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AI AS SOCIAL ACTOR: A LACANIAN INVESTIGATION INTO SOCIAL TECHNOLOGY

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ABSTRACT

Given the social and political influence of social networks, which are often structured and organized by what today falls under the umbrella term *artificial intelligence*, we seek to define this new social frame. Most importantly, we ask how to frame this new social sphere in current theory and how it can be conceptualized for social sciences. However, this is not possible without constructing a logical frame for a problem as deeply entwined with the modern history of logic as AI is. We will therefore frame the problem of AIs as social actors within the logical discourse that Lacanian psychoanalysis opened. Our analysis shows that the inherent indeterminate that constitutes the psychoanalytic subject is omitted from AI-supplanted identities. Logical analysis also allows us to discern a specific mode of subjectivation that is made much more prominent through the normalization of phenomena like echo chambers and online identities.

Keywords: Artificial Intelligence, Philosophy, Psychoanalysis, Logic, Social Actors.

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1 INTRODUCTION

Within the Fourth Industrial Revolution, artificial intelligence (AI) has become a central element of our communication and social reality. But the question remains of how to approach this new element of social life. Is it really just "new wine in old wineskins?" (Pence, 2019), or does the change in the social landscape indicate the emergence of something new? Do we need, for example, tech social workers (Mathiyazhagan, 2021) as a result of these changes? Framing the social dimensions of technology as a tool or a prosthesis, as Freud did (Freud, 1968: 451), seems bound to fail. AI is today also a socially active artifact as it frames and organizes social connections and creates social identities. This also means that it interacts with the very nature of how we understand ourselves.

What do we understand under the umbrella term of artificial intelligence here? Most importantly those uses of machine learning and deep learning, which today are used to create new social bonds. Facebook for example expressively uses machine learning in layers to generate their social feeds (Lada et al., 2021). However, the following discussion will not focus on a specific model, but on the foundations of applied computer science in logic and applied mathematics. Now, a negative is hard to prove, but there are strong indications that current 'thinking machines' and artificial thinking in general has hit a limit in applicability to social questions. While it has emerged as an important tool for many sciences, it has also failed so far to discern any structural rules within social realities despite massive scientific effort (Dressel and Farid, 2018; Littlefield et al., 2021; Salganik et al., 2020). All these studies, of which the Salganik et al. should be put into focus, show the low predictive power of current AI models with regard to social data. This, understood as a "proximate failure" (Harman, 2016: 106), i.e., an inherent deadlock of it as a social object, is of major relevance to AI as a social actor. Because despite its inability to understand social structures, there is no indication that artificial curation of social connections will cease. To approach this proximate failure, however, a more abstract way of approaching the problem is needed. The reason for this is simple: if, as the study by Salganik et al. shows, a broad range of AI models fail to produce any substantial knowledge, it makes no sense to analyze specific cases of AI failure. Instead, it should be assumed that there is a more fundamental problem at hand. This is why the focus will be on the social ramifications of a particular understanding of logic, which organizes and structures social links created and curated by machines.

2 SOCIAL ACTION

Previously, the constitution of social identities has been thought of as being based in shared experiences, thereby bridging the problem of representation in socio-linguistic concepts of social identity. However, this shared experience is increasingly supplanted by the technological link that social algorithms provide. What is this

supplantation? Everyone who uses social media today is aware of their content feed being an algorithmically curated (often with specific economic intent) display of other user-created content and advertising. If we are connected with other people through social media, which uses machine-based curation of content, be it YouTube, Facebook or others, this linkage itself is curated, not just the appearance of it on our interfaces. This means that AI's, in a broad sense of automated judgment through computing, but also as machine learning and deep learning in the case of Meta, acts directly on the interlinking of social actors, without appearing as a social actor itself. Instead of essentially random face-to-face experiences in which we meet people, the AI curating the feed of a Facebook user supplants this experience, by replacing the random, partially virtual and complex character of this with a positive mathematical model of "what their needs and wants are" (Meta, 2018). The random act of getting to know people is therefore supplanted by an active influence. In this sense AIs are social actors, but do not appear within the social structure as we would normally understand it. They do this by defining what we see online and whom we meet on social platforms without explicitly searching for them (Lazer, 2015; Vosoughi et al., 2018). While each of these examples can be theoretically bypassed by the user, thus indicating a weaker framing effect than language as a symbolic order, they represent the immediate content of our online life — the 'how' of social reality. A new type of social actor arrives on the scene so to say. However, this actor is very untypical, as it is solely located in the social unconscious or the symbolic order as Mathew Flisfelder (2012: 64) points out. Its social action of curating content is located in the symbolic order, which it organizes without adding something-to-be-organized to it. The common idea of language as communication only considers explicit language as content and meaning. Language encompasses more than this content level, as Martin Heidegger has already highlighted in Being and Time, where he considers language to be the "articulation" of the structure and frame of what is "thematic" in it (Heidegger, 1996: 140). We find comparable ideas in a broad range of modern thinkers (e.g., Wittgenstein, Habermas, Lacan) but can also show empirically that a specific language frames the same problems in different ways, thereby leading to different conclusions (Winskel et al., 2016). Such framing can be discussed on several levels, some more strongly oriented on specific thematic ideas (like biases), others more structured by the ontology of a field. In this new social field that is generated when people are connected by positively identified 'interests,' existential and structural connections might play a role, yet they are not central to establishing the link between social actors. In the end, these curated links have an explicit primary purpose, namely, keeping the user online for as long as possible and thus maximizing both their exposure to advertisements and subsequent click-throughs. Central to these content feeds is therefore a phenomenon of binding the user to their interests and making sure they are connected to other people who either engage with the same content or generate it themselves. These feedback loops are fundamental to the social field that emerges here (Ge et al., 2020: 2,269–2,270).

An often-discussed effect of this supplantation, which describes the substitution of existential experiences through media (a concept introduced by Salomon, 1994), is the spread of 'echo chambers' in which individuals with comparable social profiles are grouped together and reinforce their social interests through contact with other individuals of comparable interests, thus creating self-reinforcing social communities (Karlsen et al., 2017; Zhu et al., 2021). These echo chambers are already proving to have a tangible social impact (Levy and Razin, 2019), and different feed algorithms can be shown to produce different types of echo chambers (Cinelli et al., 2021). Such variations suggest that this dynamic is not simply a question of epistemic isolation by dismissing counterevidence to our beliefs (Fantl, 2021; Santos, 2021); rather, it is actively influenced by the supplantation mechanism of algorithms. Which means that algorithms are increasingly responsible for defining the frame of reference through which we approach our social reality.

It might still seem sensible to argue that the effect of echo chambers is overstated and that it is not difficult to escape them (Dubois and Blank, 2018). However, if we take echo chambers as a symptomatic aspect of our modern reflexive identity (i.e., an extreme byproduct of the same structuring element that makes up 'normal' behavior), we can assume that the last decade, where algorithms more and more intrude into the social as interlinking agents of social connections, only constitute a starting point. Why to consider mostly the last decades? Because what Michael Wheeler calls "online intelligence", i.e., the flexible and fluid real-time computerized judgement of data (Wheeler, 2005: 13) is a rather young phenomenon, especially in its effect on social structures. The idea of a "starting point" is supported by the increasing influence that social media has on constituting younger identities (as indicated by Raiziene et al., 2021). But in the best tradition of psychoanalytic research, we can nevertheless approach these symptoms by discerning the structural level that enables them. This means it is not the echo chamber, which is in focus, but the socio-logical structure that produces identities solely through mathematical models of "wants and needs".

However, this new social logic is not entirely consistent, even if it might appear as such. As software, it malfunctions on an ontological level (Floridi et al., 2015), thereby producing 'bugs' and mishaps. This is especially relevant as there are limits to machine learning's own applicability as the Salganik et al. study indicated. It means that while AIs do emerge as social actors in the sense of structural actor, they offer no help in discerning their own effects. A malfunction of AI in social terms will be hard to differentiate from its intended behavior. This question of whether we should interpret a certain behavior as a malfunction, or a deliberate function of AI can also not simply be answered by reverse engineering the software itself. First of all, this often will not be possible because the owner of the software would regard such an act as a violation of trade secrets. Second, the algorithmic is a fundamental mode of organization, originally based in repetition and the written word, as machine learning repeats, writes, and organizes knowledge and data

without any subjective insight as to how or why (Durán and Jongsma, 2021; London, 2019). This 'black box' of AI—that is to say, the inability to discern its inner workings—is a fundamental structure of modern AIs and a problem even for the discipline in designing these machines themselves (Arrieta et al., 2020). However, manifest inconsistencies of the structural level of language—the symbolic order in psychoanalytic terms (Žižek, 2012: 2)—are not a hindrance to AI as social actor. Quite the opposite, in fact. Since we cannot fully discern this problem by approaching the technical aspect alone, there is need to further discern the difficulties this socio-technical interaction produces.

This leads to a core problem of this theory of technological supplantation: There is so far very little theoretical research on this subject and its framing, especially as the most active forms of such supplantations have only been in effect for a very short period as feed algorithms and machine-based curation of social links is a new phenomenon. There is a pressing need to discern how to act in this new social field but very little indication as to how to do it, since we know little about its structures. Probing an emerging field and offering an initial framing is a genuinely philosophical task, and this paper will therefore try to offer a logical dissemination of the social interaction of AIs. This probing will orient itself using Lacanian logic. This logic-centered approach might seem overly formal but given that algorithms cannot be understood without their genesis in modern logic and mathematics, it is not avoidable. This also means that there will be a focus on the structural foundations of algorithms and machine learning, which are used to create social interactions online, not primarily on their effects. In this sense the paper intents to open up a new way to use Lacanian psychoanalysis with regard to AI. The works of Isabell Millar (2021), André Nusselder (2006), Jacob Johansson (2018) of course contribute to the AI discussion, but we would argue that these approaches operate on a vector that starts with the fantasy of AI and applies its Lacanian discussion of it to algorithmic intelligence. This is important but encompasses only one side of the Janushead of AI: the phallic appearance of AI, as Clint Burnham (2022) called it. The other approach would be to start with the logico-algorithmic side and its material structure of calculation and discuss it on the basis of a continental understanding of Logic (based centrally in Lacan and Freud, but also Heidegger and Badiou) and approaching fantasy as the end-product of this. Millar touches upon this in her discussion of Omega Numbers (Millar, 2021: 23–27), but there is no in-depth discussion or follow-up of this problem. Nusselder also skirts this problem in "Interface Fantasy," but considers it to be a question of interfaces as a fantasy (Nusselder, 2006: 63). Matthew Flisfeder (2021) approaches this problem directly but doesn't discuss the algorithmic Big Other's inherent inability to produce what its phallic image might imply. Johansson indicates the perverse nature of big data (Johanssen, 2018: 141–167), but doesn't bind it to the actual essence of computing: modern logic and applied mathematics. In this sense, the works of Millar and Nussefelder did not provide a foundation for the presented analysis but are those of another house. Johanssen and Flisfeder point in the same

direction in their theoretical reflections, but essentially accept the claim of rationality by the Anglo-Saxon tradition of logic: that even the computer's logic is if not identical with the symbolic as discerned by Lacan it at least doesn't contradict it. However, the analysis that a fundamental "misrecognition" happens in big data, which Rambatan and Johanssen (2022) made, formulates the direction of the presented paper. Unfortunately, Rambatan and Johanssen to not work through the symbolic structure of this misrecognition. More general Lacanian works on online culture, which encompass a broader sense of aestheticized or technologically mediated communication, also do not offer an insight into the logico-algorithmic base of this new social field.

We also do not wish to join the discourse on the point at which an AI becomes truly intelligent, nor do we wish to discuss strong AI claims, as of now, this is a fantasy and should be discussed as such. Instead, let us look at the social situations that algorithms create on an abstract basis of the logic we can discern there. This means we are utilizing Lacanian psychoanalysis neither as a form of social analysis, nor in a clinical sense, but as "the method that proceeds with the deciphering of signifiers without concern for any form of presumed existence of the signified" (Lacan, 2006: 630), i.e., as a logic of the unconscious. This logic of the unconscious operates on a central insight that psychoanalysis approaches practically under the concept of castration: there is no symbolic unity. Consequently, every discourse or use of language is oriented on a gap or void. In this sense, it operates on the exact opposite of schools of thought like system theory or positivism: "I do not accept […] that every science should refer to a unitary, or world, system" (Lacan, 1998: 8). This radical insight, which is onto-logical, is what needs to be applied to the AI discourse. In very basic terms, it means that we must break with the truism that "the basic architecture of the internet is one based simply upon sharing information" (Flisfeder, 2021: 54). Information theory is not free of ontology, which is simply accepted if we assume that a "Symbolic order" is implemented by algorithms (Flisfeder, 2021: 104). First, we should be aware how the algorithm of computer sciences is not fully within the symbolic as Lacan designates it and what that means for social interactions curated by computers.

Ontology should then be used in the precise sense that Heidegger gave. It is not a discussion of a specific ontic problem, i.e., one that already presupposes a specific ontology, but a discussion of the ontological dimension itself. Lacan has already indicated that the computer will have difficulties approaching the symbolic as such, despite being structured by the symbolic:

> "[…]it is not because it lacks the supposed virtue of human consciousness that we refuse to call the machine to which we would attribute such fabulous performances a "thinking machine," but simply because it would think no more than the ordinary man does, without that making [it] any less prey to the summonses [appels] of the signifier." (Lacan, 2006: 45 [translation corrected by the author])

What is the problem on a purely formal level? It is a use of "symbolic law as the purely positive production, rather than repression, of reality and its desires" (Copjec, 1994: 23–24) mirroring a critique that Joan Copjec mounted against Foucault. Without acknowledging this critique, we might assume that the "new algorithmic identity" (Cheney-Lippold, 2011) through cybernetics is actually a better representation of the real. But computers in general operate within a logical frame that assumes negation not as virtual, but only as a specific negation, in difference to the negations that Lacan called frustration and castration, which introduce logical indeterminate fields. This needs to be detailed further.

3 SYMPTOMS OF THE 21ST CENTURY

Both the genesis of AI out of modern applied mathematics and the structuring of communication by AIs indicate a problem that in this form has mainly been discussed in psychoanalysis—that of the social dimension of the unconscious. I wish to take up a specific concept to discuss this further: the *algorithmic unconscious* as introduced by Luca M. Possati (2020). This algorithmic unconscious indicates that the *repressed* that forms and structures an algorithm is of vital importance to its social effect. This does not mean that one should attribute any consciousness to it. The situation is much to the contrary, since the unconscious is not 'inside' our head in Lacanian terms but rather intersubjectively exists 'outside' of us, so to speak, as the implicit structure of language and the forms and frames of our habitus. Much more importantly however, it includes not only this explicit dimension, but also the virtual excess that is introduced by the symbolic. With psychoanalysis as our guide, we can approach not only the behavior of non-human social actors (Rahwan et al., 2019) but more importantly highlight a distinct techno-social interaction within the implicit organization of social realities. The main structural difference to the human social actor that quickly becomes evident at this stage is that the algorithmic is purely unconscious and acts as a social actor primarily within this unconscious structure of the social.

While this might initially sound strange, we must carefully parse what this actually means. To begin with, psychoanalysis is not used in a therapeutic sense here but more as a theoretical framework that will allow us to *discern and distinguish* certain empirically describable social elements of algorithms. What are these elements? Possati offers us three applicable repressed dimensions: First, there is the mathematical formula as an "opinion embedded in math" (O'Neil, 2017: 50). This means that the programmer of the algorithm *embedded their own perspective in the program* and model that has been programmed. This is the *most superficial level of its repression* and still somewhat easy to grasp. In theory one could easily conduct empirical research on the opinions of such programmers. Such studies would have to be specialized towards certain programs and mathematical models, of course, but with the sociology of science there is a discipline that can approach this problem directly. Most interesting here would be the implicit framing of such

opinions to approach the unconscious that structured the social dimension of the programmers' models. Ideally, such studies should focus on major content curators like Google and Facebook, but it seems unlikely that these firms would agree to let scientists discern their implicit structures. It also raises the question of whether or not they would try to influence the results. At any rate, since neither the AI itself nor its public presence has access to the perspective that it assumes, this dimension of its workings is repressed.

A *second and much more important level of repression* is found in the *logical structure of the algorithm* itself. Modern predicative logic has not been brought to the world in a moment of divine epiphany; rather it is the result of a scientific discourse that has its own traditions and conflict—most notably among the logicians themselves (Priestley, 2011: 125). Modern computer science is also a specific offshoot of this tradition that has to operate within the physically possible, which means that certain elements of the ontology of mathematics (e.g., absences) can only be considered within the limits of physical computation. Negations are most important here, as two (frustration, castration) of the three negations that Lacan introduces (Lacan, 2020: 51) can only be thought within a purely symbolic space that is not based on a systematic unity but can only produce unity as a somewhat precarious unary trait or "count-as-one" as Badiou calls it (Badiou, 2006). However, digital computing only operates on negation as either a failure of a specific (positive) model, for example in evolutionary algorithms (Sloss and Gustafson, 2020: 313–320), i.e., the "fitness" of a count-as-one in relation to its *Umwelt*, or privation as 'missing data' (cf., e.g., Chai et al., 2020). All these examples are variations of privation. Hence, the assumption that it is only a lack of complete data, which hinders social analysis.

However, as a formal science neither mathematics as such nor logic is bound by the physical, instead it operates within the purely symbolic, only limited by the internal consistency or necessity of its arguments. This is particularly evident when we consider certain strands of reasoning that have been excluded in the tradition of logic, namely, that of Heidegger, Lacan, and other continental philosophers who argued that nothing can be determined without accounting for these voids/absences in its structure. This tradition has had a minor role in the AI research conducted by Hubert Dreyfus, who disrupted and improved the AI discourse through a Heideggerian critique (Dreyfus, 1979). Heidegger, who studied mathematics, physics, and philosophy, is the most prominent critic of the traditional logic and focused much of his oeuvre on criticizing Aristotelian concepts of logic (see, e.g., Heidegger, 1976a, 1984, 1998), which are still the basis for much of modern predicative logic.[1] Nevertheless, there are other important authors we must consider here too. The Lacanian reinterpretation of the Aristotelian square, for example, has

[1] It should be noted that Aristotle did not allow for any kind of true absence. Even the concept of zero would have been impossible in his concept of logic and mathematics. Compare Kaplan (1999) and Rotman (1987).

not been widely discussed outside of continental philosophy (Grigg, 2005). In addition, the idea of the empty set in the sense of a foundational void as posited by Alain Badiou in his seminal work *Being and Event* is most likely not reproducible in technical systems (Badiou, 2006: 187–190). This has two implications. First, since there is neither a universal standpoint nor a metascience, the way computer science operationalizes mathematics is within the same problem of application that other sciences have. Computer scientists need to discern why and how their specific mathematization happens and where the differences between formal mathematics and the specific application of mathematics lie. Second, because the philosophical discourse on logic was essentially split for most of the last century, computer science as such has mostly cleaved to one tradition. This marks a second level of unconscious and repressed structure that organizes AI today: Its theoretical frame of reference is not universal but based on a specific perspective and tradition. *More importantly, it is based on a repression of the central logical relation that is needed to understand social structure like discourses, if we follow Lacan or Badiou.* The scientific reconstruction of this second unconscious level should be done through a philosophical approach to the history of ideas relevant to the specific development of modern technical algorithms. Again, we can approach this unconscious level according to a preexisting—yet in this regard largely unutilized—tradition of thinking. Unfortunately, a philosophy of computer science that is not deeply entwined with the ontology of the Anglo-Saxon tradition of logic does not really exist right now, so the prospects of a thorough analysis are low.

The *third level* and perhaps the most difficult to approach, is the classical psychoanalytic problem of the *reflexive structure that algorithms create if they are used as curators of social links* and through which we understand ourselves. This is strongly entwined with the second level of repression, because psychoanalysis as a logic of the unconscious makes explicit what is excluded in the second level of repression. This is the social in terms of the Lacanian big Other. However, since the big Other is more than what AI curation can influence, we need to specify the influence computation has on the creation of the symbolic order. This level partly includes the other two, as the sociogenesis of modern AI partly constitutes the specific type of operation that happens on this level. Whereas the other two structural levels might have made it appear as if AI should primarily be treated like a manifestation of the social, on this level we need to take AI seriously as a social actor. Here we need to approach the algorithm as a symbolic mirror that constitutes our identity. This means that we have to discern the logic that is at work here.

4 THE MIRROR OPERATION OF SOCIAL IDENTITY

Possati also notes that the algorithmic in social networks and other digital communication is structured as a part of the Lacanian mirror stage, and I agree with that notion. However, the mirror Possati references is the imaginary mirror of early childhood, not the symbolic mirror that later distinguishes and structures different

forms of subjectivity. Thus, we need to leave behind the imaginary mirror that Possati discusses. What interests us instead is the symbolic structure of the mirror, for which Lacan offers the following formula in Seminar X (for a more detailed analysis of this formula, see Heimann (2022)):

$$\frac{A}{a \mid \$}$$

This is the so-called pervert's formula, which marks a simplified baseline subjectivity or normality. We can understand this as a post-transcendental approach to the subject-object relation in which the real biophysical body identifies itself with a system of signifiers. The relation of these absolutely distinct elements is constituted by a social system. Two things should be noted in advance: The body is absolutely exterior to the signifier, it is not as such intelligible, but made intelligible by signifiers. Secondly, the relation between the signifiers and the body is only possible via a mediator (the mirror). In this sense the optical mirror relation is transposed here into formal terms. There are more complex formulae to approach this problem, but the pervert's formula is helpful to demarcate it. We should use this mirror formula here as a basic structure of reflection to understand what happens if a computer-based logic intersects with this reflection. Let us briefly distinguish the variables used here.

(a) marks the original, the human object that constitutes its own identity through the mirror. However, the (a) also stands for the *objet petit a* (object small a) in Lacanian terms, which is often called the material remainder. Hence (a) should be understood as both. In a Non-Lacanian sense, it can be read as a formalization of the Kantian thing-in-itself; as an object not expressible in language and only expressible in a formal calculus as a symbol for the void (Lacan, 2014: 39). To demarcate why, one needs to consider the distinction that Lacan makes between signifier and signified. The signifier, the formal structure of language, never relates to its signified but only to other signifiers. This basic structure of language, translated into common concepts, simply means that the word one uses to signify something has no inherent relation to this thing. Instead, common language is essentially structured by certain practical language games, to use a widely known concept in Wittgenstein's later philosophy. Therefore, the individual human has no identifying signifier, and the (a) therefore marks here an indeterminate and meaningless symbolic excess (not the sublime), or in formal terms an absence that is not intelligible as such. Because of its imaginary inexpressibility, it is something that can only appear as a counterfactual symbolic element when we push language to its final end. It's important to note that this indeterminate is exactly what pushes Lacanian logic in a radically different direction than the analytic philosopher's approach. By centering his logic on the *objet petit a* it becomes impossible to take on a systemic approach. Instead, the unity or system of a symbolic structure is always structured around this remainder. Quite notably, this element of excess is necessary if we wish to formalize the endless process that is desire and its inherent difficulty

to stay put with a specific object. For a more detailed discussion of this *object petit a* and the ontological difficulties it introduces, see Zupančič (2017: 74–139)

($) is the mirror image in which this impossible-to-know-object actively tries to know itself. This prospect is bound to fail from the start, but it fails in a productive way, so to speak. It fails because ($) is a signifier and therefore on a completely different ontological level than what it tried to understand, which is indicated by (a). That is why ($) is also called the "subject barred by the signifier." And yet within this failure there is also an aspect of success, because the relation between (a) and ($) now allows for a basic structure of identity, however this relation requires mediation through (A). This means that ($) is also a 'visible' failure, as any mirror image requires the mirror operation for identification.[2] Without going further into the Lacanian theory of the subject that does formulate more complex formulae of (neurotic) subjectivity, we will further discern the space (A) that interests us most, as it is where the social action of AI would intervene.

(A) with the vertical line marks the mirror itself. While the mirror (|) is formally structured as an operator, the (A) indicates a specific influence, which structures *how* the mirror inverts the (a) into ($). The 'mirror image' ($), comparable to the function of a visual mirror, is a virtual object. It is the social identity that we constitute through language. This means there is no material basis for this object. It exists as a symbolic structure enabled by the socio-linguistic mirror operation (A). The (A) usually is used in Lacanian theory for the big Other, the complex structure of the intersubjective unconscious that organizes how we use language. This big Other has several elements that are partly derived from its original genesis out of the infant's situation. It structurally acts as a guarantor of the identification, given that the factual non-identity of the mirror images (as is the case with the optical mirror) is superseded by the mirror operation.

Lacan developed this originally from the infant's experience with a mirror, as Possati describes, but the mirror operator functions on the symbolic structure of language. This mirror itself, as Lacan proposed, always acted on the basis of algorithmic organization in the position of A, but in Lacan's time these algorithms were assumed by him to be buried in the implicit and tacit knowledge of whole societies and as solely based in the mathematical core of language. He assumed that the organizing structure of algorithmic forms can be found in the unconscious as a linguistic element that organizes knowledge and personal identity in a fundamental sense (Lacan, 2006: 21–48). This means that the algorithmic unconscious is older than its current appearance as a technical artifact. However, today another algorithmic unconscious appeared that operates much faster than the algorithmic social unconscious and it operates differently because of its foundation in machine logic.

[2] To grasp the inherent problem of a mirror operation constituting an identity, look at your own hands to realize that the only way these can be identified with each other is through an intermediate mirror operation, an inversion that changes their appearance. The big Other (A) as the symbolic order is therefore that which constitutes the identity of otherwise different enantiomorphs.

An algorithm that curates and enables a certain social field for me acts within this space formerly organized by the implicit algorithms of the big Other that Lacan describes. It does so, without ever needing to breach the explicit level of language because it chooses and curates, based upon its own (structurally lacking) ability to discern my desires, what I see. Therefore, it frames and organizes the explicit content as noted by Flisfeder (2021: 64). This is what the (A) in the depicted formula indicates, the specific structure and organization that enables me to approach a culturally and ideologically framed mirror image ($).

5 THE ALGORITHM AS MIRROR

If we assume that social algorithms function as a mirror for the identification process of normality, then we have to confront a basic problem of representation. For a start, a *meaningful* order can arise out of totally random data. This is a basic idea that Lacan introduced early in his seminars and it highlights the problem that the signifier is not bound by whatever it intends to signify. It is a common concept in the philosophy of language and can be articulated by Wittgenstein's concept of language games as well as Heidegger's 'the they.' This means that something can appear to us as totally rational, solely through the symbolic order introduced by language, despite not possessing any internal order.

For Heidegger, this basic structure of practice-bound linguistic structures is limited by the positive function of empirical and existential failure (Heidegger, 1967: 242). As these language games can fail, we still have a possible means of accessing reality as such. However, in Heidegger's philosophy there is no distinct idea of resistance (*Widerstand*), which is the second element to be considered here. In Lacanian psychoanalysis resistance is oriented on the disavowal of (a) as a remainder of this identification (Lacan, 1993: 242) or as an impasse of being (Zupančič, 2017: 22). Identities that are solely based in the pervert's formula or the adherence to the intersubjective mirror would be negated if the unintelligibility of (a) is made explicit, because the failure that constitutes this identity would be laid bare. The consequence of this is that in the psychoanalytic theory of subjectivity, this subject is essentially a detour to avoid this. This idea was first introduced by Freud in his seminal text "Beyond the Pleasure Principle" (Freud, 2010; Zupančič, 2017: 96–101). The goal of the psychoanalytic cure is therefore to integrate this remainder as such—not as a negation but by assuming the logical non-all as the subject position (Dulsster, 2022: 15; Žižek, 2012: 745–750). Subjectivity is then an awareness of the lack that the signifier introduces but without the (pathological) desire to get rid of it. However, as Lacan already remarked, this is not true for the machine:

> With a machine, whatever doesn't come on time simply falls by the wayside and makes no claims on anything. This is not true for man, the scansion is alive, the ego in Freud's theory and in the technique of psychoanalysis and whatever doesn't

> come on time remains in suspense. That is what is involved in repression. (Lacan, 1991: 308–309)

What does this mean in terms of the mirror operation? To begin with, it allows us to explicate an argument that there are certain elements of rationality that computers are unable to reproduce, which Slavoj Žižek (2021) only hinted at. We need to ask what the difference is between a supplanted social structure and a classical social structure in formal terms. An existentially founded community is at risk of the pitfalls of the detouring subject in that it introduces strife, discordant ideas and material failure, which all create suffering, but this also enables us to accept our castration, which is the classical name for the effect of (a). That is why the neurotics formula of this reflection includes the *objet petit a* as part of the mirror image:

$$\frac{A}{S \mid a\ \$}$$

The neurotic includes the lack as part of his mirror image and while even this inclusion still can be repressed, it nonetheless offers a path towards its integration. While the pervert is the subject identity structured by the pervert's formula, which excludes the remainder (a) in his symbolic identity. The pervert's identity is still based on it, as they assume the position of this object of desire (Fink, 1999: 128). In more general terms, this existential situation forces us to constantly redefine our relation to the material reality because we fail to grasp it, as the remainder (a) marks our symbolic order as incomplete and inconsistent. The main difference for a supplanted community, i.e., one that is constituted by a logic that cannot operate with a representation of (a), would therefore seem to be that resistance and repression are strengthened to a point where the structure of castration (i.e., the failure/contingency of ($) and the problem that (a) marks) is no longer part of the identity structured by it. This means that a social identity is no longer created as a reflection of the existential basis (a) but instead created purely through the symbolic structure of (A). To propose a metaphor, the mirror operation vanishes or becomes a display that creates a virtual image solely out of already existing symbolic structures while the structural necessity to redefine those elements is much less pressing.

How can one assume that the AI-supplanted social structures would strengthen resistance and repression? We can assume that this displayed image strengthens both because the structure of predicative logic and applied mathematics upon which AI is built cannot access the formal problem that is bound to appear with (a). This is very well documented in Carnap's critique of Heidegger and its regular reoccurrence. Carnap criticizes Heidegger for using the concept of negation as an active virtual possibility ("das Nichts nichtet") instead of using negation only as the negation of existence (Carnap, 1959). This is in Carnaps view a misuse of the negation as a determined negation of something. He insists that the only logical approach to negation is a privation, that is, the specific negation of an existential

judgment, disallowing psychoanalytic concepts of negativity as well. Notably, this critique is a repeating phenomenon. It appears with some regularity: now and then someone attempts to demonstrate that Heidegger's work on negativity isn't real philosophy but essentially bad poetic scribblings. This has been well documented by Stephan Käufer (Compare Käufer, 2005: 146). Modern computer science is a specific offshoot of this tradition (Priestley, 2011). Accordingly, the active avoidance of a more complex concept of negation is still active within modern computer science. Therefore, identities are grasped by AI as a set of positive identifiers (cf., e.g., Y. Wu et al., 2017), whereas the excluded (a) that is central for subjectivity cannot be expressed. Alenka Zupančič notably used this joke to explain it:

> A guy goes into a restaurant and says to the waiter, "Coffee without cream, please."
>
> The waiter replies, "I am sorry, sir, but we are out of cream. Could it be without milk?" (Zupančič, 2012)

In terms of our identity, the "without" (or lack) that is used in this joke as a positive element is the unintelligible that is our concrete, individual, and real body that doesn't fit the symbolic. The remainder (a) in this case is the real person as a thing-in-itself being excluded from the structure of linguistic representation by not being a signifier but rather an absolutely necessary element of the (necessarily failed) identity. This means that in psychoanalytic terms a personal identity is always a combination of certain positive identifiers and the specific way in which these fail to grasp the actual individual. The "without" is therefore a positive element of its own. However, this "without" only appears on the basis of this failure, which is why the identity still succeeds in part.

The reason for the failure of algorithms to reflect this lies not simply in formalization or mathematization as such. One does rely on Lacanian formulae to explicate it. However, in the specific intellectual tradition that gave birth to modern logic and AI, this "without" that is marked is considered irrelevant. The concept of zero that is applicable to material computation is either the neutral position or the absence of a change, neither of which is identical to the absence of (a) as the inconsistency of the symbolic identity. In stark contrast to this, Heidegger, Lacan, and the continental philosophical tradition that followed them did not exclude the indeterminate from logic, and their formalizations and mathematizations of the social reflect that. In Badiou's words, "None of this [the distinction between formal and empirical sciences in the Anglo-Saxon tradition of logic] was consistent with the clear Lacanian doctrine according to which the real is the impasse of formalization" (Badiou, 2006: 5). This impasse is the (a) as a part of the psychoanalytic mathematization of the unconscious and the inclusion of the real into formalizations of the subject. This Lacanian approach is preceded by Freud's focus on the speech uttered by the analysand as the empirical basis for

psychoanalysis (Hainzovich, 2002). Freud noted early on that the structure of the unconscious cannot be discerned with a classical approach to logic (Freud, 1942: 317–319).

This, however, does not mean that there is no formal structure to this "without", thus an empirical "logic of the unconscious" must be considered from a basis other than the predicative sentence of the Boole/Frege/Russel line of thought. Lacan's answer to this is the mirror operation as a basis for the identity presupposed in classical logic (Heimann 2022). This is the reason that the *objet petit a* (a) that Lacan introduced, as a structurally and ontologically unintelligible and indeterminate element, is logically excluded from any calculation that is based on constructed and determinable sets. However, the very idea of determination and identity and thus counting relies upon an indeterminate (*the* nothing) as Heidegger first showed (Heidegger, 1999: 82–96). We also can extract this from Frege's *Foundations of Arithmetic*, as demonstrated by Jaques Alain Miller (1977), despite Frege being one of the founding authors of the modern logic that excludes this indeterminate. Expressible in the idea that "only the measurable is real," the now classical approach to logic excludes its own metric and axioms (i.e., the conditions of its own consistency marked by this absence). This leads to the very concise problem that a mathematization of the social, despite being a clear goal of Lacanian psychoanalysis, cannot be simply transferred from the existing mathematization of nature. Instead, the indeterminate and unintelligible as a central element of social structures and personal identities needs to be taken seriously if we wish to mathematize it.

One can therefore assume that this difference in logic, this lack of the access to the unconscious, acts itself as an unconscious structure of the social action that AIs produce. This might sound highly paradox: to claim that (1) the machine has no access to the unconscious, but at the same time that (2) social AI's act solely within the unconscious and determined by the repressed traditions of logic, which acts as a material unconscious (3). This lack of lack is an explicable problem that Lacan already indicated in another aspect regarding the capitalist's discourse as it disavows the split in the subject (Vanheule, 2016: 7). It means that (1) modern digital computing has no way to include the unconscious into its formalizations and thus can only create reflections of our action which actively exclude the unconscious. However, the way these reflections are created – by curation of content – is (2) purely located on the unconscious level of our reflections as the framing of reality by a severely stunted symbolic order. For the machine, the repressed is simply excluded, it cannot enter the computation at all. This doesn't mean however, that it doesn't impact the machine's actions in the social space, where it is no longer singular, but effects other social actors. By constructing the mirror image ($) without any link to castration, its production is then determined by this exclusion (3). This then is what we call the social AI's supplantation, the construction of a socially mediated identity ($) without any possible relation to (a).

What we then find in the AI-supplanted identity is the 'obscene immortality' that Žižek notes in our consumption of video games and how subjectivity is displayed in modern science fiction movies (Žižek, 2017). This obscene immortality is the exclusion of the structural element of castration. And, of course, this has effects on the subject constituted by it. The subject appears to itself as immortal in the sense that it has no concept of its symbolic finitude or that its identity is essentially a false one and produced via a failure. We cannot assume that this is relevant to every subject, but it might offer a basis for understanding the symptomatic identity structures that we see in the echo-chamber social identity. This supplantation might also increase the vulnerability of ideological framings as it removes the inherent lack that is apparent in the mirror operation. The algorithmically curated identity thus produced without an indeterminate remainder appears more complete than the regular identity. What is interesting here is that the opposite of the Freudian problem appears. While castration is for Freud a central element of the subject's identity that it has to face and acknowledge, the identity that AI as social actors produces is structurally uncastrated because the repressed remainder is impossible within the logic of the machine.

6 CONCLUSION

This turns social AI not only into a technological manifestation of social structures but into an object that is equiprimordial in the realms of technology and the social, thus calling for an approach that is focused neither on the technical nor the social but a theory of a material unconscious. The reason for this is that the material structure of computation changes the symbolic order it can produce. This is because what we see in AI as a social actor is a complex interplay between technical and social structures. By identifying the inability to formalize the lack in social AIs and their innate inability to reflect anything but an uncastrated mirror image, we can also identify a necessary field of action for further research. This creates a situation that is (at least formally) comparable to the infantile inability to comprehend the void that (a) creates (Stavchansky, 2018: 10). However, the child still symbolizes this lack unconsciously, so the identity that is partly AI-structured introduces a new mirror relation that removes this determined negation altogether.

This also means that another field of social action has opened up with the automated sociogenesis of milieus. Echo chambers, for example, are extremely hard to maintain in offline communities because they require political suppression and active policing of adverse opinions, yet they are a new normal in online communities. At the same time, this is not an isolated phenomenon somewhere in the virtual space. Online communities increasingly affect offline communities, as is visible in the widespread conspiracy theories that surfaced during the COVID-19 pandemic (Allington et al., 2021; Earnshaw et al., 2020) or in recent democratic elections (Faris et al., 2017). They are not isolated phenomena of a virtual space but rather active elements of the social space as a whole, including offline and online

communities. This also means that it is also not solely a problematic or pathological field. However, the pathological phenomena of this new field, such as echo chambers and the new variants of symptomatic behavior, do provide a rich area of research. The analysis detailed here aims to provide another viewpoint on this, by taking seriously the foundational logic discourse which constitutes the logic of modern computers. The difference between Lacanian or continental philosophy logic and the logic as utilized in computer science is, however, not one to be found in the complexity of models, but in the simplicity of foundational decisions. By constituting distinction and identity on the basis of an indeterminate, as Heidegger first proposed in "What is Metaphysics?", the foundations of computer science as it is physically determined might be already too complex to account for the indeterminate void found in the symbolic order of social life that Lacan describes.

Still, the possibility of creating social bonds independent of cultural upbringing can in turn allow for new types of social structures that might not only show pathological dimensions but also allow for new types of social action altogether. People who have been atomized by the structural elements of their economic or political situation can connect, and we see such connections being central to the creation of, say, unions of platform-based employment situations (Katsabian, 2021). What we are witnessing here is thus the rise of a new social field, one that operates according to rules that are very different from those we know from the classical mirror relation.

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