

Masks, sunglasses, and gloves: COVID-19 visual semantics¹

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"No man, for any considerable period, can wear one face to himself and another to the multitude, without finally getting bewildered as to which may be the true."

(Nathaniel Hawthorne, *The Scarlet Letter*, 1850)

Abstract

The pandemic begets an entire new visuality, whose implicit function seems to be that of coping with the pernicious invisibility of the virus and its contagions. The article focuses, in particular, on the visual semiotics of the anti-COVID-19 medical face-mask. It argues that, whereas this worn device can be hardly re-functionalized at the individual level, at the collective level, on the contrary, it becomes the object of a recurrent visual re-semanticization, whose patterns semiotics must investigate also in order to formulate some previsions about the cultural future of this now omnipresent device: will it remain forever in the human visual space?

La pandemia ha generato una visualità completamente nuova, la cui funzione implicita sembra essere quella di far fronte alla perniciosa invisibilità del virus e dei suoi contagi. L'articolo si concentra, in particolare, sulla semiotica visiva della mascherina anti-COVID-19. Sostiene che, mentre questo dispositivo indossato difficilmente può essere ri-funzionalizzato a livello individuale, a livello collettivo, al contrario, diventa oggetto di una ricorrente ri-semantizzazione visiva, i cui schemi la semiotica deve indagare anche per formulare alcune previsioni sul futuro culturale di questo oggetto ormai onnipresente: rimarrà per sempre nello spazio visivo umano?

Keywords.

COVID-19 pandemic; visual culture; medical face masks; semiotics; re-semanticization

Pandemia di COVID-19; cultura visiva; mascherine; semiotica; ri-semantizzazione

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1. Introduction

Since the beginning of semiotics as an academic discipline, practitioners of this method have been looking for signs to decipher². The most interesting signs are not those that everyone is able to decode, like a stop street sign³, but those that, for some reasons, escape the general comprehension and require a specialist to unveil their meaning. Even a traffic sign, however, can become interesting and mysterious if seen from an appropriate perspective, for instance, in relation to its forgotten origin, to the hidden conventionality of its design, or to its puzzling variability across cultures⁴. With the proceeding and progressing of established semiotics, yet, that is, with the accumulation of its courses, seminars, conferences, and publications worldwide, it seemed that the natural deposit of signs to be decoded for the benefit of the general audience was becoming narrower. In the 1960s, Roland Barthes could astonish his readers through deciphering the commercial of a French brand of pasta; in the 1970s, Umberto Eco could gain a global attention with his observations on the semiotics of traveling and other quotidian experiences; in the 1980s, the Paris school of semiotics produced academic value by rereading the classics of literature – as well as movies, paintings, and other “texts” – through a complex generative system; in the 1990s, semiotics turned to cognitive sciences, and increasingly sought to link its findings with evolutionary biology and neurophysiology; in the 2000s, the semiotics of culture acquired a primary status, with its alternative views on the encounter (and clash) of civilizations; in the 2010s, semiotics appeared as a fragmentary endeavor, with well-

² For a personal view of the latest developments of semiotics, see M. Leone, “Post-Structuralist Semiotics: A Reading”, in J. Pelkin, ed. *Bloomsbury Semiotics: A Major Reference Work in Four Volumes*, 4 vols, vol. 1: “History and Semiosis”, ed. J. Pelkey, London-New York, Bloomsbury, forthcoming.

³ Although there are very interesting semiotic studies of traffic signs and signals too: see M. Krampen, *Geschichte Der Strassenverkehrszeichen: Diachronische Analyse Eines Zeichensystems* (Probleme der Semiotik; Bd. 2 = Problems in semiotics), Stauffenburg, Tübingen 1988; A. Wagner, “The Rules of the Road, a Universal Visual Semiotics”, *International Journal for the Semiotics of Law = Revue Internationale De Sémiotique Juridique*, 19, 3, 2006, pp. 311-324; S.O. Baltierra, “Urban Signs: The Relationship between Signage and Road Accidents”, *The Design Journal*, 22, 1, 2019, pp. 2163-2164.

⁴ See, for example, V.A. Alabi, “The Highway Code in Nigeria: Examples of Domestic Strategies”, *Semiotica*, 180, 1-4, 2010, pp. 69-78; V. Poythress “A Simple Traffic-Light Semiotic Model for Tagmemic Theory”, *Semiotica*, 225, 2018, pp. 253-67. 2018; M. Welch, “Signs of Trouble: Semiotics, Streetscapes, and the Republican Struggle in the North of Ireland”, *Crime, Media, Culture*, 16, 1, 2020, pp. 7-32.

established philosophical schools like the one inspired by Peirce continuing its development in quite an independent way, usually without a precise object, whereas the structuralist method turned more and more post-structuralist and cultural semiotics recovered its links with anthropology.

But exactly when, in the 2020s, semiotics seemed to have turned into a methodology without a precise object and without the glamour that it could enjoy when it could first decipher the signs of post-modernity (before Barthes's analyses were replicated by countless epigones and students of communication in Europe and elsewhere)⁵, the COVID-19 pandemic broke out, producing new signs that were present everywhere and, simultaneously, puzzled the general comprehension. Social distancing, confinement, and especially an ocean of masks started to alter both the physical and the digital space, the social experience and the imaginary one, yet people were so shocked and overwhelmed by brutal change in their lives that they could hardly ask themselves the typical semiotic question: what does it mean? What is the meaning of the mask, beyond its evident medical protective function? How does it change the semiotics of the face and its interactions? What happens to visages when their visibility is curtailed, not only in face-to-face interactions but also in the visual imagery of an entire generation? Semiotics had found plenty of new objects in the 1960s, amazing the world by studying something that traditional academics would not, decoding the new enigmas of modernity, but then this brilliancy had somehow faded away, because those same new objects (cinema, television, comics, everyday life, etc.) had become a common theme of investigation for

⁵ For a thorough analysis of the period of decadence of semiotics, especially in the anglophone academe, see M. Leone, "Post-Structuralist Semiotics: A Reading", in J. Pelkey, ed. *Bloomsbury Semiotics: A Major Reference Work in Four Volumes*, 4 vols, vol. 1: "History and Semiosis", ed. J. Pelkey, Bloomsbury, London-New York, forthcoming; evidence of this decadence includes also the decreasing mention of semiotics in media; major Italian newspaper *Corriere della Sera*, for instance, mentions semiotics 6 times between 1960 and 1970, 207 times between 1970 and 1980, 167 times between 1980 and 1990, 161 times between 1990 and 2000, 140 times between 2000 and 2010, and 159 times between 2010 and 2020 (but mostly in connection with Umberto Eco's demise). Similar data can be found in several media in other countries with an academic tradition in semiotics; decreasing figures characterize also publications about semiotics, which in addition tend to be published by less and less central publishing houses (in France, for instance, major publishing houses like Seuil and Hachette would publish the books of Barthes and Greimas in the 1970s, whereas the subsequent generation of French semioticians was published mostly by local or academic publishers, since in the meantime the public appeal and readership of semiotics had shrunk).

other disciplines, and had even entered the common sense of people. But now, at the beginning of the 2020s, as a consequence of the tragic situation in which humanity currently finds itself, and from which it is still at pains to free itself, semiotics is suddenly acquiring a new status⁶. Disquieting signs are appearing all around, impacting humanity or signifying its new thwarted lifestyle. Semiotics is therefore urgently called to decode again, to decipher, to develop a discourse that avoids the simplification of fast journalism, the ideologies of conspiracy theories, and the panic of public opinion. The paragraphs that follow are an attempt at decoding the visuality of the medical face mask in the new imagery brought about by the COVID-19 pandemic, analyzing the role played by the mask within the wider phenomenon of the visual culture of COVID-19⁷. The research questions of the article is the following: why is it difficult to get used to the medical face mask? Shall we ever get used to it? Shall we change its use – and its signification with it – in the meantime? On a theoretical level, the article contributes to the current academic literature, still scarce, by reflecting on the new phenomenon of the medical face mask through the analysis of the semiotic interpreta-

⁶ See, for instance, research currently conducted in the frame of the ERC Consolidator project FACETS (Face Aesthetics in Contemporary E-Technological Societies), which since the pandemic outbreak has partially refocused its attention on face masks, thus attracting a wide audience (FACETS-sponsored report M. Marini *et al.*, "The Impact of Facemasks on Emotion Recognition, Trust Attribution and Re-Identification", *Scientific Reports*, 11, 5577, for instance, was published by the group *Nature*; the first author was interviewed by Italian national TV); as regards the corpus of research, FACETS studies datasets of social network profile pictures in order to understand how users represent their identity in the digital world. Within the FACETS collection, profile images are linked to socio-demographic information, such as age, gender, nationality, and so forth. The quantitative analysis of large-scale data moves beyond the pictorial analysis of individual faces to build a dynamic picture in which facial icon-types can be seen in their evolution and mutual interaction with historical events and sociocultural trends, including the introduction of the medical face mask. The collection of socio-demographic information allows to assess the representativeness of the collection and enables the creation of representative and balanced clusters through sampling strategies; more information in <http://www.facets-erc.eu/about/>. Digital facial images are analyzed both manually and through deep learning strategies of artificial intelligence (in cooperation with Turin Polytechnic University).

⁷ For a survey of the semiotic state of the art on masks, see M. Leone, "The Semiotics of the Face in Digital Dating: A Research Direction", in K. Bankov, ed., *Digital Sex and Dating*, monographic issue of *Digital Age in Semiotics and Communication*, 2, New Bulgarian University; Southeast European Center for Semiotic Studies, Sofia 2019, pp. 18-40; for a first attempt at decoding the meaning of anti-COVID 19 medical face masks, see M. Leone, "Non ti conosco, mascherina", *E/C*, Journal of the Italian Association for Semiotic Studies, 2020, online; and M. Leone, "On Muzzles and Faces: The Semiotic Limits of Visage and Personhood", *International Journal for the Semiotics of Law / Revue internationale de Sémiotique juridique*, online, 13 February 2021, pp. 1-24;; see also M. Leone, ed., *Volti virali*, FACETS Digital Press, Turin 2020, as well as M. Leone's homonymous article therein (pp. 7-16).

tions and habits that its visual appearance entail; on the methodological level, the article complements research currently being carried on withing the ERC research project FACETS⁸.

2. *Pandemic visibility*

The visibility of a human group is affected by a number of circumstances and factors that shape the iconic habits of both individuals and social clusters. Large epidemics inevitably modify whole styles of life, which include patterns in the production, circulation, and reception of images⁹. Not all contagious illnesses have the same impact. That generally depends, first, on how lethal the disease is. Present-day societies are periodically hit by waves of influenza yet these do not usually give rise to notable modifications in visual culture. To the most, they beget specialized changes, for instance, in governmental visual campaigns for the promotion of vaccination for the elders and other prophylaxis methods. Before the current COVID-19 pandemic, the western visual culture was deeply affected only by the spreading of AIDS¹⁰, with the consequent production of social ads and other images for the promotion of safe sex. Ebola and other contagious diseases, including SARS, did not spread globally, and especially did not spread in the global west, so that they remained largely aniconic¹¹.

Lethality, however, is not the only factor determining the impact of an epidemics on visual culture. The nature itself of contagiousness is impor-

⁸ M. Marini *et al.*, "The Impact of Facemasks on Emotion Recognition, Trust Attribution and Re-Identification", *Scientific Reports*, 11, 5577; see also M. Cagol, M. Viola, "La relazione mascherata: Le mascherine chirurgiche e la comunicazione sociale in prospettiva educativa", *Formazione & Insegnamento*, XVIII, 3, 2020, online; M. Calbi *et al.*, "The Consequences of COVID-19 on Social Interactions: An Online Study on Face Covering", *Scientific Reports*, 11, 1, 2021, p. 2601.

⁹ Among the numerous contributions on the iconography of the COVID-19 pandemic, see J. Sonnevend, "A Virus as an Icon: The 2020 Pandemic in Images", *American Journal of Cultural Sociology*, 8, 3, 2020, pp. 451-461; The American Society of Anesthesiologists, "Images from the Frontlines of the COVID-19 Pandemic", *Anesthesiology*, 133, 4, 2020, pp. 724-39.; see also N. Kluger, M. Samimi, "Is There an under-Representation of Skin of Colour Images during the COVID-19 Outbreak?", *Medical Hypotheses*, 144, 2020, pp. 110270.

¹⁰ See V.A. Harden, G.B. Risse, *AIDS and the Historian*; Proceedings of a Conference at the National Institutes of Health, 20-21 March 1989, U.S. Dept. of Health and Human Services, Public Health Service, National Institutes of Health, Bethesda, MD 1991; in particular the essay "Images of AIDS: The Poster Record", by W.H. Helfand.

¹¹ M. Milia, "Il contagio cospirativo sui social media: Ebola e la narrazione delle teorie del complotto", in M. Leone, ed., *Complotto / Conspiracy*, special issue of *Lexia*, 23-24, Aracne, Rome 2016, pp. 445-456.

tant too, particularly as regards the visibility of the illness in terms of its agents, early symptoms, and later consequences on the body. Perhaps, the most frightening aspect of epidemics is that they are caused by agents that, while biologically existing and extremely active, remain invisible to the human eye. No human can see a virus without a microscope or other professional instrument. This banal truth is often underestimated. On the contrary, semiotic reflection on it is paramount. First, because the agent of disease is, therefore, visible only through its signs and, notably, through the symptoms that it provokes in the body; second, because its invisibility stimulates anguished collective attention on such signs, and encourages the production of a whole imaginary whose implicit and unconscious purpose is that of visualizing the 'invisible enemy'. Images created to attribute visibility to an otherwise invisible virus are a crucial object of investigation for the semiotics of visual cultures.

In relation to these two features too, that is, visibility of symptoms and visualization of agents, not all pandemics are the same. The plague, that affected millions of Europeans for centuries through several waves, was also caused by invisible agents, yet its symptoms were particularly visible (Slack 2012). One of them, the bubo, actually gave its name to the plague ("bubonic") and caught the attention of the population and specialists in 'image-making' alike. In several paintings, including the famous *Miracles of St Francis Xavier* by Rubens (1617-18), the bubo was prominently represented so as to hint at the presence of the disease and, often, at the miraculous intervention of a thaumaturgic saint. More recently, Ebola too was characterized by horrific symptoms, which often caught the attention of the collective imaginary; the bleeding eyes of contagious people carried a tremendous stigma with them¹². The visibility of SARS first and COVID-19 after was much more subdued but, as a consequence, also more disquietingly sneaky. People affected by these respiratory syndromes would look perfectly fine in the first hours if not days of their contagiousness. That increased the terror related to an 'enemy' that not only was invisible, but also invisibly penetrated and inhabited, for a relatively long time, the body of the ill person, including those 'asymptomatic people' whose possible existence and circulation in society was particularly worrisome. In individuals having developed the disease too, however, visible symptoms were

¹² B.S. Hewlett, B.L. Hewlett, *Ebola, Culture, and Politics: The Anthropology of an Emerging Disease*, Thomson, Belmont, CA, 2008.

mostly related to the auditive sphere; hence the terror that, in the era of COVID-19, surrounds coughing, to the point that someone came up with a mobile phone app able to distinguish between a 'normal' coughing and a COVID-19 related one.

The pandemic of COVID-19 was therefore invisible as regards both its agents and its symptoms, thus increasing the collective need for a visualization of the illness, its causes, its effects, and its social presence. The quantity and quality of images produced in relation to the spreading and permanence of the pandemic must be put in relation to this double invisibility. On the one hand, images have been used to visualize the agents of the disease; most representations have implicitly referred to the scientific depiction of the virus, inspired by images produced through microscopes and in laboratories; it is evident, however, that these were never neutral but, from the very onset, influenced by a whole visual tradition of scientific representations, and particularly by that concerning the visual rendering of viruses. The little crown that surrounds the virus responsible for the COVID-19 pandemic has been singled out, magnified, and commonly included in representations, together with the somewhat tentacular nature of the crown's excrescences and the red color of the virus, with its slippery and irregular spheric shape. Very few people around the world have seen the virus or, better, the predominantly indexical images of it produced through microscopes or similar devices, yet few people in the world do not currently hold a quite precise image of how they think the virus looks like.

Scientific images of the COVID-19 virus were not, however, the only ones that circulated in the global sphere of images. Perceived as an enemy agent, the virus was often given the aspect of one, with the attribution of an aggressive face or other similar features of human or humanoid morphology. In this domain, some images were particularly striking and disquieting, that is, those that, in depicting the virus, and in attributing anthropomorphic features to it, would by that means circulating stereotypes, prejudices, and biases about the origin of the disease, its diffusion, and the supposed conspiracies related to its presence in the world, including those about presumed plots for benefiting from the pandemic, its disastrous socio-economic consequences, and the pharmaceutical industry of medical masks or vaccinations. In some images, the COVID-19 virus was given the countenance or the attire of a Chinese person, so as to insinuate that it was fabricated on purpose by China or its government; in some other images,

instead, it took on the visage of an individual with a prominent nose and sharp teeth, a physiognomy that, throughout history, has been often associated to antisemitic iconography, and it was indeed meant to suggest that a supposed “Jewish lobby” was seeking to profit from the pandemic or the need for vaccinations. Who has been producing these images? And to what purposes? Answering might be important in order to find out who was legally responsible for the defamation, yet for the semiotician of visual cultures what matters the most is that these images were ethically wrong answers to an actual cultural need, that of explaining the genesis and development of a social problem, the pandemic, for which science did not and still does not have adequate answers¹³.

Similarly, the invisibility of symptoms, or their scarce visibility, prompted a proliferation of images that were meant to somehow create a visual context for the otherwise ungraspable new disease. Given the impossibility of recognize who was affected by the virus, the frustrated need for visual identification found its expression elsewhere, in relation to the object and visual item that most characterized the pandemic, that is, the mask. Society could not visually distinguish the healthy ones from the sick and potentially contagious ones, yet it could introduce a visually compelling distinction between masked and unmasked individuals.

3. *The visibility of masks: Banality and monstrosity*

The anthropological effect of such imposition on present-day societies has been disrupting. Most contemporary visual communities are face-based. Even the most advanced digital technology, from mobile phones to automatic face recognition cameras in the public space, with abundant recourse to the most developed forms of artificial intelligence and deep learning, are face-centered¹⁴. Both in the private and in the public space, individuals identify themselves and others through the face, and generally care not to modify their visible facial identity in a way that could hinder its recognition. States have increasingly been using automatic facial recognition to identify citizens, and overall have never dissociated the idea of per-

¹³ See M. Leone, ed., *Complotto / Conspiracy*, monographic issue of *Lexia*, 23-24, Aracne, Rome 2016; M. Leone, ed., *I volti del complotto*, FACETS Digital Press, Turin 2021.

¹⁴ M. Leone, “From Fingers to Faces: Visual Semiotics and Digital Forensics”, *International Journal for the Semiotics of Law*, 8 September, 2020, pp. 1-21.

sonal identity document from the practice of taking and storing, requesting and displaying facial images. Fingerprints have been used for a long time, also in digital form, but they have never completely supplanted the face as primary item for personal identification. The centrality of the face in society, however, goes much beyond the mere practice of identification; it is increasingly crucial in the expression of singularity, individuality, and identity. On the one hand, contemporary individuals want to be received as singular. Their face is conceived as that which primarily distinguishes them from other human beings. Everyone wants to be oneself and show one's own face, neither a generic face, nor a face that resembles many other faces, but a specific face, a face in which individuality and even singularity express themselves vehemently. This desire for singularity is fed by modern and post-modern socio-economic individualism and gives rise to a whole industry of singularization, whose products concern not only the biological face but also the represented one: the industry of digital images has been successfully marketing a series of devices presented as able to enhance the singularity of facial representations, from filters to apps for facial digital post-production¹⁵.

On the other hand, though, contemporary individuals also want their face to express a certain belonging. The singularity of the face, indeed, must be received as uniqueness – with all that it entails in terms of the economic and symbolical value that can be capitalized through it – but not as monstrosity. The visage as machine of social visual normativity, as described by Deleuze and Guattari¹⁶, continues to work in the sense that, even in an era of extreme aesthetic individualism – which sells the global utopia of being unique, being special, and having a special face – the notion of normality is still binding: everyone wants a special face but everyone also wants this special face to be a normal one. Also, everyone wants to be facially unique, yet also to manifest a belonging uniqueness. The young university professor might seek to cultivate the singularity of his face by wearing a fashionable hipster bun, but this aesthetic choice, which differentiates him from the facial range of older university professors, will also inevitably reconnect him to the hairstyle of a whole generation. The face thus constructed will be relationally singular with regards to a cer-

¹⁵ The paradoxical result of these digital procedures of singularization is often standardization; see M. Leone, "Digital Cosmetics", *Chinese Semiotic Studies*, 16, 4, 2020, pp. 551-580.

¹⁶ G. Deleuze, F. Guattari, *Mille Plateaux*, Éditions de Minuit, Paris 1980.

tain social and aesthetic milieu but will not be absolutely singular. That is a privilege that the cultural imaginary grants only to the faces of actors or other VIPs, that is, individuals that are immediately recognized by their singularity, with their first and last name, without the necessity of passing through a process of identification. For all the other human beings, the non-VIPs, singularity is a myth that the market, also in its digital version, sells between the opposite poles of banality and monstrosity.

But banality and monstrosity are exactly the aesthetic connotations that medical face masks have been feared to produce. The medical face mask heavily modifies the perception and self-perception of the face. It hampers identification and the feeling of identity, it alters the perception and expression of emotions, it hinders verbal communication, especially in the case of people with hearing impairments or when communication takes place in a language one does not master. The medical face mask uniformizes the somatic appearance of the face and makes breathing more difficult, so that it is practically impossible to 'forget that it is there'. Those who wear a mask are aware of it until they take it off.

As regards monstrosity, the medical face mask jeopardizes the normativity of the visage. The face is often altered so as to express singularity but its internal mereology is usually preserved. It is part of that "visage machine" that, according to Deleuze et Guattari, guarantees that a face is recognized as such, that one is accepted as a member of the human community. Everyone today desires a special face, yet nobody would accept to have a specious one, a face that challenges the normativity of the visage so much as to hamper the feeling of belonging to the same species. With the exception of some provocative artists, human beings prefer to show a visage with eyes, nose, mouth, ears, chin, cheeks, etc., a visage that, despite the singular beauty of proportions, respect the general visual scheme of the human face. Wearing a medical face mask, on the opposite, immediately disrupt the 'visage machine' and its normativity; it transforms the face into a visual pattern that cannot express a visage, because some of its constitutive visual elements are concealed; the face appears like a monstrous surface with two eyes but no 'holes', and in particular that hole of the mouth that Deleuze and Guattari considered essential to implement the 'visual and normative machine of the visage'¹⁷.

¹⁷ M Leone, "On Muzzles and Faces: The Semiotic Limits of Visage and Personhood", *International Journal for the Semiotics of Law / Revue internationale de Sémiotique juridique*,

4. Attempts at dissimulation

Very soon, attempts have been made to dissimulate the banality and monstrosity of the medical face mask. For instance, no long after this facial device had become omnipresent in the public as well as in the private space, masks with alternative visual structures were produced and worn. Some of them contained figurative elements, like animals, flowers, or other objects. Some other masks featured explicit visual or verbal messages, including logos, flags, or slogans. Political leaders in Italy and elsewhere started to wear masks of such sort, so as to use this new face device as a surface to inscribe one's perceived personality and ideological attitude. The gesture was particularly compelling but not always rhetorically successful. Political leaders, especially with radical ideologies, have long used their body, as well as their clothes, in order to manifest their political opinions in public, in pictures, and in videos. Yet, showing a message on one's body, no matter how related to one's identity it might be, is anthropologically different from displaying it on one's face. Whatever is associated with the visibility of the visage, indeed, acquires a definitive character that is inevitably associated to one's public identity in a radical way. One thing is to wear a logo on one's t-shirt, another completely different thing is to wear it on one's face.

The fashion industry too very soon sought to reshape the meaning of the medical face mask, introducing it in fashion shows and in the media. No long after the outbreak of the COVID-19 pandemic, countless models were seen wearing a mask on catwalks. The face of models in catwalks is usually highly standardized, also in order not to divert the spectators' attention from clothes¹⁸. Facial expressions, for instance, are highly codified and models are instructed to keep their faces quite neutral and rather sad-dish. Yet again, one thing is to see a model wearing clothes from a fashion designer's new collection with an impassible face on, and another completely different thing is to see the same model wearing a mask. Inevitably, in these cases spectators immediately concentrate on this strange, alien object, which remains alien even in a field, like that of *haute couture*, which

online, 13 February 2021, pp. 1-24.

¹⁸ E. Chiais, "Make Up, Make Sense: Appunti sul trucco tra ieri e oggi", in M. Leone, ed., *Volti artificiali / Artificial Faces*, special issue of *Lexia*, 37-38, Aracne, Rome 2021, pp. 341-356.

continuously experiments with the body and its garments. A Gucci hat is Gucci first, and then it is a hat; but a Gucci medical face mask is forever a medical face mask, and only secondarily might be used to attract attention on a fashion brand and its connection with the current events.

5. *Sunglasses*

The re-functionalization of the medical face mask shows indeed intrinsic limits that can be effectively described in comparison to another protective facial device, that is, sunglasses. First, similarities can be singled out. Like medical face masks, sunglasses too are a device that is meant to protect the face, and in particular one of its organs, the eyes, from an external agent, the sun and its rays, which might be potentially harmful to it, and detrimental to the function that this organ has, that is, sight; like medical face masks, moreover, sunglasses protect the eyes through creating a barrier between them and the sunrays. The barrier is inevitably opaque, meaning that it is intrinsically characterized by a chromatic nature that guarantees the protection and simultaneously decreases both sight and the visibility of the eyes. Analogously, the medical face mask is meant to protect the nose and the mouth – the facial organs of breathing – from air, which is considered as potentially harmful for a variety of reasons (pollution, presence of viruses and bacteria), one of them currently being crucial for the general adoption of this facial device on a global scale: the presence of the potentially lethal virus of COVID-19 in the air.

Like sunglasses, medical face masks too can protect the face and its respiration organs only through altering the Gestalt of the face (in terms of both its perception and self-perception) and, simultaneously, respiration itself. Various types of mask exist, with different shapes, colors, topologies, and textures, yet all of them inevitably modify the appearance of the face. Most of them hide the mouth and the nose completely, together with the surrounding facial areas. Some transparent masks exist, but are an exception, and in any case total transparency is impossible: a plastic mask does not eliminate the effect of translucence that is intrinsic to this material; moreover, it is destined to be fogged up with use, especially in conditions of heavy respiration. Like sunglasses, moreover, masks both subjectively and objectively hinder the function that they are meant to protect. Again, different types of masks are extant, some of which allow those who wear

them to breathe a little more comfortably, yet a facial mask that filters respiration without somewhat hampering it does not exist.

Like sunglasses, finally, medical face masks are removable, but ways of wearing them do not include only extreme poles (total adherence to the face versus removal) but a wide array of intermediate possibilities, which are adopted for reasons that, again, can be compared to those for which sunglasses too are not always fully worn or fully unworn but also on many occasions half-worn, for instance, when someone wants to keep them on the nose while being able to at least partially show one's eyes to an external observer or better the quality of one's sight without however removing the sunglasses but keeping them halfway on the nose. Similarly, it is common experience to see people partially wearing and partially removing their face masks for a variety of reasons (to relieve oneself from the unpleasant feeling of 'breathing one's air' for too long; to breathe some fresh air; to relieve one's face from the pressure that the mask exerts on the skin; to allow one's face to be partially visible to oneself or also to be recognized by devices like Face-ID, etc.); in both cases, though, partial removal of facial devices (be they sunglasses or medical masks) at least partially hinders the protection that they guarantee for the sight or breathing organs.

The analogy between sunglasses and medical face masks should continue by also pointing out at the parallel ways in which they modify the face not only in its subjective or objective appearance, but also in its intersubjective functioning, as interface of communicative exchange. Sunglasses hinder eye contacts among people. That can be symmetric or asymmetric. In the first case, two or more people wear sunglasses and do not see each other's eyes, as it is commonly experienced at the beach or on a sailing boat. In the second case – a more interesting one – someone with sunglasses on interacts face-to-face with someone who does not wear them. This second situation is likely to trigger a series of semiotic effects, some of which might be intentional, whereas other effects are unplanned. Wearing sunglasses gives a subject the special power of seeing while remaining partially unseen. To be more precise, sunglasses, and especially those with big, dark lenses, allow those who wear them to look around without revealing the direction of their gaze. The counterpart of this power is the subjection of those who, not wearing sunglasses, feel that they are constantly revealing what the other is concealing. In a power-game of gazes, sunglasses constitute an effective weapon, since they dissimulate a precious source of information for the interlocutor. The

direction of one's gaze is indeed strongly associated with one's attention, intentions, desires, and plans, so that dissimulating it creates an aura of ambiguity around the face and especially around the gaze of the subject: it will not be clear anymore where he or she is looking at, and with what intention. In effect, sunglasses do not dissimulate only the direction of the gaze – as it is expressed by the direction of the eyeballs – but also the facial area around the eyes, which conveys an enormous amount of information in terms of actual or simulated cognitive, emotional, and pragmatic reactions. Wearing sunglasses facilitates the adoption of a 'poker face'. The potential power that derives from it is similar to that described by Plato in the myth of Gyges's ring: it translates into an invisibility that gives rise, in turn, to a social advantage, that of knowing the others and guessing about their interiority whilst remaining unknown or, at least, whilst concealing the same hints that are collected and read about the others.

The intrinsic phenomenology of sunglasses, therefore, has allowed them to turn and to be turned into a device of seduction or intimidation¹⁹, both linked to the modality that Algirdas J. Greimas's generative semiotics would have associated to the condition of 'being-able-to-see' / 'being-able-not-to-be-seen' of the subject, to that of 'not-being-able-to-see' / 'not-being-able-not-to-be-seen' of the interlocutor. This intrinsic phenomenology has constituted the basis for the transformation of an originally protective device into a potentially symbolical one, with an aura of seduction and intimidation. A whole imaginary has followed and strengthened this symbolical connotation, from ads to movies, from fashion design to popular visual culture. The re-semantization of sunglasses has been so powerful that it is actually impossible to revert it. Today, nobody can wear sunglasses with a protective aim only. Their appearance on the face will be immediately received as a signal that goes beyond the necessity of sheltering one's eyes from sunrays.

6. A difficult re-functionalization

It is now quite clear, from the structural comparison carried on above, that the medical face mask will unlikely become the object of a similar re-functionalization. Through hindering the mouth, and not the eyes, the

¹⁹ See V. Brown, *Cool Shades*, Bloomsbury Publishing, London-New York 2015.

mask does not seem to implicate any secondary phenomenology of empowerment; on the contrary, it seems to express subjugation and disempowering, not only in functional terms (one breathes worse, one's voice is less audible) but also in symbolical ones (in many sociocultural settings, the medical face mask has been associated to the muzzle, for instance in its denomination as "tapaboca" – literally, mouth-shutter – in Latin America). The possibilities of re-connoting this facial device, indeed, are restrained by the phenomenology of the facial part that it, the device, both protects and conceals in order to protect. Concealing one's eyes might be interpreted as a source of gaze power on the other, yet concealing one's mouth more likely refers to a whole cultural and historical imaginary in which having no mouth, or being unable to opening it, is associated with lack of power²⁰.

This association is perhaps even more central in the negative aura of the medical face mask than the idea and feeling of hindered breathing; what bothers the most, in medical face masks, is that they constrain, so as to protect it, the organ that human beings use not only for breathing but also for a whole series of alternative operations, among which expressing oneself through verbal language is fundamental. Wearing sunglasses is potentially 'cool' because it means being able to see without being seen, whereas wearing face masks is unlikely 'cool' because it implicitly means being silenced. There are, indeed, circumstances in which the medical face mask can be used as a sort of veil, granting the subject's face an invisibility that might be welcome for a variety of reasons (mainly aesthetic ones: unwillingness to showing oneself to the world), yet comparison and contrast with other 'facial veils' indicates that, in this case too, the re-functionalization can only be partial. Indeed, the reason for which the medical mask cannot be easily re-connoted also consists in its association with a specific kind of danger. Sunrays can be dangerous too, and actually lead to lethal health conditions like skin cancer; the effects of exposing one's eyes to the sun without protection for a long time can be serious too. Yet, the aspectuality of danger that is inscribed in a medical face mask is different, and limits also its being used as an aesthetic veil or its being euphorically re-functionalized.

Sunglasses can be associated with beaches rather than with eye clinics

²⁰ See M. Leone, ed., *Censura / Censorship*, monographic issue of *Lexia*, 21-22, Aracne, Rome 2016.

because their intrinsic aspectuality is different²¹. Human beings live surrounded by risks, some of which turn into actual dangers. They, the humans, might try both individually and in community to avoid dangers, yet they, the dangers, are eliminable from the environment. Not all of them, however, present the same aspectuality, that is, the specific quality of time through which they are perceived, imagined, and represented. Smoking a whole packet of cigarettes every day certainly represents a higher risk than taking an airplane every day. It is scientifically and statistically proven that cigarettes kill more than airplanes. Yet, cigarettes kill slowly, with a quality of time that linguists would define as durative aspectuality, whereas plane accidents kill instantly or almost so, with a quality of time that linguists would rather designate as punctual. Similarly, sunrays can be lethal too, and permanently damage the eyes in the long term, yet they represent a durative danger in comparison with the punctual one of the COVID-19 epidemics, whose virus is characterized and represented as particularly pernicious: a single 'wrong breathing', or rather, a single breathing in company of the wrong person, and one could find oneself, in a matter of days, confined in an emergency room, with an oxygen mask on.

7. Niche re-semantizations

For this whole series of reasons, it is unlikely that, in the middle or long term, the mask will be turned into something that is not associated any longer with the current pandemic and its risks but is somehow re-functionalized, instead, into a new device, able to signify or communicate a positive aura. These re-semantizations of the medical face mask already exist, and are multiplying, yet they are always parasitic and temporary, meaning that they owe their re-functionalization to the pandemic itself and could not semiotically work independently from it. One example is the way in which the medical face mask is used on dating platforms like Tinder. If one scrolls its images today, one likely comes across people with a medical face mask on in the digital image that is shown as first in the profile. That might seem paradoxical in a digital application and platform whose purpose should be, on the opposite, that of putting into contact people on

²¹ See M. Leone, ed., *Aspettualità / Aspectuality*, monographic issue of *Lexia*, 27-28, Aracne, Rome 2017.

the basis of how much they like or dislike each other, and primarily on the basis of how much they like or dislike each other's face²². The appearance of medical face masks in profile pictures is all the more awkward at a time in which such social dating platforms should be useful precisely in order to show one's face and to see other people's faces, given the impossibility of doing it in the physical public space. Yet it is exactly in some profiles on Tinder or similar applications that the medical face mask re-appears with a strange re-functionalization. It does not serve the purpose of protecting the person who wears it, because such person is beyond any possibility of immediate physical contact, perfectly protected in a digital bubble; in this case, on the contrary, the mask is worn to communicate something about the personality of the wearer and, in particular, about this person's attitude towards the pandemic. The message that it conveys is: "I am a responsible person in relation to the virus; I pay attention to it and protect myself and the others; meeting me is not a risk". The re-functionalization here is bizarre because it does not completely deflect the facial device from its original semantic sphere – that of the pandemic and its contagiousness – but transforms it into a digital simulacrum of itself, which is used to attract and seduce toward the actual face rather than keeping it hidden and safe from other people's potentially dangerous breathing.

8. *Gloves*

There are similar re-functionalizations concerning devices that are worn. It should not be forgotten, indeed, that the medical face mask is indeed a device – meaning that it protects from potentially harmful breathing both inward and outward (being infected, infecting) – but it is also to be considered in the category of clothes, and particularly of veils²³, since its functioning and effectiveness depend on the fact that it is worn – and that it is worn, moreover, according to a specific code, in keeping with which the mask must cover a certain area on the face with a certain level of adherence. A

²² See M. Leone, "The Semiotics of the Face in Digital Dating: A Research Direction", in K. Bankov, ed., *Digital Sex and Dating*, monographic issue of *Digital Age in Semiotics and Communication*, 2, New Bulgarian University; Southeast European Center for Semiotic Studies, Sofia 2019, pp. 18-40.

²³ M. Leone, H. De Riedmatten, V.I. Stoichita, eds, *Il sistema del velo: trasparenze e opacità nell'arte moderna e contemporanea / Système du voile: transparence et opacité dans l'art moderne et contemporain / ("I saggi di Lexia" 19)*, Aracne, Rome 2016.

medical face mask that is worn leaving the nose out – as many do according to a personal interpretation of the device that seeks to downplay its negative effects described above – is not being worn properly, and actually loses all its functionality, like glasses that are worn under the nose, not on top of it. Similar re-functionalizations to the one described above in the frame of digital dating platforms occur when the object or device that is re-functionalized becomes a sort of synecdoche of itself. The mask in Tinder profile pictures does not protect from the virus but communicates the attitude of protecting oneself from the virus. It is not a mask that is worn in reality, but the simulacrum of a mask, a sign which is used to implicitly promise that a mask will be worn (or rather, is being worn) in reality.

Another typical example are gloves. Gloves protect hands from potentially harmful external agents, like cold, heat, chemical substances, or other dangerous materials²⁴, yet have been already widely re-functionalized, especially for, like in the case of sunglasses, in that of gloves too, protection implies occultation, not only of hands and fingers themselves (at least of some of their characteristics, like skin color, skin age, pilosity, presence of distinctive marks like scars or ring marks, etc.), but also of that biological feature that, in the last century, has been systematically used as a mark of identity, that is, fingerprints. Leaving one's gloves on has therefore become, in crime stories as well as in real life, linked with the intention not to reveal one's identity in specific circumstances. There is, therefore, a re-functionalization of gloves that, like in the case of sunglasses, associates the possibility to conceal one's identity with the affirmation of a position of superiority in a power-game: I see, but I cannot be seen; I touch, but I cannot be touched. This association is preeminently evoked in erotic activities involving gloves, but is also generally attached to this item. Wearing and removing gloves has become part of the global erotic imaginary and its fetishisms.

The mask is also commonly present in the erotic imaginary, and particularly used in sado-masochistic settings, yet it is difficult to imagine that medical face masks might undergo the same erotization of gloves on a global scale, not only because of the association of the former with danger and a medical setting, but also because of the peculiarity of the part of the body that the medical face mask covers, that is, the plexus of mouth and nose. Although one might find that a person wearing such

²⁴ See M. Germain, *L'épopée des gants chirurgicaux*, L'Harmattan, Paris 2012.

a mask gains extra eroticism especially as regards the interplay between visible eyes and invisible face (not much differently from what happens with several forms of Islamic veil), the eroticization concerns the eyes and not the mouth, whose concealment on the contrary excludes it from the sphere of interaction. That is, therefore, the difference between the re-functionalization of gloves and that of medical face masks: the former leads to an empowering of the person who wear gloves, whereas the latter leads to the most to a passive erotization of the concealed face, which immediately becomes an imaginary face exactly because it cannot be fully perceived. Gloves can be thrown at the face of the other by exploiting a semiotic mechanism that, through a sort of synecdoche, turns the device worn by a bodily part, that is, the hand, into a metaphor of that limb. One can throw a glove in a gesture of challenging or even so as to invite an antagonist to engage in a duel because that glove is a sublimated prop of the hand; slapping someone with a glove confer to slapping a codified formality that, from a certain point of view, can hurt even more, since it transforms a spontaneous slap into a planned slap, an individual challenge into a socially codified and staged one. One can hardly imagine, however, a similar usage of the medical face mask, with the only exception of the digital appearance of it in digital dating platforms, described above. A medical face mask worn on the elbow, like many young people do in summer, is not tantamount to a re-functionalization, since it does not replace the functionality of the worn device but simply puts it on hold.

9. Compensatory visuality

It is, perhaps, exactly because of the impossibility of transforming the mask into something different from what it functionally is that its appearance and proliferation in the visual imagery is so impressive. It is as if communities were sublimating the medical face mask collectively with such energy exactly in a sort of unconscious and collective reaction against the impossibility of doing it individually. As individuals in the pandemic era, we are doomed to wear medical face masks on every occasion of potentially risky encounter and cannot transform this device into anything but a reminder of both our fragility and the dangerousness of the surrounding environment, including the social one. As a community, though, we can

transform the medical face mask into something that it inexorably cannot be, that is, a symbol of something else.

The collective re-semanticization of medical face masks has taken so far different forms, which can be categorized in relation to the new message attached to this veiling face device. The first category of re-functionalization is only partial since it contains images where a representation of the mask is used to manifest an ideological position in relation to the opportunity of wearing or not wearing the mask itself. Some of these artistic or graphic creations have been extremely creative not only at the level of expression but also at that of content, since they have frequently pointed at aspects of wearing the medical face mask and its social consequences that were not so commonly at the center of the public perception of these devices. Representations of this kind have included also the common practice of having iconic statues donning masks, as a reminder of the importance of this practice for the public safety and health (<http://bit.ly/318rsSd>).

The opposite ideology, that which is endorsed, for instance, by the no-mask movement, has also produced a visual imagery, in which the medical face mask has been represented in a way that somehow confirms and visualizes the unconscious fears that its public imposition triggers in present-day individuals: the ideas of suffocation, of loss of identity, of trampling of the individual rights, of silencing and censoring. In many no-mask protests, for instance, the mask was re-functionalized by its same absence, which is now an exception in the public space. In the public transport of big cities as well as in the main shopping streets around the world, seeing someone without a mask is both a visual exception and an illegal behavior, commonly sanctioned by police officers. The exceptionality of showing one's unmasked face in these circumstances immediately turns into a statement against the imposition of the visual device, although in some cases the fact of not wearing it might not be underlain by such intentional ideological posture.

A third category of visual re-functionalization of the medical face mask does not necessarily takes such a peremptory position in favor or in disfavor of it but rather represents it in order to explore the effect of its visual appearance on the meaning of the face. In this category, representing the masked face becomes a way to reflect on the pandemic, but also more generally on the face, on how the imposition of the mask somehow contributes to reveal some traits of its anthropology that were hitherto ignored or neglected. Examples in this category abound, especially in the artistic domain. Young

Australian artist Bailee Higgins uses her iPad to confer a cartoonish aura on the faces of local common people wearing a mask, so turning this device into the prop of everyday superheroes (<http://bit.ly/3vTMbXU>); Florence-based artist Jacq incorporates the medical face mask in a more general aesthetic program where the face is represented and investigated by subtraction, eliminating some of its constitutive anatomic and visual elements so as to point out at the effects of this deconstruction; the mask, therefore, becomes a visual prop that helps the artist to reflect about the role of the mouth, nose, and eyes in the Gestalt of the visage (<http://bit.ly/3vT1EHO>).

A fourth category of visuals re-functionalize the medical face mask by turning it into the element of a campaign that is apparently promoting its usage but it is actually integrating it into a commercial self-promotion. That is the case of pro-mask ads created by global companies, like the genial one that great visual artist Noma Bar designed for global anti-cold products company Mucinex (<http://bit.ly/3reaQ6f>): in this case too, masks representations visually play with the concept of 'becoming an everyday super-hero'.

A fifth category comprises artistic representations in which the mask and the face become an object of visual reflection in the frame of their common digital re-contextualization. Indeed, it cannot be neglected that the general imposition of the medical face mask in the public space, and often also in the private one, has turned the digital space of Zoom or similar platforms into the only arena in which one's face can actually be freely shown and seen. The digital face has turned into the 'real one', whereas the non-digital face is a mystery concealed behind a mask. Artist and disability activist Riva Lehrer reflects on such a condition by incorporating the digital platform itself in her representation of the digital face, with a focus that is further complexified by specific attention to disability: in a beautiful portrait of disability activist Alice Wong – which shows her face during a Zoom session with an oxygen mask on – Lehrer invites to reflect on how the general face impairment that everyone experiences today has long been an excruciating but neglected feature of many disabled people (<http://bit.ly/3sclPxf>). Irony was also a common element in the re-semantization of masks, for instance in the series of creative works that have post-produced digital images of famous paintings of the past, adding masks on their depicted faces (for instance, in the computer graphics creations of Spanish architectural studio POA: <http://bit.ly/3lGhSzq>).

A special mention should be made of productions that reinterpreted the visual format that was the most characteristic of pre-pandemic digital

face representations, that is, the selfie. Cuban artist and filmmaker Arturo Santana, for instance, created a series of selfies and selfie-videos on the pandemic, often thematizing the masked face (<http://bit.ly/3lEX6QA>). Finally, a profound re-thinking of the mask, also from the point of view of its visual appearance and modification of the phenomenology of the face, was carried on in experiments about the design itself of the mask, especially when it was re-engineered as technological prosthesis, endowed not only with the negative function of protecting from the environment but also with other positive skills, like that of integrating a multi-lingual translator, for instance (<http://bit.ly/3sfceqn>).

10. *Conclusions*

But maybe it will happen what is not expected. We, individuals, always underestimate the mass, the multitude, the community. We perceive language as something that is our own, as an intimate reality. We consider signs as ours, although sharing them with other human beings is everyday experience. We focus, now, on what oppresses us, on what is new, on this piece of fabric that covers our mouths, and noses, and that we systematically forget to wear and never forget when we wear it. It seems impossible to us that, one day, wearing a mask on one's face will be exactly like wearing shoes on one's feet. None of our remote ancestors would wear shoes, then they became increasingly common, spread among the wealthy ones, and finally turned into second nature for a global population, something that one wears when out because it is too dangerous and painful to touch the floor of public space with bare feet. The behavior is so engrained, so enshrined in common everyday life, that nobody wears shoes any longer with the explicit intention of protecting one's feet in the outside world. It is a habit, which is connoted, moreover, with a whole series of mostly aesthetic re-semantizations; shoes must match clothes and personality; they must follow fashion; they must be identical, or else they might be different only in a gesture of extravagance; they must be not too worn, too dirty, or broken. . . . only when the weather is harsh, or the environment is inhospitable, do we realize that 'we have the wrong shoes on', too heavy, or too light. We also realize when shoes constrain our feet, but we do not come up with a conspiracy theory about it, we do not blame the government, we curse only ourselves for buying or wearing those shoes, we do not bash the entire cultural institution of wearing shoes, which we do not even question

anymore. Shall we, one day, wear medical face masks exactly in the same way? Will the air outside become so unfriendly like the floor outside, and our lungs so needy of protection as our feet, so that nobody will ever forget one's mask before going out, exactly like nobody normally forget to wear one's shoes? Shall humanity come up with a variety of new masks, some of which to be worn at home, some other to be worn outside, some other yet in dangerous circumstances or while doing outdoor sport? That is, at least in part, already happening. But even if this scenario is not impossible, entailing a total naturalization of the medical face mask as the most common device of the new contaminated millennium, it is nevertheless important, as the present article intends to do, to point at the specific resistance that this naturalization might entail. Our feet and our face do not play the same socio-cultural role. Covering one's feet when in public and covering one's face when outside imply different kinds of semiotics, a difference which is important to underline also in order to better understand what we, if the current pandemic continues, or if other similar epidemics will spread throughout the world, shall precisely have to suffer, tolerate, and come to terms with. We wear masks and probably we shall still do it for a long time, yet the progressive naturalization of the mask should not make us forget the unique semiotics of our face, and what of it is lost when we are obliged to cover it.

Biography

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Bibliography

- Alabi V.A., "The Highway Code in Nigeria: Examples of Domestic Strategies", *Semiotica*, 180, 1-4, 2010, pp. 69-78.
- Baltierra S.O., "Urban Signs: The Relationship between Signage and Road Accidents", *The Design Journal*, 22, 1, 2019, pp. 2163-2164.
- Brown V., *Cool Shades*, Bloomsbury Publishing, London-New York 2015.
- Cagol M., Viola M., "La relazione mascherata: Le mascherine chirurgiche e la comunicazione sociale in prospettiva educativa", *Formazione & Insegnamento*, XVIII, 3, 2020, online.
- Calbi M. et al., "The Consequences of COVID-19 on Social Interactions: An Online Study on Face Covering", *Scientific Reports*, 11, 1, 2021, p. 2601.
- Carlin C.L., *Imagining Contagion in Early Modern Europe*, Palgrave Macmillan, Basingstoke-New York 2005.
- Chiais E., "Make Up, Make Sense: Appunti sul trucco tra ieri e oggi", in Leone M., ed., *Volti artificiali / Artificial Faces*, special issue of *Lexia*, 37-38, Aracne, Rome 2021, pp. 341-356.
- Deleuze G., Guattari F., *Mille Plateaux*, Éditions de Minuit, Paris 1980.
- Germain M., *L'épopée des gants chirurgicaux*, L'Harmattan, Paris 2012.
- Harden V.A., Risse G.B., *AIDS and the Historian*; Proceedings of a Conference at the National Institutes of Health, 20-21 March 1989, U.S. Dept. of Health and Human Services, Public Health Service, National Institutes of Health, Bethesda, MD, 1991.
- Hewlett B.S., Hewlett B.L., *Ebola, Culture, and Politics: The Anthropology of an Emerging Disease*, Thomson, Belmont, CA 2008.
- Kluger N., Samimi M., "Is There an under-Representation of Skin of Colour Images during the COVID-19 Outbreak?", *Medical Hypotheses*, 144, 2020, pp. 110270.

- Krampen M., *Geschichte Der Strassenverkehrszeichen: Diachronische Analyse Eines Zeichensystems* (Probleme der Semiotik; Bd. 2 = Problems in semiotics), Stauffenburg, Tübingen 1988.
- Leone M., "Digital Cosmetics", *Chinese Semiotic Studies*, 16, 4, 2020, pp. 551-580.
- Leone M., "From Fingers to Faces: Visual Semiotics and Digital Forensics", *International Journal for the Semiotics of Law*, 8 September, 2020, pp. 1-21.
- Leone M., "Non ti conosco, mascherina", *E/C*, Journal of the Italian Association for Semiotic Studies 2020, online; available at <http://www.ec-aiss.it/>
- Leone M., "On Muzzles and Faces: The Semiotic Limits of Visage and Personhood", *International Journal for the Semiotics of Law / Revue internationale de Sémiotique juridique*, online, 13 February 2021, pp. 1-24.
- Leone M., "Post-Structuralist Semiotics: A Reading", in Pelkey J., ed. *Bloomsbury Semiotics: A Major Reference Work in Four Volumes*, 4 vols, vol. 1: "History and Semiosis", ed. Jamin Pelkey, Bloomsbury, London-New York, forthcoming.
- Leone M., "The Semiotics of the Anti-COVID-19 Mask", *Social Semiotics*, 2021, pp. 1-8.
- Leone M., "The Semiotics of the Medical Face Mask: East and West", *Signs & Media*, 1, 2020, pp. 20-40.
- Leone M., "The Semiotics of the Face in Digital Dating: A Research Direction", in Bankov K., ed., *Digital Sex and Dating*, monographic issue of *Digital Age in Semiotics and Communication*, 2, New Bulgarian University; Southeast European Center for Semiotic Studies, Sofia 2019, pp. 18-40.
- Leone M., De Riedmatten H., Stoichita, V.I., eds, *Il sistema del velo: trasparenze e opacità nell'arte moderna e contemporanea / Système du voile: transparence et opacité dans l'art moderne et contemporain* ("I saggi di Lexia" 19), Aracne, Rome 2016.
- Leone M., ed., *Complotto / Conspiracy*, monographic issue of *Lexia*, 23-24, Aracne, Rome 2016.
- Leone M., ed., *Aspettualità / Aspectuality*, monographic issue of *Lexia*, 27-28, Aracne, Rome 2017.
- Leone M., ed., *Censura / Censorship*, monographic issue of *Lexia*, 21-22, Aracne, Rome 2016.
- Leone M., ed., *I volti del complotto*, FACETS Digital Press, Turin 2021.
- Leone M., ed., *Volte artificiali / Artificial Faces*, special issue of *Lexia*, 37-38, Aracne, Rome 2021.
- Leone M., *Volte virali*, FACETS Digital Press, Turin 2020.
- Leone M., "Volte virali", in Leone M., ed., *Volte virali*, FACETS Digital Press, Turin 2020, pp. 7-16.
- Lupton D., Southerton C., Clark M., Watson A., *The Face Mask in COVID Times: A Sociomaterial Analysis*, De Gruyter, Berlin-Boston 2021.
- Marini M., Ansani A., Paglieri F., Caruana F., Viola M., "The Impact of Facemasks on Emotion Recognition, Trust Attribution and Re-Identification", *Scientific Reports*, 11, 5577.
- Milia M., "Il contagio cospirativo sui social media: Ebola e la narrazione delle teorie del complotto", in Leone M., ed., *Complotto / Conspiracy*, special issue of *Lexia*, 23-24, Rome, Aracne, 2016, pp. 445-456.
- Poythress V. "A Simple Traffic-Light Semiotic Model for Tagmemic Theory", *Semiotica*, 225, 2018, pp. 253-67.

- Slack P., *Plague: A Very Short Introduction*, Oxford University Press, Oxford 2012.
- Sonnevend J., "A Virus as an Icon: the 2020 Pandemic in Images", *American Journal of Cultural Sociology*, 8, 3, 2020, pp. 451-461.
- The American Society of Anesthesiologists, "Images from the Frontlines of the COVID-19 Pandemic", *Anesthesiology*, 133, 4, 2020, pp. 724-39.
- Wagner A., "The Rules of the Road, a Universal Visual Semiotics", *International Journal for the Semiotics of Law = Revue Internationale De Sémiotique Juridique*, 19, 3, 2006, pp. 311-324.
- Welch M., "Signs of Trouble: Semiotics, Streetscapes, and the Republican Struggle in the North of Ireland", *Crime, Media, Culture*, 16, 1, 2020, pp. 7-32.