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FROM BIG FARMS TO BIG PHARMA? PROBLEMATISING SCIENCE-RELATED POPULISM.

ABSTRACT. Skepticism about health/vaccination policies during Covid-19 was considered a key example of "science-related populism" mainly based on far-right case studies. However, critics also spread among various left-wing and environmentalist milieus, which represents an understudied phenomenon. Relying on different strands of scientific literature, and on a qualitative research design aimed both to take account of the political heterogeneity within this critical area and to deepen its links with environmentalism, we aim to highlight the limits and normative implications of its interpretation as solely populism, and to contribute to the elaboration of a different interpretive model. Qualitative and frame-bridging analysis highlighted the consolidation of worldviews in clear opposition to hegemonic values, where the criticism of science finds a more appropriate explanation in a denunciation of the intrusiveness of capitalism in science production, as well as in a rejection of "reductivism" and a claim to self-determination that extend from ecological to health issues.

KEYWORDS

Science-related populism, scientization of controversies, scientific lobbying, social movements, studies of science and technology, qualitative research, agroecology, self-determination, scientific expertise, technoscience

1. INTRODUCTION.

Scientific knowledge and traditional epistemic authorities are the object of growing skepticism in Western societies. Scholars contextualized such a phenomenon into a wider coming to light of an anti-science or post-truth era (Harsin, 2018; McIntyre, 2018), marked by opinions outweighing scientific facts, and emotions becoming more influential than scientists' "truths" in determining people's beliefs on crucial phenomena. Consistently, one's pre-existing beliefs, emotions, values, and

supposedly "irrational" leanings would affect the understanding and acceptance of scientific truths, giving rise to private, individual epistemologies, which van Zoonen (2012) labelled as I-pistemologies. While anti-science refers to attitudes of refusal and discredit towards scientific knowledge, other scholars introduced the concepts of troll-science (Eslen-Ziya, 2020), pseudo-science (Ylä-Anttila, 2018), and epistemological populism (Saurette and Gunster, 2011), to illustrate the growing of alternative sources and ways to produce knowledge which are supported against consolidated epistemic authorities.

These phenomena have often been associated with populism. On this basis, Mede and Schäfer (2020), in this Journal, proposed an important theoretical conceptualization of "science-related populism" (see section 2). Starting from Mede and Schäfer's paper, our contribution is focused on popular dissent towards compulsory vaccination and pandemic management policies (hereinafter referred to as OPP, Opposition to Pandemic Policies – see the Methods section) during the Covid-19 pandemic, a topic which is generally identified, and also by Mede and Schäfer's work[1], as a crucial example of science-related populism. Our empirical research is focused on Italy, a paradigmatic case for the reasons we outline in the Methods section.

The interpretation of OPP-related protests as a form of populism is consistent with a public debate that generally saw them as a mere sign of the degeneration of politics into ignorance, selfishness and conspiracism. However, studies of VHR (vaccination hesitancy or refusal, see Attwell and Smith, 2017) document complex and inexorably political questions behind these phenomena, which cannot be reduced to ignorance (Colgrove, 2005; Attwell and Smith, 2017; Goldenberg, 2021; Troiano and Nardi, 2021). Also, the anti-science interpretive key has been problematized in the light of the acknowledgment of alternative expert systems and competing epistemologies (Navin, 2016; Attwell et al., 2018). In previous works, we have highlighted the limitations of readings centred on selfishness and conspiracy (Lello et al., 2022; Bertuzzi, 2021). Instead, this article aims to highlight the weaknesses of readings that reduce science criticism to populism, and to contribute to developing a more appropriate interpretation. To do so, we brought into dialogue different areas of scholarly literature – on VHR and popular skepticism towards science, contributions from Science and Technology Studies (STS), as well as political science/sociology literature on populism and its relationship with democracy.

Many scholars base the link between criticism of science and populism on research from right-wing milieus. However, within OPP, there is a relevant left or non-aligned component that is often overlooked in studies. In particular, we have been able to see from various public speeches and

[1] Mede and Schafer clarify that not all forms of contestation of science can be conceptualized as science-related populism, but they treat protests related to VHR as a crucial example of that phenomenon.

initiatives (which we return to in more detail in section 2) how OPP has been particularly widespread in certain environmentalist milieus.

Our hypothesis is that paying attention to its internal political heterogeneity, and in particular to the links between criticism of science and environmentalism, can highlight the limits of the populist reading and contribute to the elaboration of a more adequate theoretical framework. This is the point of departure for our methodological design, which aims both to dwell on OPP internal political heterogeneity and to focus specifically on environmentalist circles.

Furthermore, the analysis of frame-bridging operations from environmentalist claims to OPP – *from Big Farms to Big Pharma*, echoing the paper's title – proves useful in shedding light on the current processes of consolidation of alternative epistemologies and worldviews, where the critique of science – but also of the buzzwords of more institutionalised environmentalism – finds an adequate explanation not in populist orientations, but mainly in a denunciation of the intrusiveness of capitalism in the mechanisms of scientific knowledge production.

2. ANTI-SCIENCE AND SCIENCE-RELATED POPULISM

Two main elements support the association between popular criticism of science and populism. First, the discredit towards mainstream epistemic authorities, perceived as parts of wider social and economic elites. Second, the dichotomous division of the world between the "people", whose common sense and experiential wisdom are praised, and the allegedly corrupted and self-interested scientific elites (Wodak, 2015; Mede and Schäfer, 2020). This association was corroborated by the assessment, on an empirical basis, of a positive correlation between support for "populist" parties and mistrust of universities and experts (Merkley, 2020), as well as backing of anti-scientific positions (Giorgi and Eslen-Ziya, 2022; Bordignon 2023). Based on such premises, Mede and Schäfer (2020) defined "science-related populism" as "a set of ideas suggesting an antagonism between an (allegedly) virtuous ordinary people and an (allegedly) unvirtuous academic elite – an antagonism that is due to the elite illegitimately claiming and the people legitimately demanding science-related decision-making sovereignty and truth-speaking sovereignty" (Mede and Schäfer, 2020: 484). With "science-related decision-making sovereignty", they refer to the power to make decisions about what should or should not be studied, how, when, and by whom: the definition of the research agenda, together with epistemological, methodological, and funding allocation issues are therefore included. By "truth-speaking sovereignty", instead, they mean the right to formulate truth claims, based on the (alleged) epistemological superiority of ordinary people compared to scientific institutions, due to

their "proximity to everyday life" (Saurette and Gunster, 2011: 199) and common sense (Mede and Schäfer, 2020: 482-483).

However, Mede and Schäfer acknowledge that scholarship on epistemological populism has some limits and empirical gaps, mainly deriving from its being based on case studies dealing with conspiracy milieus, supporters of far-right ideologies, and right-wing online platforms or radio programs. Moreover, they identify promising paths of research in the analysis of the correlations between science-related populism and other populist attitudes, and the differences along the political spectrum (Mede and Schäfer, 2020: 485). Our contribution moves in this direction.

We noted that, unlike the case studies cited by Mede and Schäfer, OPP has widely grown beyond conspiracy or (far) right-wing milieus. Surveys on different European countries show that while VHR occurs to a lesser extent among the electorate of mainstream parties, it grows among parties at *both* the extremes of the political axis – in France, for instance, more among La France Insoumise's voters than among those of Rassemblement National – and especially among those who do not know what or even whether to vote at all (Mancosu et al., 2021). Moreover, though a relatively neglected phenomenon, OPP was particularly widespread among certain environmental milieus and movements. A relevant example is given by the positions assumed by David Holmgren, the co-founder of permaculture, who published on his personal blog several critical articles about the restrictions adopted by the Australian government, also discussing the Covid-19 vaccines[2]. Holmgren invited readers to critically evaluate the ideas of care, health and body dominating in the global North and to consider the power relations between Big Pharma[3] and the global health governance, which – according to him – would be very similar to those characterizing the fields of agricultural and environmental governance.

In Italy, OPP emerged among several social movements/civil society sectors that assert their left-wing legacy and champion environmental justice. For example, an open letter was written by some activists of the No-Tav movement (the movement opposing the Turin-Lyon high-speed railway), which is one of the most important, long-established, and representative environmentalist networks in Italy (della Porta and Piazza, 2007)[4]. Similarly, appeals of eco-pacifist and eco-feminist groups were made public[5]. A meaningful case highlighting the link between vaccine skepticism and environmental networks is represented by the choice, on the part of the most important Italian chain of organic products distribution (NaturaSì), to provide free swabs to its workers, with the self-

[2] https://holmgren.com.au/ideas-and-actions/writings/
[3] We use the term in its popular connotation, which refers to the big market players in the medical and pharmaceutical sector.
[4] https://letteradallavalsusa.it/
[5] See https://bit.ly/3CSkEwb and https://bit.ly/3KYOeSR

proclaimed aim of contrasting discriminations against unvaccinated people, thus taking an explicit critical position against the enforcement of the EU Digital COVID Certificate[6] by the Italian government.

We believe that studying OPP by paying attention to its internal political heterogeneity can contribute to a better understanding of the wider phenomenon of growing popular skepticism towards science. Moreover, we argue that an in-depth qualitative analysis of the motivations underlying the convergence between some environmental claims and OPP could help understand OPP through a different interpretive perspective, one that also proves useful in shedding light on a puzzling – and neglected – question, that is why opposing positions about the pandemic policies frequently caused harsh conflicts among environmentalist networks.

In order to do so, we believe it is necessary to situate the issue of science-related populism within a less abstract opposition between democracy and populism, capable of taking into account the real changes that Western democracies are undergoing, to highlight the explicit and implicit positionings in the literature on epistemological populism, and the risks associated with a self-absolving abuse (by political and scientific institutions, the media, etc.) of the concept of populism.

Subsequently, qualitative empirical research is aimed to delineate the contours of those worldviews that gather people expressing OPP positions; secondly, an analysis of frame bridging operations (Snow et al. 2018) aims to identify the semantic nuclei around which the cross-contamination between environmental claims and OPP coagulates.

3. WHICH (USES OF THE CONCEPT OF) POPULISM IN WHICH DEMOCRACY?

Mede and Schäfer rely on an "ideational" approach to populism, which basically defines it as a set of ideas describing the fundamental political conflict as one between elites and ordinary people, where sovereignty is at stake (Mudde and Rovira Kaltwasser, 2018). In the literature working on the relationship between pseudo/anti-science and populism, a link is usually established between alternative epistemic authorities and celebrities deemed responsible for the spreading of fake news and conspiracy theories, and populist political actors, often willing to support these unsound theories, thus representing a threat to both political and scientific institutions. The same link is established, on the opposite front, between mainstream political parties and consolidated epistemic authorities, explicitly or implicitly (but usually uncritically) placed on the "right" side, that is in defense of reliable science and rationality. This position is both taken for granted and naïve, in that it fails to take into account the complex relationship between democracy and populism, whereby populism

[6]See https://www.lastampa.it/cronaca/2021/09/21/news/green-pass-naturasi-paghera-i-tamponi-ai-dipendenti-cosi-si-evitano-discriminazioni-prima-azienda-in-italia-1.40725836/

should rather be acknowledged as a response to democracy's broken promises (Mény and Surel, 2001; Laclau, 2005). This more complex outlook on populism is also necessary when dealing with it in epistemological terms. Otherwise, the risk is reproducing the same dichotomous opposition scholars usually attribute to populists, between one part, described as custodian of all virtues, and the other, deemed responsible for all evils.

In particular, the concept of populism underlying the literature on pseudo/anti-science seems anchored to an expansive phase of neoliberal democracies, coinciding with the *trentes glorieuses*, when the rise of mass consumption society and the international geopolitical framework favored expansive policies in education, health, and welfare, resulting into some mitigation of socio-economic inequalities and greater inclusion of the population, even in its less affluent strata, within political processes (Piketty, 2013; Streeck, 2014). Yet, it does not seem to be fully coming to terms with the transformations affecting today's real Western representative governments, at a time when the processes of global restructuring of capitalism can instead more easily coexist with scenarios marked by profound socio-economic inequalities and the exclusion of increasingly large sectors of the population (Piketty, 2013). In such a context, the contraction of popular "semi-sovereignty" (Schattschneider 1960) deriving from the stifling of political conflict (Katz and Mair, 1995; Mair, 2023), the emptying out of the substantive aspects of democracy (Crouch, 2004) and the evolution towards technocratic scenarios (Bickerton and Invernizzi Accetti, 2021) reduce the space and effectiveness of participation from below. In the light of these processes, some scholars have already pointed out that the concept of populism, at least as it is most commonly used today, tends to lose its analytical value in a context in which it is difficult to identify political actors who do not resort to populist strategies and language. At the same time, it tends to expand its normative function, with the effect of shifting the responsibility for undesired electoral changes from the traditional parties downwards, and thus onto the voters (stigmatizing them, or at least part of them), thus avoiding a necessary exercise of self-scrutiny and self-criticism on the part of traditional parties (Schadee et al., 2019; Bazzoli and Lello, 2020).

A similar dynamic can be identified within the literature on epistemic or science-related populism, which is generally based on a naïve opposition between science described as a pure and uncontaminated domain – which purely rational citizens trust – and, on the other hand, actors at the mercy of irrationality and emotionality or driven by vested interests (Harambam and Aupers, 2015). It disregards the fact that for all citizens, and not just for those belonging to the alleged "wrong" faction, the acceptance of scientific truths is not a matter of mere rationality but is mediated by the social networks to which they belong (Jasanoff, 2021) and often has to do with processes of collective identification (Sobo, 2016).

Moreover, within that literature, science is generally considered as a field exempt from socio-economic constraints, thus taking a considerable step backward compared to the contributions of the STS, which instead showed the importance of extra-scientific conditioning on scientific activity (Latour, 1979; Harambam and Aupers, 2015). What is needed is to bring capitalism back to the center of the analysis of the functioning processes of science, even more today, in light of recent major changes in the speed, scope and sophistication of science lobbyism by global corporations.

Indeed, scholars studying science lobbyism showed that the production of knowledge as a lever to gain influence (Oreskes and Conway, 2011) is increasingly accompanied by attempts to colonize those areas where the governance of science itself, and its role in public regulation, are defined (Saltelli et al., 2022). In this scenario, organized interests try to blur the distinction between controllers and controlled, presenting themselves as "neutral" defenders of science as a common good. In addition to actions targeted at the most influential political and regulatory institutions, a more innovative strategy aims at the colonization of the public sphere, with the attempt to culturally "capture" ordinary citizens (Foucart et al., 2020). Agencies specializing in digital influence at the service of corporate interests promote the dissemination of partial information – favorable to their clients' interests – by presenting it as the undisputed body of knowledge shared by the entire scientific community. Leveraging a powerful narrative that science is under attack by dangerous fearmongers, these agencies recruit quasi-ordinary citizens – who will act sincerely motivated by a desire to contribute to enhancing the role of science in the public debate – to disseminate such material. This is what the astroturf (Walker, 2014) – "fake grass" – strategy consists of: a service that agencies offer their clients to ensure that their objectives are supported (also) from below, through a fictitious representation of grassroots activism.

The consequences of the processes described so far are not limited to a hijacking of the regulator but involve a deeper pollution or hijacking of the public sphere, that accelerates the disconnection of signifiers from their meanings to the point of operating a semantic overturning – the same overturning which we find at the root of our interviewees' skepticism and sense of *outsiderdom* (Wood and Douglas, 2019) towards mainstream narratives. In this way, it occurs that interests of agribusiness, fossil industries, and extractivist capitalism are pursued in the name of science and sustainable development (Kaul et al., 2022), crushing those who protest and oppose GMOs, intensive agriculture, and glyphosate (as well as nuclear power, regasification plants, gas pipelines, even new oil extractions): these actors are stigmatized as anti-scientific, driven by irrational "hysteria", or as being involved with vested interests (Foucart et al., 2020; Dotson, 2021). This happens both in the North and in the global South, where these phenomena are linked to programs and public-private partnerships gravitating around philanthrocapitalism (Shiva, 2022).

4. METHODS

4.1. Why Italy?

Our empirical research focused on the Italian case, which is extremely suitable to our aims for several reasons. Italy was the first Western country to be hit by the Covid-19 pandemic in February 2020, and was particularly affected in terms of victims and economic consequences, especially among the lower strata of society (Fazi and Green, 2023). Though the national government adopted a governance model similar, in its main lines, to the one applied by most Western states, it was characterized by particularly stringent measures[7]. To combat the phenomenon of VHR, the government(s) relied on the EU Covid-19 digital certificate, which became mandatory to enter an ever-increasing number of public and private spaces, and, later, to perform all (employee) work activities in the country. Finally, mandatory vaccination against Covid-19 was introduced for some categories of people.

These stringent measures acted as a stimulus for mobilization, which was also facilitated by pre-existing organizational networks developed during a previous protest cycle against the extension of national pediatric vaccine mandates, inaugurated by Law 119/2017 (Lello, 2020; Gobo and Sena, 2022).

Between 2020 and 2021, OPP thus arose as one of the most significant examples of political participation. In the autumn of 2021, protests were repeated every week in many towns, and were accompanied by an intense online activity consisting of email bombings, petitions, legal actions and individual or collective actions in virtual environments. All of this was facilitated by the establishment of a growing number of "alternative" information sources, such as web portals, TVs and radios, whose messages were spread through popular Facebook groups and WhatsApp chats, and especially on Telegram (Pilati and Miconi, 2022).

4.2. Why rely on qualitative research?

Though the literature on VHR has considerably expanded following the outbreak of the pandemic (Troiano and Nardi, 2021), most research relies on quantitative methods, which are important for measuring the phenomenon and testing the validity of theoretical hypotheses. However, these methods often fall into the uncritical use of epistemic categories, the recovery of the deficit model

[7] See the stringency index elaborated by the University of Oxford: https://www.bsg.ox.ac.uk/research/research-projects/covid-19-government-response-tracker.

(Simis et al., 2016), the preference for psychological explanations, and, therefore, the depoliticization of citizens' agency in terms of epistemic possibilities (Goldenberg, 2016; Stocco, 2022). Moreover, even though anti-vaccine movements have quite a long history (see, for a summary: Alteri et al., 2021), their claims have taken on new meanings in the Covid-19 contingency, linked to broader issues of science, technology, and the environment. In addition, qualitative research proved particularly effective in investigating frame-bridging operations and in identifying the semantic nuclei on which these are developed.

4.3.Research design

Our research design included 56 qualitative interviews with Italian citizens expressing VHR-like positions. Though the selection criterion was represented by their unwillingness to undergo the Covid-19 vaccination, we found that their criticism was not limited to vaccination policies but involved many more aspects of the policies adopted to manage the health crisis. That's why, though analytically distinct, we talk, in this paper, about both VHR and OPP. The interviewees were casually chosen, based on the criterion of maximizing the heterogeneity of the social profiles according to the variables of gender, age, and education degree (Denzin and Lincoln 2011). In the analysis exposed in the remainder of this contribution, these interviews will be indicated by a number followed by "C" (citizen). In addition to these, we conducted further 11 interviews with selected people who combine VHR with an activist profile within networks or associations linked to the fields of environmentalism and agroecology. In the analysis, they will be identified with a number followed by "A" (activist). It is important to note that, while the latter are all activists, even among the 56 citizens casually chosen solely on the basis of their VHR attitude, some still have an affiliation within movements and associations mainly related to the spheres of critical consumption and agroecology (see the Appendix A for an overview of the respondents' main socio-demographic characteristics)[8]. This methodological choice pursued the objective of investigating both the VHR universe in its internal heterogeneity, as well as thoroughly exploring, through the interviews with environmental activists, the reasons for the connection (frame bridging) between health/pandemic and environmental issues.

The interviews, lasting approximately 70 minutes each, were conducted via Zoom between December 2020 and May 2022, due to the Covid-19 situation and restrictions, using the grid reported in Appendix B. Starting from our hermeneutic units (individual interviews), we divided and coded parts of the text (open coding), then reconstructed families of meaning (axial coding) (see: Belgrave and Seide 2019). Thus, we approached the collected material with a constructivist perspective based

[8] All interviewees gave their consent to the use of the interviews in accordance with Regulation (EU) 2016/679 of the European Parliament (GDPR).

on grounded theory (Charmaz 2015), using the codes and families of codes to develop a qualitative analysis. In Appendix C, the labels that emerged from the open coding and axial coding operations are listed.

Moreover, we took part in several webinars generally referable to the field of Italian environmental movements, during which the pandemic governance and the measures to contain the virus were abundantly discussed. Our participation as researchers was not declared during these public events, but some field notes were taken. We also consulted documents circulated on the web and produced by environmentalist groups concerning the pandemic governance.

5. Results

5.1. Towards the consolidation of worldviews marked by alienation

The analysis of the interviews reveals the consolidation of a worldview that sees itself as radically different from the official narratives promoted by institutions and mainstream media, with most respondents expressing a growing inability to recognize themselves in a society that they perceive as moving in a direction diametrically opposed to the values with which they identify. Three main pillars of this worldview can be detected: 1) a deep sensitivity to environmental issues; 2) distrust of new technologies and the digitalization of society; 3) a complex and tendentially holistic view of health and medicine. In all three cases, this sensitivity is not only theorized, but is often reflected in consistent, more or less alternative, lifestyle choices. And in all three cases, the estrangement from the official narratives stems from the widespread perception that interests traceable to capitalism have taken away watchwords in which many interviewees once recognized themselves – solidarity and the protection of the environment and collective health, mainly – in order to empty these concepts and bend them to their own interests. This same estrangement is also at the root of their distrust of a part of science, due to the perception of a growing market penetration in its functioning, legitimised, moreover, by the mechanisms of green/ethics-washing through the same processes of semantic reversal mentioned above.

Starting from the first pillar, despite media representations often portraying VHR as associated with climate change denialism, interviews do indicate a diffused interest in environmental and climate issues, thus signaling a distance from traditional "populist" attitudes. After all, other research has long shown that there is no overlapping between VHR and other issues usually considered populist, including climate denialism (Kahan, 2014), and has highlighted the distance of those who are vaccine hesitant from populist positions on the crucial issue of immigration[9] (Lello, 2020). A widespread

[9] The trajectories that can lead to the redefinition or radicalization of initial positions, on the other hand, deserve a separate discussion, which calls into question multiple factors, including the response of institutions and the geometry of alliances,

interest in environmental issues was expressed by almost all respondents, not just those selected for their activist profile. On the other hand, many of the environmental activists mentioned that other individuals belonging to the same areas embraced positions attributable to OPP.

> I always try to be a friend of the environment and make choices that go in the direction of protecting the environment. I am against all polluting activities, and I make it a personal matter. I chose to work in a certain sector because I would have fewer problems of conscience [doing so]. I work in the organic farming and natural food sector. *(Int. 21, C, m, 60)*

The interviewees go well beyond climate change, mentioning biodiversity loss, chemical pollution, irresponsible use of the soil, smog, deforestation, and intensive farming. Their widespread ecological sensitivity is reflected in the centrality of the topic of food, which is a key issue from an ecological point of view (Moragues-Faus and Marsden, 2017). Several respondents, even among those selected as common VHR citizens, are part of collective organizations that deal with the production or joint purchase of food; others even produce their own food, aiming for self-sufficiency.

> I mainly follow the criteria of organic, healthy, and zero-mile food, which means knowing how the food is transported, how it is grown or made, and how the workers are treated. *(Int. 29, C, m, 23)*

When speaking of food, respondents paid considerable attention to topics typically brought to the fore by left-wing movements, particularly by those focused on prefigurative perspectives and community-based individualized collective practices (Monticelli 2022). These include not only the focus on environmental-friendly consumption choices, but also markedly critical discourses concerning the Western food production system and broader criticism of globalized capitalism.

These complex visions of the environmental crisis, and the activist histories of many of the interviewees themselves, lead them to a critique of "climate reductionism" (Dunlap and Riquito, 2023); consistently, they contest hyper-technological solutions and biopolitical/authoritarian approaches, denouncing the greenwashing operations whereby corporations cloak their special interests in the noble intentions of environmental protection.

> We have been denouncing climate change for more than ten years because we are the ones who first noticed the change on our skin and our work. […]. Unfortunately, we see once again […] that the manipulation of information is working through fear, because climate change can be scary, [so] we

as well as the outcome of the "struggle within the struggle" between political actors to give direction to claims that were initially not clearly politically charged (Clover, 2018; Chlup, 2023).

> invest in a fake ecological transition according to an economic frame. [We spend] lots of money in debt for alternative energy sources, which in reality are not an alternative. *(Int. 66, A, m, 63)*

After all, the second pillar of this worldview is a critical view of techno-optimism and the digitalization of society, which is widespread among respondents, both ordinary VHR citizens and environmental activists. The question of 5G technology is a significant example. Skepticism is not only, or not so much, due to more or less well-founded fears, but to broader criticism concerning the need for further acceleration of the rhythms of life, production and consumption in modern societies. It is aimed at the very idea of society that lies behind the implementation of increasingly efficient, connective and performing technologies.

> What is the point of always speeding things up, as if there was really a need to save two seconds to open the webpage or half a second for the message to arrive [...]. We are going beyond logic; we are going crazy. *(Int. 29, C, m, 23)*

> Many in my area are strongly opposed to the digitalization of our lives, and 5G is a good step towards that, as the pandemic was. Now we want agriculture to become 4.0 and ever more dependent. Chemistry is no longer enough. Now it also takes information technology to produce food, and as always, this becomes a reason for centralizing resources and skills and depriving people of their autonomy. *(Int. 66, A, m, 63)*

Regarding the third pillar, despite internal differences, all interviewees tend to move away from an idea of health as the mere absence of a single disease, towards a broader vision that includes physical, psychological, relational, and spiritual well-being. Adhering to a complex and holistic idea of health often leads them to criticize some perceived limits and degenerations of both the healthcare system (corporatization, privatization) and biochemical medicine (hyper-sectorization, overreliance on drugs, the materialistic and deterministic conception of the human body) (Lello, 2020). In some cases, we found critical opinions of the very paradigm of biochemical medicine, which are often accompanied by familiarity with complementary and alternative medicine (Attwell et al., 2018).

These alternative epistemologies of health (Navin, 2016), when considered in their relationship with the other two pillars, help us to better understand the frame-bridging operations that are being developed between ecological claims and health-related claims. These are basically grounded on the concepts of sovereignty and self-determination. As reported by some of the interviewees – mainly those active in peasant organizations – in many of the assemblies within their networks the need was raised to extend the concept of self-determination from the ecological sphere and food production to other spheres, including, first and foremost, health/medicine, as well as the issue of energy and its

production. They defend the right to choose how to take care of one's health (not only at the individual level, but above all at the community level) and critically discuss the role of mainstream science, chemistry, genetic technologies and corporate interests in the field of health.

> We are very critical of the use of chemistry and of what the scientific vision proposes concerning the use of health products and the genetic manipulation of food production. Obviously, I am very critical also of the approach to healthcare and medicines […]. Now, the question we are asking ourselves, in light of the past two years, is: Can we only talk about food self-determination, or should we include health, the environment, and energy autonomy? *(Int. 66, A, m, 63)*

5.2. Frame bridging: from big farms to Big Pharma

The affinity between certain environmentalist networks – particularly in the field of agro-ecology – and OPP stems from a well-established closeness between these milieus, and currents of thought that have long proposed complex and critical interpretations of health/medicine based on the rejection of linear progress, lifestyles, and Western (economic) rationality (Kothari et al., 2019; Monticelli, 2022). Today, however, this affinity is being reframed according to new meanings, updated for the contemporary (pandemic and post-pandemic) context. Interviews, especially with environmental activists, proved particularly effective in providing a detailed understanding of the bases on which the sensitivities and experiences typical of these environmental circles merge with skepticism towards health policies and vaccination mandates. The following semantic *nuclei* were identified.

- *Skepticism towards technological solutions*, as we have seen, is a crucial issue. In the interviews, a relationship is often established between the perplexity concerning the possibility of solving the problem of world hunger through chemistry and genetic manipulation, and a similar skepticism towards solving health problems by using technological tools.
- The critique to *sectorization*, given that it is the (organic/biodynamic) agricultural practice that has taught them that "everything is inter-connected" (ecosystem equilibrium, biodiversity, healthy food, lifestyles, etc.). Likewise, they criticize a health approach perceived as too sectorized, in favor of a more holistic one, better equipped to grasp the relationships between the parts, as well as between the parts and the whole. On these bases, their skepticism towards vaccines is often rooted on an idea of health based on *primary, holistic prevention* aimed at creating an equilibrium that enables the individual to respond to pathogenic attacks by taking care of the "soil", rather than addressing only the pathogens.

- This is connected to the *rejection of the concepts of reductivism and simplification*. Our respondents reject the simplification of agriculture brought about by industry, given the extreme complexity of natural relationships within the ecosystems. Translated into the health field, this approach nurtures criticism towards a perceived "reductionist" mainstream approach, including the typical Western idea that it is "normal" to live one's life without considering the factors that allow one to actively build and promote health, only to resort to drugs once a problem has arisen. This critique recalls a similar distance from climate reductionism, which far more than denialism fuels their skepticism towards much of institutionalised environmentalism and towards the ecological and energy transitions.
- *Distrust towards institutions* was already a widespread feeling among many organic farmers, who report carrying out a practice that for decades was discredited and stigmatized as ineffective by (parts of) mainstream science, professional associations, and institutions.
- Connected to the above, some organic farmers already harbored *skepticism towards mainstream science*, especially the type carried out by University courses in agricultural sciences, which is deemed to have solved issues such as weeds or low productivity by creating enormous long-term problems (biodiversity loss, soil degradation, etc.). Here their critique recalls one of the problematic aspects of the scientization of politics, namely the tendency of hegemonic epistemological approaches to marginalise other approaches and forms of knowledge (Dotson 2021). Moreover, interviewees often denounce processes of greenwashing that instrumentalize science in order to support corporate sector interests.
- *Opposition to the capitalist mode of production* both in the agricultural and the healthcare fields. Here, individuals start from their longstanding opposition to agribusiness and extend this to Big Pharma.
- The *control-autonomy dichotomy*. Technology and digitalization are also criticized since they would erode people's autonomy both in agriculture (through chemistry, genetic engineering and, more recently, information technology) and health-related issues: criticism here ranges from hypermedicalisation, which encourages over-delegation and an increasing inability to take care of one's own health, to technological devices for controlling one's vaccination status.
- The opposition to policies allegedly based on *authoritarianism* and *the blaming of the individual*, which insulates governments and corporations from the duty of self-scrutiny. This is something that many interviewees already experienced in their environmental activism, and which they claimed to have re-experienced during the Covid-19 pandemic regarding health choices.

- *A non-materialistic stance*. This is a crucial and somewhat overlooked aspect of OPP, evident, for example, in the numerous episodes of prayer, meditation and recollection linked to various forms of spirituality, including non-Western ones, which occurred during many OPP protest events (Rutjens et al., 2022). However, it also characterizes some streams of environmental movements, such as deep ecology, bio-dynamic agriculture or even degrowth. This anti-materialist stance feeds our interviewees' skepticism towards a deterministic and mechanistic vision of the body/health, as well as their criticism of what they perceive as the excesses of technology and digitalization in the name of defending human nature.

6. DISCUSSION AND CONCLUSION

The analysis of the interviews shows that OPP, although often taken as a paradigmatic example of science-related populism, does not find an adequate interpretation in this concept. On the one hand, this kind of criticism of science is not based on ignorance or an inability to understand the scientific method, nor is it a question of 'truth-speaking sovereignty', i.e. a claim to the superiority of common sense or everyday experience over the scientific method. The widespread demand of our interviewees, also highlighted in other studies (Goldenberg, 2016; Harambam and Aupers, 2025), for more scientific research, but free from the conditioning of industry, reveals on the contrary a convinced trust in scientific epistemology.

Instead, a demand for "science-related decision-making sovereignty" arises, i.e. for transparency in the relations between research and industry and for involvement in the definition of lines of investigation and the construction of scientific knowledge. This demand, however, has not to do with populism.

Indeed, several scholars have pointed out that greater involvement of non-expert citizens, on whom the consequences of technoscientific innovations fall, is necessary both to achieve more robust cognitive results (Dotson 2021) and to ensure greater social legitimacy of research results, thus enhancing their social acceptance (Jasanoff 2021).

Our findings are consistent with Harambam and Aupers's (2015) thesis that the root of criticism of science is not ignorance, as post-truth readings argue, but the democratisation of boundary work. That is, it is precisely the more widespread schooling, together with greater access to scientific publications, that has brought the debates and conflicts over epistemological and methodological issues out of the ivory tower and into the realm of non-expert citizens. Clearly, the demand for participation and democratisation of science becomes even more central and inescapable in such a context.

These findings underline the need to rethink interventions aimed at responding to the challenge of popular skepticism towards science. The priority is not to 'explain' the benefits of research to supposedly ignorant or overly emotional citizens, but to take seriously critiques that denounce the intrusiveness of capitalism in scientific production and the aporias created by the increasing scientization of politics, which is a fundamental element of the shift towards technocratic governance. The rationale behind the scientization of politics is the idea that science can resolve controversies in a more objective and unbiased way, effectively replacing politics meant as a search for compromises between different positions (Bertuzzi et al., 2024). However, while science is useful as an aid to policy-making, placing it at the centre of the decision-making process introduces major problems and biases (Dotson, 2021). Along with the invisibilization of other forms of knowledge and the emphasis on only the most easily quantifiable aspects of controversies, these include the increasing narrowing of the space for political dissent, so that growing socio-economic exclusion may, in the end, go hand in hand with growing political exclusion. When the public is faced with political choices it is legitimate to dissent in the name of different identities and worldviews. However, if those choices are instead (presented as) the compelling outcome of science, dissent may be (presented as) illegitimate. Some forms of dissent may then be dismissed – and delegitimized – through the categories of irrationality, ignorance, or anti-science, or downgraded to moral depravation (when the "verdict" of science is disregarded because of a moral perversion, e.g., selfish individualism, Lello et al., 2022), or pathology (as in the simplistic and psychologizing explanations of conspiracy theories based on "paranoid deliriums", Sobo and Drakiewitz, 2021). The denial of dissent as such, and its reinterpretation as ignorance/deviance/pathology, not only justifies the invisibilization of unwelcome positions in the media, with significant consequences in terms of limitations of pluralism and freedom of information (Chlup, 2023; Shir-Raz et al., 2022), but also opens the way for an easier justification of a recourse to authoritarian methods and to an abuse of political, judicial, and military power in order to limit freedom of demonstration and grassroots civic engagement (Pleyers, 2020).

The same technocratic tendencies lead to a short-circuit. On the one hand, science becomes more and more central to policymaking; on the other hand, science becomes the privileged target of the most innovative and pervasive lobbying strategies. An important consequence of the intersection of these processes is the risk of the emergence of a misunderstanding, or even better, an "optical illusion", whereby what is not political participation, but industrial interests, may be passed off as a demand from below, and further consecrated as the incontestable outcome of "science" (through the *astroturf* technique). Conversely, forms of grassroots political participation risk being denied as such, and thus excluded from the list of positions and interests that, in a democracy, should contribute to the definition of political compromises and decisions.

Instead, qualitative analysis, and in particular that of frame-bridging processes, has allowed us to see how, behind these critiques of science, there is a consolidation of worldviews that express political questions and claims. Our interviewees' skepticism is not about the existence of environmental problems or climate change, but mainly concerns the mainstream narrative that these can be addressed through solutions offered by green capitalism or purely technological solutions that do not challenge the neoliberal model of development (Hickel and Kallis, 2020). Positions and identities in clear opposition to hegemonic values and priorities are taking shape, criticising reductionism in the climatic/environmental field as well as in the health field in favour of more complexity-oriented approaches and the claiming of self-determination that extends from the issues of food and the ecology to include the issue of health.

6.1. Limitations and implications for further research

A limit of our research – and at the same time a promising path for future research – is a more detailed investigation of how positions on different issues differ according to the internal heterogeneity of the VHR population in terms of political affiliation and biographies.

On the other hand, beyond the theoretical and policy-related implications we already outlined, our findings are useful for rethinking operationalization processes, particularly in quantitative research. For example, they show that it makes little sense to look for a correlation between VHR and generic indicators of distrust in science if the reasons for this distrust are not considered. Similarly, they point out the need to pay attention to the substantial difference between climate denialism and critiques of climate reductionism/green capitalism when studying correlations between VHR and perceptions of environmental crisis.

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