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The Technology of Constructing Meanings in Digital Ecosystems: Agents, Platforms and Ethics

The digital environment cannot really be described as a unified space; rather it is an archipelago, a complex of digital ecosystems "inhabited" by devices, software, users, services, algorithms, databases. This archipelago is based on constructing meanings, that is, systems that are shared by communities of meanings that are "voiced" and tested by opinion leaders. This is why it is crucial to determine which strategies and agents of constructing meanings, barely visible on the innovation horizon now, could soon become leaders of the computing industry. The text below attempts to map out the future agents and platforms of these ecosystems and the ethical decisions beneath them. An important part of this analysis is devoted to considering of the potential of civil activists' participation in new practices of disseminating socially significant agendas.

In lieu of a foreword: questions

Digital technologies have multiplied communication possibilities, and communication services have become one of the most commonly used types of tools.[1] They have become the entry point into the digital space for many users as social networks, matching services, blogging and microblogging platforms, and messengers. This can be illustrated relatively simply by listing the most popular social networks, messengers, and streaming services for 2019. This includes old-timers such as Facebook, YouTube and Twitter, newer networks designed for relatively younger audiences such as Instagram, Snapchat, TikTok and LIKEE, and networks of greater interest for various "local internets" such Tumblr, LinkedIn and the Twitch streaming service.

No wonder that in such a situation, much of the software and devices are focused on meeting users' social needs, for instance finding someone helpful/interesting to talk to or exchange content with. To a certain extent, these tools, with their interfaces, affordance systems and "dark patterns"[2] act as a guarantee of a state of "connectivity"[3] state – a sense

of belonging to an online global community of individuals. Potentially, this can be seen as a very positive phenomenon, as experiencing it makes users feel confident that they will discover "their own" communities and find solutions to problems relevant to these groups. Meanwhile, communication is impossible without the generation of messages (opinions, judgments[4]) and, therefore, private generation, mass production and broadcasting of potentially influential meanings.

This brings us to the following questions: in the digital space today, who can be considered a producer of at least relevant and local content and, therefore, an influencer?[5] And, in the coming years, which platforms will produce the most influential messages? Perhaps answers to these questions are obvious. Let's say that it is simple to trace the trends of YouTube development as a new educational medium,[6] or to see ultramodern social networks[7] and streaming services as having the potential for constructing participatory communities[8] which together produce relatively consolidated judgments about the ethics of joint action and therefore about the norms of social behavior. These cases already present many challenges for civil society which require the inclusion of cyber-activists of various stripes. For example, is it necessary to develop specific network spaces for services to involve an ever-increasing audience in various projects? Or can this lead to a waste of resources, dispersal, and minimal visible effects for the active community's growth? Who exactly can become opinion leaders and influencers in these systems?

The last question is particularly important if it is transformed into a discussion on whether there will be new influential authors of messages in the digital ecosystem. Further, are they more likely to be machine agents (algorithms, virtual influencers) or more familiar human figures? And how can civil society (represented by NGOs and perhaps other more or less institutionalized agents) contribute to the formation of new ethical norms, preventing these technologies from evolving into a source of alarmism and chaos of judgment overproduction?

Context and problems

The linguists and philosophers George Lakoff and Mark Johnson argued back in the 1980s that everyday life, thinking and activity are riddled with metaphors. Following the Sapir-Whorf hypothesis of linguistic relativity (according to which the structure of a language impacts its native speakers' perceptions of the world), the authors of *Metaphors We Live By* developed the "Whorfian" traditions. They claimed: "the ordinary conceptual system within which we think and act is metaphorical in its essence." Therefore, our linguistic conceptual system determines the realities of the everyday world around us and creates linguistic facts that facilitate the structuring of human experience.[9]

Since the internet has become a mass product, there have been several changes of trends in metaphorical and abstract concepts, which help describe the effect of constituting a special social – or at least interpersonal – space created by technologies. The term "cyberspace," coined by William Gibson in his 1982 science fiction story "Burning Chrome," has been in common use ever since, including within power systems. In 2018, US President Donald Trump signed the National Cyber Strategy, which begins with the words: "Protecting America's national security and promoting the prosperity of the American people are my top priorities. Ensuring the security of cyberspace is fundamental to both endeavors." The concept of "virtual reality" has a similar history. Proposed in the late 1980s by inventor and futurologist Jaron Lanier, today this term no longer exists as an abstract idea; rather, it represents specific popular technologies that make up the continuum of "virtuality-reality" states .[10] The difficult fate of the term "internet" itself and the meanings within it are described in another chapter of this book.[11]

In general, it is vital to pay attention to approaches of defining key concepts for clear discussions about network influencers as agents, and about civic intentions of platforms: "spatiality" and "virtuality." Without them, for net-

work spaces the appeal of development and distribution of meanings will be solely based on an everyday, empirical view of the subject. Meanwhile, the conceptualization of "spatiality" and "virtuality" balances between technocentric and biological metaphors. It seems that theorists and practitioners are reaching for such verbal gymnastics to finally eliminate stalemate discussions about the proportion of "cultural-natural" which had been conducted since the time of ancient philosophers.

So, we can say that there is an "online space" which combines tools, services and agents that are technically involved in interaction by being connected to the network, computer, etc.[12] There are also "digital ecosystems" which are created, among other things, by platform activities and united in the "habitat" of modern agents.[13] This is the environment in which individuals (at least those connected to the global internet) live in today.[14] They do not always have the opportunity to inform others about their "online" (meaning "in touch, connected" and "I am in a special, "virtual place") or "offline" status. To assess the relevance of such a generalization, we need to introspectively analyze individual interactions between users and their mobile device. Although the device may reveal a relatively low amount of screen time, the user's subjective experience can relate more to the feeling of constant connection to "the network." Simultaneously, many everyday activities are conducted using software and apps on mobile and other devices, and literally digitized. In some cases, it is not entirely clear whether it's even possible to carry out simple everyday activities such as ordering a taxi, making a money transfer, paying a bill, cooking a meal or even reading or writing text without living in multi-platform digital ecosystems, largely monopolized by tech giants such as Google, Amazon, Facebook, Apple and Yandex.

It should be noted that ecosystems produced by such monopolies are fundamentally multiple. They are similar in this respect to various physical spaces of community existence. Of course these communities conduct many

activities using digital tools and make certain collective decisions. Rather than creating a unified "digital environment," ecosystems shape an archipelago of "locations," whose "inhabitants" have certain anthropological, social, economic, cultural and other habits. These habits are reflected in the construction of meanings, public agendas, and, eventually, in the development of competing regulatory perceptions. Therefore, the application of metaphorical physical interactions to describe this space is something of a winning move: instead of worrying about "technologies" it is possible to think about "people." To some extent, this even correlates with today's widespread concerns about the climate and environment. The discourse of personal "awareness" and collective "responsibility," which generally speaking is rather detrimental to the eco-friendly agenda, is also a good topic for discussions about how technologies of constructing meanings work and who is their subject.

Such disputes can be considered in the context of research and pragmatic problems that interest us. They also can be presented as questions. Who can be seen as creators of meanings in today's internet and its popular services? How and to what extent do the platforms used by these "creators" (whether human or artificial) generate a desirable or undesirable future? What trends and tendencies remain unnoticed, and why? All these problems are of current importance for specific user communities and civil activists.

Weak signals – New agents of meanings: from robots/AI to the deceased

When discussing digital ecosystems, it is necessary to consider the specifics of the agents who inhabit them. An interesting of network agents includes influencers and opinion leaders who produce interesting and useful content for others. First of all, it is important to take a step back from normative anthropocentrism. It assumes that only people

(users, representatives of business and power structures) – those who create content and make decisions – can be inhabitants of these ecosystems, excluding agents of other kinds, such as machine environments. The following example may not seem obvious at first. According to statistics published by the International Federation of Robotics, the number of service robots sold is surging year over year.[15] This shows that modern social robots (machines capable of interacting with humans in an autonomous or semi-autonomous mode) are increasingly perceived as deserving the status of objects of a moral relationship.[16] And where there is a social robot, there is software which allows machines to communicate with people in various contexts and formats. It means that a new attitude is being formed towards machines as *inanimate agents* with which, nevertheless, *interpersonal relations* are possible.

This should put a stop to disputes over whether individual entities have the qualities of a moral "agent" (capable of performing actions and being responsible for them) or "subject" (capable of being harmed or benefit). It turns out that the agency of inhabitants of digital ecosystems (and therefore potential creators of local meanings) lies beyond regular binary limits, which are the basis of the symbolic system at the foundation for developing notions of the normative. Does this mean that the potential existence of active robotic agents (both devices and self-learning technologies build on their application) forms some *weak signals* that objectively exist? We could recall here chatbots which were a major presence in users' lives alongside ICQ. Do these signals suggest future strategies and tools for producing important content that develops the agenda of communities which consider themselves a part of "civil society"?

There are several facts of various representative levels that speak in favor of this assumption. On the one hand, according to lawyers working with the Japanese legal system (Japan is implementing the concept of "Society 5.0," which explores issues of human/robot interactions and self-learning intellectual systems),[17] the growing number

of robots and related software requires a transformation of how we think about machines. At the very least, it is crucial to update legislation regulating the relationship between people and what used to be seen as their soulless technological environment. It is likely that discussions about what "robotic identity" means and what steps should be taken to recognize "robotic agents" will be needed in the context of legal decisions made by international organizations.[18] How will OECD recommendations regarding guidelines for protection of privacy and cross-border transfer of personal data[19] affect the protection of rights of robots and humans simultaneously?

On the other hand, lawyers and advocates of robot ethics have a long road ahead towards developing new legal conventions and social pacts which will fit in with the previous anthropocentric practices. The very environment of extensive and active distribution of content, such as social networks and business conducted in their spaces, is living proof of existing active agents of a robotic nature. They often act as prominent opinion leaders and influencers, i.e., producers of content/systems of messages meaningful to a certain community.

Perhaps the most relevant example is the virtual model known as Lil Miquela, which has amassed around 3 million Instagram subscribers since April.[20] Since her "machine" status was established,[21] Lil Miquela has been able to demonstrate conventional normality to the world of Eurocentric microcelebrities. This was primarily because she shows standard public behavior conventional to Western "stars." Lil Miquela follows common norms of consumption and production of cultural objects such as recording music and starring in commercials, and serves as ambassador of the liberal value model.[22] She is depicted as a 19 year old girl with Brazilian and Spanish heritage who lives in Los Angeles and works as a model. When combined with principles she advocates (rights of LGBTIQ+ communities, refugees and other minorities), it serves as a starting point for public discussion of injustice, protection of the rights

of "others" and about the damage done by perpetuating the binary metaphoric of "us" and "them."[23]

It's worth noting that this position, as well Lil Miquela's ontological status, makes her a near-perfect inhabitant of digital ecosystems described above, the very existence of which demonstrates the value of multiplicity, including the multiplicity of agency. This virtual model acts as an influencer in ethical and business fields. Thus, in April 2019 she launched a fashion label and, given that *Time* magazine included Lil Miquela in its list of top 25 online influencers,[24] the future of this yet niche brand is looking bright.

The second case, which demonstrates the power of weak signals to a greater degree, is chatbots and 3D models based on digital traces of deceased people. There are several commercial projects working with such transhumanist ideas.[25] There are also examples of non-commercial digital projects such as Dadbot, which promote lifting taboos on discussing death and aim to ease the traumatic experience of the death of loved ones.[26] Let's consider the development of these technologies from the point of social sciences. It is easy to see how their implementation works for the purpose of the death awareness movement[27] whose aim to shift the perspective of death from a hushed-up practice removed from everyday life and almost hidden away at hospitals to a fact that requires critical comprehension. However, these technologies give another *weak signal* about disruptive technologies, noted by today's scientists and futurologists.[28] By recreating habits of people who have passed away, developers are advancing the development of autonomous "machine" companions – robotic systems able to distinguish and reproduce emotions and artificial consciousness (at least in the version of "strong artificial intelligence").

We have now encountered virtual influencers and seen an emerging market waging digital war against death, which in the long term could lead to "digitizing" the consciousness of the deceased. But can we say these technologies truly have an impact on the construction of meanings? Yes, they do. First, the examples of "artificial"

agents which naturally inhabit digital ecosystems produce original content and statements. Frequently, as in the case of Lil Miquela, such statements are elements of the popular agenda and become an additional driver for its implementation. It is notable that these agents demonstrate an ability to participate in moral relationships by declaring an active personal identity. They literally introduce themselves as "I" or "we." The philosopher Jean-Luc Nancy has written extensively on community theory. He assures his readers that meaning is established by the desire of the agent. Where there is an agent, there is a meaning, it is existential.[29] In other words, if we see and recognize the capabilities of inanimate entities, we may have to acknowledge their claim to be sources of meaning contained in various messages.

It is reasonable to ask the following question: what is the role of civil activists in this system? So far, as shown by the most prominent virtual influencers, it is civil cyber-activists and other communities, sensitive to issues of protecting people from any form of discrimination, who counteract emerging ethical violations, often claimed to be due to "oversight."[30] By uniting into active communities (with varying degrees of success[31]), cyber-activists organize social campaigns such as flash-mobs, which may send a powerful message. What is likely to change?

NGOs and other institutional agents of civil society should be able to create their own virtual characters acting as ambassadors of various agendas. Lil Miquela already acts as a conduit of human rights messages, in particular speaking out against racism, sexism, and homophobia. So why not invest resources in virtual characters who will be fully engaged in educating society on protecting human dignity or the values of humanism? Chatbots and 3D-models based on the digital footprints of people who have passed away can also actively promote ideas of the progressive agenda. It is already possible to "reanimate" famous people for the sake of entertainment (for example, Tupac Shakur appearing during 2012 Coachella). This shows it is perfectly possible to use similar technologies for more meaningful purposes.

So far, the community of content creators is being expanded at the expense of automated, frequently largely autonomous agents, and remains of low interest to major markets. At the present time, civil activists could become the first to form a new community of inhabitants of digital ecosystems, built on the foundations of loyal and equal partnership with machine actors. This would make it possible to overcome alarmist pushback, which is rooted in the division between the "digital world" and "living agents," AKA people.

Probable, desirable, and undesirable futures for technologies of constructing meanings. Platforms, formats, technologies

Agents that construct meanings operate in particular digital ecosystems. As already pointed out, digital ecosystems are organized by consolidating the experience of using certain multiplatform services.[32] These services, often related to communication tasks, are the most visible part of digital infrastructures that every consumer is aware of. Therefore, based on their development, it is relatively easy to imagine the digital presence of civil society and to look for probable, desirable, and undesirable images in an inevitably approaching future.

1. Thus far, the most prominent and probable development of these platforms, whose users are engaged in communication and therefore the production of meanings (including socially significant), can be created by observing the story of YouTube. Today, we usually see YouTube as a space for the distribution of visual content. However, it is impossible to deny the significance of communication produced around such visual objects and within the audiences of makers, consumers, and curious bystanders.

This video hosting site, which will soon turn 15 years old, has become a full value blogging platform in recent years due to the activity of its users. Despite the emergence of native video formats in more modern services (Facebook

Watch, Google IGTV),[33] as well as experimental applications such as Vine from Twitter and the relatively stable Snapchat, TikTok and LIKEE, and despite the periodic blocking of the service (owned by Google)[34] in China, YouTube has not lost its position as one of the most influential platforms for vlogging. This means that it continues to be a location, an element of the Google ecosystem, in which people are accustomed to sharing experience, knowledge, and emotions.

It is very true that over time YouTube has become popular, but perhaps not quite in the scenario envisaged by its creators in 2005. For example, it has become something bigger than just a video hosting site. Today, in 2019, it is a powerful and facilitating platform from the marketing perspective, which unites producers and consumers of meanings and potentially turns them into prosumers.[35] In fact, anyone who uses YouTube in any capacity has already overcome the division into producers of messages and the objects of their influence. This person has become an essential participant in the permanent production of meanings in the form of UGC-content.

Simultaneously, YouTube has often, and for a relatively long period, been called a platform that has affected professional markets disruptively.[36] The goal of producing content could not but result in the emergence of such professionals as videographers (not to be confused with producers and operators). Almost everyone who creates messages, and therefore acts as a content-manager, develops skills as designers, producers, or SMM specialists.[37] Imagine that every member of the YouTube community could bear in mind that any content might turn out to be an element in the development of the platform. Then there might be the hope of approval of the norms of less discriminatory online communication.

Interest in blogging as a technology for documenting private daily life, and the possible promotion of "best" practices (as viewed by a producer of meaning), has to some extent been dictated by the rapid development and long market presence of services such as YouTube. This

currently represents a kind of status quo. If the presence of weak signals is enhanced in this context, it is possible to build *a probabilistic future*. For example, the market of VTubers – virtual vloggers, appeared in Japan in 2018.[38] The development of this market will potentially contribute to a growth in user awareness regarding the new non-anthropocentric situation of digital ecosystems, and lead to increased investment in other industries and technologies, such as video games and VR. These industries, often undervalued by traditional social institutions and cultural industries, may be of interest to civil activists and NGOs. Through so-called recreational spaces, relevant production practices, and broadcasting of meanings (e.g., video games[39]) it is possible to organize mutual assistance networks and other peer-to-peer projects which support interaction between equals. To develop this future, where recreational ecosystems support safe spaces, it is necessary to work on the ethics of recreational behavior of producers of meanings (both real and virtual) in those environments that are most accessible to a wide audience. Only in this case can popular and familiar technologies, formats, and platforms gain greater importance in approving an agenda that is socially fundamental and responsible in a progressive way.

2. *The desired version of the future of digital presences in civil society* can easily be constructed on the basis of the probable future. This desired version can be associated with the multiplication of content distribution platforms customized to the needs of particular users.

There are probably at least two variants of the development events (although there may be many more). It is important to notice that each of them can turn the future into a particular digital dystopia.

The first entails multifunctional platforms that will offer content publishing in an increasing number of native platform formats, and grow as industry monopolies dominate in the future. The strongest "live" or virtual influencers will appear in these spaces. Facebook in the U.S. and VKontakte in Russia can be considered such monopolies, and Yandex

is seeking the same status. The downside of this scenario is the formation of a kind of "co-dependent relationship" between the service customers and the platform itself. This kind of relationship often results in increased interest in platforms from various governmental agents and the state, which believes in the possibility of censorship legislation covering network interactions in general and their specific representations in particular social networks.[40] This legislation could serve the idea of protecting user rights (for example, the right to protect personal data or honor and dignity). In this case, the platforms themselves will become more attentive to the communication microclimates in which their communities live. Transforming this microclimate from "toxic" to "safe," the monopolies that are already popular among users gain even greater power. When this happens, the desirable future of civil society digital presence will mirror the *probabilistic future*. If large top-rated services can become a platform for discussion and implementation of the ethics of humane online behavior, then responsible self-presentation and dialogue of free citizens/communities will become the norm. Virtual producers of meanings (returning to the question of the agency in digital spaces) as significant participants in the communication process can guarantee the quality of this dialogue.

The other variant looks like a libertarian's dream: a more competitive situation will develop, leading to growth in the platforms' market, which in turn will provide communication and, consequently, the exchange of meanings. Thus, consumers of communication services will be able to choose a platform (as well as an interface, system of functions, and affordances) without fear of ostracism, stigmatization, or censorship. This case presupposes the gradual refusal of users to belong exclusively to the digital ecosystem of the company that owns the relevant service. The technical problem to be solved under such a scenario is the limited ability to broadcast and perceive any messages and meanings provoked algorithmically by the filter bubbles and echo-cameras.[41] Even now, with

multiplying platforms, there is a remarkable "segregation" of the inhabitants of the digital ecosystems (look at how "progressive" users of VKontakte treat "Odnoklassniki" users[42]). This fragmentation of users into communities often points to the success of marketing efforts of those monopoly companies, who want to own particular platforms and particular users, and at their expense develop particular ecosystems. Also, this situation is more likely to indicate the convenience of specific, socially irresponsible programming solutions that work well in terms of their implementation in business tasks.

The most notable example is TikTok, which originally operated as the Chinese Douyin social network. The interface of this application has 38 language options. However, China continues to promote its own rather authoritarian approach to the digital domain in the post-colonial but still Eurocentric world. In 2018, TikTok had more than 500 million users in 150 countries (for comparison, this number is much larger than the number of users of popular platforms like Twitter, Tumblr, LinkedIn, Snapchat, Pinterest or the Twitch streaming service in the same year[43]). At the same time, a significant percentage of the non-target audience, i.e., "adults" (over 16-17 years old), may not know about it at all.[44] TikTok offers its users a relatively safe microclimate (in this app it is easier to earn positive reactions from other users) and content production tools that are user-friendly but complex in their effects. TikTok is not often recognized as having a large and significant community and ecosystem, primarily due to its young user base. So, constructing an image of the desired digital future of civil society, especially one based on the libertarian model, requires moving away from simple business decisions and various schemes that deprive the users of agency.

Whichever variant development of multiplatform production of meanings and ecosystems wins, it will require careful attention from civil activists. In the multiplatform situation, the ability to create representative content on platforms that is important to users, and the potential to

build a community centered on content are critically significant competitive advantages. The chance to be heard will increase if the voices of NGOs or other communities interested in concurrent sociocultural problems and faults can be heard on different platforms. And if these voices are able to use the advantages of these platforms (e.g., all the tools for creating native content or virtual characters), are aware of their differences, and differentiate between "native" public groups, there will be an opportunity for these voices to be heard and noticed. Perhaps there will be an opportunity to unite these audiences in a single community, not limited by the framework of any given platform.

3. Finally, there is the variant I have called the *undesirable future*, which is not as difficult to define if we pay heed to the possibilities of the *dangerous trends* mentioned above.

The growing number of communication services and the transmediation of content seem to be the most obvious trends. Information overload arises at the individual level.[45] However, at the level of social interactions this can lead either to the formation of a relatively powerful lobby of neo-luddites,[46] or, on the contrary, to the development of slack activism[47] ("sofa activism," the habit of "expert" online activity with minimum results).

The latter practice means reification and commodification,[48] and is transforming activism from a fight for justice into a commodity, a traded good. Many conservatively-oriented critics already believe that behind cyberactivism there is often a desire to restrict freedom of expression and impose new censorship restrictions.[49] If the intention to introduce "public control" turns into a situation where we have a new type of public court, the policing of "likes,"[50] and other repressive practices based on the demonstration of the microphysics of power, any attempts to get rid of the potentially stigmatizing binary metaphor of "digital domain" will become its complete opposite. Thus, instead of setting up a relatively safe space for the production of multiple meanings, which is the right of any agent in a

moral relationship, we will get a new type of segregation which will be based on an appeal to ethical norms which do not yet even have clear frameworks and representations.

In lieu of a conclusion: Known Unknowns or New Digital Ethics and Civil Activism?

As philosophers believe, the true future is not what will happen to us, but what will happen without us.[51] Therefore, any futurological assumptions are formed through our current perceptions of what is normal and normative. Our known unknowns are those shadows of the possible tomorrow that we see today. We have not developed regulations yet (but due to the old habit of institutionalization we already assume that they will be helpful).

The future of the construction of meanings and the coming tomorrow itself are inseparable from today's struggles for the ethics of joint actions and the moral and ethical (self-)limitations of co-existence. It is evident that even now civil activists are fully involved in relevant activities as agents. Obviously, to achieve better results in establishing their agendas, they need to pay attention to those weak signals, as well as the potentially robust constructive and creative solutions that the digital environment throws up as developing ecosystems, their agents, and platforms. However, it is not entirely clear how we define the boundaries of ethical decisions. How ready are we to bring together the ethical and other assessments of public activities? To what extent can we protect any agent of production of meanings (those which are habitual or those which are new – born in the "machine" environment)? And can we concentrate our civic efforts not just on solving familiar problems, but also discussing issues that are only just becoming relevant, and distinguishing which we need to engage a habit of scanning the horizon for?

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Endnotes

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Dark pattern are types of user interfaces (sets of means and methods of interaction between the user and the device) which exist for special management of human interests and activities. The simplest example of a dark pattern is manipulation of newsletter subscriptions, frequently issued by default to users of a service.
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20 Lil Miquela's Instagram: https://www.instagram.com/lilmiquela/ Further, we will describe the virtual model as an independent acting subject. This decision was made because of Lil Miquela's unidentified affiliation with a corporation or developer who could be held responsible for public actions committed in a certain account or in advertising

campaigns. Therefore, Lil Miquela cannot be described as "fake"– an alternative to a "real" person who has a personal account (such certification of the model was the first response to what was seen on her profile for many users).

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