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Article

Redefining and Reshaping the “Terrologist” for a Proper Management of Dual Climate-Social Issues: The Critical Need for New and Qualified Experts in a Changing World

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Simple Summary

1. A world of cutting-edge science and unprecedented denial – 2. The need for a dual climate-social expert: the terrologist – 3. The terrologist between sociology and common sense – 4. Final remarks on the socio-legal challenge of anthropogenic climate change.

Abstract

In a world characterized by the paradox of unprecedented advances in climate science on the one hand, and high degrees of skepticism towards anthropogenic climate change on the other, the need for a new figure, or expert, arises. Conventional scientists and entire disciplines struggle against climate change denial, while the effects of climate change itself need to be faced and managed in a way that goes beyond the current framework of expertise in the standardized field. Via an evaluation of current challenges and future perspectives, this work redefines the term “terrologist” to introduce a new, ideal expert with a background in climate and social sciences, capable of resolving at a local scale the challenges posed by the phenomenon. The same expert would also be able to offer solutions at much broader scales, possibly beyond the boundaries of countries and their legal systems. These challenges are not to be underestimated, as they threaten the economy and the integrity of society as a whole: a mismanagement of climate-related actions may in fact exacerbate social conflict and deepen the ongoing crisis. The description of this new role highlights the importance of social science involvement in topics normally restricted to climate sciences and its multiple branches, and calls for more cooperation between multiple fields.

Keywords: terrologist; climate change; social sciences; environmental regulations

1. A World of Cutting-Edge Science and Unprecedented Denial

Modern society is characterized by opposite, competing dynamics: on one side, climate science and related fields have reached an unprecedented level of reliability and accuracy, up to the point where isotopic analyses of gases measured in the atmosphere can unambiguously attribute emissions

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to specific anthropic activities¹. On the other side, denial and skepticism towards policies and regulations aimed at mitigating anthropogenic climate change have also reached record levels, fueled by political debates and shifts in the priorities of regional governments, among other things. The effectiveness of SDGs (Sustainable Development Goals) is in fact oftentimes questioned, although SDGs are well recognized as key tools towards a sustainable future². While it is possible that skepticism is driven by unsustainable policies (for example, the aggressive and unpractical push towards the full implementation of electric vehicles)³, critical flaws within science communication have also been mentioned in previous research as at least partially responsible for the phenomenon⁴. The resulting skepticism would therefore be a combination of multiple factors, all having inadequate management in common.

That said, skeptics would not be of concern without their capacity to drive major shifts in regulations and other mitigation measures via their political vote. The threat of nullifying decades of discoveries and advances towards successful reduction of anthropogenic impacts on Earth's climate is substantial, and needs to be addressed adequately. The field of Psychology has devoted resources towards this goal, analyzing the phenomenon and providing a broad range of descriptions of behaviors and actions typical of sympathizers of anthropogenic climate change denial⁵.

The phenomenon is far more intricate than initially believed, as two sub-categories emerge: climate *misinformation*, and climate *disinformation*. According to a description issued by the United Nations Development Programme (UNDP) Climate Promise⁶, the two can be differentiated as follows:

Climate misinformation refers to false or inaccurate information about climate change and climate action that is generally spread without malicious intent. It usually arises from misunderstandings, misinterpretations of data or simply outdated knowledge. For example, some people might misinterpret short-term weather patterns, like an extended winter season, as evidence against global warming. Despite the absence of intent to deceive, misinformation still contributes to confusion and skepticism about climate science, making it harder for people to access accurate information.

Climate disinformation, on the other hand, is deliberately false and fabricated to deceive people about climate change and climate action for political, financial or ideological reasons. It is spread by

¹ A. Buono, I. Zaccardo, F. D'Amico, E. Lapenna, F. Cardellicchio, T. Laurita, D. Amodio, C. Colangelo, G. Di Fiore, A. Giunta, M. Volini, C.R. Calidonna, A.G. di Sarra, S. Trippetta, L. Mona, *Expanding continuous carbon isotope measurements of CO₂ and CH₄ in the Italian ICOS atmospheric consortium: first results from the continental POT station in Potenza (Basilicata)*. Atmosphere, 2025, 16(8): 951.

² F. Biermann, T. Hickmann, C.-A. Sénit, M. Beisheim, S. Bernstein, P. Chasek, L. Grob, R.E. Kim, L.J. Kotzé, M. Nilsson, A. Ordóñez Llanos, C. Okereke, P. Pradhan, R. Raven, Y. Sun, M.J. Vijge, D. van Vuuren, B. Wicke, *Scientific evidence on the political impact of the Sustainable Development Goals*. Nature Sustainability, 2022, 5:795-800.

³ Z.-Y. She, Q. Sun, J.-J. Ma, B.-C. Xie, *What are the barriers to widespread adoption of battery electric vehicles? A survey of public perception in Tianjin, China*. Transport Policy, 2017, 56:29-40.

⁴ F. D'Amico, *The "methane problem" as an ongoing challenge to climate change communication and understanding. When data estimate uncertainties become a social uncertainty*. Rivista internazionale di sociologia giuridica e diritti umani 6, 2023, pgs. 81-96.

⁵ P.E. Stoknes, *Rethinking climate communications and the "psychological climate paradox"*, Energy Research & Social Science 1, 2014, pp. 164.

⁶ United Nations Development Programme (UNDP), *What are climate misinformation and disinformation and how can we tackle them?*, web page.

individuals or organizations with vested interests in denying or downplaying the reality of climate change and its impacts. For instance, fossil fuel companies have been known to fund campaigns that cast doubt on climate science to protect their profits. Disinformation tactics can include cherry-picking data, promoting pseudoscience, or amplifying conspiracy theories. Unlike misinformation, which can often be corrected through education and better communication, disinformation is more difficult to address and requires targeted efforts to expose and counter the deliberate falsehoods being spread.

Both climate misinformation and disinformation undermine public trust in climate science, delay policy responses and polarize public discourse. According to the Global Risk Report 2024, misinformation and disinformation, together with the impacts of the climate and nature crises, are the biggest short-term and long-term risks to human society.

It is therefore imperative for the world of scientific research to address the issue in a more practical way, facing the odds directly and dismantling the denial agenda with well substantiated facts and evidence. The direct approach constitutes, however, only one of the actions that need to be taken to ensure a proper balance between technological development and the reduction of mankind's impact on the environment.

A core issue is the notable advance of climate change denial in modern society, as evidenced in a recent review by Gerald Kutney:

Until the public audiences accept the basic tenets of the science of modern climate change, legislation to address the climate crisis is unlikely, if not impossible. This problem will fall more on the next generation to resolve, and thus their climate education is more important than ever before. Generally, these surveys reflect climate education when those surveyed were still at school and/or more recent posteducation influences on their knowledge of the science of climate change. The youth now in school will need to be better educated than those in these surveys for progress against the climate crisis to take place [...] Much of the world has limited knowledge of the science of climate change. This is despite decades of climate science and climate communications. The energy-industrial complex and climate-denial organizations are partly responsible for this as they have turned their attention more to schools.⁷

In the same work, Kutney made an extremely important statement, differentiating the fields involved in the issue in terms of scale, scope, and effects of the phenomenon:

The science of climate change is essentially a physical science, but the study of climate denial is a subject for the social sciences. Individual denial of the science of climate change is more a topic for psychologists who deal with climate denial, whereas collective denial of the science of climate change is explored more by sociologists who study the "climate change countermovement" or "climate denialism".

The call for active social science involvement in the management of climate change denial is present in scientific research, and is frequently addressed in governmental policies due to its impact on elections and other democratic mechanisms. Is this approach sufficient to tackle the hazards posed by climate change itself and merge the findings of atmospheric and social sciences into a single, consistent framework ensuring optimal mitigation regulations? Does the skepticism allow experts in the field to be credible when it comes to the management of environmental emergencies? More importantly, do these studies actually solve the problem, or does the world need a new figure capable of mitigating risks and the social impacts of them in an equal, professional manner? In this work, the authors go a step further and bring the involvement of such fields to a new level, promoting the introduction of a new figure in modern environmental management, a figure that is well- founded in many principles discussed by prominent sociologists, as described in the following chapters and well remarked by Dimartino.

2. The Need for a Dual Climate-Social Expert: The Terrologist

⁷ G. Kutney, *Climate denial and the classroom: a review*, Geoscience Communication, 8, 2025, 81-105.

A truly sustainable future is challenged by environmental issues, and the skepticism addressed in the previous chapter poses a direct threat to the management of these issues. For this reason, it is imperative to introduce effective mitigation policies, as failures in the late stage of an environmental crisis can exacerbate criticism and draw an insurmountable line between experts and the general populace.

The call for active social science involvement in the management of climate-related issues has been underlined in previous works, reporting tangible examples of this kind of cooperation. For example, in *“The ‘methane problem’ as an ongoing challenge to climate change communication and understanding”* by F. D’Amico, an analysis of polls and trends in the perception of the climate crisis led to the following statement:

While one could make the case that human population on Earth could – and perhaps should – be reduced due to the current population-to-resources ratio, the fact that similar tendencies are spreading among young adults is demonstrably the symptom of a much bigger problem. Instead of questioning themselves about the possibility of having children due to climate change, wouldn’t it be more beneficial for the population as a whole if young adults were better informed on climate change, as well as the proper actions that have to be taken to counter, or at least mitigate, the phenomenon? Why are young adults perhaps more informed on the “catastrophic” branch of the argument, and know virtually nothing on mitigation efforts such as tangible changes in livestock diets that result into fewer methane emissions from animals such as cattle? These are among the questions that go in the direction of promoting more collaboration between social and other forms of sciences when it comes to climate change communication.⁸

In addition to polls and the issue of perturbed perceptions of real issues, the need for such cooperation also lies in the evaluation of the legal consequences of acts that have some level of deliberate effect on the environment and human health. In the analysis of Ruga Riva’s work aimed at a ruling of Pisa’s Court in Italy⁹, D’Amico and Dimartino jointly remarked that:

Ruga Riva’s examination and discussion on the first legal ruling on the new definition of natural disaster, applied to a case of arson which resulted in a large wildfire. The Court of Pisa, Italy has in this case ruled that the crime of arson dually combined with that of anthropic-driven natural disaster by highlighting the effects of that fire on the ecosystem, the local landscape, the hydrogeological parameters of the area, and the local climate. Rulings such as the one examined by Riva provide new insights and clues on new joint socio-juridical-environmental fields of research.¹⁰

The ruling of Pisa’s Court and its evaluation by D’Amico and Dimartino, in the context of this paper, allows to underline two key points: a) the legal consequences of damage to the environment are heterogeneous in nature, as they are strictly related to national laws and the homogenization process if frequently challenged by the complexity of the European Union and similar authorities worldwide; and b) experts in the field of Law and Atmospheric Sciences are presently two mutually exclusive categories, as an expert in either field is not an expert in the other. The current framework of the academic world and its intricate structure worsen these differences and lead to substantial divergence between fields: social sciences and other fields are not encouraged to interact, as researchers working on climate and related fields are subject to evaluation using criteria such as the

⁸ F. D’Amico, *The “methane problem” as an ongoing challenge to climate change communication and understanding. When data estimate uncertainties become a social uncertainty*, in «Rivista internazionale di sociologia giuridica e diritti umani», N. 6, 2023, pp. 81-96.

⁹ C. Ruga Riva, *La prima sentenza di merito sul disastro ambientale. Un inaspettato caso di incendio disastroso per l’ambiente*, «Lexambiente. Rivista trimestrale di diritto penale dell’ambiente», 4, 2022, pp. 62-73.

¹⁰ F. D’Amico, A. Dimartino, *On present-day wildfires: when law, society, nature, and anthropic activities combine. A multi- to inter-disciplinary analysis*, in «Rivista internazionale di sociologia giuridica e diritti umani», N. 7, 2024, pp. 140-158.

h-index which tend not to be considered in social sciences. Similarly, citations are considered in completely different ways, and do not contribute to the career of a social scientist while they constitute one of the primary criteria for the evaluation of the scientific output of an environmental scientist.

Furthermore, joint projects aimed at the merger of these disciplines are essentially ignored by academic metrics, which constrain scientists and their activities in well-defined boundaries with minimal chances of expanding the interaction between, for example, Sociology and Atmospheric Chemistry. A logical consequence of diverging fields of research is the absence of experts in both of them, as any expert in a given field is not encouraged (or requested) to expand their scopes towards the other field. Therefore, although at first the number of atmospheric and environmental researchers with social science expertise may seem noteworthy, the interactions between these fields are virtually nonexistent.

The prominent science fiction author from the past century Isaac Asimov used the definition of “extra-terrologist” to define an expert on extraterrestrial worlds and life originating and developing in them¹¹. This word, and specifically the root *terrologist*, has found many uses in the context of sci-fi. This work is effectively proposing a further redefinition, applicable to present-day disciplines and calling for the importation of the term from sci-fi to actual science. The terrologist would be an expert characterized, in their academic curriculum, by joint social and environmental sciences and related disciplines, effectively capable of making predictions concerning the impact of environmental changes on mankind and addressing them in a full joint social-environmental framework, accounting for the contribution of all applicable fields. The tangible results of the terrologist’s work would be practical, well organized solutions and proposals aimed at the mitigation of effects, providing – for example – a clear understanding of sea level rise’s threat to a coastal town, the rights of its citizens in terms of relocation, access to governmental help, and management of any pending rulings related to the situation. Similarly, the terrologist would be fully qualified on the legal consequences of deliberate pollution and similar circumstances, providing a clear picture of a natural disaster induced by human activity not only in terms of an evaluation of the dispersed pollutants, but also in terms of the legal consequences of whoever committed the crime. These requirements may seem hypothetical, but as Dimartino will clearly report in the forthcoming chapters, social sciences do have a basis for this kind of approach, a basis that has remained stagnant for too long and needs to be brought to light.

The terrologist would also be required to address the general public concerning these events, citing Law and scientific papers on climate/environment with an equally advanced level of understanding of both, deriving from an academic CV partially overlapping with that of lawyers, sociologists, geologists, environmental engineers, *etc.*, but characterized by an optimized balance between all these disciplines, and thus being capable of coming to conclusions that go beyond the present level of all these categories combined, according to the current framework of education. In fact, it would be perfectly safe to say that the benefits of the terrologist on society may surpass the predictions of this paper due to the nearly complete novelty of the proposed approach and the academic background of a figure that presently does not exist. If the *theoretical* figure can have tangible impacts, the *real* figure would likely go beyond them, providing a completely new insight into climate change-related issues. A side effect of the terrologist’s effectiveness would be the reduction of skepticism, as the general populace would perceive the terrologists themselves as “closer” to society compared to stereotypical environmental scientists. A bold prediction, but one that is worth making.

The redefined terrologist, in its very inception, will face a number of challenges. By definition, it needs to be applied and introduced on a global, or nearly global scale, meaning that countries not adhering to the same unions and blocs would need to find common rules, and recognize terrologists graduating from universities across the globe to the highest possible degree. While this procedure

¹¹ I. Asimov, *Asimov’s Mysteries*, Doubleday, 1968, pp. 1-228.

may fall under the broader scheme of internationally recognized qualifications and roles, each country's perception of the climate crisis is extremely likely to affect the applicability of terrologists as widely recognized experts, potentially leading to heterogeneities. Legal frameworks may or may not, in fact, allow a third-party expert to have a well-funded say on topics accepted elsewhere on the planet, significantly contributing to further heterogeneity. It is possible, if not certain, that the introduction of terrologists in key countries may cause the figure to expand, following successful actions. The next two chapters by Dimartino will venture deeper into the issue and demonstrate that a new figure of this kind would show the ultimate convergence of many fundaments of social sciences that have remained stagnant for many decades, if not more.

3. The Terrologist Between Sociology and Common Sense

The essay based on key elements of multiple fields conveys a perspective that does not pretend to be firmly novel, as highlighted by D'Amico, however it does retain several factors that constitute an innovation for social sciences.

Why do we make this remark if the previous chapters by D'Amico report on a topical debate on the nature of a world characterized by the paradox of unprecedented technological advances in climate sciences, alongside diffused skepticism with respect to the direct effects of anthropogenic climate change? The reason for this dilemma lies in the very purpose of the scientific methodology driving the development of monographies and collectanea regarding environmental and human rights-related issues, with numerous references on conflicts of various kind, including – but not limited to – conflicts of social, anthropological, legal, philosophical and sociological nature.

With these premises, it is crystal clear that a conventional debate on the introduction of a new figure, hereby described as a multidisciplinary expert as proposed by D'Amico, is of particular complexity. However, we cannot ignore the leading hints pointing towards the innovation of such a proposal, which call for a more sociological – rather than philosophical – approach on the matter, possible by considering past studies by the author of the second part of this essay, specifically aimed at legal sociology.

Gerald Kutney is extremely accurate in his claim that «the study of climate denial is a subject for the social sciences. Individual denial of the science of climate change is more a topic for psychologists who deal with climate denial, whereas collective denial of the science of climate change is explored more by sociologists»¹². However a deeper analysis of the issue, from the perspective of experts in social sciences, cannot exclude the complexity of the main focus of sociology, which is mankind. We will therefore try, in this regard, to provide a clearer view.

The sociological “common sense”, which is an intricate topic on its own and cannot be fully described in terms of functions and characteristics in this essay, can lead to certain limits in the extent of our knowledge on reality. The limitation occurs because common sense is fundamentally based on direct experience, and is therefore the expression of limited knowledge, bounded by space and time. What we deem the real issue is the fact that common sense can lead to prejudices unsupported by evidence, a symbol of knowledge that someone may regard as rigid, or perhaps, even too rigid.

What is the relationship between “sociology” and the just mentioned “common sense”? Sociology is yet another source of knowledge on reality, transcending beyond common sense. If Sociology is indeed regarded as a “science”, particular attention would be devoted to its *method* instead of its *studied object*. A proper scientific methodology of a given knowledge, in fact, is not necessarily tied to the object, instead it focuses on the procedure evaluating the object itself.

Let it be clear, however: Sociology as a field and common sense are not necessarily contradicting each other. We can claim that Sociology confirms, refutes or provides alternative explanations with

¹² G. Kutney, *Climate denial and the classroom: a review*, cit., pp. 81-105.

respect to “things everyone knows”, a concept that may be regarded as dangerous for knowledge intended in the legal sense.

Sociology is therefore aimed at a scientific study of society. What does “scientific” mean? The definition is clearly tied to methodology. We may ask ourselves what the exact meaning of “society” is, but doing so would lead to very long and articulated notions going beyond the purpose of this essay. The matter was clearly addressed by Franco Ferrarotti, as we will see how society can no longer be intended in Aristotelian terms, and cannot be intended in the classical Roman sense, either, despite the numerous residuals of Roman Law in modern legal frameworks. Like classical societies, technologically advanced modern societies share a common factor: society is a “collectiveness”, a phenomenon of founded on people sharing history, being part of a group, and being open to changes and gradual shifts. In detail, this concept follows Ferrarotti’s definition of sociology as the science of societies developing towards modernity, not cautious as they leave behind tradition as a formal source of legitimacy, but rather optimistic in their effort to rely on rational evaluation as the key criterion upon which their future should be shaped¹³.

That said, for now, our appreciation will persist in Ferrarotti's concept of what he defines as a slow evolution of the mental schemes to which average social awareness conventionally refers to.

In fact, Ferrarotti recalls the idea of the scientist as a social figure with healing capabilities, filling a gap between the sorcerer and confessor, and accompanied by a certain mythology of science, Ferrarotti describes the great evolution of the concept of science over the last three centuries. From a discipline dispensing “divine knowledge,” a seventeenth- and eighteenth-century concept, we have essentially moved on to a rather problematic concept of science.

The observer is no stranger to the realm of knowledge. Even the most rigorous cognitive undertaking, in fact, becomes an intervention leading to changes in known reality¹⁴. It is no coincidence that the author begins his book, *Che cos'è la società* (What is society), with the following statement: «Sociology is a science. More precisely: *it is the science of society*, the field that studies – describes, explains, interprets, and predicts – social phenomena. That is all. Actually, too much and too little have been said at the same time»¹⁵. We believe, in this regard, that the topic can be addressed by recalling Alessandro Cavalli's successful attempt in focusing on the embarrassment that a sociologist experiences when faced with the question of defining the real object of his discipline: «The most straightforward answer is that sociology is the scientific study of society, creating more problems than it solves»¹⁶.

At this point, although it is now safe to claim that a multitude of insights have emerged in this developing essay, the most important one is undoubtedly the insight bringing us back to the widespread opinion that sociology is in crisis: an opinion, it should be noted, that does not appear to be entirely novel in this field of research. Bruno Bilotta is particularly insightful in this regard, as he analyzes sociology's main weakness, starting precisely from science:

Upon closer inspection, science, in order to operate as such, requires not only scientific investigation tools, but also objects on which to apply the method of investigation itself; essentially, investigating a phenomenon means having the possibility, at least theoretically, of reproducing the phenomenon that is being investigated. This is the rule of every Physics experiment from which social physics derives, which, as we all know, is the mother of sociology, or one of many mothers, since

¹³ F. Ferrarotti, *Che cos'è la società*, Carocci, Roma 2011, pp. 47-67.

¹⁴ Ivi, pp. 11-12.

¹⁵ Ivi, p. 11.

¹⁶ A. Cavalli, *Incontro con la sociologia*, il Mulino, Bologna 2001, p. 11.

sociology owes its existence to multiple mothers, a unique case in the history of humanity and in nature in general.¹⁷

Bilotta is also very straightforward in highlighting that «this very characteristic is what makes it weak: the *tout court* transition from social physics to sociology has weakened it, undermining its chromosomes at the source and making them fragile and vulnerable to attack by a variety of other sciences». Following this statement, the renowned legal sociologist further explains that:

[..] and the method of investigation of sociology is essentially weak because, first and foremost, the very object of sociology – namely: humanity – is absolutely complex and intangible. Is it possible to argue that human action is replicable in precisely the same terms, in the same situations, with the same individuals involved, with the same courses of action, such that the social "phenomenon" can be replicated? I believe that no one has ever dared or even attempted to give a positive answer to this question, which is the question that undermines sociological science as a science: it is a methodological flaw.¹⁸

After these very profound insights, we therefore allow ourselves to reinforce Gerald Kutney's concept and affirm that more than sociology, what we really require is sociology of law on the one hand, and the philosophy of law on the other, as we will further discuss in the next chapter.

4. Final Remarks on the Socio-Legal Challenge of Anthropogenic Climate Change

This work is not aimed at a detailed, or even broad, description of the intricate topic of climate change – even though many references about this very topic and its various dimensions have been implemented within the discussed legal framework, including its anthropogenic origin¹⁹. This statement highlights an even more certain consideration, for those familiar with the study of environmental law, that the study of climate change is certainly not a novel topic in the field, considering how the *United Nations Framework Convention on Climate Change* (UNFCCC)²⁰ dates back to 1992 and defines "climate change" only as change in climate attributed directly or indirectly to human activity that alters the composition of the global atmosphere and that is additional to natural climate variability observed over comparable periods of time²¹. The UNFCCC therefore makes a precise distinction between climate change caused by the human capacity to alter atmospheric composition and the climate variability that is conventionally attributable to natural causes. With these definitions in mind, it becomes clear that D'Amico's proposal of the "terrologist" as dual social and environmental science expert is indeed necessary and crucial; additionally, as Pisanò remarked,

¹⁷ B.M. Bilotta, "Per una sociologia dei conflitti. Una proposta", in B.M. Bilotta (a cura di), *Elementi di sociologia dei conflitti*, Cedam Wolters Kluwer, Milano-Padova 2017, pp. 16-17.

¹⁸ Ivi, p. 17.

¹⁹ A. Dimartino, *Verso un'analisi socio-giuridica delle questioni ambientali in Europa*, in «Società e diritti», V. 7, N. 14, 2022, pp. 55-65; F. D'Amico, A. Dimartino, *On present-day wildfires: when law, society, nature, and anthropic activities combine. A multi- to inter-disciplinary analysis*, in «Rivista internazionale di sociologia giuridica e diritti umani», N. 7, 2024, pp. 140-158.

²⁰ Per un quadro di riferimento completo sui cambiamenti climatici, si rimanda al seguente sito: <https://www.mase.gov.it/portale/cambiamenti-climatici-unfccc-e-accordo-di-parigi>

²¹ Nello specifico il trattato internazionale di cooperazione: https://it.wikipedia.org/wiki/Convenzione_quadro_delle_Nazioni_Unite_sui_cambiamenti_climatici; altresì l'United Nations Framework Convention on Climate Change scaricabile in https://www.reteambiente.it/repository/normativa/5321_concli_comp.pdf

Ever since the late 1990s, scientific literature has increasingly agreed on causally determining the link between human activities and climate change, even though the tangible negative effects of this causality (sea level rise, loss of glaciers) depend on multiple factors and very complex interactions and can only be evaluated in terms of probability and statistics.²²

Additionally, the renowned professor of Legal Philosophy invites us to consider yet another factor, which is of particular interest for us in this circumstance:

Climate change is not determined by a single event, but by a complex series of events that produce positive or negative feedback over an indefinite period of time. The dynamic, non-static nature of climate change automatically implies that even if humanity stopped emitting greenhouse gases into the atmosphere today (which is practically impossible), the Earth's temperature would continue to rise in the coming decades as a consequence of the buildup of past emissions. This essentially means that any delay in considering the risks deriving from climate change and their possible negative impacts worsens the climate crisis, bringing humanity ever closer to one or more of those "tipping points," the so called "points of no return," beyond which it is no longer possible to avoid certain negative impacts on ecosystems and human life, regardless of any regulatory action, even the most drastic, that is taken to mitigate the effects themselves.²³

In the current era, therefore, we can consider the topic of anthropogenic climate change crucial, as it represents a real challenge not only for the environment, but also for the economy, with certain legal and social consequences and impacts. Setting aside the economic-environmental challenge, the most relevant factor in the scope of this essay is, without any doubt, the socio-legal side of the issue. And to narrow the scope even further, perhaps the social challenge, which D'Amico invokes, is the most imposing in scientific research; this is also due to the fact that, as Pisanò always reminds us, the topic has been and is adequately addressed:

In recent years, the European Union has proposed several increasingly ambitious climate change mitigation policies. This ambition is growing with growing awareness of the urgency of climate change and the urgency of an effective political response to the issues posed by anthropogenic climate change caused by anthropic activities.²⁴

The social challenge therefore lies entirely in the figure of the terrologist as proposed and described by D'Amico, a sociological and philosophical challenge that we intend to accept and address. We need to keep in mind that social sciences cannot offer absolute certainties, as already highlighted in Bilotta's statements cited in the previous chapter. We also need to consider that such a hybrid science would not necessarily be able to reveal the ultimate truth, a limitation that is well highlighted by Fracchia:

In any case, especially after the discovery of relativity during the twentieth century, science is not necessarily capable of revealing the complete truth or offering absolute certainties²⁵ (truth is, at most, the underlying horizon of a scientist's investigation process). It can, however, provide a very useful theoretical filter capable of guiding and enlightening us on the path towards critical knowledge; science, then, would emerge as a "place" where rigorous verification is carried out and the replicability of results is tested.²⁶

²² A. Pisanò, *Il diritto al clima. Una prima concettualizzazione*, in «L'Ircocervo – Prima Rivista elettronica italiana di metodologia giuridica – Teoria generale del diritto e dottrina dello Stato», N. 2, 2021, p. 269.

²³ Ivi, p. 271. Sui "punti di non ritorno" si veda E. Padoa-Schioppa, *Antropocene. Una nuova epoca per la Terra, una sfida per l'umanità*, Il Mulino, Bologna 2021, p. 88.

²⁴ Ivi, p. 276.

²⁵ Cfr., D. Marconi, *Per la verità. Relativismo e filosofia*, Einaudi, Torino 2007.

²⁶ F. Fracchia, *Il giurista deve tacere sul climate change, ma deve irritarsi: problemi di confine e indicazioni metodologiche*, in «Rivista quadrimestrale di diritto dell'ambiente», N. 1, 2024, p. 42.

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