Plural, Situated Subjects in the Critique of Artificial Intelligence

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1. Introduction

Many current critical standpoints on information technologies from the field of artificial intelligence (AI) focus on a difference between human subjects and technology. Such standpoints come in two variants. The first variant is the idea of technical neutrality. Most fortunately, the old argument that technology is neutral, that its social impact "just depends on what you do with it", is losing influence.

However, this argument is often debunked by saying: algorithms are not neutral because they are made by humans. Similarly, on a more abstract level it is often claimed that data sets that are used to train machine learning algorithms mirror human society and thus import its injustices and prejudices (Campolo et al. 2017; O'Neil 2017). That implies that algorithms could be neutral, if humans would not constantly spoil them with their biases. This is a very determinist, platonic story, where human ideas and actions are decisive, which are then put into code and executed by machines (Chun 2008).

Thus, it is important to turn to the second variant of critique. It comprises the positions that show that human subjectivity is not something external to information technology—which is then represented by that technology in a biased or unbiased fashion.[1] Rather, they argue, digital technology does something to human subjectivity itself.

However, most of these approaches form a general verdict on data-based or algorithmic subjectivity, which is usually described as a kind of loss of features that are endorsed. In the following, I will engage with such theories and show using a few cases why such general verdicts harbor the danger to miss the important factor that specific applications of AI connect in quite different manners to pre-existing socio-technical situations and the respective forms of subjectivity. I will use the work of postcolonial theorist Linda Martín Alcoff in order to provide a

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1 Such approaches that hinge on an epistemic critique of representation are discussed in detail in (Matzner 2016).

concept of subjectivity that can grasp the impact of recent technological changes but at the same time highlights differences between particularly situated subjects as its resource of normativity—rather than a general feature or lack of algorithmic forms of subjectivity.

2. Applications of AI and two Forms of Critique

Technologies from the field of AI increasingly structure digital communication and interaction, but also what is perceived as "offline" spaces. Especially predictive technologies from machine learning are central to the current services of digital platforms. They are used to personalize search results, to filter posts on social media, to suggest which content we should watch and with whom we should interact. Such predictive technologies also have permeated various institutional and commercial processes. Famously, decisions on credit, insurance and hiring are influenced by scores provided through machine learning algorithms. Security agencies and polices all over the world use AI-enhanced surveillance technologies, in border controls, the processing of visa and asylum applications, the automated evaluation of CCTV footage or—the posterchild of algorithmic bias—recidivism prediction (Angwin and Larson 2016).[2] Predictive uses of machine learning also drive targeted advertising and the creation of other "prediction products" as Shoshanna Zuboff calls them (Zuboff 2019). However, the exact relation of algorithmic technologies, labor, and value creation in the digital economy has yet to be clarified (Heilmann 2015; Srnicek 2016).

A lot of critical work has been done regarding the information that can be derived from such algorithmic predictions, their epistemic status and their tendency to veil biases in the aura of machinic objectivity (Aradau and Blanke 2015; Kitchin 2014, 2017; Pasquale 2015). Elsewhere I have argued that these important inquiries must be amended with critical scrutiny regarding what these algorithmic practices do to subjects (Matzner 2016). For example, the use of daily interaction on social media for surveillance purposes imports meanings and practices of suspicion and mistrust into these interactions.

Following this intuition, it is important to ask which new forms of subjectivity, or which shifts in forms of subjectivity, the increasing impact of AI-based technologies engenders. Many critical accounts, including those from activist positions, implicitly presuppose the model of subjectivity predominant in liberal political

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2 The research on each of the applications of AI I have mentioned here is growing almost daily. Cathy O' Neil's (2017) book is a good starting point for references on the applications I have mentioned here—even if her criticism falls within the line of defending autonomous subjects against technology that I criticize.

thought: a rational, self-reflexive and autonomous subject. Algorithmic processes that apply machine learning technologies are seen as an imposition on each of these aspects. For example, discourses on the so called "filter bubble" focus on the prevalence of emotional rather than rational discourse through algorithmic filtering, the lack of transparency of the algorithms so that the self-reflective thinking necessary for autonomous judgements is impaired and thus an autonomous use of technology is no longer possible (Pariser 2011; Zuiderveen et al. 2016). However, the clear opposition between liberal subjects and technological impositions is too simple. The entire story of cybernetics, which led up to current connectionist AI (Sudmann 2018), has been structured by a deeply ambivalent relation to liberal ideas. On the one hand, cybernetics was driven by the idea to develop new and powerful tools for free and more effective human actions. On the other hand, the ensuing idea of the human, the animal and the machine as essentially matters of control and communication is a deep threat to ideas of autonomy and self-reflexivity (Hayles 1999: 87). Also the recent applications of AI can in many regards be considered as a liberal project (Matzner 2019). Furthermore, the concrete challenges that current applications of AI pose cannot be easily solved on an individual level. For example, issues of privacy and data protection, if solved within the liberal paradigm, presuppose a partition of data into personal data, which each respective individual can control (Matzner 2014). However, the attractivity of current AI-driven data analysis is to use data on an aggregate level, which finds patterns and associations that cannot be reduced to single users' contributions. Even personalized systems like recommender systems or timeline filtering algorithms usually do not store a digital model of the user, as the use of "data doubles" and other concepts might suggest (Lyon 2014). Rather, the decision is taken for each individual item, regarding which an approximation of the user's interest is derived from the current stream of data and state of the user's connections.[3] Thus, such problems need to be addressed on the aggregate level of data usage rather than only individualized parts. Finally, liberal theory has come under scrutiny from feminist and other critical theories for engaging what Hayles calls the "practices that have given liberalism a bad name" (Hayles 1999: 87).

For these reasons, critical theories of applications of AI that take recourse to other sources of normativity are preferable. A prominent and elaborated example is Antoinette Rouvroy's concept of algorithmic governance. She derives her nor-

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3   As usual, it is hard to know exactly how prominent applications like Twitter's timeline or Facebook's newsfeed are filtered. Thus, I derive my observation from the published research. Already early research done at Yahoo (De Francisci, Morales et al. 2012) that has spearheaded a lot of research on personalized content, did not use persistent models of the user. The approach uses support vector machines for classification. In the meantime, personalization, like most other machine learning tasks, has switched to neural networks, and thus to even more data driven and dynamic approaches. See for example a recent paper by Microsoft Research (Zheng et al. 2018).

mative stance from an idea of humanity that is precisely based on the absence of full autonomy and rationality. Rouvroy follows theories of Judith Butler and Louis Althusser (Rouvroy 2013: 158). Both describe subjects as never in control of themselves, because they are essentially dependent on others. However, these others are not simply determining. The influence of others on us happens in social interaction which neither we nor the others fully control. It is particularly that excess and openness of human action that enables critique and meaningful interaction. Albeit, this very excess is threatened by algorithms:

> [W]hat has to be preserved as a resource antecedent to both the 'subject' and sociality, as excess of the world over the algorithmic reality, is 'the common'; this 'in between', this space of common appearance (*comparution*) within which we are mutually addressed to each other. (Ibid.: 159-60)

Thus, Rouvroy sees human interaction yielding a potential for novelty and spontaneity that computing never can grasp. In her account, algorithmic governance, much in line with the description above, is not focused on individual subjects. Rather, algorithmic governance is "[e]ffected through the reconfiguration of informational and physical architectures and/or environments within which certain things become impossible or unthinkable, and throwing alerts or stimuli producing reflex responses rather than interpretation and reflection." (Ibid.: 155) This description clearly echoes cybernetic worries of the loss of the subject. Algorithms, in Rouvroy's words, reduce the virtual to the actual, the possible to the statistically probable, the living to the computational (Rouvroy 2017). Thus, the main line of critique Rouvroy harnesses has against algorithmic governance is again a certain loss of subjectivity, in this case a form of relational subjectivity that can contribute to the creation of politics and resistance.

3. Critique on a general level and the importance of situated subjects

Such analyses provide important insights into the consequences of the application of AI. In particular, Rouvroy's account does justice to the specifics of many recent forms of AI-based verdicts and activities, which work on the supra-individual level and which provide incentives for action rather than information. It is important to note that there are some applications of AI that can be seen very much in line with more Foucauldian forms of disciplinary power (Matzner 2017). In particular, these can be found at the borders of the Western, capitalist societies that Rouvroy and most other critics of AI take into focus. Yet, within these societies, such analyses are pertinent. However, in their attempt to find a general verdict on a specific loss of subjectivity through applications of AI, they miss important qualifications.

This is not only a matter of descriptive accuracy but also means that AI is not per se such an anti-political technology as which it appears in these analyses. Its anti-political effects do not fall on subjects as such but on particular subjects—and on each in a different manner.

The problems of such general verdicts can e.g. be seen in Wendy Hoi Kyong Chun's analysis of filter bubbles. She shows that the theory of the filter bubble is based on the concept of homophily: The idea that human beings tend to orient themselves towards others who are or think similarly. Critics of the filter-bubble argue that algorithmic content creation tends to enforce that human tendency in a dangerous manner, which can lead to all kinds of extreme and racist communities. However, the problem of the algorithmic selection is not seen in the content itself, but in the concept of similarity that applies to all content in the same manner. That way, homophily

> serves as an alibi for the inequality it maps, while also obviating politics: homophily (often allegedly of those discriminated against)not racism, sexism, and inequalitybecomes the source of inequality, making injustice 'natural' and 'ecological.' (Chun 2018: 76)

Algorithmic filtering, which is an exemplary case of what Rouvroy calls the "reconfiguration of informational [...] architectures" (Rouvroy 2013: 155), is criticized regarding a universal trait of human subject formation. Chun shows that it is necessary to take the social situation of subjects, which enable racism, sexism, inequality into account. Another case in point would be the infamous analysis by ProPublica, which has shown that a recidivism prediction software was biased against blacks (Angwin and Larson 2016). This case has been discussed almost too much, so I just want to highlight that the software did not use any racial features as input. Thus, even if the efficacy of algorithms does not work in terms of race, it still addresses and produces race.

In order to overcome the line of critique mentioned in the beginning, which implies a neutral technology spoilt by biased data, it is necessary to show how any kind of media and AI in particular engage with socially and culturally situated subjects—including race.

4. Situated subjects

In her book on what she calls "habitual new media," Chun describes data analytics and their turn away from individuals quite similar to Rouvroy. Her analysis centers on the concept of habit: rather than focusing on an individual subject, data analytics try to grasp habits, established ways of acting, and consequently tries

to form and influence these habits. In order to achieve this, they focus on the correlation between habits rather than individual acts or even individual patterns. "Through this, individual actions become indications of collective patterns rather than exceptions." (Chun 2016: 57) These patterns are the object of optimization, quite similar to Rouvroy's description of the reconfiguration of architectures and environments in order to achieve certain behaviors.

Here, I cannot follow the detailed conceptual work in which Chun engages with the notion of habit. However, I want to follow her suggestion to connect this take on habit from media theory with thoughts on habit that relate to alterity:

> habit is publicity: it is the experience, the scar, of others that linger in the self. Habits are remnants of the past—past goals/selves, past experiences—that live on in our reactions to the environment today, as we anticipate tomorrow. Through habit we inhabit and are inhabited by alterity. (Ibid.: 95)

Chun encourages us to ask how such habits are changed through recent developments in digital media and how they can change again in order to change society (ibid.: 8). This implies that not habit per se is the problem, but differences among habits. However, Chun herself does not take these differences serious enough. Her main preoccupation are liberal injunctions to protect the subject from alterity and technological impositions. By fusing both, she urges to find ways to "inhabit" our habitualized relations to others, which includes to "warily embrace" the many new flows of data, connections, configurations of subjectivity. Here she has a much more positive outlook on technology than Rouvroy. Yet, she underestimates how any form of exchange and ensuing subjectivity is formed by power—not just the private, liberal space. Some socio-technical positions are quite hurtful to inhabit. Thus, in the following I want to suggest a middle ground, which however shares the outlook that changes in the ways we perceive and the ways we (can) act in a given situation are not only the aim of algorithmic means of governing. They are a fundamental way how subjectivity works. This is analyzed in detail by Linda Martín Alcoff in her book visible identities.

Alcoff starts from the Foucauldian insight that power is not just an imposition from the outside. Rather, being a thinking and acting subject also means to be situated in power. However, contrary to Foucauldian analysis which focuses on the disciplinary subjection under norms, Alcoff shows via a theory of alterity and habitualization that our perceptions and actions are formed by the practices we perform and by the situations we have found ourselves in. Our past experiences leave traces that Alcoff describes in line with central insights from what is commonly discussed as theory of social practices (Reckwitz 2002): "[T]he interpretive horizon that constitutes our identity is undoubtedly constituted [...] by a wealth of tacit knowledge located in the body." (Alcoff 2006: 106) Such tacit knowledge and

habitualizations have their location in practices. They are not necessarily imposed on us, rather they are the growing residue of the way we act—or are forced to act. The latter of course remains important, but is not the only way how habitualization comes about. It is an integral part of the way we make meaning of our situation and how we structure our actions. A lot of these ways of perceiving and acting come from others—via education, the various contexts we live, work, play, learn, etc. All of these contexts or situations are structured by collective practices. Practices in which we do something but at the same time attain a subjectivity. Others tell us—more or less implicitly—who we are, what we become or should become by doing certain things, what is apt or usual for "someone like you" etc. As Alcoff states:

> Part of what the collective praxis creates are aspects of the self. Our preferences, our dispositions toward certain kinds of feelings in certain kinds of situations, what typically causes fear, anxiety, calmness, anger, and so on, are affected by our cultural and historical location. Sometimes people take such internal feelings as proof of a natural origin, as when a homosexual kiss elicits feelings of disgust. The feelings may well be quite real, but this is not proof that homosexuality is unnatural; physical reactions can be altered by knowledge and acquaintance. This example suggests the most powerful role that the other plays in self-formation: the character of the other determines in no small part the self. (Ibid.: 115)

Regarding theories of the subject, it is often important to highlight this influence against ideas of innate characteristics or the demand to become as self-reflexive as possible. Then it suffices that "the situation" of the subject is important—but not so much what that situation actually is. Alcoff highlights that the practices we become habituated in are structured by all kinds of social difference. She mainly analyses race and gender, but points at social strata, education and financial resources as others. Thus, apparently quotidian practices are different for subjects inhabiting different social positions. E.g. she lists all kinds of things that are particular for women, with regard to the work of Simone de Beauvoir and Iris Marion Young:

> There is not only throwing and sitting, but standing, walking, running, patterns of conversation involving interruptions and dominating the topics, perceptual orientations that can encompass sideline issues so as to notice household dirt, distressed children, bored interlocutors, and so forth, as well as the very interior experience of one's own emotional subjectivity. (Ibid.: 106)

She has similar lists for race and cross cultural and intersectional indices (ibid.: 106 et. seqq.). Alcoff describes that we perceive situations, spaces and persons dif-

ferently, depending on our preceding experiences, the cultures and meanings in which we have moved. We enter a subway differently as man or a woman, as person with white skin or person of color. Here, cultures and meanings should not be understood as externalizable structures. They only persist in collective practices and particularly in what Alcoff calls "perceptual practice" (ibid.: 115).

It is of course possible to reflect and to engage with one's own habitualization and the practices in which this happens—but not by rendering them fully transparent to oneself. We can act very consciously of the fact that our perception and the possible forms of action are deeply intertwined with contingent practices. Nevertheless, these practices are the very context in which meaning and perception emerge. Furthermore, experiencing something means to be somewhere and thus does not only enable knowledge, but also the possibility to be changed in one's subjectivity: "Knowing is a kind of immanent engagement, in which one's own self is engaged by the world [...] rather than standing apart and above."(Ibid.: 111) Thus, when we attempt to engage with our own situation, practices form both the context and the site of this engagement. In consequence, habitualization can only yield to another form of habitualization:

> The phenomenal world constantly folds back on itself, adding to what has come before and what remains still in the background of the present moment; the past is that which has been surpassed, yet remains within. There are no complete breaks or total separations, only folds within a continuous cloth, pregnant with latent meaning. (Ibid.: 110)

This also entails that a lasting change of subjectivities cannot be based on individual attempts. Rather, the practices, the ensuing social relations need to be changed in order to bring about different forms of habitualization and subjectivities:

> Experiences matter, but their meaning for us is both ambiguous and dynamic. We are embodied, yet not reduced to physical determinations imagined as existing outside of our place in culture and history. This account helps to capture the dialectics of social identities, in which we are both interpellated into existing categories as well as making them our own. (Ibid.: 111)

This analysis of situatedness, also the situatedness of social change has consequences for the kind of politics that Rouvroy advocates. Alcoff denies the necessity for an account of (human) beings as always in excess, or a "pure capacity of negation or of flight" (ibid.: 112). Even if such ideas of politics are deeply inspired by critiques of the subject, Alcoff contends that they still contain remnants of the "dualism" that inspires liberal accounts, which try to somehow separate the individual from others or society. However, the habitual situatedness within practices

is not just part of oppressive and determining identities—although these are in the foreground of Alcoff's discussion. They are part of any subjectivity, including those with which we identify, in which we find pleasure, friendship, solidarity, luck. In consequence, to attain these we do not need to exceed situatedness, we just need to change the situation. In Alcoff's words: "Moral agency, subjectivity, and reasoning capacities are made possible within social networks of certain types. There is no amorphous substance or pure capacity lying pristine below the layer at which social constructions of identity take hold." (Ibid.)

5. Situated Subjects, AI and Politics

Alcoff herself does not discuss media and technologies. However, her thinking is deeply inspired by Merleau-Ponty's phenomenology, which contains the mediatized structure of experience at its core—represented by the infamous example of a blind person's stick (Merleau-Ponty 1962: 152, see also Alcoff 2006: 188). Thus, Alcoff's thought can be easily amended with the necessary reflections on media technology.

In his discussion of interfaces, Christoph Ernst shows that interaction with digital technology via interfaces implies a situated subject, including the body (Ernst 2017: 100). Interfaces only work because they can address implicit knowledge which is rooted in practices and thus is structured by social rules (ibid.: 102). Interface research and design even tries to consciously address that using what Ernst calls in reference to cognitive science a "conceptual model" (ibid.). While this bears the potential of manipulative attempts, it is not manipulation per se but a necessity for an interface to work, i.e. to do justice to the fact that interfaces do not just interact with generic human beings but concretely situated subjects.

Ernst discusses interfaces, not the more abstract adjustment of architectures or environments that Rouvroy emphasizes, which work through "stimuli and signals that produce reflex responses". However, if this efficacy is precisely the defining factor of technologies in algorithmic governance, they need to connect to the habitualized subjectivities not unlike interfaces (see also Distelmeyer 2017). Thus, even if these technologies do not aim at a set of norms and ensuing subjectivity, they are still entangled with situated subjects.

This also is confirmed by Chun's observation that predictive analytics is tied to habitual practices, which I have cited above. Using Alcoff's theory, we now return to the point that habitualization itself is not the problem. That a lot happens on a pre-conscious and habitual level, does not mean that the applications of AI work deterministically on us. Rather they interact with structures of perception and action that can certainly be influenced by algorithms, but that are also characterized by a pre-formed depth that results from prior experiences. This can change

the previsioned result of algorithmic governance in many ways, ensuing in frictionless, almost unnoticed influence, as well potentials to inhabit and embrace and potentially evolve one's situation as Chun suggests—but also many kinds of tensions, hurt and resistances. This is the main point here. Subjects are concretely situated subjects and algorithmic governance, particularly because it acts one supra-subjective level connects quite differently to the various forms of subjectivity.

This already starts on the level of perception: For example, EU citizens that are not recognized by automated border control terminals that use AI based face recognition will immediately see this as malfunction of technology. Migrants might perceive this as a threatening decision. Also, the even less tangible adaptations of environments connect to situated subjects. This is precisely the reason why applications of AI are not neutral. Not just because they are based on biased training data; but because they connect differently to different forms of subjectivity. The algorithmic filtering of news is problematic because it connects better to certain subjects and communities structured by hate and othering than to other forms. Recidivism prediction enlarges and continues a security system that is based on race discrimination. John Chenney-Lippold has shown that the algorithmic selection of merchandise based on a machine learning system that tries to predict the users gender connects better to heterosexual, commodified forms of gender than others (Cheney-Lippold 2011).

AI has yielded many technologies that have enhanced the efficacy of technologies in the sense that they directly impact the way we perceive and act in the world. This impact, however, does not amount to a loss of subjectivity in general. Rather it reconfigures different forms of subjectivity in different manners. The normative source of critique then does not lie in a difference between a new form of subjectivity under algorithmic governance and one that is somehow beyond that. Rather, the source of critique lies in the differences that already exist between subject positions, and the many ways in which they are shifted through technology. Chun's suggestion to "warily embrace" this situation can be one way of trying to achieve a change for the better in such a situated manner. However, other ways lie in the refusal to accept a situated subject position, which might include demands for privacy protection as well as ceasing to use particular technologies altogether. These demands will need a socio-technical index. That is, they are not the demand to return to an independent subject position like the liberal strands that both Chun and Rouvroy criticize would have it. Still, privacy, cloaking of data, refusing to be implicated in automated analysis might be a necessary resource to find better and viable situations for persons whose subject position becomes entangled with applications of AI in hurtful, abusive, disempowering ways.

To repeat, the challenge of critique is not to escape situatedness but to change the situation. Alcoff's reflection shows that this will always be a situatedness with others; and as my amendment of her theoretical outlook illustrates, it will always

be a situatedness with technology. Thus, in the end this amounts to a political and democratic challenge. Our situation is always already related to others. Applications of AI make that very clear: they focus on relational data and as data driven technologies only make sense at the aggregate level.

At the same time, as Alcoff shows, is it impossible to fully reflect that situatedness and relationality. It is not a system or environment but an encroachment of many different "past goals/past selves—past experiences" as Chun writes. This creates many differences in perception and possibilities for actions for each subject. Thus, issues of epistemology and of power are fused. In this sense, the political challenges are first to get to get to know the situation of others, the way that technologies connect to their subject position. In a second step these positions need to be reconciled to achieve a new and better configuration of technology. This needs to be a democratic solution, not in the sense of finding a compromise between pre-existing interests, but in the sense that subjects always already form a related, socio-technically situated plurality.

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