5<br><br>Zajko, M. (2022). Artificial intelligence, algorithms, and social inequality: Sociological contributions to contemporary debates. *Sociology Compass*, *16*(3). https://doi.org/10.1111/soc4.12962 |
| > The lack of transparency<br><br>Classification = social stratification<br><br>• Factors considered in Machine Learning are biased (dependent on who is funding machine learning) | “Classification itself is a deeply moral project often implicated in social stratification” p.3<br><br>While databases such as Google operate on some principle of crowdsourcing where the users contribute to the way the algorithm may display certain results associated with specific qualities that propagate specific ideologies or sentiments, it is up to Google workers to decide what is inherently racist or sexist, acceptable and unacceptable. These decision making processes are not objective but rather subjective and definitely affected by the workers’ personal beliefs as well as the social benchmarks and relative positions that they exist in. Thus, they tend to reproduce the same broad social context that exists in the real world within the algorithmic systems they set up. Power imbalances, economic inequity, and social exclusion are all reproduced.<br><br>Joyce, K., Smith-Doerr, L., Alegria, S., Bell, S., Cruz, T., Hoffman, S. G., Noble, S. U., & Shestakofsky, B. (2021). Toward a Sociology of Artificial Intelligence: A Call for Research on Inequalities and Structural Change. *Socius: Sociological Research for a Dynamic World*, *7*, 237802312199958. https://doi.org/10.1177/2378023121999581 |
| > The lack of context<br><br>Quantity over quality; false correlations | Data is assumed to be transparent, meaningful, representative, and inclusive. But with data entry, quantity is favored over quality. Algorithmic systems are set up to collect as much data as possible and identify patterns within these datasets. This leads to the creation of correlations without the proper context to evaluate such a result.<br><br>Joyce, K. A., Darfler, K., George, D., Ludwig, J., & Unsworth, K. (2018). Engaging STEM Ethics Education. *Engaging Science, Technology, and Society*, *4*, 1–7. https://doi.org/10.17351/ests2018.221 |

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| > Algorithms as a threat to news journalism<br><br>(Algorithms as an assemblage of values) | In the context of news, quantifying newsworthiness seems to be a difficult feat as the values that determine such a quality need to be quantified into data points. This in itself exceeds the structure and limitations of the available technology. In the long run of technological evolution, this poses a certain threat on how journalists and news outlets continue to exist in the world. Additionally, the concept of personalization adds another layer to the factors that influence news platformization. As algorithms push the concept of personalization, this again influences the way newsworthiness is determined.<br><br>Schjøtt Hansen, A., & Hartley, J. M. (2021). Designing What's News: An Ethnography of a Personalization Algorithm and the Data-Driven (Re)Assembling of the News. *Digital Journalism*, 1–19. https://doi.org/10.1080/21670811.2021.1988861 |
| > Devalueization of the labour(cybertariat)<br>– the value of the labour is in the millions of bits of information<br><br>(The coding elite versus the cybertariat; a shift in what capital is seen as) | The cybertariat, unlike the proletariat, are not in competition with other workers or technology itself, but rather, they are the very free labour the coding elite seek out. Every time someone performs any task, the algorithm learns from it, even from the most menial tasks such as completing "I am not a robot" captchas. Additionally, in the automation age, the capital value is no longer found in an individual's labor power but rather the millions of bits of information about who they are and what connects them to each other.<br><br>"We can both reject magical thinking about machine intelligence and acknowledge the enormous economic, political, and cultural power of the tech industry to transform the world we live in. Beyond futurism and hype, existing AI is actually quite mundane." p. 231<br><br>It is designed by the coding elite, sustained by the cybertariat, fueled by personal data extracted by (mainly) large digital firms, frequently optimized for profit maximization, and supported by a contingent set of legal institutions that authorize (at the time of this writing) continuous data flows into corporate as well as state servers. Like prior control innovations, AI surveils, sorts, parses, assembles, and automates. And like prior forms of social surveillance and discipline, it weighs differently and more prejudicially on poor and minority populations. Far from being purely mechanistic, it is deeply, inescapably human." p.231<br><br>Burrell, J., & Fourcade, M. (2021). The Society of Algorithms. *Annual Review of Sociology*, *47*(1), 213–237. https://doi.org/10.1146/annurev-soc-090820-020800 |

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| > Algorithms as black boxes: Lack of transparency | Algorithmic models are seen as black boxes, containers of unknown contents. Earlier stages of algorithmic systems, such as PageRank were inherently democratic and transparent; people voted through their clicks and this ranked pages accordingly. Crowdsourcing is democratic. However, now, the algorithms employed on different platforms are not transparent in the way they operate and are becoming an 'invisible hand' in society.<br><br>Striphas, T. (2015). Algorithmic culture. *European Journal of Cultural Studies*, *18*(4–5), 395–412. https://doi.org/10.1177/1367549415577392 |
| > Algorithms as a form of biopolitical management<br><br>Algorithms as a mode of control through categorization<br><br>Algorithms cause people to lose control in defining who they are online, they lose ownership over the categories that constitute their identity<br><br>Algorithms = cybernetic categorization = introduces a new axis of power | "Algorithmic interference works as a mode of control" p.164<br><br>"An analysis of coded computer algorithms enables a supplement to Foucauldian thinking around biopolitics and biopower, of what I call soft biopower and soft biopolitics" p.165<br><br>"Codes [algorithms] are cultural objects embedded and integrated within a social system whose logic, rules, and explicit functioning work to determine the new conditions of possibilities of users' lives. How a variable like X comes to be defined, then, is not the result of objective fact but is rather a technologically-mediated and culturally-situated consequence of statistics and computer science." p.167<br><br>"Using statistics, demographic assessments, and through an analysis of birth and death rates, government was able to situate itself in a relationship with subjects not only vis-a'-vis individual bodies but vis-a'-vis the population and sub-populations." p.172<br><br>"New cybernetic category constructions are the consequence of this modularity and ultimately allow for a 'free', but constantly conditioned, user." p.178<br><br>Cheney-Lippold, J. (2011). A New Algorithmic Identity: Soft Biopolitics and the Modulation of Control. *Theory, Culture & Society*, *28*(6), 164–181. https://doi.org/10.1177/0263276411424420 |

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| > Algorithm as gatekeepers<br><br>Algorithm as tools that make things visible/not visible<br><br>Algorithms dictate what is seen/visible, the power of visibility | "The notion of mediated and constructed visibility through a close reading of the News Feed and its underlying operational logic, the EdgeRank algorithm" p.1165<br><br>"EdgeRank, the algorithmic editorial voice of Facebook, determines what is shown on users' Top News by drawing on different factors relating to the Edges. At least three different components are key to determining the rank of an Edge: (1) Affinity. This pertains to the nature of the relationship between the viewing user and the item's creator. Here the amount and nature of the interaction between two users is measured. Sending a friend a private message or checking out his or her profile on a frequent basis heightens the users' affinity score to that particular friend. (2) Weight. Each Edge is given a specific 'weight' depending on how popular or important Facebook considers it to be. Therefore, not every Edge gets weighted the same. Some types of interactions are considered more important than others. Arguably, a Comment has more importance than a Like. (3) Time decay. Probably the most intuitive component relates to the recency or freshness of the Edge. Older Edges are thus considered less important than new ones." p.1167<br><br>This concept of visibility through algorithms feels heavily reminiscent of Foucault's concept of the panopticon where the sense of always being under surveillance by a visible or invisible power affects the way a person behaves: "The realm of visibility created by the panoptic architecture did not work primarily through a certain iconography, nor a visual semiotic regime, but first and foremost through the technical structuring of a way of being, implementing an awareness or attentiveness to the constant possibility of inspection. To highlight vis- ibility as a system, a diagram, is to highlight the 'distribution of individuals in relation to one another, of hierarchical organisation, of dispositions of centres and channels of power' (Foucault, 1977: 205). It is precisely this notion of a material or technical structuring of visibility that seems especially interesting and relevant in terms of new media. The spaces designed by the (im)material conditions of the software are similarly designed to make things visible, and thus knowable, in a specific way." p. 1170-1171<br><br>"Essentially, becoming visible is to be selected for by the algorithm. Inscribed into the algorithmic logic of the default News Feed is the idea that visibility functions as a reward, rather than as |

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| | punishment, as is the case with Foucault's notion of panopticism." p. 1174<br><br>Bucher, T. (2012). Want to be on the top? Algorithmic power and the threat of invisibility on Facebook. *New Media & Society*, *14*(7), 1164–1180. https://doi.org/10.1177/1461444812440159 |
| > Corporate Platform Complex<br><br>– old hopes lost | The infrastructure which today constitutes the dominant manifestation of digital connectivity does not seem to be quite what previous decades called "the internet," rather, it appears as a complex of privately owned online services that call themselves "platforms." This Corporate Platform Complex (CPC) is currently ruled by a handful of very large and powerful companies (also known as Big Tech) bearing names such as Google/Alphabet, Amazon, Apple, Facebook/Meta, Microsoft, Alibaba and Tencent. (pp. 7-8)<br><br>"The shift from the internet to the CPC can be seen at work in the technological, economic and cultural transformations of digital networking that significantly depart from the internet as we used to know it." (p. 8)<br><br>Instead of the hacker, the "influencer" has become the new heroic figure, the focus of subjectivication." (p. 10)<br><br>"According to Hito Steyerl, as a result of this process, what is still sometimes called the internet has lost its previous meaning, that is, it has "stopped being a possibility" — something new and exciting that promised a better future. It has become a residual technology, still "an effective element of the present," but less legible and intelligible than it used to be. (...) The internet's own native subculture, such as those formed in the 1980s and 1990s, have gone underground, assembling in the so-called dark web, in IRC chats, in some forums, in pirate file-sharing networks, in websites with no social plugins, in mesh networks and wikis, and maybe also in the chaotic informational milieus of some secure, encrypted, open source messaging apps." (pp. 10 - 11)<br><br>As a subsumed entity, the internet is not so much dead as undead, a ghostly presence haunting the Corporate Platform Complex with the spectres of past hopes and potentials." (p. 11) |

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| | "The model of peers exchanging information and cooperating to produce common good was overwhelmed by social media modes of communication. Clashes over values demonstrated the irreducibility of beliefs and desires to individual motivations and methodological individualism could not bear the weight of the history of oppression that sociogenicaly constructed subjects along differential axes of gender, sexuality, class, ethnicity and race. (p. 36)<br><br>"Platformization, on the other hand, successfully turned the explosion of participation in digital communication into a growth in revenue." (p. 36)<br><br>Terranova, T. (2022). *After the Internet: Digital Networks between Capital and the Common*. Semiotext(e) |
| > Algorithmic society | "We can refer to this by using the term 'algorithmic governance' – the replacement of human, legible and accountable judgements with 'black-box' algorithms – or, as sociologist Aneesh Aneesh dubbed it, 'algocracy' (2006, 2009; Engin & Treleaven, 2019)." (["The algorithmic society: technology, power, and knowledge", 2021, p. 1]<br><br>agency<br><br>"Full automation means that human agency can be almost completely designed out of decision-making processes – even though the extent to which this happens varies in practice. Algorithms collect information (input), process it (throughput), apply it (output) and learn to improve output (feedback) (Zarsky, 2013; Citron & Pasquale, 2014; Danaher et al., 2017).Artificial intelligence, databases, websites, and automated procedures are replacing human agency from actual decision-making (Henman, 2010; Peeters & Widlak, 2018; Van der Voort et al., 2019). Moreover, decision-making becomes a matter of classification rather than judgement of individual cases (Peeters & Schuilenburg, 2018). As a consequence, new actors or experts are now entering the game (usually not trained in social sciences). The discretionary space shifts to the IT professionals that design algorithms, to the data analysts that identify behavioural patterns, and in a certain way also to the algo rithms themselves that recognise new patterns and adjust their decision-making procedures accordingly through machine learning (Hannah-Moffat, 2019)." (["The algorithmic society: technology, power, and knowledge", 2021, p. 2]) |

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| | "Algorithmic governance is central to the functioning of public and private organ isations. For instance, police forces use them to predict where, when and by whom crimes are more likely to be committed (Perry et al., 2013; Asquer, 2014; Van Brakel, 2016; Smith & O'Malley, 2017; Williams, Burnap & Sloan, 2017; Bennett Moses & Chan, 2018). In criminal justice, algorithms are used to predict future dangerousness of defendants and convicts (Sjöstedt & Grann, 2002; Kleiman, Ostrom & Cheeman, 2007; Berk, 2012; Berk & Bleich, 2013; Hamilton, 2015; Goel, Rao & Shroff, 2016; Douglas et al., 2017). Marketeers use algorithms to analyse consumer audiences from online search queries, credit card purchase data, and behavioural data (Sadin, 2009; Mager, 2012; Reigeluth, 2014; Harcourt, 2015; Zuboff, 2019). Government agencies are turning towards algorithms to, among other things, identify welfare fraud, deliver public services, allocate regulatory over sight resources, and assess risks in child protection (Coglianese & Lehr, 2017; Van Eck, 2018; Yeung, 2018; Engin & Treleaven, 2019; Henman, 2019)" (["The algorithmic society: technology, power, and knowledge", 2021, p. 3]<br><br>Schuilenburg, M., & Peeters, R. (Eds.). (2021). The algorithmic society: Technology, power, and knowledge. Routledge/Taylor & Francis Group. |
| > Algorithmic landscape | Algorithmic landscape →<br><br>"Networks powered by algorithms are eating everything. (...) The algorithmic networked world poses deep questions about power, freedom, fairness, and human agency." (p. 3)<br><br>"Algorithmic control means that increasingly dynamic software will manage not just transactions and communication, but also human systems. Our cultures and institutions are ill-adapted to this new environment." (pp. 3-4)<br><br>"Algorithms are not neutral; they reflect the preferences and biases of those who design them" (p. 18)<br><br>Werbach, K. (Ed.). (2020). After the Digital Tornado: Networks, Algorithms, Humanity (1st ed.). Cambridge University Press. https://doi.org/10.1017/9781108610018 |

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| > Algorithm regulation | -proposes regulatory measure - the progressive data-sharing mandate<br><br>-describes the concentration process and its dynamics; then explains why the feedback effect cripples market competition, then proposes regulatory measure<br><br>-feedback effect (pp. 130-131)<br><br>-progressive data-sharing mandate<br><br>“The progressive data-sharing mandate is the policy measure I propose to address this unique situation. It is narrowly tailored to spread access to the raw material of innovation, with incentives for data utilization and renewed competition based on the ability to tease valuable insights from the raw data. While novel as a competition measure, it is based on principles of lowering switching cost and enhancing competition that are well-rooted in existing policy practices. If enacted, the progressive data-sharing mandate will act as a powerful antidote to market concentration, foster broad innovation, and prevent systemic vulnerabilities of online markets.”(p. 147)<br><br>Mayer-Schönberge. V. (2020). Regulating the Feedback Effect. In K. Wernbach (Ed.), *After the Digital Tornado: Networks, Algorithms, Humanity* (1st ed.) (pp. 122-136). Cambridge University Press. https://doi.org/10.1017/9781108610018 |
| > Algorithmic accountability | “However, with the rise of social media and scientific developments in artificial intelligence research, algorithms have started to impact how decisions are made in entirely new domains.” (p. 114)<br><br>“The influence of algorithms can be found in the structure of our social networks, whom we marry, what news articles we see, and what jobs we get.” (p. 114)<br><br>“As algorithmic suggestions and decisions have proliferated, so too has an awareness – and, increasingly, wariness – about the impact that algorithms are having on society.” (p. 114)<br><br>“This has included specific concerns about racial disparities in the predictive accuracy of recidivism prediction instruments (Angwin et al. 2016), gender bias in how digital job advertisements are |

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| | placed (Lambrecht and Tucker 2016), the ability of dynamic pricing algorithms to discriminate indiscriminately (Miller and Hosanagar 2019), the role of news-filtering algorithms in polarizing our political discussions (Pariser 2014), and a general concern about the ethics of using the unprecedented power of artificial intelligence for private and governmental surveillance (Tufekci 2017; Zuboff 2019)." (p. 114)<br><br>"In April 2019, a group of US Senators proposed the "Algorithmic Accountability Act" (AAA), in which they raised concern about the potential for "automated decision systems" to exhibit bias and discrimination (among concerns such as privacy and security) (Booker 2019)." (p. 114)<br><br>"Algorithms do not emerge out of thin air; their impact is driven by not just the mathematics behind them, but also the data that feed them, and the systems they interact with. We use this framework to propose a description of algorithmic systems being comprised of three fundamental factors: The underlying data on which they are trained, the logic of the algorithms themselves, and the way in which human beings interact with these systems (see Figure 3)." (p. 115)<br><br>"We find that algorithms can play a role but focusing exclusively on them while ignoring the manner in which data, algorithms and people interact can paint an incomplete, and even misleading, picture when attempting to understand the effects of each component across different contexts. By systematically decomposing the causes of filter bubbles, we are able to provide a more complete characterization of the problem and facilitate the development of meaningful policy changes for moving forward." (p. 129)<br><br>"We conclude by suggesting that adding more context – both sociological and technological – to these discussions provides the most meaningful way forward for ensuring algorithms have a positive effect on society. By decomposing, quantifying, and ultimately understanding the complex dynamics that exist between humans and algorithms, we will be able to more efficiently diagnose, inform, and improve these systems." (p. 130)<br><br>Hosanagar, K. & Miller, A. P. (2020). Who Do We Blame for the Filter Bubble? On the Roles of Math, Data, and People in Algorithmic Social Systems. In K. Wernbach (Ed.), *After the Digital Tornado: Networks, Algorithms, Humanity* (1st ed.) (pp. |

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| | 103-121). Cambridge University Press. https://doi.org/10.1017/9781108610018 |
| > Responsible algorithms | "Relatedly, as technology reconfigures work practices, it also shifts power in ways that may misalign with liability frameworks, diminishing humans' agency and control but still leaving them to bear the blame for system failures." (p. 149)<br><br>"Predictive algorithms can be partitioned into two categories: (1) those focused on outcomes that do not rely too heavily on professional judgment (e.g., was an individual readmitted to the hospital within thirty days of their visit?) versus (2) those focused on outcomes that are more tailored toward emulating the decisions made by professionals with specific domain expertise (e.g., does this patient have pneumonia?)." (p. 151)<br><br>*–objectives for algorithmic systems design–*<br><br>-transparency<br><br>-explainability<br><br>-contestability (the ability to contest decisions; allows professionals to train systems)<br><br>"contestability is a particularly important system quality where the goal is for predictive algorithms to enhance and support human reasoning, such as decision-support systems. Contestability is one way "to enable responsibility in knowing"30 as the production of knowledge is spread across humans and machines. Contestability can support critical, generative, and responsible engagement between users and algorithms, users and system designers, and ideally between users and those subject to decisions (when they are not the users), as well as the public." (p. 156)<br><br>Kluttz, D. N., Kohli N. & Mulligan, D. K. (2020). Shaping Our Tools: Contestability as a Means to Promote Responsible Algorithmic Decision Making in the Professions. In K. Wernbach (Ed.), *After the Digital Tornado: Networks, Algorithms, Humanity* (1st ed.) (pp. 137-152). Cambridge University Press. https://doi.org/10.1017/9781108610018 |

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| > Digital totalitarianism & surveillance capitalism | "Surveillance capitalism now spreads across the "normal" economy in traditionally information intensive sectors such as insurance and finance, but also in healthcare, retail, education, real estate development, and automobiles, to name but a few." (p. 194)<br><br>"Surveillance capitalism can no longer be defined as a specific group of corporations, neither can it be conflated with the digital technologies on which it depends. While it is impossible to imagine surveillance capitalism without the digital, it is easy to imagine the digital without surveillance capitalism. The point cannot be emphasized enough: Surveillance capitalism is not technology. Digital technologies can take many forms and have many effects, depending on the social and economic logics that bring them to life. Surveillance capitalism relies on data-gathering devices like computers, phones, sensors, microphones, and cameras. It deploys machine intelligence and platforms. It expresses itself in algorithms. But it is not the same as any of those." (p. 195)<br><br>-Zuboff even uses terms like digital totalitarianism-<br><br>-epistemic inequality-<br><br>"Instrumentarianism's radical indifference is operationalized in Big Other's dehumanized methods of evaluation that produce equivalence without equality by reducing individuals to the lowest common denominator of sameness – organisms among organisms." (p. 198)<br><br>Zuboff, S. (2020). Caveat Usor: Surveillance Capitalism as Epistemic Inequality. In K. Wernbach (Ed.), *After the Digital Tornado: Networks, Algorithms, Humanity* (1st ed.) (pp. 174-214). Cambridge University Press. https://doi.org/10.1017/9781108610018 |
| > Algorithmic culture (information, crowd and algorithm) | -data-driven 'algorithmic culture'<br><br>-information, crowd, and algorithm<br><br>-keywords approach (semantics)<br><br>"compared to information and crowd, algorithm is a less obvious keyword by means of which to make sense of culture today. If the |

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| | former two terms could be considered dominant, or prevalent, as judged by their popular usage, then the latter would best be described as emergent, or restricted, though tending in the direction of conventionality. Yet, as James Gleick (2011) puts it in The Information, '[t]he twentieth century gave algorithms a central role' (p. 206)." (Striphas, 2015, p. 403)<br><br>"So, on the one hand, we have algorithms – a set of mathematical procedures whose purpose is to expose some truth or tendency about the world. On the other hand, we have algorisms – coding systems that might reveal, but that are equally if not more likely to conceal. The one boasts of providing access to the real; the other, like an understudy, holds its place. Why in the early 20th century did algorithm become preferred over algorism, so much so that the latter form is now all but an archaism?" p.404-405<br><br>Striphas, T. (2015). Algorithmic culture. *European Journal of Cultural Studies*, *18*(4–5), 395–412. https://doi.org/10.1177/1367549415577392 |
| > Dataveillance systems / algorithmic resistance | -dataveillance systems<br><br>-research conducted in the Bolsonarian Brazil<br><br>"The relevance of individuals' understandings and intentional actions toward datafication systems transcends such co-constitutive loop, though. Virtually all modern accounts of agency are nested within normative assumptions about freedom (Emirbayer and Mische, 1998: 964). Once we assume that end users can perceive datafied control structures that are designed to remain imperceptible, we must also contemplate the possibility that these actors (and not only governments and markets) might be able to disobey and contradict such structures" (Magalhães, 2022, p. 78)<br><br>"resistance to algorithmic power—algorithmic resistance—might well take ordinary forms. This prospect may provide a welcome challenge to some of the simplistic assumptions about social control that underlie all-encompassing theories about data-driven hegemony (e.g. Zuboff, 2019)" (Magalhães, 2022, p. 78)<br><br>"This article addresses this problem, arguing that algorithmic resistance might indeed involve a particular and rarely considered kind of (partial) digital disconnection—political disengagement." (Magalhães, 2022, p. 79) |

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| | "t is not a collective effort against social injustice and algorithmic biases, or an individual act driven by moral principles, as the examples examined in the literature on users' agency towards datafication, but a self-defence against the "moral injuries" (Honneth, 1995) that algorithmic visibility is perceived as inflicting. When citizenship is understood as useless, costly, and harmful, disengagement is hardly a surprise" (Magalhães, 2022, p. 85)<br><br>-algorithmic resistance /stop acting politically on social media platforms as a way of avoiding an algorithmic visibility regime that is felt as demeaning their civic voices<br><br>Magalhães, J. C. (2022). Algorithmic resistance as political disengagement. *Media International Australia*, *183*(1), 77–89. https://doi.org/10.1177/1329878X221086045 |
| > Unpacking the black box (algorithms and materiality)<br><br>–algorithm as assemblage, post-digital approach | -history of thinking about algorithms: leading to a broader definition of algorithm (prefer to stick to this one)<br><br>-unpacking "the black box", the "biased algorithm" or "ethical AI"<br><br>-materiality and agency of algorithms are heterogeneous<br><br>"The ethnographic strategies I proposed provide ways to question how algorithms are brought to existence through figurations and by the crossing of contexts enacted by social actors and their respective organisations" (Cellard, 2022, p. 996)<br><br>-not black boxes, but simply mundane routines<br><br>"At the end, what has to be negotiated and governed is not only a digital object but a set of protocols and procedures made of organisational habits, legal rules, analog artefacts and technological expertises." (Cellard, 2022, p. 996)<br><br>-from the perspective of crtical algorithm studies<br><br>-algorithm understood as a 'figure'; a discursive short-hand pointing to diverse modes of procedural governance and not always digital ones<br><br>-figures rather than digital objects |

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| | -ethnographic strategies to describe the contexts of production and circulation of algorithmic figures<br><br>“they could also be portrayed more broadly as infrastructures, assemblages, protocols of actions, sets of policies and practices – or different combinations of these elements” (Cellard, 2022, p. 983)<br><br>-concerned by the politics of algorithmic transparency and accountability<br><br>“a ‘figure’: an expression portraying in a particular way the manifestations of procedural actions leading to a decisionmaking” (Cellard, 2022, p. 984)<br><br>“The ethnographic programme I will sketch in this article is useful to question the ontology and discursive power of algorithms” (Cellard, 2022, p. 984) → without ignoring their material reality<br><br>“From the history told by Daston, we learn that algorithms are hybrid figures that could be formalised through the joined heritage of legal and mathematical formalisms. Their essentialisation as purely mechanical entities is way more recent” (Cellard, 2022, p. 985)<br><br>-then alogirthm becomes “computational procedure” or “algorithmic techniques” (refferencing Rieder, 2020: 81)<br><br>“The modern definition of an algorithm is in fact a conceptualisation coming from 1970s software engineering and more specifically from its structured programming movement (Burke, 2019). This intellectual tradition of computer science advocated for a more limited language of instructions, organised in reusable parts, a way to simplify and solidify the writing of programmes.” (Cellard, 2022, p. 985)<br><br>Science and technology studies:<br><br>“Therefore, for STS, an algorithm is better understood as a global system connecting human and non-human entities” (Cellard, 2022, p. 987)<br><br>“The algorithm is then a figure or short-hand to describe a complex assemblage of interactions, a way to synthesise a bundle of entities shaping a ‘borderless’ algorithmic context (Ananny and Crawford, 2016: 11)” (Cellard, 2022, p. 988) |

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| | "Researching algorithms through a post-digital approach enacts them as discursive and cultural artefacts formed by an ecology of actors encompassing software developers, regulators, users, organisations and, depending on the case under study, a bundle of other contexts where they could be enrolled." (Cellard, 2022, p. 995)<br><br>Cellard, L. (2022). Algorithms as figures: Towards a post-digital ethnography of algorithmic contexts. New Media & Society, 24(4), 982–1000. https://doi.org/10.1177/14614448221079032 |
| > Algorithms and structure | -algorithms and data structures<br><br>-the questions of representation<br><br>-data structure - specific meaning in computer science and also in humanities<br><br>Manovich, L. (2013). Software takes command: Extending the language of new media. Bloomsbury. |
| > Algorithmic transparency (=democratic demand) – method surfacing algorithms | -algorithm transparency (=democratic demand)<br><br>-method surfacing algorithms<br><br>"I propose that making things "transparent" should not be about "opening" the fixed state of a system but requires moving, reformatting (and therefore transforming) all the technical layers and their associated processes: data inputs and outputs; the constant and sometimes automated learning or monitoring of systems; the evolution of rules guiding a system; the role of an expert; the threshold of a metric; and so on" (Cellard, 2022, p. 798)<br><br>-reframe the problem of accountability as a design issue<br><br>"More precisely, my proposal is to reframe the problem of accountability as a design issue, enacted by what HumanComputer Interaction researcher Paul Dourish (2017) calls the "information materialities" of devices: their properties, formats, compositions, sizes, and sensorial characteristics, the way they permit certain types of understanding and manipulation while preventing others. I want to reconceptualize accountability not so much as a legal mechanism and democratic duty but as an information design problem enacted by mediation devices— |

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| | "surfaces" such as bureaucratic documents or web interfaces" (Cellard, 2022, p. 798)<br><br>"The institutionalization of algorithmic transparency initiatives developed through laws and guidelines is more focused on "opening up" a system from a specific (and always partial) point of view than taking care of the mediating layers—the surfaces and events of disclosure which contingently deliver the key information" (Cellard, 2022, p. 799)<br><br>"While transparency-as-openness is materialized in access to particular information about an algorithm (e.g., its sourcecode), I propose that the focus should be on the ability of citizens to produce meaningful accounts about such algorithm: a localized, indexical, personalized, and fleeting ability-to-account necessary to produce a more collective, durable, and normative algorithmic accountability (Neyland, 2016)." (Cellard, 2022, p. 799)<br><br>"The method of surfacing algorithms developed here proposes to rearrange the layers that need to be known and to make them visible as part of the thick texture of everyday life. Classical algorithmic transparency, implemented through audits and impact assessments, risks reproducing the well-known pitfalls of accountability cultures—unrealizable fantasies of objectified information, the use of misleading metrics, and the maintenance of secrecy (Strathern, 2000). Surfacing algorithms is a first step toward the redesign and future transformation of how algorithms are understood in everyday settings. It is a call to experiment with new arts of accounting through an engagement with materiality, appearance, information design, and the always contingent description of technical processes." (Cellard, 2022, p. 799)<br><br>"The transparency metaphor presumes that what politically matters is the inner workings of the algorithm—the fetish of code (Chun, 2011)—but the politics of transparency occur through performances happening at the surface of devices. The transparency narrative follows a classical optical metaphor operating a clear separation between the inside and the outside. How then to think beyond this optical imaginary and the way it orders the politics of knowledge in datafied democracies?"<br><br>Cellard, L. (2022). Surfacing Algorithms: An Inventive Method for Accountability. Qualitative Inquiry, 28(7), 798–813. https://doi.org/10.1177/10778004221097055 |

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| > Black box society | "The term "black box" is a useful metaphor for doing so, given its own dual meaning. It can refer to a recording device, like the data-monitoring systems in planes, trains, and cars. Or it can mean a system whose workings are mysterious; we can observe its inputs and outputs, but we cannot tell how one becomes the other. We face these two meanings daily: tracked ever more closely by firms and government, we have no clear idea of just how far much of this information can travel, how it is used, or its consequences." (Pasquale, 2015, p. 3)<br><br>"Though this book is primarily about the private sector, I have called it The Black Box Society (rather than The Black Box Economy) because the distinction between state and market is fading. We are increasingly ruled by what former political insider Jeff Connaughton called "The Blob," a shadowy network of actors who mobilize money and media for private gain, whether acting officially on behalf of business or of government.24 In one policy area (or industry) after another, these insiders decide the distribution of society's benefits (like low-interest credit or secure employment) and burdens (like audits, wiretaps, and precarity)." (Pasquale, 2015, p. 10)<br><br>Pasquale, F. (2015). The black box society: The secret algorithms that control money and information. Harvard University Press. |
| > Algocracy | -the threat of Algocracy<br><br>-the resistance<br><br>"The question raised by this article is whether the rise of such algorithmic governance creates problems for the moral or political legitimacy of our public decision-making processes" (Danaher, 2016, p. 245)<br><br>"The question raised by this article is whether the use of such algorithm-based decision-making in the public and political sphere is problematic. Suppose that the creation of new legislation, or the adjudication of a legal trial, or the implementation of a regulatory policy relies heavily on algorithmic assistance. Would the resulting outputs be morally problematic? As public decision-making processes that issue coercive rules and judgments, it is widely agreed that such processes should be morally and politically legitimate (Peter |

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| | 2014). Could algorithm-based decision-making somehow undermine this legitimacy?" (Danaher, 2016, p. 246)<br><br>"Using Estlund's(1993,2003,2008) threat of epistocracy argument as my model, I argue that increasing reliance on algorithms gives rise to the threat of algocracy—a situation in which algorithm-based systems structure and constrain the opportunities for human participation in, and comprehension of, public decision-making. This is a significant threat, one that is difficult to accommodate or resist." (Danaher, 2016, p. 246)<br><br>Danaher, J. (2016). The Threat of Algocracy: Reality, Resistance and Accommodation. Philosophy & Technology, 29(3), 245–268. https://doi.org/10.1007/s13347-015-0211-1 |

## 2/ Agency

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| > Freedom vs engineered freedom | -more philosophical approach to questions of humanity etc.<br><br>"First, we discuss humanity, distinguishing between what it means to be human and what matters about being human. We argue that humanity is a shared resource consisting of intergenerational ideals and commitments. Second, we discuss Robert Nozick's famous thought experiment: the Experience Machine. The scenario raises fundamental questions about the good life and does so from an individualistic perspective. Finally, we discuss our thought experiment: the Experience Machine n.0. This scenario also raises fundamental questions about the good life, but it does so from an interconnected social perspective that emphasizes how world building engineers humanity by shaping the possible lives of others, including future generations." (p. 166)<br><br>-distinguishing freedom from engineered freedom (p. 155)<br><br>"Life can be understood as a role-playing game with the earth being our experience machine."<br><br>"A world in which engineered determinism governs is a world in which fully predictable and programmable people perform rather than live their lives. Such a world would be tragic. People living in it could be described as human and still would qualify as homo sapiens. Nonetheless, they |

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| | would have a thin normative status as human beings because much of what matters about being human would be lost." (p. 168)<br><br>"Twenty-first century techno-social engineering deeply affects how we think, feel, and interact with one another. Outsourcing so many of these functions to technosocial systems can't and shouldn't be assumed to be in our interest, neutral, or mere natural extensions of ourselves. We need to be aware of atrophying capabilities, mind control, and the gradual loss of human dignity as more aspects of our lives are determined by smart techno-social systems.39 We are not fully predictable and programmable machines. In all likelihood, we never will be. But that is no reason to become complacent. Much of what matters about being human can be lost in partial deprivations as we march down the slippery sloped path we're on." (p. 182)<br><br>Frischmann, B. & Selinger, E. (2020). *Why a Commitment to Pluralism Should Limit How Humanity Is Re-Engineered*. In K. Wernbach (Ed.), *After the Digital Tornado: Networks, Algorithms, Humanity* (1st ed.) (pp. 155-173). Cambridge University Press. https://doi.org/10.1017/9781108610018 |
| > Human awareness/agency | "The paradox is that because instrumentarianism does not claim bodies for some grotesque regime of pain and murder, many are prone to undervalue its effects and lower their guard. Under the regime of instrumentarian power, the mental agency and self-possession of autonomous human action are gradually submerged beneath a new kind of automaticity: a lived routine of stimulus-response-reinforcement that operates outside of awareness and is aggregated as statistical phenomena: the comings and goings of mere organisms." (p. 199)<br><br>-human agency!!!!<br><br>"Human awareness is a threat to surveillance revenues because the mobilization of awareness endangers the larger project of behavior modification. Philosophers recognize "self-regulation," "self-determination," and "autonomy" as expressions of "freedom of will," and a flourishing research literature illuminates the antecedents, conditions, consequences, and challenges of human self-regulation as a universal need. The capacity for self-determination is |

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| | understood as an essential foundation for behaviors associated with critical human capabilities such as empathy, volition, reflection, personal development, authenticity, integrity, learning, goal accomplishment, impulse control, creativity, and the sustenance of intimate relationships." (p. 202)<br><br>"Cambridge Analytica channeled these methods and mechanisms, merely pivoting the surveillance capitalist machinery from commercial markets in human futures toward guaranteed outcomes in the political sphere. Its strategies of secret invasion and hidden conquest were the same standard operating procedures to which billions of innocent "users" are subjected each day" (p. 205)<br><br>"Surveillance capital wages a quiet information war for epistemic hegemony and the power over human behavior that it promises, thus channeling capitalism's adversarial bloodline not toward groups like workers or consumers who are defined by their economic function, but rather toward the widest possible category of people: "users." This broad target of all people engaged in all forms of life is as all-encompassing as the economic imperatives that compel surveillance capitalism toward societal domination. It bears a single message: CAVEAT USOR." (p. 208)<br><br>-issues of privacy and human will<br><br>Zuboff, S. (2020). Caveat Usor: Surveillance Capitalism as Epistemic Inequality. In K. Wernbach (Ed.), *After the Digital Tornado: Networks, Algorithms, Humanity* (1st ed.) (pp. 174-214). Cambridge University Press. https://doi.org/10.1017/9781108610018 |
| > Lack of choice (and control)<br><br>Algorithms as a lens that shows you what choices exist | "Every technology has an interface, Stanford law professor Ryan Calo told me, a place where you end and the technology begins. And when the technology's job is to show you the world, it ends up sitting between you and reality, like a camera lens. That's a powerful position, Calo says. "There are lots of ways for it to skew your perception of the world." And that's precisely what the filter bubble does." p.26<br><br>"Ultimately, the filter bubble can affect your ability to choose how you want to live. To be the author of your life, professor Yochai Benkler argues, you have to be aware of a |

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| | diverse array of options and lifestyles. When you enter a filter bubble, you're letting the companies that construct it choose which options you're aware of. You may think you're the captain of your own destiny, but personalization can lead you down a road to a kind of informational determinism in which what you've clicked on in the past determines what you see next—a Web history you're doomed to repeat. You can get stuck in a static, ever narrowing version of yourself—an endless you-loop.". p.29<br><br>"there's always a bargain in personalization: In exchange for convenience, you hand over some privacy and control to the machine." p. 238<br><br>Pariser, E. (2014). *The filter bubble: how the new personalised web is changing what we read and how we think*. Penguin Books. |
| > Folk theory of algorithms (human-oriented)<br><br>–gaining more insight into user experiences, asking people | "Taking algorithms as a prime case to investigate how people respond to datafication in everyday media use, we ask how people perceive positive and negative consequences of algorithms" (p. 807)<br><br>-asking people, very (human-oriented) methodology – folk theory (survey on media literacy)<br><br>"We draw inspiration from the field of HumanComputer Interaction which studies these issues through the lens of folk theories (e.g. Eslami et al., 2016). But where this latter body of work focuses on improving software design, our aim is to feed into the critical discussion of user agency in response to datafication (Kennedy et al., 2015; Ytre-Arne and Das, 2020)." (p. 808)<br><br>"identifying five folk theories: algorithms are confining, practical, reductive, intangible, and exploitative" (p. 807)<br><br>"Algorithmic media draw on the systematic exploitation of user data often referred to as datafication" (p. 807)<br><br>"Gaining a deeper understanding of user experiences is essential as datafication produces complex and potentially problematic outcomes in society. Concerns have been raised about lacking accountability systems for regulating platforms (Poell et al., 2018), reinforcement of bias and oppression (Eubanks, 2017; Milan and Treré, 2019; Noble, |

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| | 2018), or normalization of surveillance and resulting cynicism affecting the infrastructure of the public sphere (Zuboff, 2019)" (p. 808)<br><br>"Surveillance realism is defined as a "lack of transparency and knowledge in conjunction with the active normalization of surveillance through discursive practices and institutional sanctions" (Dencik and Cable, 2017: 777), while digital resignation emphasizes that "feelings of resignation are a rational emotional response in the face of undesirable situations that individuals believe they cannot combat" (Draper and Turow, 2019: 5)." (p. 808)<br><br>"While structural concerns have been prominent in academic debates on datafication (Dencik and Cable, 2017; Draper and Turow, 2019; Van Dijk, 2014), some research has emerged that investigates user perspectives on datafication in general, and algorithms more specifically." (p. 809)<br><br>"algorithmic imaginaries," defined as "the way in which people imagine, perceive and experience algorithms and what these imaginations make possible" (Bucher, 2017: 31)" (p. 809)<br><br>"The first folk theory is that algorithms are confining: They narrow your world view by feeding you more of what you have expressed interest in, more of what you already know, rather than expand your horizons or challenge your beliefs. This folk theory builds on insight into how algorithms work with digital traces, and posits that such functions capture users within an increasingly narrow frame of knowledge. The theory is clear and prevalent in the material, and examples include" (p. 814)<br><br>"Some respondents frame this problem as confirmation bias or rephrase arguments from debates on selective exposure. Notions of echo chambers and filter bubbles, while academically contested (e.g. Bruns, 2019), are alive in the material. What is at stake, referred to explicitly by some, is the public sphere ideal of a shared meeting-place for a broad spectrum of ideas, or in the context of news, the general news agenda." (p. 814)<br><br>"Algorithms are confining" is the most widespread theory in the material (41% of responses), more frequent among |

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| | younger age groups, and among respondents with higher education" (p. 814)<br><br>Ytre-Arne, B., & Moe, H. (2021). Folk theories of algorithms: Understanding digital irritation. Media, Culture & Society, 43(5), 807–824. https://doi.org/10.1177/0163443720972314 |
| > Algorithms as human-machine assemblages<br><br>Algorithms as an echo of their creators, influencers. | "Algorithms play a role in privileging the popular and establishing connections between like-minded" p. 4656<br><br>"Google and Facebook, illustrate this point that there is indeed ideology (understood here as specific ideas about the world and the human condition) inscribed into the code of these media entities" p. 4658<br><br>"Concerning algorithms, their agency is shaped both by humans in organizations and technology. In the input step of algorithmic calculations, the agency is obviously human and would be affected by programmers and software engineers background, hacker culture and the contexts (commercial as well as organizational) in which the problems that the algorithms are designed to solve are formulated." p.4659<br><br>"Algorithms are deeply dependent on human actors, especially in the first step; the input/design phase. The calculations themselves and the outcomes they produce are less dependent on human intervention. This has raised questions of who or what can be accountable when algorithmic calculations go wrong, have unintended or undesirable effects." p. 4665<br><br>Klinger, U., & Svensson, J. (2018). The end of media logics? On algorithms and agency. *New Media & Society*, *20*(12), 4653–4670. https://doi.org/10.1177/1461444818779750 |
| > Resistance to algorithmic consumer culture<br><br>Algorithms as a motivator for 'taking back agency' | 1. "Our framework stresses the dynamics through which algorithms produce a"technological unconscious"(Beer2009), a force that has been shown to significantly downplay consumers' agency, and instead of liquefying social structures might contribute to their"techno-social reproduction"(Airoldi2021a)–for example, by |

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| | amplifying cultural biases regarding gender, class, and race (Noble2018; Benjamin2019)" p. 424<br>2. Not only can predictions on consumer identities be inaccurate or clearly biased, but, more importantly, consumers can be reflexive about algorithmic systems, for instance in trying to make sense–or"decode"(Hall1980)–how they work in grassroots ways (Siles et al.2020; Bucher2017). p.420<br>3. Marketing research has shown that consumers are often aware of the social labels implicit in micro-targeted ads (Summers, Smith,and Reczek2016), and may choose to"resist"automation (Leung, Paolacci, and Puntoni2018). p.420<br><br>Airoldi, M., & Rokka, J. (2022). Algorithmic consumer culture. *Consumption Markets & Culture*, *25*(5), 411–428. https://doi.org/10.1080/10253866.2022.2084726 |
| > Lack of agency (Algorithms as a system of hidden persuasion) | "Algorithms are tools for structuring and influencing *repeated* data: designed to pattern input and instrumentalize output. Their current pervasiveness in human society is unprecedented. This special issue proposes that repetition, iteration, and digital sharing should be considered in a wider sense than simply as an individual choice to decide, knowingly, to repeat some *thing*. Indeed, perhaps that is part of the problem: a click or a like is *not* such a knowing decision to repeat. It cannot be, by definition, because its networked effects are impossible to calculate in that same instant, and in isolation. However, a click or a like is not impossible to *predict*. That is what algorithms are designed to do. And if that is what algorithms are designed to do, and those networked effects depend on emotion, on precisely avoiding the application of fully considered, contextualised knowledge, and if user behaviour is implicated in the business models that shape Internet use, we are living, by design, in a system of 'hidden persuasion'" p. 1-2 [pdf didn't have pp.]<br><br>Foster, C., & Zhang, R. (2022). Special Issue: Iteration and persuasion as key conditions of digital societies. *AI & SOCIETY*, s00146-022-01507–x. https://doi.org/10.1007/s00146-022-01507-x |
| | "Many algorithm systems have been argued to resemble aspects of media institutions because algorithms such as Google's search engine increasingly behave like political |

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| > Repair tactic as a form of resistance (repair the broken algorithm)<br>– resistance is dependent on the collaboration with the traditional media | and cultural institutions that operate with politics of attention." p.528<br><br>Resistance within such algorithmic systems is not executed in the traditional sense where users go to alternative avenues where they may find a voice. Rather, such resistance is enacted in a way that is complicit within the framework that algorithms exist. E.g. Burai's case of using Google Images to show how the algorithm favors 'whiteness'. (https://www.bbc.com/news/newsbeat-36044177) By showing this and gaining media attention on these 'mistakes', a sort of 'repair' tactic is engaged by the algorithm creators to fix them. In the age of participatory media, resistance came in the form of finding alternative avenues to traditional media to amplify marginal voices; however, in the age of algorithms, resistance is dependent on collaboration with traditional media. (referencing 529 - 536)<br><br>Velkova, J., & Kaun, A. (2021). Algorithmic resistance: media practices and the politics of repair. *Information, Communication & Society*, *24*(4), 523–540. https://doi.org/10.1080/1369118X.2019.1657162 |
| > Monitored and monetised – losing agency (unpaid providers) | "The internet has created a new, highly fragmented parallel public sphere, where cultural functions are now also conducted by a public no longer comprised of passive consumers but active participants: the audience, the fan base, the targets of the culture industry, and not just those who work within it. In succumbing to the invitation of the web, its openness, diversity and permissiveness, the user provides the stuff that generates the clicks that drive the advertising that the corporations trade on, not to mention the metadata sought out by intelligence agencies and secretive electoral campaigns, or purloined by hackers. In short, by becoming unpaid content providers, we allow ourselves to be monitored and monetised, but we also have a freedom of participation with profound." (p. 228)<br><br>Chanan, M. (2022). *From Printing to Streaming Cultural Production under Capitalism*. Pluto Books. |
| > Human-as-service / human cloud | |

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| – degradation of human labour, microwork, invisible labour [data work invisible as cargo-handling infrastructures], the author connects also data to their material infrastructures | "The brutal tectonics of platform capital are reshaping the already desolate global landscape of labour into a grey hinterland of casual and petty employment. But to read much of the literature on microwork, one would think such data work is an entirely novel phenomenon. Confident assertions of 'the human cloud', 'humans-as-a-service' and 'just-in-timelabour', suggest a tiger's leap from the workaday world of yesteryear into a brave new future of 'machine-human hybridity'.5 'Artificial artificial intelligence' – to use the term of Jeff Bezos – suggests a high-tech pact between worker and algorithm, in a 'new economy' set for explosive growth" (p. 13)<br><br>"Though data is the lifeblood of platforms, its production is not something we tend to think of. We can see an iPhone' s hardware and can glean from its materiality the labour necessary for its manufacture. But we can neither see nor touch the data that moves through its software. We are never forced to encounter the fact that data must also be produced; that such an ethereal, elusive substance is the result – like hardware – of human labour." (p.15)<br><br>-human-as-service:<br><br>"Like others who somehow manage to subsist on informal service niches, microworkers have no obvious occupation. 'Microworker', 'crowdworker ' and 'humans-in-the-loop' are just some of the nebulous terms that try to reimagine this negative space as something coherent. There is, of course, the initial problem that the term 'microwork' originates with Samasource, a platform to which refugees represent little more than grist for the AI mill. The term tacitly serves the interests of such actors, who, along with institutions like the World Bank, wish to dignify an essentially immiserating pursuit. Indeed, there is a tendency to use 'microworker ' as if the term described a proper profession with routine and specific tasks, like 'lawyer ' or 'doctor'. But microwork is, by its very nature, highly contingent, irregular and essentially formless. Jeff Bezos perhaps best describes this void – albeit unintentionally – in his shameless marketing of Mechanical Turk as 'humans-as-a-service'.34 Though evoking 'software as a service' in an effort to disguise labour as computation, Bezos also captures the vacuity of a role that ranges over a multitude of tasks, often cleaved from other jobs. All of this leaves us |

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| | with a question: what precisely is microwork if not an occupation?" (p.53)<br><br>-automation in reverse<br><br>"If microwork represents a shift in the contours of informal sector work it also announces a new, dismal instalment in the treatment of those marginal to the wage. In ways beyond Marx's most vivid nightmares, the poor and dispossessed now unwittingly train the very machines built to track their movements and terrorise their communities, or else replace their role in the labour process." (p. 59)<br><br>-black box labour<br><br>"As the world's poor are corralled into helping a platform plutocracy predict the future, the present necessarily becomes a less predictable terrain. Effectively working inside a black box, workers are divested of all the usual ways to orient themselves inside the labour process.20 There are no managers, only algorithms; no fellow workers, only avatars of competitors; no obvious points of contact or information. Work is a realm of 'unknown unknowns', of shadows playing across the wall and 'black swans' appearing out of the dark, where all that remains visible is the task directly in front of them. Big tech companies lurk in the shadows, tasks are obscure, while accounts are closed and requesters vanish without warning. Blind and isolated, one struggles to see what one's labour precisely is and who it benefits, just as one struggles to defend oneself against an employer about which nothing is known. The worker, then, plays nightwatchman to a shadowy algorithm. They may know that training data is fed into the algorithm and that a decision comes out of the other side, but what goes on in between remains entirely opaque.21 This opaque space represents a black box, a dark patch covering something of significant social effectivity, entirely impenetrable – for reasons often of power and secrecy – to those outside its workings." (p. 64)<br><br>Jones, P. (2021). *Work Without the Worker Labour in the Age of Platform Capitalism*. Verso Books. |
| > Active negation of choice | "These 'anti-algorithmic' platforms set out to challenge what some see as the machine-based construction of |

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| | cultural taste: the datafication of audiences (Livingstone, 2018), the mathematization of taste (Alexander, 2016), and the regulation of identity (Arnold, 2016, p. 58). From another perspective, however, Netflix might be seen as the perfect antidote to the patrician model of the well-educated, tasteful critic telling us what we should be watching. From this perspective, the cultural value of Netflix, with its vast library and the ability for audiences to select what they want to watch, depends on concepts of access, choice and consumer empowerment. Such concepts have long been central to those who have argued for the democratisation of technology and digital production and consumption." (Higson, 2021, p. 13)<br><br>-Netflix's brand identity centers on notions of user choice, its algorithms work to actively negate choice<br><br>"Are they adequately played out in their algorithmic approach to the prediction and promotion of taste? One of the constant criticisms of this approach is that it is designed to reproduce existing taste by offering audiences more of what they already like, rather than pushing them out of their comfort zones or broadening their horizons. The algorithmic approach, it is argued, creates filter bubbles and echo chambers. From this perspective, "although Netflix's brand identity centers on notions of user choice, its algorithms work to actively negate choice" (Arnold, 2016, p. 59)." (Higson, 2021, p. 19)<br><br>Higson, A. (2021). NETFLIX - THE CURATION OF TASTE AND THE BUSINESS OF DIVERSIFICATION. Studia Humanistyczne AGH, 20(4), 7–25. https://doi.org/10.7494/human.2021.20.4.7 |
| > Algorithmization of taste –it is not only about algorithms | -AGENCY - ignoring the history of older new media evacuates hope, alternative scenarios and so on<br><br>-history may be the source of inspiration and hope (the author offers a historical perspective)<br><br>-this book squarely scrutinizes what is perhaps the most pressing of the myriad claims made about VOD recommendation engines: AI's supposed hostile takeover of cultural suggestion and indeed humanistic culture itself, |

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| | algorithmic systems' putatively unprecedented re-mastery of taste<br><br>-this book approaches VOD recommender systems within a usercentric archaeology of cultural recommendation and media consumption choice<br><br>-need to consider algorithmic recommendation systems in wider history of pre-digital recommendation systems (posters, critics, etc.)<br><br>-it is not only about algorithms (AGENCY)<br><br>"Algorithmic suggestions maintain some value to many VOD users, but they typically constitute just one small piece of a multistage, iterative process of active and passive engagement with film and series information" (p. 18)<br><br>"this book challenges widespread assumptions about the effects of algorithmic computational processes and big data on media choice, revealing that there may be more continuity than change in the digital age" (p. 23)<br><br>-common trap: technological determinism<br><br>-to contextualize the discourses surrounding the internet and big-data computer processing within the longer history of older "new media," such as the telephone, radio, and cable television (Vincent Mosco - The Digital Sublime)<br><br>"In this way, Mosco argues, "the myth encourages us to ignore history because cyberspace is genuinely something new, indeed, the product of a rupture in history, the Information Age. Until now, information was scarce; it is now abundant. Until now, communication technology was limited; it is now universally available at prices that are rapidly declining" (34–35). The denial of history via the rhetoric of the unprecedented, central to the logic of the myth, evacuates the possibility of alternative scenarios and human agency." (p. 27)<br><br>-IGNORING THE HISTORY EVACUATES THE POSSIBILITY OF ALTERNATIVE SCENARIOS AND HUMAN AGENCY<br><br>"Netflix's, YouTube's, and other internet streaming services' algorithmic recommender systems seemed to |

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| | constitute the culmination of a certain internet fantasy: personalization. For many commentators, these systemswhich suggest content likely to interest viewers based on their prior viewing histories—represented a fundamentally new way of connecting cultural objects and human beings. Computer scientists and business gurus swooned over the ability to scale the provision of cultural recommendation using bigdata-based "collective intelligence" and "wisdom of crowds."6 Feature writers for the Atlantic, New Yorker, and other middlebrow publications attested to the Netflix recommendation engine's superhuman qualities, its "alien" recognition of taste able to perceive deep structures and networks between seemingly disparate genres and actors, connections that humans and critics could not possibly intuit." (p. 11)<br><br>"Are recommendations truly based on "taste" or simply pay-for-play promotions? The nontransparent, black-box quality of proprietary algorithms and the tracking methods that invisibly record viewing histories in order to suggest further videos for "people like you" reminded these thinkers of Foucault's panopticon and Deleuze's control society. A second major concern hinged on filter bubbles, cultural homogenization, gated communities, reputation silos,<br><br>"public sphericules, and social fragmentation. Algorithmic recommender systems, observers warned, hew too closely to previous selections and biases, inevitably leading users to consume certain products, thereby "hiding" others and affecting individuals' exposure to diversity. Leaving users in the dark about alternate choices, these devices limit expression and diversity, erode democratic access, narrow horizons of expectation, and inhibit empathy by erasing common experiences and "watercooler moments."<br><br>"In sum, reviewing the discourse surrounding recommender systems and related developments over the past ten, fifteen, twenty years reveals two competing, and largely mutually exclusive, narratives. One heralds an unprecedented era of democratic access and choice. The other proposes a scenario straight out of Clockwork Orange (1971): media shoveled into our eyes, a color-by-numbers operation masked by clever marketing illusions." (p. 12)<br><br>Algorithms work to confirm, rather than develop or challenge, consumers' tastes, they reasoned, potentially |

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| | leading to an atomized proliferation of house-bound noncommunities of one. Finally, a third vocal criticism surmised that algorithmic recommendation, by virtue of its very form and technology, represents a hostile takeover of humanism, a hijacking of culture itself from the qualitative to the quantitative. Cultural recommendation—not to mention the livelihood of critics and educators since time immemorial—has traditionally been based on the presentation and evaluation of the Arnoldian "best which has been thought and said." In the face of algorithms, however, it risked being reduced to slack-jawed perma-bingers passively acquiescing to Netflix's advice that the next episode will begin in 5, 4, 3, 2, 1" (p. 12)<br><br>Frey, M. (2021). Netflix recommends: Algorithms, film choice, and the history of taste. University of California Press. |
| > Engineering choice / algorithmic supply chains (= people) | "Our social lives are mediated through connectivity and algorithmic revision. As smartphones become powerful general-purpose computers and computation disappears into every device around us, from smart home appliances to vehicle navigation systems, the entire world becomes a code/space. Far from rendering the idea of a code/space obsolete, this ubiquity underscores our failure to understand the impact of computation on the very ways in we think" (Bridle, 2018, p. 38)<br><br>"Reading a book, listening to music, researching and learning: these and many other activities are increasingly governed by algorithmic logics and policed by opaque and hidden computational processes. Culture is itself a code/space." (Bridle, 2018, p. 38)<br><br>-engineering choice<br><br>-reducing workers to algorithms (Amazon), banks, culture and so on; Optometrist Aglorithm (google photo categorising algorithm)<br><br>-algorithmic supply chains increasing workloads until full automation creates mass unemployement and immiseration (negative), or fully automated luxury communism (left accelerationism posits a future where robots really do all the |

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| | work and all humans really do get to enjoy the future of their labour)<br><br>“Before dismissing such scenarios as the fever dreams of science fiction writers and conspiracy theories, consider again the rogue algorithms in the stock exchange s and the online marketplaces. These are not isolated examples: they are merely the most charismatic examples of everyday occurrences within complex systems. The question then becomes, what would a rogue algorithm or a flash crash look like in the wider reality?” (Bridle, 2018, p. 112)<br><br>-negative future scenarios:<br><br>“Or perhaps the crash will look like a string of blockbuster movies pandering to right-wing conspiracies and survivalist fantasies, from quasifascist superheroes (Captain America and the Batman series) to justifications of torture and assassination (Zero Dark Thirty, American Sniper). In Hollywood, studios run their scripts through the neural networks of a company called Epagogix, a system trained on the unstated preferences of millions of moviegoers developed over decades in order to predict which lines will push the right – meaning the most lucrative – emotional buttons.43 Their algorithmic engines are enhanced with data from Netflix, Hulu, YouTube and others, whose access to the minute-by-minute preferences of millions of video watchers, combined with an obsessive focus on the acquisition and segmentation of data, provides them with a level of cognitive insight undreamed of by previous regimes. Feeding directly upon the frazzled, binge-watching desires of news-saturated consumers, the network turns upon itself, reflecting, reinforcing and heightening the paranoia inherent in the system.” (Bridle, 2018, p. 114)<br><br>“Every email we send; every text message we write; every phone call we make; every journey we take; each step, breath, dream, and utterance is the target of vast systems of automated intelligence gathering, the sorting algorithms of social networks and spam factories, and the sleepless gaze of our own smartphones and connected devices. So who’s paranoid now?” (Bridle, 2018, p. 162)<br><br>–agency!!!– |

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| | "Our understanding of those systems and their ramifications, and of the conscious choices we make in their design, in the here and now, remain entirely within our capabilities. We are not powerless, not without agency, and not limited by darkness. We only have to think, and think again, and keep thinking. The network – us and our machines and the things we think and discover together – demands it." (Bridle, 2018, p. 213)<br><br>Bridle, J. (2018). *New dark age: Technology, knowledge and the end of the future*. Verso. |
| > Political theory of data | -Political theory of data<br><br>-format theory<br><br>-it is lacking the political theory of data - (what forms of power they constitute and the kinds of the political subject they implicate)<br><br>-data technology significant for contemporary politics and political lives (mass surveillance, disciriminating algorithms, automated disinformation)<br><br>-data politics<br><br>-Foucault - poltiical power does not always exhibit in the form of coercive sovereign power, but sometimes assumes more subtle forms such as disciplinary training and biopolitical management<br><br>"The term "format," as I use it here, refers to the technical-conceptual apparatus that structure data such that they can be recorded, stored, processed, and retrieved. Formats become ineluctably political when they are involved in structuring data about us. Formats are widely visible in our everyday interactions but are also almost always looked over. Formats for gender, race, health, and credit specify the shapes of our data, be it via high-performance, machine-learning systems or legacy paper machines like punch-card indexes. These formats are political not only in the way that they function as political prostheses for classical political dynamics of coercion, but more significantly they are political in the way they serve to perform the work of what I |

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| | call “fastening” subjects to all manner of databases and systems.” (Koopman, 2022, p. 340)<br><br>“My argument is rather that format theory provides a bridge between conceptual and technical analyses of racial politics (and other topics for political inquiry) that enables us to simultaneously mobilize and enrich the insights of each. Format theory creates analytic capacities for interrogating the conceptual and the technical in their connections with one another.” (Koopman, 2022, p. 341)<br><br>Koopman, C. (2022). The Political Theory of Data: Institutions, Algorithms, & Formats in Racial Redlining. Political Theory, 50(2), 337–361. https://doi.org/10.1177/00905917211027835 |
| > Subjectivity in the age of algorithms<br><br>–does not perceive algorithms only in technical/technological terms<br>–algorithms as epistemic devices<br>–the concept of algorithmic knowledge<br>–algorithmic knowledge changes the perception of the individualp<br>–algorithms as socio-technical assemblages (of people, technologies, practices, sites, and knowledges) | -this perspective does not perceive algorithms in technical/technological and mathematical terms, but seeks to develop ontological assumptions about algorithms (also about judgements and taste)<br><br>“the book argues that algorithms create a new way of knowing, which, in turn, changes our fundamental sense of self and our concept of subjectivity” (Fisher, 2022, p. 1)<br><br>“The book analyzes algorithms as epistemic devices, geared toward creating knowledge, which informs users’ decisions, preferences, tastes, and actions, and changes the very sense of who they are. Second, in doing so, algorithms subvert a key tenet of modern subjectivity: the participation of the self in creating knowledge about the self, its capacity for mobilizing self-reflection and critical knowledge in order to expand its realm of freedom.” (Fisher, 2022, p. 1)<br><br>-concept of algorithmic knowledge, draws from Habermas, or Bell<br><br>-Fisher argues our subjectivity is under attack by algorithms<br><br>-similarly technical rationality as Herbert Marcuse<br><br>“Much like Habermas, then, Foucault too sees in subjectivity not merely an effect of power but a space capable of resisting power and opposing it” (Fisher, 2022, p. 23) |

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| | "By algorithms, I mean a socio-technical assemblage geared toward rendering data into information and knowledge." (Fisher, 2022, p. 9)<br><br>"Wider, because algorithms refer in this book not merely to lines of code, which render input into output in order to receive a desired outcome. Rather, by algorithms, I mean a whole sociotechnical assemblage of people, technologies, practices, sites, and knowledges. This includes the incessant production and accumulation of big data in digital sites, predisposed to collect user-generated data (platforms); the construction of technological tools, which make sense of this data, turning massive amounts of personal data into knowledge (algorithms, machine learning, neural networks, artificial intelligence), Can algorithmic knowledge be critical?" (Fisher, 2022, p. 9)<br><br>-Fisher analyses the state of human freedom in the context of digital media<br><br>-subjectivity is a political project of the Enlightenment (subjectivity gave legitimacy to political agency)<br><br>"As a result, algorithms increasingly sidestep the role of subjectivity in the formation of that knowledge, undercutting the humanist project of a self able to form and articulate what it thinks/likes/wants. Algorithmic knowledge undermines a key process in the constructing of subjectivity: selfreflection, or the active participation of the self in creating knowledge about the self." (Fisher, 2022, p. 2)<br><br>"Chapter 4 focuses on recommendation engines and seeks to clarify how the very notion of culture changes as algorithms take part in helping individuals make their own judgments of taste. Rather than seeing them merely as technical and mathematical devices, this chapter argues that underlying recommendation engines are ontological assumptions about culture and aesthetic judgment." (Fisher, 2022, p. 5)<br><br>-algorithmic spatiality (algorithns and right to the city)<br><br>"Chapter 5 details another concrete example of how algorithms are already becoming independent agents in the formation of our social and political life. It examines the new type of knowledge that algorithms create about space – |

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| | algorithmic spatiality – and how this knowledge participates in the production of space." (Fisher, 2022, p. 5)<br><br>"In contract, I argue, the algorithmic model of knowledge is onesidedly based on positivist assumptions, which impels it to exclude subjectivity from knowledge about the self. Rather than promoting an interpretive, hermeneutic, and reflective approach to the self, it suggests to exclude subjectivity from such an endeavor. Instead, it suggests that we will be most authentic to our true self if we let algorithms tell us who we are." (Fisher, 2022, p. 12)<br><br>"With the advent of algorithms and the interweaving of our existence with digital devices, which, in turn, gives us access to huge quantities of data, indicating actual behavior, the argument goes, we are in a unique epistemic position to know our selves better than ever before." (Fisher, 2022, p. 12)<br><br>"Algorithmic knowledge has indeed been criticized for its biases (Crawford, 2016; Gillespie, 2012a, 2012b; Mayer-Schönber & Cukier, 2013). Such biases may have detrimental social consequences from distorting our image of the world to racial discriminating (Ferguson, 2017; Gillespie, 2016; Mehozay & Fisher, 2018; Tufekci, 2019). What is more, their opacity makes public audit and critique of them virtually impossible (Kim, 2017; Mittelstadt, 2016; Pasquale, 2015b; Soll, 2014). Algorithmic knowledge has also been criticized for creating and perpetuating a feedback loop for users, enclosing them in a Filter Bubble (Pariser, 2012; Turow, 2011). And given their underlying political economy and their reliance on personal data, algorithms have also been criticized for inherently undermining privacy (Dijck van, 2014; Grosser, 2017; Hildebrandt, 2019; Kennedy & Moss, 2015), and for exploiting audience labor (Andrejevic, 2012; Bilic, 2016; Fisher & Fuchs, 2015; Fuchs, 2011b). All these point to algorithms as constituting a new regime of knowledge, which has a huge impact on contemporary life, yet remains largely unknown, unregulated, and outside of the realm of democratic politics (Feenberg, 1991)." (Fisher, 2022, p. 13)<br><br>"Subjectivity can be thought of as a private sphere, where thoughts, wants, and needs of the self can be reflected upon and evaluated by that very self. It is a space that allows, at |

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| | the very least, a possibility to question our self." (Fisher, 2022, p. 20)<br><br>"Simply put, algorithmic knowledge, and its inherent erosion of privacy, also erodes our ability to protect our subjectivity." (Fisher, 2022, p. 21) !!!!<br><br>"The rise of digital media was accompanied by the development of a new episteme, a new way of knowing the audience, one centered on big data and algorithms (Antique, 2017)" (Fisher, 2022, p. 36)<br><br>algorithms and people?<br><br>"The algorithmic episteme gives primacy – even exclusivity – to surface over depth in its conception of individuals." (Fisher, 2022, p. 41)<br><br>-towards a post-social conception of the individual<br><br>"What we have seen is a move from an ascriptive conception of individuals in the construction of the audience in the mass media to what might be called a performative conception of the audience in digital media. This entails seeing individuals based on the behavioral data they produce (Rouvroy & Stiegler, 2016), bypassing their selfunderstanding and identifying patterns from which a predictive behavioral analysis can be deduced (Barry & Fisher, 2019)." (Fisher, 2022, p. 44)<br><br>"Users are well aware of the algorithmic nature of their interactions with digital technology; they know they are being watched and monitored. Users use their "algorithmic imagination" (Bucher, 2016) to see the content they are offered as indication of how they themselves are being seen. To some extent (albeit with critical distance), they also see it as an algorithmic reflection of their self. To change the metaphor offered earlier, the media, then, act here not as a camera, but as a mirror, reflecting back the image they capture. This, according to Gillespie, creates a feedback loop by which "the algorithmic presentation of publics back to themselves shapes a public's sense of itself" (Gillespie 2014)." (Fisher, 2022, p. 45) |

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| | "During most of the 20th century, identity was predominantly based on ascription to a category of people who are similar. By subscribing to an identity of "worker", "woman", or "black", individuals did not assume a totalistic identity between themselves and every other individual within the category. Instead, it assumed that individuals in the same category are identical in what was politically significant, for example, that they suffer from a categorical discrimination, or having similar material interests. The performative conception of the individual, which underlies the algorithmic episteme, suggests the specter of a post-social, postdemographic cosmology. It assumes that identifying ourselves through ascription to a social category is too reductionist and instead offers categorizing individuals by their data patterns. This puts us at a risk of entering a post-social cosmos where individuals have a harder time identifying each other as sharing a similar category, as these categories remain opaque to us." (Fisher, 2022, p. 46)<br><br>Chapter 4 /ALGORITHMS AND CHOICE<br><br>–recommendation engines as tools automating aesthetic judgments<br><br>–cultural field has always been populated by multiple intermediators<br><br>"The shift from established cultural intermediaries to algorithms introduces new logics to intermediation (Morris, 2015)" (Fisher, 2022, p. 68)<br><br>"We proceed by introducing the central role of recommendation engines in contemporary culture. While corporate, professional, and popular discourse highlights the objective, data-driven, mathematical nature of algorithms, we hypothesize that underlying the technological work of recommendation engines are also ontological assumptions about the nature of aesthetic judgment" (Fisher, 2022, p. 68)<br><br>"The ways by which recommendation engines picture the world through data represent, we argue, a particular worldview, which has ramifications for culture" (Fisher, 2022, p. 69) |

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| | "We therefore reject the assumption that algorithms merely mathematically translate numeric data into knowledge, and are, therefore, indifferent to political, social, or normative concerns." (Fisher, 2022, p. 69)<br><br>"Recommendation engines do not merely mediate culture but also change what culture means. Being performative, they change the object they assume to measure – aesthetic judgment, in this case" (Fisher, 2022, p. 70)<br><br>-aesthetic judgment as individualistic x objectivist<br><br>"While culture carries moral, normative, and political undertones, these are overlooked by algorithms; algorithms deal with data, which serve as proxy for culture, not with culture per se." (Fisher, 2022, p. 76)<br><br>"Recommendation engines do not simply automate aesthetic judgment as if leaving its essence intact – but rather change the action they set out to automate. This change is of both cultural and political significance. Culturally, recommendation engines presume aesthetic judgment to be objective and individual, thus undermining the subjective and intersubjective character of culture. Our findings support existing research regarding the privatization and individualization of culture." (Fisher, 2022, p. 83)<br><br>Conclusions:<br><br>"Most prominently, I have suggested that algorithms seek to create knowledge which is increasingly independent of subjective and inter-subjective processes. It is founded on mathematical rather than natural language, it is performative rather than reflexive, and positivist rather than critical. It therefore excludes the central role that subjectivity has in the formation of knowledge about the world and about the self." (Fisher, 2022, p. 109)<br><br>"What this book has sought to do is to encourage us to think about how algorithmic knowledge changes our conception of the individual. Algorithms must not necessarily be seen as the cause for that transformation, but rather as the socio-technical expression of such as a move toward algorithmic governance, algorithmic self, algorithmic culture, and so forth." (Fisher, 2022, p. 110) |

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| | "The algorithmic self epitomizes for them the emergence of a techno-human cyborg, emancipated from the metaphysical conceptions of modernity (Barron, 2003; Braidotti, 2013, 2019; Brate, 2002; Fuller, 2012; Haraway, 1991, 2007; Hayles, 1997a, 1997b; Shilling, 2005, p. 4)." (Fisher, 2022, p. 111)<br><br>"Subjectivity animates human action" (Fisher, 2022, p. 111)<br><br>Fisher, E. (2022). Algorithms and Subjectivity: The Subversion of Critical Knowledge (1st ed.). Routledge. https://doi.org/10.4324/9781003196563 |

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