

Beyond Privacy: Autonomy at Risk in a World of Predictive AI

How do automating and informing technologies, such as AI-driven behavior prediction, challenge the concepts of free will and autonomy, both on an individual and societal level, and what ethical questions - particularly in the context of Ess's digital media ethics - need to evolve to address these challenges?

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1 Introduction

Implications from technological progress and especially field of digital technologies, such as AI-driven prediction models are beginning to take ground in public discourse, highlighting threats and concerns in regards to safety, privacy, well-being, polarization and democracy. However, there is much bigger concern, which needs to be addressed even at the current moment, namely the issue of autonomy and free will.

Yet, a deeper and more foundational issue arises - one that goes beyond data security or privacy: the question of autonomy and free will. As digital systems increasingly predict, preempt, and influence our decisions, we must ask not merely “what can these systems do,” but “what do they leave us free to do?”.

This tension emerged in a class discussion, where a question arose: would we give up our data if it meant better predictions about our lives or futures? One classmate expressed discomfort with the idea - not because of what AI might know, but because of where and how that information might be stored. This is a valid concern about privacy, but beneath it lies something even more profound: when our choices are shaped by predictions, is the decision still ours to make? This concern touches on what it means to be human and thus concern of autonomy at hand.

Therefore, this paper aims to answer the question of:

How do automating and informing technologies, such as AI-driven behavior prediction, challenge the concepts of free will and autonomy, both on an individual and societal level, and what ethical questions - particularly in the context of Ess’s digital media ethics - need to evolve to address these challenges?

The paper is divided into 3 main sections. Firstly, the paper highlights main characteristics of new digital technologies based on Zuboff’s fundamental paper of “Automate/Informate The Two Faces of Intelligent Technology”. Jarrahi et al.’s “Artificial intelligence, human intelligence and hybrid intelligence based on mutual augmentation” lays out distinction of human and artificial intelligence. The paper also presents currently prevailing digital media ethics framework by Ess from *Digital media ethics*. After theories are introduced, the paper goes in depth to the analysis of new and ground-breaking technologies, such as AI-driven prediction models and views them in light of automating and informing lenses and its implications to human autonomy. The author makes a critique of prevailing Ess’s digital media ethics framework. This analysis is followed by discussion section, which elaborates on key concerns and finally tries to point the way forward. The conclusion brings all this together to reiterate key points what change ethically these technologies bring.

While the paper considers digital technology of AI-driven behavior prediction, it does framing it through automating and informing logic and then applies it to Ess's ethics framework, showing how new trends challenge understandings of autonomy and free will.

The paper ultimately aims at reminding deeper underlying problems of what it means to be a human, in particular free agent. The future is closer than we think and we need to start tackling these issues on more fundamental level, closer to the core of humaneness and human experience.

2 Theory

2.1 Zuboff's Automate/Informate

Zuboff's main claim in this paper is that in the long run, for organizational success, the technology is not about automation, but more about informing organizational members and thus improve operations and increase innovation. (Zuboff, 1985)

With Fredrick Taylor's scientific management, prevailing idea of substitution of machine power for human labor was a huge solution for increasing efficiency, speed and volume of production. While managers typically understand information technology as enabler of efficiency and speed, it should be highlighted that information technologies have at least one of the following objectives: continuity, control and comprehensibility. (Zuboff, 1985)

This can be classified further into the duality of information technologies. Following Ford, technology applied can be automating, which would fall under control and continuity dimensions. On the other hand, much undervalued and underappreciated side of information technology is that technology creates information, process coined by Zuboff as informing. Even if the main objective is control and continuity, the component of informing is nevertheless there, because quite often these technologies generate new information which can be utilized. (Zuboff, 1985)

Zuboff draws the parallel between organization and database taking a life of its own, when organization reach a level of recreating their own images with integrated, real-time databases. These databases then become an autonomous domain, a public symbol of organizational experience, much of which previously had been private, fragmented, implicit or nonexistent. But this goes without saying that if it is undermanaged, there will occur information overload, which is due to lack of comprehension and inadequateness. However, if it is consciously strategy to utilize it, it gets people to pose questions, reflect and ultimately organization becomes learning environment. (Zuboff, 1985)

Zuboff highlights that intellectual skills for people therefore becomes important in order to understand to what the information refers and what is the meaning. This intellectual skill has three components: abstract thinking, inductive reasoning and theoretical grasp. (Zuboff, 1985)

There are two different conceptualizations of the strategic conception that would guide technology deployment, which are people working for a smart machine or are smart people working around the machine. What this actually means is whether organization follows more the strategy of technology as more informing or more automating. Generally, the emphasis lies on automation in the net of economy logic. This is bolstered by information hoarding by middle managers. However, as intelligent technology creates information and information is made available to those at the point of production,

the essential logic of Taylorism is shattered (Zuboff, 1985, p. 15). This means it invites organization to a new vision of the organization: namely that people indeed are intelligent agents around the central core, automated database. This means that managers who pursue this vision will need to appreciate the intricacies of life at the information interface (Zuboff, 1985, p. 15). In this new reality, in the end, “it is only the employee’s skill and commitment that can ensure that intellectual effort will be exerted and that opportunities made available by an informing technology will be exploited” (Zuboff, 1985, p. 16).

A way forward for these problems, Zuboff highlights the underlying philosophical issue of limitations of language, because bureaucratic organizations tend to focus on execution of the status quo and thus words such as subordinates, rules, hierarchy, fixed roles all play into this realm. However, what is crucial to not is that informing technology changes the game and thus there is need for a vision that transcends this unidimensional language use. This new vision and language has to come naturally, not from the top-down. (Zuboff, 1985, p. 17)

Zuboff highlights another critical point of industrial technology. Namely, the fact the seductiveness of perfect automaticity can create loss of critical judgment, in turn aligning with Arendt’s vision of behaviorist world, where we arrive at passive humanity of all people being automated were only active decision is to let go of its individuality. (Zuboff, 1985, p. 17-18)

2.2 Jarrahi et. al’s different forms of intelligence

Jarrahi et al.’s paper “Artificial intelligence, human intelligence and hybrid intelligence based on mutual augmentation” delineates the concept of AI and contrast it with human intelligence. The buzz-term of AI is often misleading and associated as “intellectual wildcard” (Jarrahi et al., 2022, p. 1). However, there is difference between what is unique to AI and how it differs fundamentally with human intelligence. Human intelligence is of general intelligence character, while AI systems are predominantly task-centered (Jarrahi et al., 2022, p. 2). AI in fact is surpassing human performance in tasks such as execution and speed of repetitive tasks. AI algorithms are not working like human intelligence processes, it does so by imitation of human intelligence or through methods not observed in humans and going beyond human understanding. (Jarrahi et al., 2022)

2.3 Ess’s Digital Media Ethics framework

In the Ess’s Digital Media Ethics Chapter 1, Ess examines a question of “do digital media present us with radically new kinds of ethical problems that thereby radically require absolutely new ethical approaches?” (Ess, 2009, p. 12).

Ess examines important characteristics of digital media. Firstly, digital media works through binary code, though Ess reminds that this does not mean the end of the analogue. He mentions thus that digital media builds on and enhances, rather than replaces analogue modes of communication and experiences. Hence, continuities with our experiences as analogue do not require us to abandon previous ethical frameworks and find new ones. On top of that problems of convergence of digital media in digital form challenges intellectual property, privacy and consent, through everything being datafied and captured. (Ess, 2009)

Secondly, digital information is greased, meaning it can instantaneously and globally be disseminated. This means that primary factor of problems are privacy and intellectual property, such as copyright. (Ess, 2009)

Thirdly, digital media comes in form of fluidity, interactivity and ubiquity. In particular, these interactive devices mean that we are increasingly subject and the objects of “voluntary surveillance” (Ess, 2009, p. 18). Moreover, personal data, collected by Internet of Things, presents more threats to individual and group privacy. The global scope challenges our own assumptions, because we are faced with different cultural matters. On top of that this all challenges our own perceptions of who we are and who we ought to be. (Ess, 2009)

The way forward emphasized by Ess is that in “post-digital” world, digital media remains same as analogue media, i.e. music arriving to our ears in analogue form. In addition, digital media as global media comes to confront the culturally variable views. This can lead of ethical responsibility to be more accurately understood in terms of a distributed responsibility, instead of individualistic manner. (Ess, 2009)

3 Analysis

3.1 Conceptualization of AI

AI and large machine learning models technology have been applied mainly with the goal of automation. Indeed, as whole goal is to simulate human perception and understanding, it is not surprising to see AI associated primarily with automation.

However, what is also worth noting is that informing as a aim of use of AI is present, though not in a way one might desire. Informing can be seen in AI as a way to summarize texts and answer questions, like GenAI models of ChatGPT or Microsoft Copilot. However, it is worth noting that informing in this is nevertheless automating, because while GenAI combines information and generates new information and thus informs, it does so by eliminating time for search and thus economic autonomy logic is present.

Therefore, AI can be both automating and informing and they are not necessarily contradictory. At the same time, we can even think of AI as not automating nor informing. This is due to fact that all objectives of continuity, control and comprehensibility can be considered nonexistent. Indeed, this is the case of connectivist AI, trying to actually resemble human intelligence, which is not about hard-coded human instructions. Continuity cannot be ensured if AI is unpredictable, control is a matter of how much AI can act without human intervention and there can be lack of comprehensibility, where AI cannot inform how it acts.

In such connectivist systems, like large language models trained on trying to simulate human neurons in our brains, the ability to anticipate or explain the system's reasoning collapses. The system acts, but we as users nor developers do not fully know how it know and why such results were yielded. Thus, not only do these AI models challenge traditional automating characteristics of technical control and continuity, but they also render the user dependent on outcomes they cannot interrogate, eliminating our way to comprehend (Zuboff, 1985).

Informing AI simulates helping, but subtly shifts control by framing options or nudging decisions. Ultimately predictive AI systems, such as predictive policing or health predictive systems, like recent advances in trying to predict patient age and thus future lifespan subtly bound our future options and seeks to automate ourselves (Powell, n.d.).

AI system such as ChatGPT “inform” but does so in an economically-automated context (saving time, outsourcing cognition). Informing is used to enhance automation, not autonomy. This duality should be noted and is hence critical consideration. This economic logic aligns with Zuboff's broader concern about the instrumental motivations that underlie technological design. Informing becomes

a sub-function of automation, designed to optimize efficiency and control rather than to enhance reflective human agency. Rather than fostering understanding, it offloads cognitive labor to a system whose internal logic remains largely opaque to the user. Informating, in this context, is not conscious strategy, it is automation. It does not lead to emancipation, it leads to streamlined compliance.

For instance, when a user asks ChatGPT for a summary of an article, they are informed, in a sense that it offers easier way to understand the content and abstracts away the process of interpretation. The model structures, filters, and presents information in a manner that may appear neutral and is guided by embedded statistical priorities. This is not just cognitive outsourcing, it is normative outsourcing. The user is less involved in meaning-making and more reliant on computational mediation. Of course, we understand already that “the more people use AI, to less critical thinking they do” (Al-Sibai, 2025), therefore yet we should understand AI autonomy and human autonomy in violation with each other not only in cognitive level, but also in normative level.

Zuboff notes that what ultimately matters is that whether people work for smart machine or people work around the machine (Zuboff, 1985). Thus, it is critical point whether we depend on our use of AI or we knowingly and consciously use AI for good. Her argument reframes the question of AI not in terms of capability, but in terms of power: who defines the use, who holds interpretive authority, and who adapts to whom. If AI is designed and deployed primarily to automate and optimize, then informing serves automation. However, if AI is to serve human flourishing, it must be designed with autonomy and comprehension as primary goals. That is unfortunately not the current trajectory of most commercially dominant systems.

3.2 Human and AI Autonomy

Autonomy, generally understood as the capability to make self-conscious choices, free from external influence, is one of the central questions of philosophical and ethical matters. Since AI becomes more and more used and employed in our decision-making processes, the whole nature of this autonomy has to be reexamined. In fact, the ever-increasing autonomy given to AI algorithms, in particular those that predict our behavior, raises huge concerns on whether we as human beings remain consciously and autonomous agents or eventually deteriorate to objects of algorithmic governance.

Jarrahi et al. offer a framework to understand this shift. In particular, we should understand human autonomy and AI autonomy in the similar fashion as Jarrahi et al.’s intelligence distinction. It may come as a surprising thing that AI can have autonomy, but we should think of this AI autonomy in similar fashion as human autonomy. Just as we generally understand human autonomy as “the capacity of an individual to make their own choices and decisions without external influence”, AI

autonomy is tied with its capacity to make choices without external influence. Of course, these choices depend on pre-given instructions and data, ultimately this autonomy is granted by humans in its use cases. European Union AI Act also identifies autonomy as central element of AI systems. It defines AI systems as “a machine-based system that is designed to operate with varying levels of autonomy and that may exhibit adaptiveness after deployment, and that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments” (EU, 2024).

As this powerful AI intersects with our human experience, predictive AI system especially do not simply informate and provide information, they frame the information space in which users operate. While this might appear to support the user - by simplifying tasks or enabling efficiency - it bit by bit shifts control out from the human control in the benefits of system. Users are not actually informed. They are guided by these systems and these systems are designed to predict the human action and behaviour, hence can be thought of as human autonomy taken over by AI autonomy.

Going back to the example of health recommendation apps, which predict optimal behaviors or even predict the viable future health conditions based on user data and ultimately present personalized nudges are ostensibly informative prompts, but they are also automated framings of well-being, based on a data-driven notion of what is best based on historic data. This means is that human intelligence gives artificial intelligence its autonomy and artificial intelligence then strips away our autonomy. In similar fashion, AI-curated feeds on platforms like TikTok increasingly determine what users see, and thus what they know, feel, or desire. In such cases, human autonomy is altered in softer manner and not entirely eliminated. However, as it reshapes our societies in fundamental level, it also steers us towards a place where people have less options, stripping us away from our true human autonomy, which is irrational and emotional to a state where autonomy is only for Enlightened efficiency and rationality, passiveness, where nothing is challenged and things are like they are, because it is the best in automating and informing standard.

As AI systems gain autonomy in the form of constant adaptive learning and increasingly-applied predictive modeling, the human counterpart’s autonomy risks erosion. The key concern is not that AI acts on its own, but that it acts for us, often without us noticing the shift. Jarrahi et al.’s distinction thus supports a broader argument: just as artificial intelligence is opposite of human intelligence, the autonomy of AI systems inversely correlates with the autonomy of human agents. That is, more AI autonomy leads to less human interventions and then to less human autonomy. Therefore, in a context where AI both informs and automates, the autonomy of its actions becomes extremely critical to be fully understood.

3.3 Ethical considerations

We move further to analyze ethical considerations, in particular tackling Ess's digital media framework. Ess main point is of difference between earlier landscape and current digital sphere.

Firstly, let us consider digital media and analogue media differences at present moment. In particular, as Ess observes compared to digital media, analogue media involves some loss of information across the collecting, recoding, storing processes (Ess, 2009, p. 13) and Ess notes that although this information stored in analogue form is distinct of digital formats (for distribution or execution), we still consume the content in analogue way, like our ears and eyes capture the input not in digital format, but in a same way as we have for entire humankind. He sees thus digital media enhancing our analogue modes of communication and experiences.

However, this is challenged in our today's world. World in which digital technology challenge our human core. First of all, digital devices get connected more and more to simplify out human experience. This happens e.g. through new technologies which are integrated to our nerve systems, brain and other physiological systems. In this case, electrical signals are transferred and connect with brain or technology in-between bridges the concept of analogue means.

As Ess notes that convergence is happening in the form of digital media, we should thus observe the convergence of "digital twin" and physical entity, especially if digital technologies are integrated ever so closely with our lives and human entities. However, AI in a sense of informing, but also in the form of automating, merges the two. In particular, it co-joins external information and information which is unique to us. AI prediction tools indeed not only apply bridge our closeness to external information sources and databases (as informing technology in Zuboff's sense does), but also automates ourselves through giving (predictive) information of ourselves.

Therefore, just as Ess observes ethical challenges to consent and privacy, we ought to see more deeper issue at hand, convergence of digital twin and our physical autonomous entity. The idea of autonomy is under back-hand attack.

The greased information as second characteristic of digital media is even more prominent in this day and age. As analyzed already, our connection are allow to connect us to exterior world in increasingly easier ways. However, again, what Ess does not mention, is that the issue at hand is not only privacy and problems of copying, copyright, but more of our reliance and dependence of technology and predictive AI systems or even more fundamentally, challenging our autonomy as AI seems to be delegated to take over because AI brings efficiency.

Finally, concepts of selfhood and identity are indeed under attack. In one sense, relational sense of selfhood of Ess makes sense, where we increasingly depend on external and multiple social relationships.

However, Ess remains firm in his idea of relational autonomy, which conjoins individual emphasis on freedom (autonomy) and the realities of our relationships. It is though important to highlight in the face of increasingly many predictive AI systems, this autonomy gets delegated to external systems, whether these are indeed (predictive) AI systems or general network of external agents.

This means that relational autonomy should rather be considered relational network, where individual is no longer subject, but a part of a network, which is subject. In that sense, as Ess notes, Western standard of individual is clearly challenged, because here ethical responsibility is very individualistic. In similar sense, warning of Zuboff, where people work for the bigger system, not around the system, offers similar concern. People are then no longer subjects. This parallel can be seen with people valuing the idea of certainty and thus automation, efficiency and safety, privacy. With such managerial thinking, we arrive at the automating logic which is in clear contradictory with human autonomy.

Having arrived in a system, where people are no longer agents, but cogs of a system, then we can clearly say that we are no longer independent and autonomous. However, if we are part of this bigger network, now occurs new questions, is this big societal network autonomous or perhaps it has prescribed ideas and ideals which disallow even the system itself to change or adapt. Therefore, we should reconsider things in the face of newer AI predictive systems which come not only close to our selfhood, but actually evade our self-standing, as these technologies are now either physically part of us or in a subtler, yet perhaps more dangerous sense limit our options or tell us about our futures.

On top of the concerns to individual autonomy, as well as already mentioned, societal autonomy in a sense that system itself regulates and adjusts itself, being not autonomous, societal autonomy can be affected by self-fulfilling prophecies, when the prediction system does not necessarily predict, but influences humans or systems to act in a certain way, so that creating a future, which otherwise would not have been made.

4 Discussion

As analyzed, Ess's point of departure is that we are and we can act as autonomous beings with these new medias. However, this assumption of free will and autonomy of humans should be more deeply considered in this day and age. It is time to move on from digital media ethics to digital technological ethics, where the primary concern of privacy is surmounted by concern around autonomy in the face of digital technologies.

What Ess offers is "dialogical approaches - approaches that emphasize the importance of listening for and respecting differences between our diverse ethical views" (Ess, 2009, p. 26). Thus, suggesting ethical pluralism past of ethical monism and ethical absolutism to see how difference can be overcome by observing shared norms, beliefs and practices. (Ess, 2009)

However, what the analysis suggests, one key characteristics of digital media has changed and other two characteristics are vastly increased in scope. Namely, convergence is fundamentally evading us, not only our exteriors, which is contrary to Ess and with that other two characteristics of information "greasiness" and our identity problems expanded. This suggests that we ought not to relax on previous ethical frameworks, as Ess suggests.

In fact, I would contend that ethical pluralism as much as we would like to hold it, is bound to be challenged. With the rapid technological progress and AI revolution, this will lead to major collisions. As this progress drives us to opt to these predictive AI systems, the technology brings us to a state where we maybe even willingly and unknowingly become robot-like humanoids, who have their lives and future laid out by these AI systems or networks, meaning our autonomy being delegated to these AI agents. However, what is clear is that not everyone is not willing to accept this. This can lead to polarization, where some people start to fight against these somewhat dystopian systems.

As a way to conceptualize this issue I suggest, just as Mowlabocus observes that our phones serve a dual purpose of illusory world of the internal self and the reality of the external world, we can look at these predictive AI technologies as something which in a way, offers comfort in a sense of predicting our future, but also connects us to outer systems as being part of a bigger picture, in an efficient and informed societal level. Of course, as with Mowlabocus, this is not neither good or bad, it is just a way life is.

Moral judgment, whether we agree and are willing to have this near future, comes down to the core of "what is human?". As with Ess, this is ultimately age old problem, but not in a sense that ethical pluralism can merely solve. Hence, what I suggest is that, what we should consider is "are we, us, humans, willing to become less human, in a sense that we are part of a bigger collective, a system,

where AI offers us automation and information in a form of better future”.

One particularly urgent concern, which extends beyond individual autonomy, is indeed the issue of social autonomy and conformity. Predictive systems not only shape how we as individuals behave - they also shape how societies function. When a majority of people use the same AI systems to optimize their behavior, what emerges is a kind of behavioral standardization. Over time, this means that opting out of AI-generated suggestions - whether in education, health, or employment - can appear irrational, inefficient, or socially deviant. This transforms what was before a personal tool into a social obligation. If everyone else relies on AI to structure their schedules or manage decisions, the person who resists may find themselves excluded, misunderstood, or disadvantaged. In such environment, autonomy becomes performative - you are still free to choose, but choosing differently becomes practically impossible.

This dynamic mirrors Zuboff’s concern of a future in which humans work for the machine, not around it. But it goes deeper. In a predictive society, it is not just that we work for the machine, it is that we start to think like the machine, valuing speed, consistency, and efficiency above all else. This undermines one of the fundamental characteristics of human autonomy: the capacity for irrational, emotional, or even contradictory action. The predictive model cannot tolerate unpredictability - it depends on patterns. Thus, as our behaviors become more predictable, we become more compatible with the system, but less human unfortunately.

Amid rising concerns about AI’s predictive control, it is worth asking whether resistance is still possible. This concern is specially prominent, if say, on a societal level, majority decides that delegated autonomy to AI is something we all are willing to carry out in a broader scale. This can very well mean the peer pressure for individual to also opt in. But is this opt-in one-way ticket, where getting back our autonomy is essentially impossible. Can individuals then assert unpredictability in systems designed to anticipate them? Autonomy does not require constant opposition - but it requires the space for rebellion to exist. In this light, hesitation, slowness, or even randomness become acts of autonomy worth preserving.

4.1 Limitations

Of course, this work is a critical examination of Ess's framework in a face of new ground-breaking technologies, like predictive AI systems. As this paper is more a critical reflection, not full-fledged literary review or research, it is certain that deeper philosophical analysis can perhaps explain the identified problem conceptualization better or debunk outlined claims.

As a case, the paper used mainly new AI systems, in fact predictive AI systems to highlight the issue, yet there are main other fascinating cutting-edge technologies, which address the same issue, such as a bit touched neural devices, like Neuralink or other health devices, which revolutionize the human body and our autonomy. Delving deeper into these areas can offer even broader and more better understanding what are going to be exact ethical concerns and problems at hand in the future just around the corner.

On top of that, what is worth highlight is that AI prediction rely on being able to list out all factors which ultimately have effect on the future. Therefore, it is not probable that AI can completely predict the future. However, autonomy is nevertheless at risk, because economic logic and technological progress model and try to predict our behavior, limit our options, manipulate our opinions and choices, sense our emotions.

5 Conclusion

The paper considered the question of: “How do automating and informing technologies, such as AI-driven behavior prediction, challenge the concepts of free will and autonomy, both on an individual and societal level, and what ethical questions - particularly in the context of Ess’s digital media ethics - need to evolve to address these challenges?”. Through critical analysis with the help of theories of Ess, Zuboff and Jarrahi et al., we identified that that AI prediction systems endanger our autonomy through fundamentally changing how we engage with new technologies, limiting our options, integrating us into bigger networks, making us completely dependent of these systems. In particular, through Ess’s framework, we ought to reconsider implications of these new technologies, highlighting more autonomy instead of privacy concerns. This means more fundamentally not relying on simple ethical pluralism, because we should decide on what it means to be human and whether we are willing as a large collective to become less human in a sense that we are more automated and informed for a better and efficient future.

The thought-so far-future is around the corner or more bluntly here since new technologies such as predictive AI march onto the scene. These technologies are indeed fundamentally different and therefore thinking more fundamentally of the larger scale implications is critical.

If our futures are increasingly anticipated and offered back to us as optimized paths, then the core of human experience - uncertainty, deliberation, and surprise - is at risk. Autonomy is not simply the ability to act. It is the ability to reflect, to resist, and to imagine otherwise.

Ethical frameworks must move beyond privacy and toward defending the possibility of meaningful autonomy in a predictive world. This is not merely about slowing down technological progress - it is about remembering that human dignity lies in the tension between who we are and who we might become. If AI systems define the answer without us even merely considering it, then are we still the ones asking the question?

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