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Mediatization(s) Studies

CIM 10th Anniversary

Sandra Valdettaro Editor



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**Mediatization(s) Studies:
Exploratory Notes on an
International Conversation**

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Introduction

This book is dedicated to the commemoration of CIM's 10th anniversary and is the result of the articulation of several researches by CIM's members and other colleagues from different international academic institutions with important contributions in Mediatization(s) Studies.

The purpose is to intensify a transnational academic conversation to contribute to consolidate this field of study that, being still new, already has a rich and important history.

The texts presented here raise concerns about different levels of the mediatization process and its connections with contemporary issues. As a team of researchers in Mediatization(s) Studies, we became interested in both understanding the contemporary modalities of construction of meaning and, simultaneously, if history is a guide, expand our genealogical knowledge into further results in future.

Researchers, as society as a whole, were not prepared for the Coronavirus pandemic in 2020; however, we were quickly able to deal with the situation by deepening previous links and generating new intellectual

and critical associations. In this way, among other activities, we held a virtual Colloquium at CIM with colleagues from different latitudes and published an E-book with the presentations, which is a sample of our first impressions on the pandemic.

Since the Covid-19 pandemic caused all universities to switch to remote work, new opportunities have been a concern. Although relying on electronic contacts can be a challenge, there are many reasons to strengthen our research motivation. What can we do as academics to face an age of rampant complexity? This book tries to be a contribution to shine light on present challenges.

Mediatization as a social, cultural and perceptual environment, whose weightiness is central in current societies, requires interdisciplinary and multiple approaches. Assuming the significant presence of this term in academic discourse, we are faced with the risk of turning it into a fuzzy notion. That is why this book proposes argued analytical perspectives that duly mark its semantic boundaries in the context of what is perceived as a blurred unlimited semiosis.

In this way, in several chapters of this book, delimitation of the different meanings of mediatization is proposed, from the empirical description and analysis of its different levels of operation -devices, intersubjective interactions, institutional spaces, memory representations, political imaginaries, community dimensions, etc.-, to theoretical, philosophical and epistemological developments.

The complexity of mediatization is approached from the consolidated corpus of semiotics which is continuously crossed by other theoretical perspectives that enrich the analysis. The impact of *circulation* in digital platforms and interfaces on the physiognomy of studies is noted, placing the level of interaction in a new way that is boarded from sociological, anthropological, ethnographic and culturalist perspectives, in interdependence with semiotics. In the same way, the mutations of the media and languages system are analyzed.

The presence of general approaches of an essayistic, metaphorical and philosophical tone also continues questioning the current way of being

in mediated society and culture. The resumption of classical authors, whose theories acquire new meanings in our context as significant interpretative keys, is remarkable.

Different perceptions about Artificial Intelligence, Big Data and Geodatication are a central part of the current academic debate, so the texts here include present the controversial variety of senses involved.

From reading this book arises, then, a singular and notable perception: not only Mediatizations Studies are interpellated by the complexity of the present, but also Communication Research itself, in its proper long history, is being retaken in renewed ways. The articulation between new and old theories in a hybrid ecosystem of academic enunciation is a loop that always acts *après coup*.

We trust, as always, on suspicious readings to deepen the controversial nature of the debate and thus be able to advance our own understanding of the growing complexity of mediatization.

Rosario, Argentina.

August 2021

The Digital Helmsman: Semiosis, Disintermediation, and Artificial Intelligence

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“Most things are never meant.”

Philip Larkin (1972)

“Going, going”, *High Windows*.

Abstract

The article pinpoints differences and similarities between semiosis and mediation, articulates the concepts of mediation and intermediation, distinguishes among different types of disintermediation, remediation, and re-intermediation, and applies this conceptual grid to artificial intelligence. It reaches the conclusion that, depending on whether artificial intelligence disintermediates a previous mediation or a previous intermediation, it becomes the object of different perceptions of agency, some of which entail a rhetoric of unbiased automatism. Semiotics is perfectly placed to study them. The article concludes that the next frontier of these rhetorics will consist in coating artificial intelligence with hyper-realistic simulacra of the body, starting from the primary social interface, that is, the face.

Keywords

Semiosis, mediation, intermediation, disintermediation, artificial intelligence.

1. Introduction

On June 18, 2021, artificial intelligence boat Mayflower, planned to cross the Atlantic Ocean from Plymouth in UK to Plymouth in US, exactly as the human-led boat Mayflower had done four hundred years earlier with his crew of about one hundred pilgrims, had to interrupt its journey, meant to explore the opportunities of artificial intelligence for automatic navigation and for the collection of oceanographic samples, and return to the departure harbor. The vessel was equipped with six cameras endowed with artificial intelligence and with an 'intelligent tongue' able to sample and test organic materials from sea waters. Build by navigation company Promare, the new Mayflower was equipped with a radar and connected with an IBM-controlled web service of weather forecasting, providing constantly updating data for navigation. Project managers still have to find out what stopped the journey, since the boat is still on its way back home as this article is being written, but it was probably a minor mechanical failure that could not be repaired without human intervention. The nuisance had reduced the navigation speed at a level that human technicians monitoring the course of the Mayflower judged as dangerously low, given that the vessel was about to venture in open ocean and face stronger winds, the streams of Mexico gulf, and a couple of storms. Despite being much more technologically advanced than its predecessor of four hundred years earlier — a vessel that was made of wood, much heavier, much slower, and with a lot of passengers onboard — the new Mayflower did not make it.

This is just an episode in the epopee of artificial intelligence navigation, which is in its turn part of the even longer history of artificial intelligence transportation. Humans might rejoice at the idea that they are still necessary, and that the value of their stewardship is still unsurpassed, but it is perhaps just a matter of time before they are outsmarted by artificial intelligence. Or maybe not. In any case, many important insights can be drawn from episodes of this kind. Several disciplines are now focusing on artificial intelligence, which is at the center of global attention again, after having enjoyed much popularity at its birth (soon after the Second World War), in the 1960s (at the peak of the Cold War), and in the 1980s

(with the spreading of personal computing).¹ Global attention towards artificial intelligence seems to be linked with the development of warfare technology and to major changes in the market of computational machines. The present AI frenzy might not be an exception, being related to the development of new algorithms and neural networks as well as to cyberwarfare. But this is another story. What matters is that many scholars from different areas are now intensely keen on artificial intelligence, and semioticians are not an exception.²

Semiotics has important insights to offer about this matter, and indeed there is a long tradition of semiotic studies devoted to artificial intelligence. The rise of cybernetic theory, meant as the theorization on self-governing and self-regulating systems — including machines endowed with artificial intelligence — was intertwined since the very beginning of its genesis with a reflection on signs. Already in 1936, Romanian military scientist Ștefan Odobleja³ published “Phonoscopy and the Clinical Semiotics”, which was the first draft of a paper that he then presented in 1937, as he participated in the IX International Congress of Military Medicine. The paper, in French, was entitled “Demonstration de phonoscopie” and contained a prospectus announcing Odobleja’s future work, “Psychologie consonantiste”, laying the theoretical foundations of generalized cybernetics. The book was then published in Paris by Librairie Moline (vol. I in 1938, and vol. II in 1939). But this was just the beginning. Since then, artificial intelligence has attracted the attention of semiotics regularly, although not always systematically. Semiotics indeed can offer many insights to the topic, and reflect on episodes like the one evoked at the beginning of the present article. In it, it is clear that, more and more, the subject of artificial intelligence and that of disintermediation are closely connected. Semiotics can contribute an interesting frame to unders-

1. On the subject, see, among the latest contributions, Harnish 2001; Husbands *et al.* 2008; and Nilsson 2010.

2. Among the most recent contributions, see Leone 2020; Alexander *et al.* 2021; Brier and Vidales 2021; García 2021; and Leone 2021.

3. Valea Izvorului, Mehedinți, 13 October 1902, — 4 September 1978; see Drăgănescu 1981.

tand the dialectics between these two elements, and this is exactly what the present paper is set to do.

2. Semiosis and mediation

First, a general semiotic definition of mediation, intermediation, and disintermediation will be provided. As a preliminary consideration, it should be underlined that semiotics is all about mediation. Semiosis itself, abstractedly considered, is the most general form of it. In Charles S. Peirce's model of the sign, semiosis precisely consists in the fact that the relation between the representamen and the object is not direct but mediated through a third element called "interpretant". The interpretant captures the relation between the object and its representamen through a certain respect or quality, which is dynamically prompted by a ground in the object but is not entirely determined by it. The ground of an object does not coincide with it, a dynamic object does not coincide with its ground, and a dynamic object does not coincide with the interpretant that it prompts. There is continuous mediation in semiosis, and continuous determinations that never amount to totality. If semiosis essentially is mediation, it has to be said that mediation too is essentially semiosis. Whatever form of mediation is envisaged, it necessarily entails the production and reception of signs that bridge the mediated entity and the mediating one.

This theoretical formulation is interesting but could lead to an excess: indeed, if every semiosis is mediation, and every mediation is semiosis, then it is not clear why the two terms should be distinguished. Nevertheless, although intimately related, "mediation" and "semiosis" do actually refer to distinct semantic areas. Whereas "semiosis" captures the functioning of signifying mediations from an abstract theoretical point of view, "mediation", which derives from the words "medium" and "media", conjugates the idea of semiosis with that of a technology that is devised by human beings so as to convey meaning. Thus, on the one hand, "mediation" could hardly be used to talk about semiosis in general, if this does not involve a technological element. There is certainly mediation

in human perception, yet semioticians usually talk about it in terms of semiosis; should human perception involve augmented reality glasses, however, then the word “mediation” would impose itself. At the same time, there is certainly semiosis in TV broadcasting, yet the technological dimension of it is so evident that it would be reductive to talk about it generally in terms of semiosis and it is much better to do it in terms of mediation. In a nutshell, semiosis is the word that captures the general dynamics of signifying mediation, whereas mediation is the word that refers to the technological instantiations of semiosis.

Yet, there is also a point in saying that every semiosis involves mediation and that every mediation involves semiosis. The first sentence affirms that there is not such a thing as a ‘natural semiosis’; seeing with one’s eyes seems to involve no technology, yet the ways in which we perceive reality through our own sight is decisively influenced by the technologies of vision that surround us, starting from images. Images are a technology of vision and, as such, a form of mediation. In a world where man-made images exist, ‘natural’ visual perception is no longer possible. Yet his second sentence, “every mediation involves semiosis” is important too. It reminds one that disintermediation is, in the terms of Franco-Lithuanian semiotician Algirdas Julien Greimas, always an “*embrayage*” following a previous “*débrayage*”. For those who are not familiar with Greimas’ understanding of language, it should be reminded that, in it, the generation of meaning always entails an enunciation that projects a sort of semiotic theatre with specific spatial, temporal, and personal coordinates. It is only starting from this initial projection, which mediates between meaning and its communication, that a disintermediation can be simulated. A novel can start with a sentence like “Call me Ishmael”, but this is just an *embrayage*, a simulation of proximity between the text and its readers, a simulation that follows a necessarily previous *débrayage*, i.e., the projection of the theatre of meaning in which the novel takes place. This consideration is important in order to emphasize the concept that there is no disintermediation without a previous mediation or, to be more precise, without a previous “intermediation”.

3. Mediation, intermediation, and disintermediation

To this regard, the difference between “mediation” and “intermediation” should be pointed out. It is not a mere lexical nuance but a conceptual one. The suffix “inter-” adds a personal dimension to the concept of mediation. Mediation implicitly involves human agency, with its consequences of personality, subjectivity, and individuality; this involvement is, however, implicit, meaning that the word “mediation” tends to refer to processes of semiosis that imply communication technology in an impersonal way. That is even more evident when the correspondent verb is used: a content, it is frequently said, can be “mediated” or even “re-mediated”, meaning that it can be adapted for a certain communication technology (broadly conceived) and then readapted in case of further mediatic change. A human agency is clearly involved in all these processes, yet it stays in the background. The word “intermediation”, on the contrary, brings to the fore the human agency implied in mediation. Wherever a mediation is defined as intermediation, it is evident that it is an embodied mediation, involving all the plexus of corporeality and singularity that come together with the idea of a subject, an individual, and a person.

That must be underlined especially so as to understand the conceptual relevance of disintermediation. In disintermediation, human agency is not removed; it is simply displaced; or, to be more precise, as the notion of intermediation lays the rhetorical accent on the embodied dimension of mediation, so disintermediation erases this accent, and suggests an illusion of total disembodiment. As it is clear in many examples, however, the human agency and its corporeality is only moved elsewhere, hidden from the view but also from ideological scrutiny. For instance, the passage from a family doctor to an internet medical service endowed with artificial intelligence is certainly one of disintermediation. Whereas beforehand the doctor would incarnate the expert transmitting relevant medical knowledge and practices to patients, the internet service gives these patients the impression that they can self-diagnose and self-medicate. It is evident; however, that expert human agency has not disappeared from the scene. It has just been displaced far from it, and replaced by the invisible agency of ICT engineers and technicians. They are, indeed, the

new intermediators of medical consultation, devising the algorithms that will eventually determine which medical information will be retrieved, and how. The disintermediation of artificial intelligence in many cases works as a re-intermediation under different guise. Although this operation is accompanied by a rhetoric of transparency and immediateness, it actually surreptitiously conceals the real agency that moves the machine. That makes it even more interesting to semiotically reflect on artificial intelligence gone wrong, that is, on glitches, which should be dealt with in a dedicated article.

4. Artificial intelligence and disintermediation

The triad semiosis/mediation – intermediation – disintermediation must be conceptually articulated with the semantic and operational field of artificial intelligence. This is presently more extended than it was in the past, covering a variety of phenomena where the human cognition is replaced by the algorithmic functioning of a machine. In synthesis, yet, artificial intelligence takes place every time that a device with no apparent human agency manifests its own seemingly autonomous agency performing tasks that are normally carried out by human intelligence. The rhetorical force by which artificial intelligence intervenes in human life is not constant, but precisely depends on the agency context in which it operates. If that is one that traditionally entails only mediation, and not intermediation, then the conspicuity of artificial intelligence will be minimal. A typical example is that of content suggestions in media platforms like Netflix, Amazon Prime, or Spotify. In them, we are constantly recommended a movie, a series, or a song that we might like. The mechanism is not different from the artificial intelligence that permeates the entire web and actually guarantees the economic sustainability of web giants like Google or Facebook. Our digital footprint is constantly monitored, hopefully within the legal framework set by the state, and then analyzed through artificial intelligence so that, from the identification of patterns in these big data, tailored suggestions can be offered to the customers. In this case, artificial intelligence is applied to mediation

and not to intermediation, meaning that, before the advent of artificial intelligence, no equivalent service was offered about media contents. In the epoch of analogical television, presenters (they were often women; in Italy they were called “Signorine Buonasera”) would simply illustrate the palimpsest of the day, without recommending any program in particular. That would have been unfair towards the other programs, which the broadcaster — usually a state one — considered all worthy of being seen. What determined the emphasis on a program and its value was, on the contrary, its collocation in the palimpsest itself, with the most important events being placed in the time zones during which families would usually gather to watch television. With the advent of private TV broadcasting, channels would alternate commercials about sponsored products with commercials about their own TV programs, which were therefore presented too as “TV products to sell”. In any case, these recommendations followed the logic of “paleo-television”, as Umberto Eco defined it in opposition to “neo-television”, since they were not tailored to individual preferences but targeted the audience that it was believed would be in front of the screen at a given time (thus, cartoons were advertised at the time when children would presumably be in front of the screen, after school, watching other cartoons). Throughout the development of pre-digital popular culture, tailored suggestions were offered only by friends and relatives, who would know the personality of an individual and suggest to him or her TV programs, song albums, or books that he or she might like. This function was simply not available in pre-digital media. When it is featured by digital platforms, therefore, it is not received as an instance of dis-intermediation but as one of re-mediation (the good old TV commercials are now being repropounded in a bespoke form). The consequence is that we constantly receive suggestions from platforms but we never consider them as an expression of artificial intelligence, although they actually are one of the most essential instances of it.

In other cases, the rhetoric of artificial intelligence is more emphatic. Emphasis is at its maximum when artificial intelligence disintermediates starting not from simple mediation but from proper intermediation, that is, from a situation in which communication meets technology through

an explicit human agency. Examples are countless, but none of them is more striking than translation. Homes of scholars in their mid-forties like the author of the present paper are probably full of a kind of books that are presently never open and accumulate dust in some corner of the library. They are called “dictionaries”. The same destiny befalls encyclopedias, although some of them might still contain materials that are interesting but are not present in the web. Paper dictionaries, instead, are a pure relic of intermediation, when translation depended on the fact that someone, by birth or study, would master two or more languages and help other human beings to bridge them. I still remember how joyful I was when my parents would buy me a new dictionary that would help me in school: the Italian monolingual dictionary was the first one, then the Latin-Italian one, then the Greek-Italian one, then the German-Italian one, and then, when I started traveling throughout the world, many other dictionaries followed, that I acquired through my journeys and studies, from the many little English-Italian dictionaries to the most exotic and regional ones, which I bought more for the pleasure of collecting them than for the sake of utility. I can still remember, at the same time, how painful it was to spend long hours on one of these volumes, frantically flicking through pages, searching for words, pondering options. All this is now history. The internet is full of websites that offer translation services from the most known languages of the world to the most known ones, and their number and quality is constantly multiplying, as it is multiplying the number of translated languages, which now increasingly includes also minority and regional languages. Dictionaries are still necessary for specific languages, but it is undoubtedly impressive how artificial intelligence tools like Google Translator are constantly improving, systematically bettering their performance thanks to artificial intelligence and through access to an enormous amount of translation data. The service is still far from being flawless, especially if translating from and to languages others than English, yet progress is undisputable and rapid. An academic article in Italian written in plain language can now be almost flawlessly translated into English. In this disintermediation, the role of artificial intelligence in replacing human agency is evident, although the biases of its algorithms are not as conspicuous. In this case too, users

realize that an artificial intelligence, and not a natural one, is beyond the translation mainly from the imperfections that the former entails, and that the latter would spontaneously avoid. Some of them are quite funny, exactly because they reveal the automatism of the machine beyond the pretended intelligence of the interface. Yet, despite these glitches, the deeper biases of automatic translation, those which are rooted in the way the translating artificial intelligence is trained, are less visible and frequently go undetected. That is a general rule of the current reception of artificial intelligence, for non-specialists still see it more as the outcome of a programmed machine than as the output of a trained device. This implies two distortive effects: on the one hand, artificial intelligence might be seen as more deterministic than it actually is: its biases, therefore, are received as a consequence of how its algorithms are written. On the other hand, an important source of artificial intelligence's biases is overlooked, that is, the materials that neural networks are 'fed' so that they might develop intelligent behavior. It is as though, in assessing the prejudices of a human being, only its cognitive biases were looked at, and not those generated by education.

To recapitulate, if mediation always implies semiosis, and if semiosis constantly entails mediation, the latter usually involves a technological setting, whose socio-cultural reception varies according to epoch and context. In general, the more a human agency is perspicuous in mediation, the more it is received as intermediation, that is, as semiosis involving a technological device operated by a human being. It is in relation to this plexus of mediation, technology, and human agency, that a phenomenon and a rhetoric of disintermediation can take place, meant as the apparent elimination of human agency from the mediation itself. According to this rhetoric, mediation appears as self-regulated by technology, automated, and, consequently, unbiased. Following a deep-seated anthropological prejudice, since human agency systematically results in ideological biases, the apparent elimination of the former is interpreted as bringing about a consequent neutralization of the latter. In reality, any technological disintermediation should be interpreted as crypto-reintermediation, for human agency is never eliminated from mediation but merely displaced somewhere else, at a previous and more concea-

led stage of the production of mediation itself. From this point of view, artificial intelligence can introduce pernicious biases in human relations exactly because its outputs can be seen as unaffected by human agency and its ideologies. As it has been pointed out, the rhetoric of artificial intelligence is more or less striking depending on whether its pseudo-disintermediation applies itself to a domain of human signification that was previously either mediated or intermediated. In the first case, since the presence of human agency in technological semiosis was not emphasized, the rhetoric of artificial intelligence in disintermediating such domain will be less perceptible. Systems for the recommendation of media contents exemplify this typology quite well: artificial intelligence is now used to recommend tailored media contents to users, yet this is a new function of digital platforms, which was practically absent in analogic broadcasting of media contents. In this case, therefore, artificial intelligence does not appear as conspicuous in its functioning and, as a consequence, can work in a seemingly transparent but surreptitiously biased way. In the second case, instead, when artificial intelligence intervenes in a domain that was usually intermediated, the substitution of human agency is more conspicuous, yet the biases of artificial intelligence are always looked at in the frame of the human one, without an articulated knowledge of how artificial intelligence actually produces its outputs. Programming, for instance, is seen as the source of distortion, whereas training is usually neglected, exactly because it is an activity associated more with the upbringing of human agency (through education) than to the shaping of artificial intelligence. In a nutshell, AI applied to mediation produces hidden surreptitious biases, whereas AI applied to intermediation produces a suspicion that is often misplaced, targeting the surface of the problem and not its depth.

5. The system of artificial intelligent mediations

Given this articulation of semiosis, mediation, intermediation, and disintermediation, on the one hand, and, on the other, the dialectics between human and artificial intelligence, semiotics or, better said, a semiotically

oriented philosophy of communication can give an important contribution in studying the simulative artifacts of artificial intelligence, that is, the efforts to simulate human intelligent behaviors through non-organic and non-human devices. Such simulation can take place at the level of expression, at that of content, or at both.

At the level of expression, the focus is on the inorganic reproduction of signs that humans associate with intelligence. An excellent example is Disney-financed project “Gaze”, a robot that simulates human expressions and, moreover, emulates them in face-to-face interactions with humans.

In this technology, essentially inorganic matter is arranged, also through artificial intelligence, so as to convey an impression of understanding. Facial expressions are not only cognitive, but some are, and many are essential to communicate mutual intelligibility. *Gaze* is a robot developed by Walt Disney Imagineering with a team of researchers from the University of Illinois at Urbana-Champaign and the California Institute of Technology. It is the result of advanced research in the field of technology and presents an intriguing feature. It can reproduce certain specific expressions of the human face. For example, it is able to make small movements of the head or to blink the eyelids. The research group FACETS (Face Aesthetics in Contemporary E-Technological Societies), financed by the European Research Council, and led by the author of the present paper, is currently investigating the meaning of the face with particular emphasis on its transformations in the digital era. One of the central hypotheses of research, now condensed in the present paper, is that there is a strong connection between the development of artificial intelligence, the production of simulative artifacts, and the face. Indeed, as it has been seen *supra*, disintermediation through artificial intelligence entails a rhetoric, which emphasizes the passage from a human-mediated technological context of communication to a machine-centered one, in which all human agency and, as a consequence, all human biases are expelled. This rhetoric, as it has been pointed out, is particularly effective in the case of disintermediation starting from an intermediation that would conspicuously involve human agency (like in the case of machine-based linguistic translation, for instance). As the example of *Gaze* and many

others reveal, however, more and more the face is becoming one of the most central devices of digital re-intermediation through artificial intelligence. When artificial intelligence is coated with simulative artifacts that represent the human body, indeed, it gains an extraordinary communicative power, encouraging even more the spontaneous reception of the contents of artificial intelligence. People do not interact anymore with an algorithm and its cold numeric outputs and they do not simply see them projected on a screen. On the opposite, the elaborations of artificial intelligence are coated with artifacts that simulate the human body, as well as the connection between the human body and its internal cognitions, emotions, and intentions.

6. Conclusion

The process of re-intermediating artificial intelligence is progressing rapidly. It started with the human voice. Interacting with the artificial intelligence of personal assistants like Siri or Alexa has become common practice. On the one hand, users receive their behavior with a strong rhetoric of disintermediation. When “talking” to Siri and Alexa, for instance, one usually forgets that their responses have been trained in a way that conditions their ‘intelligent’ behaviors, and one tends to believe, on the contrary, that information received through these personal AI assistants is perfectly automatic. Glitches can manifest themselves in their behaviors too, and some of them can have particularly funny consequences; yet, they do nothing but reinforce the impression that what lies at the core of these devices and applications is a mechanism that is completely deprived of any human agency. When these same devices and applications are coated with a human-like interface, then, their outputs are received not only as automatic and, therefore, unbiased, but also as emotionally close and believable. The attribution of a voice already represents a significant step forward in this process. Receiving street directions from a human-like voice that speaks our own language with a tailored tone is different than seeing them projected on a screen. A further step forward in the re-intermediation of artificial intelligence

is represented precisely by the attribution of a human face, which can now come in the form of the photo-realistic digital picture or video of an artificial face, but also in the form of a three-dimensional face attached to a head and to a body, like in the case of holograms or anthropomorphic robots. The whole biological and socio-cultural heritage of the face, which is the central device of human interaction, is bestowed upon artificial intelligence so as to confer to interaction with it the smoothness and naturalness of a face-to-face conversation, yet without losing the rhetorical effect of disintermediation. Disintermediation and re-intermediation, indeed, coexist, as if the development of intelligent algorithms and their being presented through the digital simulation of a body (whose creation too often involves artificial intelligence) was seeking to satisfy a deep-seated desire of humanity, that of begetting creatures that are at the same time perfectly controllable and perfectly human, like a creature that does not rebel against its creator.

Will the Mayflower of the future succeed in crossing the ocean without any human assistance? Will it be able to face the largely unpredictable nature of winds, waves, and currents in a properly manner? And transport safely human beings and goods across the world? It is probably just a matter of time before this result is achieved, and a profession as old as human civilization, that of the helmsman, is disintermediated by artificial intelligence. But readers of Melville, Conrad and Stevenson know that navigation is not only going from point A to point B, and that many revolutionary sea adventures and discoveries, including Columbus' voyage to the continent that we now call "America", were instances of serendipity, of the very human capacity of turning a glitch into an opportunity. The Mayflower of the future will probably be able to reach its destination, fast, safely, and autonomously. Nevertheless, it might still need training on how to profit from mistakes, which humans frequently transform into new occasions for creativity. We humans are training artificial intelligence to be much more perfect than we are. We shall then train it to become as imperfect as we are ■

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