13.

Muzzling Science? Cultivating Scientists' Rhetorical Awareness in the Public Communication of Expertise for an Era of Pandemic Fatigue

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The Italian Pandemic Context

Rome, December 3, 2021 — The Italians and the irrational. Next to a reasonable and wise majority of national citizens, we saw the emergence of a wave of irrationality. It showcases a fatuous sleep of reason, a fatal escape into magic, witchcraft, shamanic thinking, claiming to decipher the occult sense of reality. 5.9% of Italians (around 3 million people) believe that Covid-19 simply doesn't exist. 10.9% believe the vaccines to be useless and ineffective. 31.4% believe the vaccine to be experimental and those taking it to be acting as guinea pigs. 12.7% of Italians believe science causes more damages than benefits. We observe an irrational tendency to believe pre-modern superstitions, antiscientific prejudices, groundless conspiracy theories and speculations. From the techno-phobias: 19.9% of Italians believe 5G to be a sophisticated tool to control people's minds. From the historic-scientific *denialism*: 5.8% of Italians believe the earth to be flat and 10% believe man never landed on the moon. The conspiracy theory of the 'great replacement' has infected 39.9% of Italians that are convinced of the dangers of 'ethnic replacement': for them, national culture and identity will disappear because of immigrants bringing into the country a dynamic demographic in

opposition to national Italians that are not having children any longer. All this happens allegedly for the will of presumed and opaque globalist elites. The irrational has infiltrated the social fabric not only in individual skepticism but also in social movements, which this year have inflamed public squares. It also permeated a good portion of public discourse, where this attitude has gained visibility through social networks trending topics, through escalating the rankings of book sales, and through occupying a staggering amount of space on television networks - ("La società irrazionale" 2021).

This media excerpt, describing a rather worrisome picture of Italy during the second year of the pandemic, has been published in 2021 by CENSIS (Centro Studi Investimenti Sociali, the "Italian Institute of Studies on Social Investments") (Censis 2021b). CENSIS has been conducting research on the social and economic Italian situation since 1964 and it is regarded as a leading national authority by local and national administrations that regularly utilize its reports on economic, social, and cultural trends in processes of policy-making and cultural interventions. This striking summary, and the broader CENSIS report including a staggering amount of data about Italy in 2021, does not come as a surprise to anyone who has been living through the pandemic in the Italian national context. While the presence of a 'reasonable and wise majority' of citizens is evidenced by the high vaccination rates and by the sustained national collective efforts to curb the spread of Covid-19 infection through everyday acts of civic responsibility, it is also important to recognize and better understand the sense of unrest circulating in the nation's citizenry.

The trends described by CENSIS deserve careful scrutiny to better contextualize their emergence and to better understand their consequences in the Italian public sphere, precisely because they do not just describe irrational convictions deeply rooted in the extreme anti-scientific fringes of the population. Rather, if we look at the numeric data reported by CENSIS, we can see that these

^{1.} N.d.a. All translations from the original sources in Italian have been done by the author.

antiscientific positions seem to be subtly spreading also among larger publics together with 'pandemic fatigue' and a loss of optimism for a return to life as we knew it before March 2020. Equally concerning is also the fact that some of those extreme fringes of anti-science and irrationality champions have representatives in institutional and governmental seats, thus contributing to popularize those anti-science positions in everyday political and public discourse and generating public confusion and skepticism also within the larger and "wise" part of society.

In 2021, in this context of rising public unrest, for instance, we also saw a rise in public protests and rallies targeted against, in turn: the mask mandates, the vaccines, the national lockdown, the Covid-19 vaccine pass (called 'Green Pass' in Italy) or the government policies tout court. Some of those protests not only endangered those in attendance, causing Covid-19 outbreaks among the un-masked protesters, but in a few cases they turned violent, putting other citizens and public health workers at risk. One notable example, from October 2021, was when a crowd of 'No Green Pass' protesters guided by the far-right extraparliamentary party leaders of Forza Nuova (that were later arrested and charged) decided to attack and trash the headquarters of the Italian labor union CGIL in Rome and also the nearby ER of the hospital Umberto I (where one of the protesters had been checked in), whose doctors and nurses were attacked and beaten after the protesters stormed the place. Episodes of violence like this one have often been championed by extreme fringes of the political and ideological spectrum that during the pandemic have worked consistently to co-opt and exploit the pandemic public health issues to their advantage, framing them as issues of personal freedom and freedom of speech and turning them into political and ideological problems to capitalize on. However, the political exploitation of public health topics is not at all limited to cases as extremes as this one or to political groups and figures as extreme as the neofascist *Forza Nuova*. As it has been correctly highlighted in the CENSIS report, the turn towards irrationality in Italy has cultivated fertile grounds for the politicization of public health and the progressive polarization of national publics in their views of the pandemic situation.

manifestation of public 'irrationality' Different antiscientific attitudes have taken different forms over time, and one of the most concerning facts that emerged from reports like the one published by CENSIS is that—in many cases—they seem to have emerged, in part, as a reaction to some of the mediated modalities of public communication of science circulating nationally since the beginning of the pandemic. If, on the one hand, the public uncertainty about scientific topics during the pandemic encouraged the explosion of public attention to scientific and expert discourses and their migration into the public sphere and public media, we have also, on the other hand, witnessed a growing political exploitation and co-optation of those topics and on occasion, political attempts to 'muzzle' the scientists and to shift the voice of experts outside of public sphere conversations and back into the exclusive realm of the technical sphere.

In this chapter, I explore some anti-science attitudes in the Italian public sphere vis-à-vis the peculiar, mediated context for expert and science communication that has characterized the Italian communication of Covid-19 during the pandemic. By reconstructing the events that led to a failed political attempt of muzzling the public communication of expertise in Italy, I argue that the pandemic highlighted a need, for experts engaging in public communication of science, to develop a rhetorical awareness of the contexts, platforms, and constraints of the media in which they are invited to speak to general publics. Developing this enhanced awareness of the rhetorical and argumentative contexts that they enter when they cross over from the technical and into the public sphere will help prevent the scientists' exploitation or silencing by politics or even worse, being misunderstood by their publics—especially when they enter the public sphere via traditional mass media (like Italian TV or radio) that thrive from spectacularizing their content, or social media with its complicated attention economies. In other words, by reading this failed political attempt to muzzle the scientists, here I re-center the importance of public communication of science on the media in our contemporary democratic context and emerging post-pandemic world.

However, as I will illustrate in this chapter, this increased importance of science communication in the public sphere in times of Covid-19 has also created a pressing exigence for scientists and experts to enhance their rhetorical understanding of the public platforms in which their science communication appears. Learning to avoid the argumentative traps of contemporary media ecologies and knowing how to navigate mediated communication is one way the scientists can work to prevent future proposals that block their access to public media, like the one I will analyze in this chapter, and most importantly it is one solution to improve their public communication of expertise tout court. In what follows, I start by reading this Italian political proposal of regulating public science communication in context, in order to better understand the rationale for its emergence and start thinking about what scientists and experts can do, in the first person, to contribute to improve the public debate about scientific expertise.

Public Science under Attack?

The political attempt of "muzzling" the Italian scientists that I mentioned above consisted in a proposal brought for discussion in parliament by Giorgio Trizzino, a former member of the 5 Star Movement party, and a former surgeon and doctor. On the 21st of September 2021, Trizzino's daily agenda in parliament included a debate about the need to demand that scientists and experts ask authorization to their employers before any occasion of public communication (like TV or radio interviews or any other appearance to discuss their expertise in the public sphere). Essentially, by leveraging the concerning findings in two CENSIS reports about Covid-19 communication in Italy, this doctor turned strict regulation of politician suggested a communication of science in Italian mainstream media and in the public sphere. This policy idea was meant as an intervention to improve the current situation described by CENSIS in their report cited at the outset of this chapter and in an earlier one (cited directly by Trizzino in the debate proposal): because of the negative effects of the expert communication in mainstream media during the pandemic—which, according to CENSIS, generated more confusion than clarity in terms of public understanding of science and more insecurity and skepticism than confidence in the government's pandemic policies—regulating and aligning the public communication of the many experts entering the public sphere was proposed as a possible solution to improve the nation's problems related to emerging antiscientific attitudes in response to confusing public messaging about science or the politicization of experts' public statements. In order to ensure a more united front in the communication of science related to the pandemic, the policy debate proposal drafted by Trizzino specifically suggested that experts and scientists affiliated with public universities or other public and private institutions should have to request authorization from their institutions in order to speak to the public via the media. This authorization would also entail an approval of the message to be communicated via the media in advance, and it would ensure that any message conveyed by scientists would be monitored in advance for accuracy and approved to represent the official voice of the institution employing the expert/communicator before the dissemination of it via mass media like television or newspapers.

In practice, in the Italian context, this would make it almost impossible bureaucratically for a lot of experts to actually ever speak to the public, which of course ensued a massive reaction from the world of Italian science, which read this proposal as an attempt of politics to 'silence science' for political reasons. The angered and dissenting reaction to this proposal has been homogeneous in the world of science and medicine, bringing together in dissent the voices of experts from many fields and different sides of the political spectrum against this attempt to 'censor' their public communication of science, an act of service to the Italian public. If Trizzino encouraged a "full stop to the media trumpeting" of the experts, in order to defend his proposal, various high-profile doctors and scientists responded by defining the proposal as "pre-historic", "fascist", "ridiculous", and a form

of "absurd censorship" (Santarpia 2021). Trizzino's rebuttal to the unified criticism coming from the world of science and medicine was a quote from Umberto Eco saying that "a cultured man is the one who knows where to find good information in the exact moment when he needs it" (*Informazione – Notizie a Confronto* 2021), implying that his proposal for regulating the public communication of science via mass media had to do with the quality of information that can be communicated in those platforms and with the necessity to improve public science communication and the related public debate by managing its messages before their appearance in public sphere platforms, rather than with silencing or censoring anyone.

Preventing science communication from happening freely in the media by imposing strict regulations for experts to be allowed to engage in public communication, or having them agree in advance on the precise message to communicate, seems like an undemocratic solution that encourages an unfeasible restriction of the freedom of speech of experts not only *qua* experts but also as citizens. However, despite the controversial solution proposed, it is important to recognize that Trizzino correctly identified some of the Italian contextual problems of public communication of science via the media, hinting at the fact that the mass media platforms like radio and TV, especially with local debate formats that routinely encourage controversy and polarization as public spectacle, are not ideal venues for those entering them without careful preparation and training that ensure an effective communication of a specific message. Perhaps Trizzino's own personal move from medicine to politics enabled him to identify some core issues that have to do with communicating across technical and public spheres and deserve to be discussed more in depth. Jumping from his acknowledgement of an existing problem to a political proposal of carefully regulating the experts' interventions on the media, however, is a slippery slope, and a dangerous one in a time of pandemic crisis. The public communication of experts is a key factor during a public health crisis, and its unnecessary restriction could lead to an even worse

outcome than the presence of contrasting and occasionally confusing voices in the public sphere.

In a study conducted by Bucchi et al. (Bucchi, Fattorini, and Saracino 2022) and published in the International Journal of Public Health, the authors explain how Italian scientific experts during the pandemic have contributed to research that generated insights and solutions (including vaccine development), advised and shaped policy agendas, and communicated extensively across a wide variety of media platforms (TV/radio/daily news, social media) in a number of ways. Experts' communication and visibility, in particular, have been shown to be critical to improve the public perceptions of COVID-19 immunization, for instance. The public willingness to get vaccinated, specifically, is influenced by people's trust in scientific professionals and by their perceptions of their communicative role throughout the pandemic: when it comes to public expert communication, the more it is viewed as clear and consistent, the more it is associated with willingness to get vaccinated; the more it is perceived as confusing and contradictory, the more it is associated with vaccine hesitancy (Bucchi 2021).

The results of thoses studies, thus, confirm two points that are important to make when analyzing Trizzino's proposal of regulating public science communication on the media: because this proposal would risk reducing dramatically the public communication of science on the media, it is likely that it would consequently affect negatively the public understanding of science, science literacy, and consequently, in a pandemic situation, the public confidence in vaccination campaigns and other good and science-based advice. In other words, less communication is never a good thing because lay citizens orient themselves to science and make decisions on key behaviors to adopt by engaging with the public communication of experts that is often mediated by mass and social media. Hence, 'muzzling' the scientists by restricting their access to the media is a potentially dangerous reaction that not only does not solve the problem (increasing the public understanding of pandemic issues), but which would likely make the problem worse, as implied by the findings of scholars working in the public understanding of science, in Italy and elsewhere. And yet it is also important to recognize that in the Italian national context, a problem does exist in the public communication of experts. Trizzino identifies this problem correctly, even though his proposal jumps to the wrong conclusions to solve it. Bucchi et al. highlighted that public trust in experts increases when their public communication about specific issues is "clear and consistent" (Bucchi, Fattorini, and Saracino 2022). In the debate agenda presented to parliament, contextualizing his proposal as a part of a future improved national pandemic-preparedness plan, Trizzino wrote:

Risk communication is the punctual exchange of information and advice between authorities and experts, people and communities at risk, and it is an essential part of the intervention of public health authorities in the context of any outbreak; information that is accurate, timely, and consistent —in the formats, languages, and channels that people use for information and that they trust—will enable communities to understand the health risk that they are facing and it will make it easier to foster correct actions and behaviors geared towards prevention, such as for instance, vaccinations ("9/03264-A/078: CAMERA – ITER ATTO" 2021.).

In this passage in particular, he defines risk communication to be a key element in connecting experts, publics, and policymakers. Communicating about risk, then, is an essential activity for experts and scientists, who are the sources of the information that both publics and politicians need in any context of emergency. This focus on risk communication, for instance, aligns with Carolyn R. Miller's argument that separating risk analysis from risk communication "is a false distinction" because "risk analysis is a form of communicating about risk" (Miller 2003, 201). For Trizzino, risk communication is a "punctual" exchange of information and advice between experts, authorities, and the communities at risk. This exchange needs to be "accurate", "timely", "consistent", and it should happen in "the formats, language, and channels" that people use and trust. In short, Trizzino recognizes that risk communication is an activity that

aims to bridge experts, publics, and policy-makers, and it should do so through the language, forms, and channels that are functional to connect the stakeholders, and which should ideally happen in a timely, punctual way.

Once we analyze this premise for the discussion of regulating science communication on the media, a few contradictions emerge: how can risk communication be timely and punctual once it is so strictly regulated and filtered through norms and rules of Italian bureaucratic processes, which take considerable time and risk delaying or sabotaging entirely the timeliness and punctuality of the information exchange required in this situation? If risk communication is an activity that, by definition, crosses the technical and public spheres, what is the benefit of restricting/ regulating the access to the public sphere to the key experts that hold the expertise that needs to be timely communicated in public? Finally, if risk communication happens in the "formats, languages, and channels" of our daily life, then what is the benefit of keeping a strict separation between the sphere of arguments where stakeholders can freely communicate and regulating the moment of cross-over from technical to public sphere that is so essential for a timely management of the pandemic?

Trizzino focuses on finding a solution to one side of the problem, the one that recognizes that a clear and coherent communication would be needed to improve the expert-public-policy debate in a time of crisis, but then his proposed solution jeopardizes public communication *qua* public activity by restricting and regulating access to it in order to monitor messages for accuracy and consistency. This type of monitoring seems problematic for a variety of reasons, but here I want to highlight, first, the reasons why it is primarily not a good solution to the problem Trizzino sees in the Italian public sphere. This I will do by closely reading his words in the proposed solution to the dilemma of fragmented and not carefully crafted public science communication:

In order to guarantee appropriate and uniform information, the Plan (n.d.a. the "pandemic plan") highlights how it is essential, for any

pandemic prevention plan, a training activity that is organized and attended at the national, regional, and local levels. This is to foster a common/univocal approach of methods, of responses and actions. Among the general objectives of the training program there is also that of developing the communicative-relational competences to intervene in the management of the emergency ("9/03264-A/078: CAMERA – ITER ATTO" 2021.).

This controversy can teach us one thing about the public communication of science and expertise: that it can't be improvised. Politicians know this fact well, and they are wellprepared and well-trained to speak on the media, in order to reach their audiences and stay on message. Trizzino, as a former doctor turned politician, knows this well, and he is not wrong in advocating for media training in his controversial proposal for parliamentary debate. However, when he does so, he seems to be convinced that public science communication, in order to be "appropriate", needs to also convey uniform information and a "univocal approach of methods, responses, and actions". This notion of the need of a uniform or "univocal" approach to public science communication, in theory to achieve a type of clear and coherent public communication of science, is misleading and inherently anti-scientific in and of itself. There is a big difference between, on the one hand, encouraging media-training to allow a better and free public communication of science, and, on the other hand, advocating for a type of state-controlled, uniform, and strictly regulated science communication that can become not only non-timely because of the burdensome process of seeing authorization suggested, but most of all, not free or representative of the diversity of perspectives in the various approaches, fields, and individual scientists' work. A "uniform" and "univocal" approach to public science communication, in short, is an idea that erodes academic freedom and freedom of speech and fails to reflect the ideals of the scientific method in its attempt to achieve coherence and clarity, which is the advisable outcome to reach in public science communication in a pandemic.

Therefore, here, while condemning Trizzino's proposal as essentially undemocratic and even anti-scientific, echoing the united front of criticism voiced by the Italian experts in the public sphere, I find it useful to think about alternative solutions to improve public science communication in the Italian public sphere. Muzzling the scientists or aiming to achieve a "uniform," state-controlled public science communication is not only unfeasible, but also not recommendable. So, what can we learn from this controversy? What other ways can we envision to achieve a better communication of science in the public sphere, while leaving the scientists free to do their job and free to debate, as is appropriate in a democratic environment? The first lesson experts might need to learn from this controversy might be inspired precisely by Trizzino's proposal, but taken in a different direction: perhaps experts should familiarize themselves with the constraints of public-oriented communication, and, just like politicians, do some work to prepare and train for entering conversations constrained by the platforms, frames, and context of media spectacle. Doing so as part of their own professional development can help them manage their communication in a better way and can also help resist the politicization or exploitation of expert interventions by non-scientific stakeholders like politicians, journalists or media figures invested in fostering spectacle and not science, or any other contextual constraint not conducive to solid public discussion of expertise.

Politicizing Science and Expert Opinions

Along with the unpacking of Trizzino's proposal, I will add an additional layer of contextualization about the Italian media landscape that during the pandemic has opened up the spaces for the public communication of science. I do so because the public platform in which scientists have been called to speak during the pandemic has deeply influenced not only the public reception of their science/risk communication but also the ways of

communicating their expertise, the arguments made, and the ethos of the experts as well.

This specific placement of public science communication has deeply influenced the reception of the messages conveyed by the scientists. However, my argument here is that it has not influenced enough the crafting of those messages for the public sphere by the experts. This will be one point of intervention when the experts encounter future communication situations similar to the one we have experienced during the pandemic: when crossing from technical to public sphere, especially when entering the public sphere via mass media and in TV or radio formats that encourage spectacle and not depth, much attention is needed not only to adapt the messages to communicate across the technical and public spheres, making them accessible for general publics, but also it is necessary to know how to navigate the communicative and argumentative modes that are common to those platforms, which tend to leverage speed and foster polarization more than careful unpacking and depth in conveying information.

The public platforms that suddenly became available to the scientists and experts during the pandemic (mass media like TV and radio and all their re-mediations on digital and social media) have greatly expanded their public outreach by giving them the opportunity to speak directly to large national audiences of citizens. However, in order to do so, the experts had to enter the spectacular contexts of TV and mass media infotainment, with all the constraints entailed by these frames entail, which are not necessarily conducive to good science communication or to good public communication tout court. The scientists who entered the Italian public sphere during Covid-19 also had to do so in a moment of emergency and likely without the time and space to carefully reflect on how to engage in public and communicate science while immersed in the inescapable constraints of the mass media spectacle and in the frantic engagement with pandemic science. If we think about the peculiar characteristics and the obviously flawed media dynamics of Italian mass media, we can quickly realize some reasons that did not help set the experts up for success in their public science communication attempts: we

know Italian media is characterized by an emphasis on polarized public debate, an unbalanced public representation of different societal or expert voices designed to enhance conflict for the sake of spectacle, following the logics of political infotainment, and we know that there is a widespread tendency towards the politicization of all public topics and issues (Mazzoleni and Sfardini 2010). When scientists and experts entered the Italian public sphere by appearing on mass media during the pandemic, they were likely not fully prepared to understand how to deal with media questions that demanded the constant oscillation between discussing technical matters of expertise and their own personal opinions on pandemic policies, which resulted in a quick politicization of the experts and a constant muddling of science/risk communication with political and policy topics. This, in turn, resulted in the confused and partisan public reception of science highlighted by CENSIS.

important way for scientists improve One to communication, then, is to learn to explicitly shift the stasis while communicating via the media, to differentiate their interventions when speaking about science as scientists and speaking about policy, opinions, or values as citizens. In her "Manufactured Scientific Controversy" (2011), Leah Ceccarelli suggests that experts "explicitly shift the stasis from questions of fact, definition, and cause to the questions of value and policy that are the driving force behind the public debate" (Ceccarelli 2011, 217) when it's relevant to do so in order to maintain a clear differentiation between the scientific information they convey to the public as experts, and the expert's civic and personal opinions about policy, values and public concerns. This is essential to avoid a politicization and polarization of science that, as we have seen in the Italian context, does not serve neither the experts nor the public well. In the next section, I elaborate on this context of spectacularization and politicization of science communication in Italy, before concluding with a call for rhetorical awareness for public scientists in our emerging post-pandemic age.

Public Communication of Science in Italy during the Covid-19 Pandemic

On Italian mainstream media, discussions about the pandemic emergency and Covid-19 have occupied a lot of space: experts and scientists have become routine guests for any type of TV show (news, talk shows, entertainment, infotainment) and have acquired a sort of star status; over time, their repeated appearances have generated ongoing public controversies in the Italian public sphere about everything related to the Covid pandemic. The controversies among experts and public figures appearing in this emerging television genre encouraged the development of type of 'fandom' or public following for specific expert figures that gradually started to represent not just science or expertise, but also specific stances regarding pandemic policies. Very quickly, as a consequence, the communication of science became politicized and often spectacularized: experts were pressed to answer questions about policy disguised as questions about science and they were often placed in contexts where they had to debate political or laymen public figures in some cases, and in other cases experts from different fields or "renegade" experts representing minority positions (for example vaccine-skeptic doctors), thus opening the stage to a series of confusing public debates where manufactured controversies, political debates, or just instances of infotainment have appeared in national public television and radio in the guise of serious debates about science and medicine.

The emergence of this peculiar genre on Italian mainstream media, which I will here call the 'Covid-19 manufactuversy', attracted public attention in a moment of dire need of good science communication, but it failed to provide an appropriate platform and frame for the expert communication that the public deserved to hear and the experts had to offer. Specific experts started to be associated with specific political positions, and their public appearances and public engagement over time made them recognizable as politicized experts or scientists and doctors speaking from a particular political standpoint, expressing public

opinions based on their expertise, but filtered through their political leanings.

One interpretation is that the attempt of muzzling the scientists discussed above emerged not only from CENSIS' findings but also from a perception that science had become part of a flawed public debate, with experts joining politicians in polarizing controversies that often conveyed all but good public science communication. In an article that traces this evolution of the experts' public rise as part of the Italian mass media spectacle, discussing the phenomenon of "virologists turned TV stars" and published in the Italian newspaper *Il Giorno*, Mauro Cerri describes the situation in these terms:

From unknown experts, virologist and doctors turned into TV stars, very sought-after by journalists and TV personalities in need of a quick analysis of pandemic data. Inevitably, virologists have become the oracle-via-ether of this difficult year defined by numbers, terms, and projections about Covid and its consequences. [...] Doctors and scientists are the absolute protagonists, undisputed masters of their topics and of the scene, so much so that their fights confuse the public. Prudent, reflexive, alarmist or optimist, confident or unscrupulous, depending on the expert in turn. From the tv screen to those of our tablets, experts entered our homes, and we learned to know them along with their reports on the daily numbers of infectedand-recovered victims of Covid-19. Every face has become a name, every name an opinion, every opinion a belief. As good Italians, we have not missed the opportunity to take a side, to become fans of one or the other, and to make ours scientific ideas that we don't quite understand, but that we can remember and repeat to our friends, adding 'he said that'. And it's enough. (CERRI 2021)

In another report from CENSIS, published in April 2021 and titled *Disinformation and Fake News During the Pandemic: the Role of Communication Agencies* (CENSIS 2021a), we can also read a variety of data that evidences this situation in which the mainstream media focus on pandemic themes, including the communication of science done by experts and the discussions of the Covid-19 management and policies not only did not help the wider public acquire clarity on scientific and medical information

related to the pandemic, but in fact detracted heavily from it. This second CENSIS report, in addition to the other one cited at the outset of this chapter, clearly illustrates how mainstream media platforms generated confusion, anxiety, and lack of trust in authorities and science. In the paragraph dedicated to the effects of mainstream media communication during the pandemic, CENSIS defines this worrisome national trend as a 'communicative infodemic', a sort of information epidemic in the mainstream media coverage of Covid-19. This 'infodemic' in Italy, says CENSIS, is characterized by a significant increase in the air time spent on pandemic topics, but not necessarily in the quality of the messages offered. In this case, more science communication does not equal more or better public information or public confidence in science, and this is precisely because of the peculiar problems highlighted thus far in the Italian rhetoric of science during the pandemic. In the report we read:

The information disseminated on the media consisted of messages that—even from the most structured sources—in most cases appeared contradictory, negating each other (it is enough to think about the doctors and virologists that asked for new lockdowns in opposition to those that could not see their necessity, or the presidents of the various regions that one day wanted to open up the society and the next asked widespread school closures), not clear, anxiety-inducing, if not willingly mystifying. Rather than reassuring and orienting Italians towards appropriate behaviors, too much information with little clarity ended up generating confusion, alarmism, fear, and sometimes even not recommended or wrong behaviors. Paradoxically, thus, so much communication did not manage to create clarity for the Italians: since the beginning of the pandemic emergency, instead, we noticed the lack of useful information fluxes. and above all of coherent and secure information on the virus, contagion, testing practices and all appropriate preventive behaviors, and also, if not more, on the resources to utilize to receive accurate and clear answers on all Covid-19 questions (CENSIS 2021a, 14).

If we look at the claims made by Cerri above, it's easy to connect them with the controversy about the muzzling of science that we traced thus far. Case in point: Cerri mentions all the virologists and doctors appearing on TV, producing information characterized by contradictions and by messages negating each other. This is in line with the description made by CENSIS in both reports cited, and also in line with the claims made by Trizzino in his infamous proposal analyzed above.

The interesting part that we notice in the short quote from Cerri, and which can give us a valuable insight in how this could happen, points to the idea that the problem with pandemic communication lay more in mass media as communication platform than in the sources of the messages (virologists and doctors). However, he highlights the fact that we see the "doctors and virologists" cited as the source of confusion because they "asked for new lockdowns in opposition to those that could not see their necessity" (CERRI 2021) as a typical example of the information contradictions happening on mass media that contributed to create anxiety, confusion, and public distrust. Now, this is only one example, but from careful observation of the Italian public debate and public science communication over time, it became evident that this example is typical and part of larger pattern of dysfunctional public communication of science that led both to the politicization of science in Italy during the pandemic, and to the rising distrust towards science in the national public. This distrust emerged when people started assimilating scientists with politicians, transferring the typical distrust in politicians over to the scientists that, like politicians, had suddenly become TV stars during the height of the pandemic and had started expressing polarizing public statements that were more akin to public or policy opinions than to science communication. In this case, Cerri notices how it is so confusing that one scientist would support a lockdown, while the other did not, thus creating a puzzling loop of contrasting positions that were perceived as based on science, when in fact it is clear that those positions concerned policy and value more than scientific facts.

In short, what has happened far too often in what is generally defined as public communication of science in Italy is that the questions asked to the experts were more often questions about policy and value than questions about science, facts, or definition. When the scientists started responding to those arguments without

explicitly differentiating the shift of stasis from questions of fact, definition, and cause to the questions of value and policy that are always at the center of public sphere conversation, they sabotaged their scientific credibility in the eyes of a public in dire need of clear scientific information more than political or policy opinion.

This is not to claim that scientists should not as a rule express their policy or political or value-based argument. However, when they are prompted to do so on mainstream media, where they are framed as the voice of science in charge of communicating about science, then the public perception and reception of their messages can get derailed because of the shift from the realm of science to the realm of what is perceived as policy. The consequence of this is that the scientists' credibility erodes, not just because of the public's exposure to contradictory messages, but also because of the association, in the public eye, of scientists/experts with politics and politicians (in Italy politicians generally enjoy low public trust).

So, on the one hand, asking scientists about lockdowns and policy is not the best frame for public communication of science. On the other hand, scientists letting themselves be dragged into policy/value-based discussions without explicitly shifting the stasis and acknowledging when they talk as regular citizens rather than in the name of science, have damaged the ethos of science and the overall public understanding of science. IN CENSIS' report we can learn more about some of the consequences of this problematic conflation of stasis in the public discourse of science on mainstream media, and the lack of preparedness of the scientists to intervene on those platforms in a more productive way:

[...] the communication problems remained over time, feeding false expectations, unjustified alarmism, and equally unjustified relaxation. The result has been a perverse entanglement of an excess of general information fluxes, most of the time providing contradictory and anxiety-inducing information, and a lack of specific fluxes, of useful service to guide people on the proper choices to make in situations of risk or on symptoms to evaluate and decisions to make: the lines at the ER in the first months of the

pandemic and those for testing in the following phase are just the outcome of the unfolding bad communication (CENSIS 2021a, 15).

Over time, during the pandemic, we have seen an intense communication flow, including science communication, but this flow has entangled matters of fact and matters of concern in ways not so easy to recognize or decipher for the Italian public, which was often left without the scientific information they needed and with an excess of policy positions and contradictory information that they could not disentangle on their own. Hence, the confusion and anxiety and distrust described by CENSIS:

Therefore we saw a lot of communication, but poorly organized, about cures, vaccines, rules to follow, all accompanied by a lot of confusion about what could and actually should have been done...An immediate feedback on the effects of this type of communication comes from the Italian population, which defined the communication about the Covid pandemic, both social and mainstream, as confusing (49.7 %), anxiety-inducing (39.5 %, rising to 50.7 % among the younger generations), excessive (34.7 %), generic (20.5 %). Only 13.9 % of the population believes the communication to be balanced—a percentage that goes up to 19.6% among the elderly—and 12.5% found it clear (15.2% among the over 65). Among the younger generations, many believe that the communication was wrong (14.1 % for 18-34 years of age, 3.7 % for the over 65, average 10.6 %), and even terrible (14.6 % among millennials, 3.2 % among the elderly). (CENSIS 2021a, 15).

The specific mainstream media environment in Italy—characterized by infotainment, spectacularization, and polarization—contributed to erode the national trust in science by effectively routinely turning scientific voices against themselves in a variety of ways. In conclusion, a couple of the problems I noticed as recurring in everyday television, newspapers, and radio, are:

1. Fostering a frame of constant manufactuversy (where virologists were often called to debate vaccine skeptics or Covid deniers), or sterile controversy (where virologists and doctors were often invited to debate

- each other or debate laypeople), all this most likely for spectacle and entertainment value rather than for public service.
- 2. Entangling science with misleading political/policy or opinion and value questions, ultimately contributing to increase public confusion and polarization around pandemic issues, while also decreasing the public understanding of science, scientific credibility (virologists started to be seen as 'TV stars' and perceived as appearing on TV to further their own interests and visibility, just as politicians do), and the overall quality of democratic public discourse in Italy.

Conclusion: Scientist-Citizenship in Times of Pandemic Fatigue

This case illustrates another perspective to improve the public communication of science across the technical and the public spheres, and it thickens an argument that I have supported previously about the need of scientist-citizens: experts equipped to communicate efficiently both as scientists and as citizens when they exit the technical sphere of science and enter the public sphere (Pietrucci and Ceccarelli 2019; Pietrucci 2019). When I first conceptualized the figure of the scientist-citizen with Leah Ceccarelli in the study of the case of L'Aquila 7, we noted how the purification of technical and public spheres over time had fostered the alienation of scientists and experts from their role as citizens (Pietrucci and Ceccarelli 2019). We made the case that because scientists are part of a larger public collective, that is, because they are citizens too, they have a duty to communicate clearly what they know to be essential information coming from their technical scientific expertise to those who need to know it but do not have the same type of expertise. The L'Aquila case showcased the failure of the earthquake experts to recognize and enact their civic duty of communicating clearly to the non-experts what they knew during the infamous meeting of the Major Risk Committee

of March 31, 2009, and within the larger rhetorical ecology of L'Aquila during the period of crisis before the earthquake of April 6, 2009. Because they saw their conversations as belonging only in the technical sphere, the experts in L'Aquila did not engage, neither directly nor indirectly, with the public communication of science before the destructive earthquake in Abruzzo, thus failing to enact scientist-citizenship in that context.

The sudden overflow of public science communication in the Italian public sphere during the global Covid pandemic showcases the opposite: even when there is a massive influx of science communication in the public sphere, it is a good idea for experts and scientists to think of their *scientist-citizen* ethos as a guide to their public rhetoric of science. Being a *scientist-citizen* also means understanding that the spheres of argument where one communicates present different exigences and constraints. While the 'L'Aquila 7' had not understood that their duty was also to step into the public sphere and correct misinformation about their findings, in the case of Covid-19 communication in Italy scientists and doctors did clearly see the need to enter the public sphere, but they did so in ways not necessarily conducive to good public science communication.

While they might have communicated *as-citizens* (by expressing their opinions on Covid policy), and *as-scientists* (by committing to communicate and explain their expertise about pandemic science), thinking about this case has showcased that they did not integrate these two positions well—either by letting one take over the other, when the communication of their own opinions on preventive policies detracted time and space from the actual communication of science, or by not understanding how to differentiate and alternate between the two by communicating the science and the facts clearly, and then shifting the stasis explicitly to express personal opinions on policies, politics or values.

The examples brought up in this chapter, together with the analysis of their troubling consequences—in this case the rising public distrust and the anti-science tendencies linked to the feeling of confusion, anxiety, and uncertainty about the pandemic that I discussed, citing the CENSIS reports—illustrate that there is a

need for scientists and experts to become more rhetorically savvy and to become aware of constraints and opportunities of the contexts and platforms that they enter in the public sphere in order to communicate to lay publics.

Learning to recognize and manage those constraints—such as the limitations to the possibility of good public communication of science when hosted on TV infotainment or talk shows that rely on spectacular content to attract their audience share, or the misleading framing of questions by journalists and TV hosts who ask about policy but with questions that are disguised as science-based—in short, developing a rhetorical awareness of the contexts in which they speak to different publics *is* another good way of enacting *scientist-citizenship*. And it is a mode of citizenship that we direly need in a time of global pandemic and climate crisis, and one that is only available to experts and scientists.

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