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The Problem of Temporal Synchronization in Climate Change Theoretical and Comparative Interplays in the Light of Litigation

Alessandra Di Martino

Sapienza Università di Roma

***Abstract**:* **The Problem of Temporal Synchronization in Climate Change. Theoretical and Comparative Interplays in the Light of Litigation**
The article deals with two discourses on time in climate litigation. After tracing the most traditional discourse, especially with regard to future generations, it explores the discourse of temporal synchronization, mainly drawing on the work of Hartmut Rosa. It then analyzes three landmark climate judgments through this lens: *Neubauer* of the German Federal Constitutional Court, *Klimaseniorinnen* of the European Court of Human Rights and *Lozano Barragán* of the Colombian Supreme Court of Justice. It illustrates the elaboration of doctrinal concepts such as intertemporal rights, associational standing and intergenerational burden-sharing, and rights of nature, considering them as figures of resynchronization. It also examines the institutional remedies developed by the courts and confronts various democratic approaches with the synchronization thesis. In the concluding part, it combines the theoretical reflections with a realistic assessment of the effects of the judgments and outlines a kind of chronopolitics compatible with "futurity".

Keywords: Future Generations, Temporal Synchronization, Hartmut Rosa, Climate Litigation, Democratic Institutions.

Summary: 1. Two Discourses About Time in Climate Change Issues – 2. Temporal Mismatch and Synchronization – 3. Signs of Resynchronization in Comparative Constitutional Jurisprudence – 3.1. *Neubauer* and the Intertemporality of Rights – 3.2. *Klimaseniorinnen*: associations as proxy and intergenerational burden-sharing – 3.3. *Lozano Barragán* and the Colombian Amazon: Transtemporality of Future Generations and Rights of Nature – 4. Challenges of Resynchronization for Democratic Politics – 5. A Provisional Conclusion.

1. Two Discourses About Time in Climate Change Issues

Recent interdisciplinary studies have illustrated how climate change can intersect several dimensions of temporality: linear and cyclical time; geological, present, intergenerational and planetary time; the time of colonization and exploitation of

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the soil; the time of democratic institutions and the time of law[1]. In these works, the concept of time is understood in slightly different ways: as the order of past, present and future[2]; as periods needed for regenerating nature and the ecosystems; as duration of the process of political participation and decisions; as a logical presupposition of legal norms and legal orders.

Looking more closely into the field of comparative constitutional law, we encounter two main discourses on time in climate change issues[3]. The first one, which is more traditional, is about future generations, their supposed rights and intergenerational justice. The second, which is somewhat less overt but more innovative, concerns temporal synchronization and intertemporality. In reality there are also overlaps between the two frames, since intergenerational justice presupposes a kind of intertemporality, and this article aims to show how they both operate.

The topic of future generations and intergenerational justice has been studied for decades by political and moral philosophers[4]. John Rawls – whose contractualist theory of justice presupposed the contemporaneity of subjects and only with some difficulty could be transposed to future time – elaborated a "just savings principle". This required that the present generation save and pass on to the next generation the material and immaterial goods necessary for the establishment and maintenance of

[1] S.M. Beynon-Jones, E. Grabham, "Introduction", in S.M. Beynon-Jones, E. Grabham (eds.), *Law and Time*, Routledge, ebook, 2019, pp. 1 ff.; V. Pecile, "Rethinking Legal Time: The Temporal Turn in Socio-Legal Studies", in *Oñati Socio-Legal Series*, 13 (2023), pp. 386 ff.; M. Carducci, "Il tempo del pianeta come bene della vita nell'emergenza climatica", in *diritticomparati.it* (06/09/2022); E. Buono, "Coordinate temporali dell'Antropocene: un diverso orizzonte giuridico", in *DPCE online*, 2024, pp. 883 ff.

[2] The *régime d'historicité*: see F. Hartog, *Régimes d'historicité: présentisme et expériences du temps*, Seuil, Paris, 2003.

[3] The approach I suggest overlaps only to some extent with Ch. Hilson's timeframes: Ch. Hilson, "Framing Time in Climate Change Litigation", in *Oñati Socio-legal Series*, 9 (2019), pp. 361 ff. Alongside the generational timeframe, Hilson identifies a scientific and a political timeframe: the first refers to the time horizon within which scientists believe the damage caused by the adverse effects of climate change will occur; the second refers to the time frame required for political action, which is generally evoked as an immediate need. As for this contribution, I have developed initial reflections in a presentation on "Derechos, clima, generaciones futuras. Primera parte: Derechos fundamentales, clima y conflictos de temporalidad" that I gave in a workshop on "La génesis de nuevos derechos fundamentales" at the Universidad de Málaga, 9 and 10-5-2025; the second presentation, more focused on economic issues was delivered by F. Saitto (below, nt. 63). In my view, the generational and the synchronization timeframes are more comprehensive and tend to implicitly absorb both scientific and political considerations.

[4] For an overview, see S. Caney, "Justice and Future Generations", in *Annual Rev. Political Science*, 21 (2018), pp. 475 ff.; T. Meijers, "Justice between Generations", in *Oxford Research Encyclopedia of Politics*, Oxford University Press, Oxford, 2018, also available at scholarlypublications.universiteitleiden.nl; I. González-Ricoy, "Intergenerational Justice and Institutions for the Long Term", in K.H. Goetz (ed.), *The Oxford Hanbook of Time and Politics*, Oxford University Press, Oxford, 2024, pp. 507 ff.

just institutions[5]. Rawls' thesis, however, assumes a linear and optimistic temporality, based on the perspective of a progressive economic growth. However, this view becomes less tenable over the course of the 1970s and even less so from the 1980s to the present. Along with the energetic and economic crises, and the re-emergence of Malthusian perspectives, the ecological crisis is also looming, with a widespread awareness of the growing depletion of natural resources and counter-effects of greenhouse emissions.

Thus, on the one hand a new kind of temporality – an order of time as the relationship between past, present and future – is sedimenting, a temporality which is less optimistic and less progressive[6]. According to this view, the actual order of time no longer coincides with Reinhard Koselleck's famous notion of modernity's temporality – the tension between space of experience and horizon of expectation[7] – since the latter horizon is shrinking, the future projects its threats and darkness into the present, which tends to absorb and flatten other temporality regimes. Hence the label of "presentism"[8].

On the other hand, this more fragile and pessimistic sense of temporality had consequences on approaches to intergenerational justice. Whereas Rawls thought that future generations would have benefited from resources and institutions left to them by previous generations and would tend to be better off, this became no longer plausible. Instead, later philosophers, such as Brian Barry, albeit within the Rawlsian tradition, sustained that obligations of present generations towards future ones should have a different content, i.e. handing over the planet in conditions no worse than those in which they had received it. This implied that the focus shifted from goods to be saved to harms to be prevented[9].

It has to be noted, however, that the very concept of generation and the underlying idea of *generationalism* are not without problems, since they tend to present a division of society in groups which weakens the representation of the *intra*generational class-based cleavage and related conflicts, in a world where downward social mobility is a realistic perspective and social upheaval less frequent. Also, it tends to downplay plurality and disagreement within each generational group, to evoke a vertical ordering of society with unequal distribution of authority and to foster social determinism, since the scope of political action should be merely to execute already known programs beneficial to future

[5] J. Rawls, *A Theory of Justice*, rev. ed., The Belknap Press of Harvard University Press, Cambridge Mass, 1971, 1999, pp. 251 ff.
[6] F. Hartog, *Régimes d'historicité*, cit.
[7] R. Koselleck, "'Erfahrungsraum' und 'Erwartungshorizont' – Zwei historische Kategorien" (1975), in Id., *Vergangene Zukunft. Zur Semantik geschichtlicher Zeiten*, Suhrkamp, Frankfurt a.M., 1989, p. 349 ff., see also Id., "Einleitung", in Id., O. Brunner, W. Conze (hrsg.), *Geschichtliche Grundbegriffe*, I, Klett-Cotta, Stuttgart, 1972, pp. XIII ff.
[8] F. Hartog, *Régimes d'historicité*, cit., pp. 11 ff., 257 ff.
[9] K. Forrester, *In the Shadow of Justice, Postwar Liberalism and the Remaking of Political Philosophy*, Princeton University Press, Princeton, 2019, pp. 172 ff.

generations[10]. Moreover, speaking in general of future generations has the effect of "de-historicizing the concept of generation"[11]. This is true not only at the national, but even more so at the global level. With regard to the climate issue, the language of future generations tends to "de-emphasiz[e] past responsibility" towards countries and peoples who are already suffering existential threats from climate change, or for whom the bearing of the costs of mitigation would entrench already severe poverty. Re-directing the responsibility towards the future tends to employ an ambiguous, non-reciprocal and redemptive kind of rhetoric, that fails to address pressing issues such as adaptation, technology transfer, loss and damages and climate-induced migration[12].

In any case, it would be an overstatement to claim that the language of generationalism is incompatible with social issues or political agency, since it has also been used – especially in the fields of environment and climate change – in an egalitarian and solidaristic sense, as well as to stimulate processes of collectively defining shared obligations, goals and actions[13]. I will come back to this later.

Without dealing at length with the philosophical discussion, I would like to mention two of the main problems that have been raised. The first one regards the content of duties concerning future generations. There is a spectrum of positions going from sufficientarianism, meaning guaranteeing minimum basic resources or capabilities[14], to egalitarianism, meaning avoiding relationships of domination between generations or unequal allocation of morally relevant benefits, to prioritarianism (or also luck egalitarianism), meaning that the position of those worse off through no fault of their own should in any case be elevated[15].

The second problem relates to the configurability of rights for future generations. So far, I have talked about duties of present generations, since this seems to be the most accepted form of translating instances of intergenerational justice. However, some philosophers have affirmed that future generations have moral standing and may thus be bearers of rights. According to them, neither the nonexistence objection nor indeterminacy objections are conclusive, since even if future generations don't have rights now, they may have them in the future and even if we cannot know which subjective interests and preferences future people have, we may know what their objective basic needs could be. Furthermore, Parfit's nonidentity problem – the thesis that future people are possible people and that they cannot be harmed by the same actions that created them – has been dealt with

[10] J. White, "Thinking Generations", in *British J. Sociology*, 64 (2013), pp. 237 ff.
[11] *Ivi*, p. 241.
[12] S. Humphreys, "Against Future Generations", in *European Journal of International Law*, 33 (2022), pp. 1065 ff. (1074).
[13] J. White, "Thinking Generations", cit., pp. 235-236, 240-242.
[14] L.H. Meyer, D. Roser, "Enough for the Future", in A. Gosseries, L.H. Meyer (eds.), *Intergenerational Justice*, Oxford University Press, Oxford, 2009, pp. 219 ff.
[15] For details see above, nt. 4.

through widening the person-affecting principle or embracing more impersonal values[16].

Lawyers, however, have a slightly different perspective: if faced with the question of legal rights for future generations, the fact of nonexistence and the issue of indeterminacy become crucial. It is incorrect, from a legal point of view, to confer rights to persons who do not exist now, who cannot be identified in the future and whose interests cannot be determined. Few exceptions only regard not-yet-borne foetuses or circumscribed legal fictions[17]. On the other hand, it is acceptable to talk about duties and responsibilities of the present generation towards future ones[18], or about certain rights which, having as objects collective goods, also imply duties for their holders (e.g., the right to a healthy environment)[19]. As I will show, the legal obstacles encountered in formulating enforceable rights for future generations have also stimulated functionally equivalent alternatives within climate change litigation, such as intertemporal rights, rights to climate actionable by associations and rights to nature. At the same time, the minor relevance of future generations in the subjective dimension (as rightsholders) has been compensated with an increase in their relevance in the objective dimension, namely conceiving their alleged needs and interests as limits to the activity of political bodies. In this way, they are often framed as norms of purpose.

This function of constraining ordinary legislative and administrative activity clearly emerges in constitutional norms, either originally approved in a constitution or introduced later with a constitutional revision. Over the last decades, there have been numerous reforms along these lines. For instance, the German Basic Law enshrines a "responsibility towards future generations" (art. 20a BL[20]), the French Charter of Environment promises "not to compromise the ability of future generations [...] to meet their own needs" (Preamble). Some Latin American Constitutions include formulas that recommend taking into account both present and future generations: i.e. art. 225 of the Brazilian Constitution establishes a duty of public powers "to defend and preserve [the environment] for present and future generations". Also, the latest Italian constitutional revision avoids the grammar of

[16] S. Caney, "Justice and Future Generations", cit., pp. 479, 481; T. Meijers, "Justice between Generations", cit., pp. 6 ff. For a narrow positive answer to the question of future generations rights see A. Gosseries, "On Future Generation's Future Rights", in *Journal of Political Philosophy*, 16 (2008), pp. 446 ff.

[17] For a discussion see, amongst others, A. D'Aloia, entry "Generazioni future (diritto costituzionale)", in *Enciclopedia del Diritto*, *Annali* IX, Giuffrè, Milano, 2016, pp. 337 ff.; R. Bifulco, *Diritto e generazioni future. Problemi giuridici della responsabilità intergenerazionale*, Franco Angeli, Milano, 2008; M. Luciani, "Generazioni future, distribuzione temporale della spesa pubblica e vincoli costituzionali", in *Diritto e società*, 2008, pp. 145 ff.; C. De Fiores, "La memoria dell'avvenire. Le democrazie costituzionali di fronte alle sfide del futuro", in *Politica del diritto*, 55 (2024), pp. 411 ff.

[18] For all see C. De Fiores, "La memoria dell'avvenire", cit., p. 426 ff., 430 ff.

[19] G. Peces Barba, *Escritos sobre derechos fundamentales*, Eudema, Madrid, 1988, p. 209 (also cited in the judgment of the Colombian Supreme Court of Justice examined below, para 3.3).

[20] BL is the abbreviation for the German Basic Law (*Grundgesetz*).

rights, when it provides that the Republic, while protecting the environment, biodiversity and the ecosystems, does so "also in the interest of future generations" (art. 9, para 3 Const.)[21].

The constitutional constraint according to which the actual legislator must take into account the needs and interests of future generations is also an answer to another kind of "presentism", which has been structurally associated by some political scientists to electoral politics. According to this view, which has been quite widely followed in the fields of environmental and climate change law, elected representatives have a major incentive to adopt policies that can be positively evaluated by citizens in the electoral cycle's short term. Furthermore, future subjects do not have a voice that can be heard nor opinions or interests that can be represented in Parliament[22].

As I will later point out, this position appears too categorical and may be nuanced. In any case, it is appropriate to recall that the issue is part of the broader problem of whether and how to consider future generations in democratic politics and constitutional lawmaking. The question, that has arisen since the adoption of the first written modern constitutions, is formulated in the opposite way: should the present generation bind future ones – also through the aspirational idea that the constitution should be eternal –, or should each generation give itself its own constitution as a result of democratic collective deliberation? Constitutional lawyers and political thinkers have since then given different answers[23], among which, I mention only two positions: that of Ulrich Preuss, according to which – even within the same constitutional framework – each generation should be given the opportunity to develop progress in its own way and with its own content. This requires the creation of institutions capable of ensuring that society and political forces have sufficient space, both material and symbolic, to initiate a process of reflection and possible change[24]. The other position is that of Alessandro Ferrara: according to him, different generations can be considered having a relationship of vertical reciprocity and belonging to the same transgenerational people, which in turn is different from single segments of the electorate. Both the constituent power

[21] An overview in D. Amirante, *Costituzionalismo ambientale. Atlante giuridico per l'Antropocene*, il Mulino, Bologna, 2022, pp. 94 ff., 124 ff.; R. Araújo, L. Koessler, "The Rise of the Constitutional Protection of Future Generations", in *LPP Working Paper Series*, (2021), n. 7, describing how the protection of future generations has been enshrined in constitutions worldwide as a principle, a duty and, to a much lesser extent, a right. See also P. Viola, "From the Principles of International Environmental Law to Environmental Constitutionalism. Competitive or Cooperative Influences?", in D. Amirante, S. Bagni (eds.), *Environmental Constitutionalism in the Anthropocene*. *Values, Principles and Actions*, Routledge, Oxon, 2022, pp. 234 ff.

[22] D.F. Thompson, "Representing Future Generations: Political Presentism and Democratic Trustees", in *Critical Rev. of International and Political Philosophy*, 13 (2010), pp. 17 ff., also in *nrs.harvard.edu*, from where it is quoted.

[23] S. Holmes, *Passions and Constraint: On the Theory of Liberal Democracy*, Chicago University Press, Chicago, 1995, ch. 5.

[24] U.K. Preuß, *Revolution, Fortschritt und Verfassung*, Fischer, Frankfurt a.M., 1994, pp. 25 ff.

and the power to amend the constitution respecting its essentials are attributed to the transgenerational people. It is a form of exercising "sequential sovereignty" as opposed to "serial ownership" of the constitution, the exercise of sovereignty being exclusive and proprietary for each living generation. The transgenerational people can be also represented (in somewhat less technical terms) by the apex courts, which have a mandate to interpret the constitution and its enduring will[25].

In light of these theories, constitutional texts and relevant jurisprudence on future generations can be seen both as an acknowledgment of their chance to define their own notion of progress (or non-regress), and as a way of articulating the shared commitments of the transgenerational people. In any case, the above-mentioned inauguration of a less linear and more uncertain order of time plays a role in justifying a legal responsibility of the actual towards future generations[26]. This should not preclude, however, some room for political freedom and for the participation of the contemporaries in a democratic process that should remain open in its possible outcomes.

If the concept of future generations more often figures in recent constitutional texts and case law, it coexists – and this is the point I would like to outline here – with another discourse about time in climate change litigation, which can be summarized with the concept of intertemporality. This, in my view, should be understood as an answer to the problem of temporal (de-)synchronization. In section 2 I will examine this issue, drawing on the reflections of some contemporary theorists and especially on those of Hartmut Rosa. In section 3, I will examine some leading cases in the comparative constitutional jurisprudence, where intertemporality and future generations are thematized, seeking to grasp the specificities of each constitutional context. In the section 4, I will link the issues of intertemporality and future generations that have emerged in case law with the same issues that have affected representation, since jurisprudence and democratic participation are both indispensable and complementary profiles in addressing the challenges of climate change. In section 5, I will draw some conclusions that confront the theoretical and comparative reading of the rulings with their effectiveness and I will outline a form of political action that aligns with "futurity".

2. Temporal Mismatch and Synchronization

The second discourse about time and climate change in constitutional comparative law calls our attention to the problem of temporal desynchronization. It is especially Hartmut Rosa who has developed a more comprehensive theory in recent years. Before getting to him, however, at least another scholar is worth mentioning,

[25] A. Ferrara, *Sovereignty Across Generations*, Oxford University Press, Oxford, 2023, pp. 1 ff. and *passim*.
[26] For a broader argument see H. Jonas, *Das Prinzip Verantwortung* (1979), it. transl. *Il principio responsabilità*, Einaudi, Torino, 1990, ch. II.IV, IV.II ff.

François Ost, who has identified two sub-types of "detemporalization" relevant to the issue of climate change. The first sub-type regards a linear and deterministic temporality, typical of the market domain, which forces constant change but is devoid of meaning and alternatives (temporal determinism). The second sub-type concerns a temporal mismatch (dyssynchrony) between different dimensions of social time, for instance between that of the market – with its spheres of production, but especially consumption and finance – and the lifetime of workers, traditional communities and nature[27]. Hence, the need for a "minimum of concordance of timing" or synchronization. In order to achieve this goal, it would be reasonable in his opinion to get the law and institutions involved[28].

The thesis of Rosa, which is focused on a thorough sociological investigation of modernity and late modernity seen through the lens of acceleration[29], shares with that of Ost the diagnosis of detemporalisation, which he calls "desynchronization". However, Rosa points out major difficulties with respect to the ability of democratic institutions and law to operate as synchronizers.

According to Rosa, we live in a late modern era characterized by an enormous acceleration of some key social spheres. Such an enhanced speedup – driven not only by capitalism and technology but also by secularization and individualization – induces changes in society and individual lives at a rate which is much higher than the rate of social change experienced during modernity, since it follows an *intra*generational pattern and not an *inter*generational one. In Rosas words, this can be described as an "increase in the decay rates of the reliability of experiences and expectations" and as a "contraction of the time spans definable as the 'present'"[30]. With regard to the intergenerational discourse developed above, this implies that it is no longer possible to clearly distinguish between experiences and mindsets of different generations (elderly, adults, children and adolescence), since relevant changes may happen any time soon[31]. However, not all peoples of the world and not all segments of society develop at the same speed, since some of them experience a deceleration which can be at the same time cause and symptom of exclusion. The problem of hyper-acceleration is most present in the spheres of economy (and within it, especially the financial sector), technology (which depends

[27] F. Ost, *Le temps du droit*, Odile Jacob, Paris, 1999, pp. 9 ff., 27 f.
[28] *Ivi*, p. 31 f.
[29] Amongst his numerous publications see Ha. Rosa *Beschleunigung. Die Veränderung der Zeitstrukturen in der Moderne*, Suhrkamp, Berlin, 2005; Id. "Social Acceleration: Ethical and Political Consequences of a Desynchronized High-Speed Society", in Id., W.E. Scheuerman (eds.), *High-Speed Society. Social Acceleration, Power, and Modernity*, Penn State University Press, University Park, 2009, pp. 77 ff. (an earlier version was published in 2003); Id., "Best Account. Skizze einer systematischen Theorie der modernen Gesellschaft", in Id., A. Reckwitz, *Spätmoderne in der Krise. Was leistet die Gesellschaftstheorie?*, Suhrkamp, Berlin, 2021, pp. 151 ff.; Ha. Rosa, "Beschleunigung: Zur Heuristik des Ausnahmezustandes", in K.R. Korte, G. Scobel, T. Yildiz (hrsg.), *Heuristiken des politischen Entscheidens*, Suhrkamp, Berlin, 2022, pp. 263 ff.
[30] For all see Ha. Rosa, "Social Acceleration", cit., p. 83 f.; Id., *Beschleunigung*, cit., p. 133 f.
[31] Ha. Rosa, "Beschleunigung: Zur Heuristik", cit., p. 271.

on the previous one but influences other social spheres), and media (and within it, especially the digital sector). Such phenomena of hyper-acceleration can no longer be accommodated by the dynamic stabilization typical of modernity; instead, they generate a temporal disconnect – a desynchronization – between those hyper-accelerated social spheres and slower ones. Among the slowest spheres in society are labour, democratic politics and nature[32].

Regarding the latter, it may be observed that in the first works on acceleration, Rosa did not clearly consider nature and the ecosystems as an autonomous sphere – not unlike Niklas Luhmann, who saw the environment as the external matter which rendered the differentiation of social systems possible[33]– but as processes characterized by an objective and insuperable (or superable at the cost of a massive qualitative manipulation of the process) speed limit[34]. But he gradually granted them a more autonomous, system-like status in later writings. More specifically, on the one hand the ecological crisis is seen as a form of hyper-acceleration of the atmosphere, since other hyper-accelerated spheres (economy, technology, media, etc.) produce an increase of the movement of molecules in the atmosphere and this causes the temperature to rise, provoking global warming and, subsequently, many adverse climatic effects[35]. On the other hand, the speed of such an increase in the earth's temperature and the following consequences contrasts with what can be seen as the "proper time" of nature (*Eigenzeit der Natur*), i.e. the time needed for nature to reproduce and regenerate. Greenhouse gas emissions, pollution, deforestation and large-scale fishing are all occurring at a rate much faster than the rate at which nature and the ecosystem can regenerate or dispose of dangerous substances[36].

Here is where democratic politics and law could play a role: according to Rosa, the law – understood as a set of norms agreed upon through a democratic process – should operate as a vehicle for resynchronization. After all, law and institutions have historically provided stability and predictability of action in a predominantly accelerating society. In particular, environmental law – which for our purpose may be conceived broadly as to include climate law, even if in other

[32] Ha. Rosa, *Beschleunigung*, cit., pp. 333 ff.; Id. "Social Acceleration", cit., pp. 92 ff.; Id., "Best Account", cit., pp. 203 ff.; Id., "Beschleunigung: Zur Heuristik", cit., pp. 266 ff.

[33] But cf. for a view of Rosa and Luhmann in more oppositional terms F. Rimoli, "Accelerazione, risonanza, entropia: democrazia senza futuro?", forthcoming in *Diritto pubblico*, (2025), para 2.

[34] Ha. Rosa, *Beschleunigung*, cit., pp. 139 ff.; Id., "Social Acceleration", cit., p. 93.

[35] Ha. Rosa, "De-Synchronization, Dynamic Stabilization, Dispositional Squeeze. The Problem of Temporal Mismatch", in J. Wajcman, N. Dodd (eds.), *The Sociology of Speed. Digital, Organizational, and Social Temporalities*, Oxford University Press, Oxford, 2017, p. 37; Id., "Über die Schwierigkeit, Fundamente im Treibsand zu bauen. Beschleunigungstheoretische Überlegungen zum Verhältnis von Recht und Demokratie", in M. Fröhlich *et al*. (hrsg.), *Universitas. Ideen, Individuen und Institutionen in Politik und Wissenschaft*, Nomos, Baden-Baden, 2019, p. 324; Id., "Best Account", cit., p. 210 f.

[36] Ha. Rosa, "Best Account", cit., p. 210 f.; Id., "Über die Schwierigkeit, Fundamente im Treibsand zu bauen", cit., p. 323 f., Id., "Beschleunigung: Zur Heuristik", cit., pp. 264, 274.

respects there are relevant differences[37] – should reconnect the hyper-accelerated social spheres to the times of nature, decelerating the former, since it would be very difficult, if not impossible, to accelerate the latter. Hence, the regulation of greenhouse gas emissions, of toxic wastes, of de- and reforestation etc. can be seen as an instrument of deceleration of the economic system and of the atmosphere, as well as a move towards their resynchronization with the time of nature[38].

There is, however, a deeper problem which lies within the structures of democratic politics and can also be observed through the lenses of time and acceleration. The point is a simple one: the approval of legal norms within the democratic process is time-consuming. This has been explained theoretically, since political philosophers have long considered the availability of adequate time resources in order to exchange opinions and deliberate in the legislative process and in the public sphere as a precondition for the legitimacy of political decisions[39]. Also empirically, the demanding time for participation, representation and decision is considered essential in order to maintain an acceptable level of democratic quality[40]. But the proper temporal unfolding of the democratic process is hindered by the pressure to decide quickly caused by hyper-accelerated social systems. Rosa claims that democratic politics has a proper time (*Eigenzeit der Politik*), with specific temporal modalities. One of these is the temporal relation (*Zeitrelation*) between the political system and other social systems[41]. Confronted with such (sub)systems – once again, especially financial economy, technology, and digital media –, the political system is structurally unable to accelerate at the same pace[42].

[37] On the differences between environmental law, ecological law, climate law and earth law see M. Carducci, "La ricerca dei caratteri differenziali della 'giustizia climatica'", in *DPCE online*, (2020), n. 2, pp. 1345 ff.; L.J. Koetzé, R.E. Kim, "Earth System Law: the Juridical Dimensions of Earth System Law", in *Earth System Governance*, 1 (2019), pp. 4 ff.

[38] Ha. Rosa, "Airports Built on Shifting Grounds? Social Acceleration and the Temporal Dimension of Law", in Corrias, L., Francot, L. (eds.), *Temporal Boundaries of Law and Politics*, Routledge, Oxon, 2018, pp. 79 ff.; Id., "Über die Schwierigkeit, Fundamente im Treibsand zu bauen. Beschleunigungstheoretische Überlegungen zum Verhältnis von Recht und Demokratie", in M. Fröhlich *et al*. (hrsg.), *Universitas. Ideen, Individuen und Institutionen in Politik und Wissenschaft*, Nomos, Baden-Baden, 2019, pp. 323 ff.; Id., "Best Account", cit., pp. 227-228.

[39] W.E. Scheuerman, "Liberal Democracy and the Empire of Speed", in *Polity*, 34 (2001), pp. 41 ss.; Id., *Liberal Democracy and the Social Acceleration of Time*, John Hopkins University Press, Baltimore London, 2004, pp. 26 ff.

[40] See also, albeit critical with Rosa on some specific points, W. Merkel, A. Schäfer, "The Temporal Constitution of Democracies", in K.H. Götz (ed.), *The Oxford Handbook of Time and Politics*, Oxford University Press, Oxford, 2024, pp. 22 ff., and, for the times of political institutions, L. Cuocolo, *Tempo e potere nel diritto costituzionale*, Giuffrè, Milano, 2009, pp. 153 ff.

[41] Temporal reach, temporal volume, speed, sequence, temporal relation: see Ha. Rosa, H. Laux, "Clockwork Politics – Fünf Dimensionen politischer Zeit", in H. Straßheim, T. Ulbricht (hrsg.), *Zeit der Politik. Demokratisches Regieren in einer beschleunigten Welt*, *Leviatan*, Sonderband 20 (2015), pp. 52 ff.; Ha. Rosa, "Beschleunigung: Zur Heuristik", cit., pp. 263-266, here with a preliminary and partially different classification.

[42] Ha. Rosa, *Beschleunigung*, cit., pp. 391 ff.; Id., "Social Acceleration", cit., pp. 101 ff.; Id., "Airports Built on Shifting Grounds?, cit., pp. 81 ff.; Id., "Best Account", cit., 208 ff.; Id.,

Also, from a slightly different perspective, the requirement of length seems to irremediably conflict with the bias towards presentism of electoral politics[43].

This general contrast is synthesized by Rosa in a paradox: technological acceleration and increasing scarcity of time occur simultaneously, or, slightly differently formulated, the same features and mechanisms which provoke an augmented need of time (*Zeitbedarf*) for political decisions provoke a contraction of the resources of time (*Zeitresourcen*)[44]. This broader paradox is, in turn, articulated in a series of narrower paradoxes.

First, the rise in speed in certain social systems has caused a shrinking of the timespan for stable expectations and conditions for actions. While these conditions have become contingent, the growth of speed has also generated an increase in complexity, which has led to more uncertainty[45]. An increase in complexity and uncertainty requires more time for thought and consideration, in order to take rational decisions and plans. Second, the growth in complexity demands the planning of long-range decisions, being aware of their potential irreversibility. Political action capable of wider reach and adopted according to rational criteria is significantly time-consuming; however, as mentioned before, both the predictable timespan and the available time resources shrink. Thirdly, and more generally, the length of the process of decision-making in our pluralistic and differentiated society has grown considerably, since old traditions and conventions are no longer able to secure a background consensus. An agreement can be reached only through lengthy detection, organization, articulation and mediation of different social interests[46].

This paradoxical situation could seem to have no way out. Rosa himself has later suggested that a resynchronization might happen through the experience of "resonance", i.e. a non-alienated relation with the world and with nature, capable of resisting the imperatives of growth and exponential acceleration and to give value to more authentic forms of life[47]. The concept has a neo-romantic flavour and is not always conclusive[48], but this does not mean that it cannot generate suggestions and inspirations. Other authors have instead maintained that Rosa's initial scheme was too rigid, in that it assumed a uniform and universal political

"Beschleunigung: Zur Heuristik", cit., pp. 271 ff. See also R. Hassan, "Network Speed and Democratic Politics", in *World Futures*, 64 (2008), pp. 3 ff. With a lesser emphasis, the topic is also present in the above mentioned F. Ost, *Le temps du droit*, cit., p. 29.

[43] Above, nt. 22.

[44] Ha. Rosa, "Social Acceleration", cit., p. 87, 92; Id., "Beschleunigung: Zur Heuristik", cit., p. 278.

[45] On the difference between complicated, complex and contingent see K.R. Korte, G. Scobel, T. Yildiz, "Politisches Entscheiden: Zwischen Komplexität, Kontingenz und Kunstfertigkeit", in K.R. Korte, G. Scobel, T. Yildiz (hrsg.), *Heuristiken des politischen Entscheidens*, cit., pp. 11 ff.

[46] Ha. Rosa, "Beschleunigung: Zur Heuristik", cit., p. 278-280, but also Id., *Beschleunigung*, cit., pp. 409 ff.; Id., "Social Acceleration", cit., p. 104 f.; Id., "Best Account", cit., 208 f.

[47] Especially Ha. Rosa, *Resonanz*, Suhrkamp, Berlin, 2019.

[48] For a critique see F. Rimoli, "Accelerazione, risonanza, entropia", cit. For a reading of Rosa in the context of the German School of Critical Theory see F. Stühler, *Auf den Spuren der Kritischen Theorie und der modernen Sozialphilosophie*, LIT, Berlin, 2022, pp. 192 ff.

time, whereas it should be differentiated according to the kind of political systems and democratic governments, as well as according to the subjects to be regulated[49]. Also, the belief that all politics is hostage to presentist time pressures could be disproved by practice. The field of climate politics and law, for example, is itself a forward-looking one[50]. The problem, as will be highlighted, is how politics for the future could be realistically conceived, discussed and implemented[51].

Some reflections that echo those of Rosa can be found in the writings of scholars that have specialized in climate change law. Some authors, among them Michele Carducci, have spoken of a "tragedy of the [temporal] horizon"[52], that is, the progressive and rapidly narrowing before our very eyes of the time frame in which we can actually prevent global warming from reaching a point of no return. This "rapidly closing window of opportunity", as it has been metaphorically called by international sources[53], contrasts with much longer periods of time in which humans have polluted the environment and exploited nature, following the capitalist system of production and its (neo)colonial expansion. It also contrasts with much longer periods of time that nature takes to restore ecosystems that have now been almost irreparably damaged[54]. In even stronger terms than Rosas, Carducci outlines a collision that could become a real "endgame", between "politically decided and legally regulated time" (*t*), on the one hand, and "remaining natural time" (*T*), on the other. Hence, rebalancing the *t/T* ratio has become crucial for stabilizing the climate system and for the survival of the planet[55].

[49] W. Merkel, A. Schäfer, "Zeit und Demokratie: Ist demokratische Politik zu langsam?", in H. Straßheim, T. Ulbricht (hrsg.), *Zeit der Politik*, cit., pp. 218 ff.; W. Merkel, A. Schäfer, "The Temporal Constitution of Democracies", cit., pp. 27 ff., 30 ff.

[50] *Ivi*, p. 32; J. White, "The Future as a Democratic Resource", in *Perspectives on Politics*. *First View*, (2025), pp. 1 ss.

[51] Below, para 4 and 5.

[52] M. Carducci, entry "Cambiamento climatico (diritto costituzionale)", in *Digesto delle discipline pubblicistiche*, VIII Agg., Utet, Milano, 2021, p. 72; Id., "Climate Change and Legal Theory", in G. Pellegrino, M. Di Paola (eds.), *Handbook of the Philosophy of Climate Change*, Springer, ebook, 2023, pp. 320 ff., quoting the speech of M. Carney, *Breaking the Tragedy of the Horizon. Climate Change and Financial Stability*, in *bis.org* (2015) and suggesting to correct the frame of the "tragedy of the commons". See also E. Buono, "Coordinate temporali dell'Antropocene", cit., pp. 894 ff.

[53] UN Environment Programme, "The Closing Window. Climate Crisis Calls for Rapid Transformation of Societies", in *unep.org* (2022); IPCC, "AR6 Synthesis Report. Climate Change", in *ipcc.ch* (2023), pp. 88 ff., 97 ff. Lately see ECtHR, *Verein Klimaseniorinnen Schweiz v. Switzerland*, n. 53600/20, 9 april 2024, para. 118, 543.

[54] M. Carducci, "Climate Change and Legal Theory", cit., pp. 314 ff.; E. Seyma Sysman, "Il tempo. Il grande assente del costituzionalismo ambientale", in *DPCE online*, *Oca* (2024). See also E. Buono, "Coordinate temporali dell'Antropocene", cit., pp. 892 ff. On the imperial origins and implications of air-appropriation through greenhouse gases emissions from former colonial and wealthier countries see A. Folkers, "Air-appropriation: The Imperial Origins and Legacies of the Anthropocene", in *European Journal of Social Theory*, 23 (2020), pp. 611 ff.

[55] M. Carducci, "Il tempo del pianeta", cit.

Even if this perspective does not coincide with that of earth system law[56], parallel observations concerning temporality and systems theory can be useful. The earth system approach explicitly considers the earth as a socio-ecological system, including ecological aspects such as climatic and biodiversity systems inhabited by humans and other species, who interact asymmetrically. It has been maintained that the underlying logic of this system is autopoietic, i.e. self-organizing, reproducing according to cause-effect feedback loops, with cognitively open (irritable) but operatively closed boundaries[57]. A sympoietic outlook on the earth system, outlining complex relations among its components, openness of sub-processes and a "contingency surplus" is also conceivable and perhaps preferable[58]. In any case, the attitude towards time is similar yet slightly different from Rosas. Earth system law, which is broad enough to include climate law and climate litigation[59], should work in a mirror-like way with respect to the overarching earth system, both of them being adaptive systems[60]. Hence, the legal system should adjust to the earth system's non-linear temporality – a consequence of its complexity, instability and unpredictability – as well as to its geological time, corresponding to biogeochemical cycles such as the carbon and the water cycles. Something analogous can be said with regard to "ecological law", which seeks to reconnect with the ecological time[61].

There are, however, also critical remarks to be raised *vis-à-vis* the latter theories, namely an over holistic and harmonious approach, a lesser consideration for material, i.e. socio-economic, geopolitical and redistributive conflicts between wealthier and poorer countries, as well as for the role of capitalism[62]. The temporal horizon of these conflicts is much closer to our present than geological time. Indeed, studies on "just transition" seek to rebalance the focus[63]. Democratic implications

[56] L.J. Koetzé, R.E. Kim, "Earth System Law", cit., pp. 1 ff.; L.J. Koetzé, R.E. Kim, "Exploring the Analytical, Normative and Transformative Dimensions of Earth System Law", in *Environmental Policy and Law*, 50 (2020), pp. 457 ff.

[57] See, drawing on Luhmann, M.C. Petersmann, "Sympoietic Thinking and Earth System Law: The Earth, its Subjects and the Law", in *Earth System Governance*, 9 (2021), pp. 4-5.

[58] *Ivi*, pp. 5-7, with reference to D. Haraway, "Sympoiesis: symbiogenesis and the lively arts of staying with the trouble", in Ead., *Staying with the Trouble. Making Kin in the Chtulucene*, Duke University Press, Durham, 2016, pp. 58 ff. The term sympoiesis was seemingly coined by scientist B. Dempster.

[59] L.J. Kotzé *et al*., "Courts, Climate Litigation and the Evolution of Earth System Law", in *Global Policy*, 15 (2024), pp. 5 ff.

[60] M.C. Petersmann, "Sympoietic Thinking", cit., p. 5. See L.J. Koetzé, R.E. Kim, "Exploring", cit., p. 466.

[61] L.J. Koetzé, R.E. Kim, "Earth System Law", cit., p. 5, 7-8; L.J. Koetzé, R.E. Kim, "Exploring", cit., p. 465.

[62] A. Somma, "Il diritto del sistema terra. Democrazia, capitalismo e protezione della natura nell'antropocene", in *DPCE online*, Sp. 2 (2023), pp. 275 ff.; A. Folkers, "Air-appropriation", cit., pp. 611 ff., who described it as "ecological imperialism" (611).

[63] A. Savaresi, J. Setzer *et al*., "Conceptualizing Just Transition Litigation", in *Nature Sustainability* (2024), pp. 1379 ff.; M.A. Tigre *et al*., "Just Transition Litigation in Latin America. An Initial Categorization of Climate Litigation Cases Amid the Energy Transition", in

are also contested, since earth system law has a rather global orientation[64], downplaying democratic legislators at the state level. With a partially different inclination, other authors seek to overcome deficits of presentist representative politics by strengthening deliberative and participative democracy, with their different timing, looking mainly at legal traditions of the so-called Global South[65].

3. Signs of Resynchronization in Comparative Constitutional Jurisprudence

Following these theoretical insights, I will now focus on three landmark judgments in climate constitutional jurisprudence and show how they have dealt with the problem of temporal synchronization. Even though pursuing different lines of argumentation, they have all developed legal and doctrinal concepts that suggest a possible resynchronization between the hyper-accelerated social spheres which drive climate change and the ecosystem.

Over the last decade, the field of climate litigation has grown exponentially all over the world, also providing interesting material for comparative studies. Both phenomena of cross-fertilization and specificities in different legal traditions have been addressed[66]. Climate litigation may be initiated in various legal fields (civil law, administrative, constitutional law) and may have a gradual variation in the scope of territorial reach (national, regional, international). There is, however, also some overlap. The three landmark rulings I will deal with are drawn from constitutionally relevant litigation. They have been chosen because they all present the three key features of what has been defined as an emerging comparative

scholarship.law.columbia.edu (2023). On economic and redistributive implications and parallels with the debt issue see F. Saitto, "Terra e lavoro". Osservazioni preliminari sul rapporto tra sistema economico, generazioni future e 'questione ambientale'", in *Diritti e costituzione all'alba del terzo millennio. Liber Amicorum per Roberto Nania*, Giappichelli, Torino, 2025, pp. 701 ff.

[64] Above, nt. 61.

[65] M. Carducci, "Cambiamento climatico", cit., p. 72, and more thoroughly below, para 4 and 5.

[66] Among the many works see B. Pozzo, "Climate Change Litigation in a Comparative Law Perspective", in F. Sindico, M.M. Mbengue (eds.), *Comparative Climate Change Litigation*. *Beyond the Usual Suspects*, Springer, Cham, 2021, pp. 610 ff.; Ead., "Il contenzioso climatico nel prisma del diritto comparato", in *Diritto pubblico comparato ed europeo*, 26 (2024), pp. 987 ff.; S. Baldin, P. Viola, "L'obbligazione climatica nelle aule giudiziarie. Teorie ed elementi determinanti di giustizia climatica", in *Diritto pubblico comparato ed europeo*, 23 (2021), pp. 597 ff.; A. Pisanò, "Elementi per una definizione dei contenziosi climatici propriamente strategici, movendo dal *Global Climate Litigation Report: 2023 Status Review*", in *Politica del diritto*, 55 (2024), pp. 3 ff.; S. Bagni, *The Enforcement of New Environmental Rights Through the Courts. Problems and Possible Solutions*, in D. Amirante, S. Bagni (eds.), *Environmental Constitutionalism in the Anthropocene*, cit., pp. 409 ff.; E. Lees, E. Gjaldbaek-Sverdrup, "Fuzzy Universality in Climate Change Litigation", in *Transnational Environmental Law*, 13 (2024), pp. 502 ff.; N. Affolder, G.E.K. Dzah, "The Transnational Exchange of Law through Climate Change Litigation", in F. Sindico *et al*. (eds.), *Research Handbook on Climate Change Litigation*, Elgar, Cheltenham, 2024, pp. 207 ff.

"prototype": the claiming of constitutional rights[67], the use of scientific findings as objective evidence for the urgent need to take action, the narrower thematization of future and intertemporality[68]. Compared to other landmark judgments[69], the reasoning developed by these decisions is particularly innovative when viewed through the lens of temporal resynchronization. Hence, they deserve special attention.

The three rulings that are examined are *Neubauer*, delivered in 2021 by the German Constitutional Court[70], *Klimaseniorinnen*, delivered in 2024 by the European Court of Human Rights[71] and *Lozano Barragán*, delivered in 2018 by the Colombian Supreme Court[72]. Their innovations[73] related to temporality can be synthetized as follows: the development of an intertemporal concept of rights, the connection between representative associations and intergenerational burden-sharing, and the cross-temporality of future generations and rights of nature.

Before delving into their specific reasonings, a common trait needs to be underlined. The innovations presuppose that there is a close link between the admissibility part of the judgments and their merits. In the passages on admissibility, a thorny problem – common to much climate litigation – regards the qualification of young plaintiffs who claim that their rights have been violated and ask for counteracting the emissions of greenhouse gases. In the comparative and international spectrum the question has received different answers, mainly due to contingent factors, and has not been clearly defined[74]. This is also specific evidence of the difficulty of recognizing future generations as rights holders. While some jurisdictions do not allow climate change litigation introduced by minors, others do, albeit with children invoking different rights: either their own rights for themselves (in the present moment and in the years ahead), or their own rights as a *proxy* for those of future generations or their own rights *as* those of future generations[75]. In two cases under consideration, minors and adolescents were among the plaintiffs,

[67] J. Peel, H.M. Osofsky, "A Rights Turn in Climate Change Litigation?", in *Transnational Environmental L*aw, 7 (2018), pp. 37 ff.; A. Savaresi, J. Auz, "Climate Change Litigation and Human Rights: Pushing the Boundaries", in *Climate Law*, 9 (2019), pp. 244 ff.

[68] E. Lees, E. Gjaldbaek-Sverdrup, "Fuzzy Universality in Climate Change Litigation", cit., pp. 508 ff.

[69] The most significant, because it is the first in which a state has been condemned for failing to adopt adequade measures to reduce greenhouse gas emissions is Dutch Supreme Court, *The State of Netherlands v. Urgenda Foundation*, 20/12/2019.

[70] German Federal Constitutional Court (GFCC), 1 BvR 2656/18, 24/03/2021.

[71] European Court of Human Rights (EuCtHR), *Verein Klimaseniorinnen Schweiz et al. v. Switzerland*, n. 53600/20, 09/04/2023.

[72] Colombian Supreme Court of Justice (ColSCtJ), STC 4360-2018, 05/04/2018. In some English articles, this judgment is also cited as *Future Generations v. Ministry of the Environment*.

[73] For broader considerations on the concept of innovation in the field of rights protections see G. Hornung, *Grundrechtsinnovationen*, Mohr, Tübingen, 2015.

[74] A. Nolan, "Children and Future Generations Rights before the Courts: the Vexed Question of Definitions", in *Transnational Environmental Law*, 13 (2024), pp. 522 ff.

[75] *Ivi*, pp. 524 ff.

along with young adults. In another judgment plaintiffs were elderly people, but the case revealed connections with a concomitant application filed by young people. Each court offered its own distinctive response to the admissibility question. Moreover, each court established its own path for achieving temporal resynchronization.

3.1. *Neubauer* and the Intertemporality of Rights

The decision *Neubauer* of the German Federal Constitutional Court developed the concept of "intertemporal guarantee of rights". The judgment was initiated by an individual constitutional complaint (*Verfassungsbeschwerde*). There were several applicants: minors represented by their legal representatives, young adults and associations for environmental protection. On the one hand, the Court found the associations' claims inadmissible, since according to the law on the Constitutional Court only individuals may file a complaint. On the other hand, it granted admissibility to individual complaints filed by natural persons (children and adolescents as well as young adults)[76]. It also made clear that these applicants were asserting their own rights, not the rights of unborn persons or future generations, "neither of whom enjoy subjective fundamental rights"[77]. However, although maintaining that it is the plaintiff's own rights that are at issue in the case and not the rights of future people, the Court interpreted the individual application requirements (having a personal, direct and present interest) in a fairly expansive way. It specified that in order to have a personal interest, this should not be "qualified", i.e., different from that of other people, and that in order to have a present interest, a forward-looking assessment may be relevant[78]. This enabled the Court to determine that, approximately a decade after the decision, the rights of the plaintiffs could probably be jeopardized and that appropriate measures had to be taken in good time.

The judges reach the conclusion through a number of significant doctrinal steps. In order to fully understand them, it is useful to recall that *Neubauer* concerned the Climate Protection Act of 2019, which provided for greenhouse gas emission reduction measures to be taken according to a strict timetable until 2030. For the period after that date, the Act referred to regulations yet to be adopted by the government.

The first doctrinal step was reversing the framework of the appellant's claim, shifting it from the obligations to protect to individual rights. This is a quite intricate issue typical of German doctrine on fundamental rights. These may be understood either in a subjective dimension, that is, as individual rights, granting protection from state's interference. Alternatively, they may be understood in an objective

[76] German Federal Constitutional Court (GFCC), 1 BvR 2656/18, para. 90 ff.
[77] *Ivi*, para. 109.
[78] *Ivi*, para. 110 ff.

dimension, which in turn encompasses several sub-dimensions, including the state's obligation to protect and rights to receive a benefit from the state[79]. Here, the applicants primarily invoked the right to life (art. 2 para. 2 BL) and the right to property (art. 14 BL) as the basis of a state's duty to protect. They also invoked a right to an ecological minimum level of subsistence (art. 1 and 20a BL). Surprisingly, the judges reframed the issue from one of the state's obligations to protect life or property to one of the state's non-interference with general "freedom rights" (*Freiheitsrechte*) or fundamental freedoms[80]. This move was widely debated by legal scholars[81]. In any case, it allowed the judges to apply the principle of proportionality in its typical stages, albeit with some adjustments.

The Court developed the following argument, also employing the metaphor of the "emergency brake". Given that the legislator has established an emission reduction scheme only until 2030, by which time Germany is projected to have consumed a significant portion of its carbon budget, the state will be compelled to implement urgent and substantial measures thereafter in order to achieve the goal of carbon neutrality by 2050 (this would be equivalent to pulling an "emergency brake"). Political bodies will then have to intervene quite heavily in the sphere of many freedoms, namely all those which will be affected by a much stricter regulation of energy consumption (industry, transport, services, culture, domestic and social activities, etc.)[82]. The freedoms potentially involved are not mentioned specifically, but through the generic formula of *Freiheitsrechte*, which nevertheless finds and anchor in the subsidiary and "umbrella" right of general freedom of action (art. 2, para. 1 BL)[83]. However, some commentators believed that the rights most

[79] See at least H. Dreier, *Dimensionen der Grundrechte*. *Von der Wertordnungsjudikatur zu den objektiv-rechtlichen Grundrechtsgehalten*, Hennies & Zinkeisen, Hannover, 1993; W. Kahl, "Grundrechte", in O. Depenheuer, Ch. Grabenwarter (hrsg.), *Verfassungstheorie*, Mohr, Tübingen, pp. 807 ff.; Ch. Calliess, "Dimensions of Fundamental Rights – Duty to Respect versus Duty to Protect", in H. Pünder, Ch. Waldhoff (eds.), *Debates in German Public Law*, Oxford University Press, Oxford, pp. 27 ff. In a comparative perspective P. Ridola*, Il principio libertà nello stato costituzionale. I diritti di libertà in prospettiva storica-comparativa*, Giappichelli, Torino, 2018, pp. 166 ff.; A. Di Martino, "La doppia dimensione dei diritti fondamentali", in *La Rivista Gruppo di Pisa*, (2016).

[80] GFCC, 1 BvR 2656/18, para. 116 ff., 182 ff., spec. 184-185. The English translation of the judgement uses the terms "fundamental freedoms" or "fundamental rights".

[81] In addition to the authors cited in the following notes see C. Franzius, "Die Figur eingriffsähnlicher Vorwirkungen. Zum Klimabeschluß des Bundesverfassungsgerichts", in *Kritische Vierteljahresschrift für Gesetzgebung und Rechtswissenschaft*, (2021), pp. 136 ff.; Ch. Calliess, "Das 'Klimaurteil' des Bundesverfassungsgerichts: 'Versubjektivierung' des Art. 20a GG?", in *Zeitschrift für Umweltrecht* (2021), pp. 355 ff.; A. Di Martino, "Intertemporalità dei diritti e dintorni. Le scelte argomentative del Bundesfervassungsgericht nella sentenza sul clima e le interazioni con i processi democratici", in *Rivista di Diritti comparati*, (2023), pp. 56 ff.

[82] German Federal Constitutional Court (GFCC), 1 BvR 2656/18, para. 116 ff., 182 ff., 247 ff. (192).

[83] Above, nt. 80.

likely to be affected – and according to the Court's view in need of protection – would be economic rights[84].

This is also where temporal observations come into play: although the interference with these rights does not occur in the present, the Court nevertheless already takes into account, in an anticipatory manner, the restrictive effect that will manifest itself in the years shortly after 2030. The new doctrinal concept articulated by the judges is "advance-interference like effect" (*eingriffsähliche Vorwirkung*)[85] in the sphere of fundamental rights. This anticipatory relevance of time in the evaluation of an infringement of rights runs parallel to an intertemporal reshaping of the proportionality principle. To explain this, it is important to emphasize that it is at this stage that art. 20a BL finally comes into play, as the principle that establishes a state's responsibility for future generations and must be reconciled with the rights restricted by the "emergency brake". The legal tool for such reconciliation is the proportionality principle. As a criterion for articulating the principle of proportionality in the context of climate change, the Court introduces the temporal element: the more time passes, the more evident the irreversibility of climate change and its consequences become, the more the principle of climate protection prevails over individual rights[86]. In this respect, some authors have spoken of an "intergenerational proportionality" as a triangle whose sides are made up of the guarantee of freedom in the present, the security of freedom in the future, and their balanced distribution over time[87]. In the words of the Court, it is the "intertemporal guarantee of freedom" (*intertemporale Freiheitssicherung*)[88], that is thus operationalized.

It is important to note that, even if the German constitutional judges addressed the need to redistribute chances of liberty as well as burdens in the reduction of emissions[89], they applied the lexicon of intertemporality clearly with regard to freedom but not to justice. Some commentators sought to translate the Court's approach in a "systemic intertemporal justice", as objectively referring to the comprehensive legal order[90], but this is something different from egalitarian philosophical approaches to intergenerational justice. It is also significant that the

[84] Ch. Möllers, N. Weinberg, "Die Klimaschutzentscheidung des Bundesverfassungsgerichts", in *Juristenzeitung*, 76 (2021), p. 1073, 1076.
[85] *Ivi*, para. 116, 183 ff.
[86] *Ivi*, para. 120, 185, 198, 246. This approach to proportionality was confirmed in GFCC, 1 BvR 1187/17, 23/03/2022, para. 98 ff., 134 ff., 155, on windparks.
[87] M. Kment, S. Borchert, "Intertemporalität in der Energiewende", in *Archiv des öffentlichen Rechts*, 147 (2022), pp. 589, 597 ff. See also G. Britz, "Klimaschutz in der Rechtsprechung des Bundesverfassungsgerichts", in *Neue Zeitschrift für Verwaltungsrecht, Sonderausgabe Klimabeschluss*, (2022), p. 11.
[88] GFCC, 1 BvR 2656/18, para. 122, 142, 183, 190, 191.
[89] *Ivi*, para. 183, 192 ff.
[90] M. Ruttloff, L. Freihoff, "Intertemporale Freiheitssicherung oder doch besser 'intertemporale Systemgerechtigkeit'?", in *Neue Verwaltungszeitschrift*, (2021), pp. 920-921; J. Berkemann, "Freiheitsschancen über Generationen (Art. 20a GG)", in *Die öffentliche Verwaltung*, (2021), pp. 712 ff.

Court didn't use as a constitutional yardstick art. 3 BL, on the principle of equality[91]. After all, the Court considered only the rights of living people (children or young adults) likely to be infringed in the near future and implicitly stressed the role of objective law as the sphere where a self-modulation of those liberties should occur[92]. This also explains the criticism leveled by some commentators regarding the temporal scope of the judgment: the Court's temporal horizon, at best, encompasses the mid-term future but fails to extend to the long-term future. Moreover, a focus on the intertemporal dimension of freedoms ultimately results in the safeguarding of the freedom to burn fossil fuels[93]. Also, the extra-territorial implications of the lawsuit are strongly weakened[94].

The role of objective law in providing the "intertemporal guarantee of freedom" entails an institutional counterpart, that is connected to the democratic principle and to the role of the legislator, to which I will return later (para. 4).

3.2. *Klimaseniorinnen*: Associations as Proxy and Intergenerational Burden-sharing

The European Court of Human Rights (EuCtHR) developed two interrelated ideas concerning temporality in *Klimaseniorinnen*: the standing of associations, especially those representing persons being at a "distinct representational disadvantage"[95] and the principle of "intergenerational burden-sharing" with respect to risks and impacts of climate change[96]. Doctrinally, these innovations may be understood in the light of two peculiarities: the earliest development of a principle of intergenerational equity in international law and the traditional narrowness of standing before the European Court. *Klimaseniorinnen* has sought to overcome the latter by emphasizing the former.

The legal principle of intergenerational burden-sharing can be considered as a specification of the principle of intergenerational equity or fairness[97], which in turn mirrors the philosophical concept of intergenerational justice. It is no coincidence that debates in international law unfolded around the same period in which the first significant philosophical disputes took place and the first international documents started referring to future generations. The seminal study on the topic, showing a clear Rawlsian inspiration, sees the planet as a trust that

[91] G. Britz, "Klimaschutz", cit., p. 14.
[92] N. Grosche, "Recht und intertemporale Gerechtigkeit", in *Der Staat*, 61 (2022), pp. 116 ff. See also Ch. Möllers, N. Weinberg, "Die Klimaschutzentscheidung", cit., p. 1073.
[93] D. Bertram, "'For You Will (Still) Be Here Tomorrow': The Many Lives if Intergenerational Equity", in *Transnational Environmental Law*, 12 (2023), p. 141.
[94] Despite the admissibility of complaints from Bangladeshi petitioners: see among others S. Humphreys, "Against Future Generations", cit., pp. 1086 ff.
[95] ECtHR, *Verein Klimaseniorinnen Schweiz*, para. 484, 489, 614.
[96] *Ivi*, para. 419, 484, 489, 499.
[97] D. Bertram, "For You Will (Still) Be Here Tomorrow", cit., pp. 121 ff.

must be preserved for future generations, while members of the current generation are regarded as beneficiaries entitled to use it. Analytically, the principle of intergenerational equity is broken up into three distinct components – conservation of options, conservation of quality of the planet and conservation of equitable access – and from it are derived rights and duties, among which rights for future generations[98].

However, in subsequent years mainstream international theory and practice largely refrained from explicitly engaging with detailed articulations of this concept. Instead, a "creeping intergenerationalization" was observed, i.e. the implicit absorption of intergenerational equity in other, perhaps more expressive and effective concepts and principles. These include the principle of sustainable development, which addresses the balance between economic growth and environmental protection; the precautionary principle, which requires the suspension of risky activities that may cause as yet unidentified future harm; and the common heritage of mankind, wherein global resources are regarded as held in trust for present and future generations[99]. In contrast, as mentioned earlier, some vocal critical perspectives have emerged concerning future generations, challenging approaches that are overly abstract and ahistorical. Abstract narratives – this is the reproach – tend to overlook both the causative role of past and colonial episodes of exploitation and domination in ecological harm, as well as the immediate needs of social groups most affected by climate change. This results in a depoliticization and homogenization of responsibilities[100].

I have dwelt longer on these aspects because they provide useful background information against which to read *Klimaseniorinnen*. In particular, one may ask if the notion of "intergenerational burden-sharing" is intended in a more objective or subjective sense. To fully grasp the issue, one has also to look at the problem of standing, since the Court interpreted the requisite of "victimhood" according to art. 34 ECHR in a quite unusual way. While the long-standing interpretation of this provision was that only individuals could be applicants, the EuCtHR in *Klimaseniorinnen* declared inadmissible the applications of individuals and

[98] E. Brown Weiss, *In Fairness to Future Generations. International Law, Common Patrimony and Intergenerational Equity*, The UN University, Tokyo, 1989 see also Ead., "Our Rights and Obligations to Future Generations for the Environment", in *American Journal of International Law*, 84 (1990), pp. 198 ff. More specifically, the three components are: the conservation of diversity of natural and cultural resources in order to make significant options available also for coming generations, the conservation of the quality of the planet in order to pass it down in no worse conditions than those it was received, the conservation of equitable rights of access to the legacies of previous generations. Critical with this work is S. Humphreys, "Against Future Generations", cit., pp. 1072 ff., also outlining the neocolonial taste of the language of trust (*ivi*, p. 1069).

[99] D. Bertram, "For You Will (Still) Be Here Tomorrow", cit., quoting Ch. Redgwell with respect to "creeping intergenerationalism".

[100] S. Humphreys, "Against Future Generations", cit., pp. 1061 ff. See also L. Netto, "The Struggle is Now. Why We Should Be Cautious About Granting Present Rights to Future Generations", in *verfassungsblog.de* (10/04/2025).

admissible that of an association, whose members were the same individuals, namely elderly women who complained to be particularly exposed to adverse effects of climate change[101]. On the same day, the Court famously dismissed two other applications on climate change, one of which was filed by young people[102]. Even though the latter application was declared inadmissible for failure to exhaust internal remedies, the Court had previously heard in this case arguments on the issue of intergenerationality, that likely influenced its reasoning in *Klimaseriorinnen*[103].

Whereas some commentators outlined the contradiction between the treatment of individuals on the one hand and associations on the other, as well as incoherence with consolidated case-law[104], others sought to come to terms with the new development carried out by the Court through an evolutive interpretation and to highlight its potential. In granting standing to the association in climate cases, the Court builds upon a growing trend among European states. It also significantly uses open and flexible expressions pointing to a broader group of represented subjects, stressing that in order to be recognized standing in climate cases, the association shall represent not only the interests of its members, but also the interests of "other affected individuals" (or "at risk of being affected"). It also concedes that it is likely that these interests overlap with those of "the general public and future generations"[105] and that they are mainly felt by persons at a "distinct representational disadvantage"[106]. If we realize that the Court is not only dealing with the single case presented by the association of elderly ladies, but is crafting broader principles that will influence its future case-law and that of other jurisdictions, engaging in a transnational dialogue on climate issues[107], we can better grasp the meaning of those phrases and also make sense of the reference to "intergenerational burden-sharing". In this respect, quite different positions are worth mentioning. Some commentators have even affirmed, maintaining that there is no gap between victim status and standing, that legal subjects allowed to claim rights are future generations[108]. Others, narrowing down the reference group, have pointed to children and youth as present groups who are more likely to experience

[101] EuCtHR, *Verein Klimaseniorinnen Schweiz*, para. 478 ff.
[102] EuCtHR, *Duarte Agostinho et al. v. Portugal*, n. 39371/20, 09/04/2024.
[103] A. Nolan, "Inter-generational Equity, Future Generations and Democracy in the European Court of Human Rights' Klimaseniorinnen Decision", in *ejiltalk.org* (15/04/2024).
[104] EuCtHR, *Verein Klimaseniorinnen Schweiz*, *Partly concurring and partly dissenting opinion of Judge Eicke*, para. 4, 18 ff., 28 ff, 59 ff. Among others K. Dzehtsiarou, "'*Klimaseniorinnen* Revolution': The New Approach to Standing, in *European Convention on Human Rights Law Review*, 5 (2024), pp. 423 ff.
[105] EuCtHR, *Verein Klimaseniorinnen Schweiz*, para. 502 c), 521, 524. See also para. 497, 499. But cf. for a precise critique *ivi*, *Partly concurring and partly dissenting opinion of Judge Eicke*, para. 48.
[106] Above, nt. 95.
[107] Above, nt. 66.
[108] G. Letsas, "The European Court's Legitimacy After *Klimaseniorinnen*", in *European Convention on Human Rights Law Review*, 5 (2024), pp. 450 ff.

harm from climate change[109]. Still others have stressed how the Court avoided using the grammar of rights of future generations, drawing on intergenerational burden-sharing as an objective principle and specifying certain state obligations[110].

I agree that the Court has not referred to rights of future generations, but to intergenerational burden-sharing as an objective interpretive principle, as a specification of the principle of intergenerational equity and signifying a redistribution of burdens, i.e. costs and risks, of climate change across generations (a mirror discourse on benefits, the other pole of intergenerational justice, would have been less concrete). Contrary to some scholarly wishes, and perhaps closer to those authors that view generations as a seamless cycle[111], the judges refrained from establishing a distinction within future generations. Instead they affirmed that the term "intergenerational" refers both to the diversity of currently living generations and to the diversity between already existing and yet unborn individuals[112]. The judges also seemed to share another feature of intergenerational equity, namely a contiguity between the blurring of generational temporal boundaries and the blurring of spatial boundaries, defining climate change also as a "common concern of humankind"[113]. However, they didn't go so far as to include a suggestion of a fair allocation of responsibility between the Western (neo)colonizing countries and the rest of the world[114].

The reference to the intergenerational burden-sharing, in conjunction with the alleged major difficulty encountered by potentially affected subjects in representation, allowed a heightened level of scrutiny by the Court[115]. The principle of intergenerational burden-sharing was operationalized in two ways[116]. First, it was used to extend the standing of associations, which are, by themselves, intertemporal entities. Second, it was used to elaborate from art. 8 a right to "effective protection by state authorities from serious adverse effects on their life, health, well-being and quality of life arising from the harmful effects and risks caused by climate change"[117]. It is precisely this right that shall be invoked before the Court, a right which generates the state's obligation to protect, but still a right for the purpose of access to litigation[118].

[109] A. Nolan, "Inter-generational Equity, Future Generations and Democracy", cit., p. 6.
[110] L. Netto, "Resisting the Allure of Future Generations' Rights: The ECtHR's Approach to Climate Action in *Klimaseniorinnen*", in *völkerrechtsblog.de* (19/04/2024).
[111] A. Brucher, A. De Spiegeleir, "The European Court of Human Rights' April 9 Climate Rulings and the Future (Thereof)", in *verfassungsblog.de* (29/04/202024), p. 2.
[112] EuCtHR, *Verein Klimaseniorinnen*, para. 419.
[113] *Ivi*, para. 451, 499.
[114] A. Brucher, A. De Spiegeleir, "The European Court of Human Rights' April 9 Climate Rulings", cit., p. 3.
[115] A. Nolan, "Inter-generational Equity, Future Generations and Democracy", cit., p. 5.
[116] A. Brucher, A. De Spiegeleir, "The European Court of Human Rights' April 9 Climate Rulings", cit., p. 2.
[117] EuCtHR, *Verein Klimaseniorinnen Schweiz*, para. 544, 519.
[118] On the state's obligation to protect see F. Gallarati, "L'obbligazione climatica davanti alla Corte europea dei diritti dell'uomo", in *DPCE online*, (2024), pp. 1457 ff. For a critique of the Court's

In order to determine whether the right has been violated, it is necessary to carefully establish a causal link, with temporal considerations being relevant when assessing the high probability of future harms. In addition, the remedies imposed by the Court on states, to which I will return, contain implicit references to the "tragedy of the temporal horizon". This is particularly evident through the suggestion to use the carbon budget method (or another equivalent to it)[119], i.e. the quantity of carbon dioxide that may still be released into the atmosphere without jeopardizing the objective of maintaining the earth's temperature within the range of 1,5-2°C over the course of the century. Hence, the judges imposed a state obligation to act immediately, also "in order to avoid a disproportionate burden on future generations"[120].

3.3. *Lozano Barragán* and the Colombian Amazon: Transtemporality of Future Generations and Rights of Nature

The judgment of the Colombian Supreme Court of Justice in *Lozano Barragán*, on the Amazon rainforest, presents another take on the issue of temporality, namely conveying the rights of future generations to a healthy environment with the rights of nature as trans-temporal or cross-temporal rights[121].

The case was introduced with an *acción de tutela*, lodged by several children, adolescents and young adults accompanied by the organization *Dejusticia*, who asked the national government and other public authorities to adopt adequate measures to stop or significantly decelerate deforestation in the Amazonia. Since deforestation is the major cause in Colombia for greenhouse gas remaining in the atmosphere, this case is among those classified as climate litigation. The plaintiffs complained a violation of their rights to a healthy environment, to life and health, as well as the rights to environment for future generations. They employed a relational narrative incorporating Indigenous worldviews, stressing the inherent relationships of humans, other beings and natural elements[122]. The judges, in a quite

reasoning, according to which the judges first determined the content of the state's obligation, and then legitimated it formulating the new right see G. Grasso, A. Stevanato, "Diritto di accesso al giudice, doveri di solidarietà climatica e principio di separazione dei poteri nella sentenza *Verein Klimaseniorinnen Schweiz et autres c. Suisse*", in *Corti Supreme e salute*, (2024), pp. 579-580.

[119] EuCtHR, *Verein Klimaseniorinnen Schweiz*, para. 550 (a), 571.

[120] *Ivi*, para 549. Drawing on Hilson (above, nt. 3), this is an example where the scientific, the political and the generational timeframes intersect.

[121] On the trans – or cross – temporal dimension of environmental and cultural rights, also including this particular case, see D. Bertram, "For You Will (Still) Be Here Tomorrow", cit., pp. 139 ff.

[122] M. Wewerinke-Singh, A. So'o alo Fleur Ramsay, "Echoes Through Time: Transforming Climate Litigation Narratives on Future Generations", in *Transnational Environmental Law*, 13 (2024), pp. 565-566.

atypical[123] and innovative reasoning for the Supreme Court of Justice, decided in their favour. Perhaps the most striking aspect of the reasoning is the part that appears to be influenced by decolonial thought, which denounces human fault in the escalating exploitation of the soil and the depletion natural resources[124]. The two latter processes are the result of a strong anthropocentric attitude and contribute decisively to climate change and its deleterious effects. This, according to the Court, contrasts with the ecological features included in the Colombian Constitution[125]. The judges indeed share the plaintiffs' view that aggressive economic activities, some of them openly neocolonial, are a primary cause of deforestation: land grabbing, farming of illegal products, illegal mining and logging, widespread extractivism, intensive agro-industrial and livestock farming, works of infrastructure[126].

From a doctrinal point of view, the Court bases its ruling mainly on the right to environment (art. 79-80 Col. Const.), stressing its different dimensions of subjective right, duty and objective principle[127]. In particular, the judges highlight two objective dimensions of environmental rights that are particularly relevant in addressing deforestation and climate change: an ethical duty of intra-species solidarity and the intrinsic value of nature. Both are constitutionally significant[128]. They are also incorporated into the three principles of precaution, intergenerational equity and solidarity, all relevant in this case[129]. At the same time, the judges engage in a discourse on subjectivities, involving future generations and nature. This discourse seems however – perhaps intentionally – incomplete. As for the first subject, the Court doesn't give a definition of future generations, assuming that the younger applicants are a part thereof and using the hendiadys of "present and future generations". As for the second subject, the judges refer to the leading case of the Colombian Constitutional Court which had affirmed the subjectivity of the Atrato river[130], believing that the recognition of legal subjectivity to a natural entity could help increase the effectiveness of its protection[131]. As it has been suggested, this approach reflects an "ecocentric-anthropic" vision[132].

[123] P. Andrea Acosta Alvarado, D. Rovas-Ramírez, "A Milestone in Environmental and Future Generations' Rights Protection: Recent Legal Developments before the Colombian Supreme Court", in *Journal Environmental Law*, 30 (2018), pp. 522 ff.
[124] *Ivi*, p. 523.
[125] ColSCtJ, *Lozano Barragán*, para. 4-5, 7.
[126] *Ivi*, para. 11.
[127] *Ivi*, para. 7-8.
[128] *Ivi*, para. 5.3. See S. Bagni, "Alcuni caratteri peculiari del contenzioso climatico in America latina", in *Diritto pubblico comparato ed europeo*, 26 (2024), p. 1000.
[129] ColSCtJ, *Lozano Barragán*, para. 11. On the greater argumentative efficacy of the principles perspective see D. Bertram, "For You Will (Still) Be Here Tomorrow", cit., p. 142.
[130] ColSCtJ, *Lozano Barragán*, para. 12. The relevant leading case is Colombian Constitutional Court, T-622/16, 10/11/2016 (*Río Atrato*).
[131] Colombian S Ct Justice, *Lozano Barragán*, para. 12.
[132] L.A. Tolosa Villabona, "Vanguardism and Environmental Justice Developments in Colombia", in D. Amirante, S. Bagni (eds.), *Environmental Constitutionalism in the Anthropocene*, cit., pp. 450,

Commentators have read the references to future generations and nature in *Lozano Barragán* in two different ways, both shedding a light on the relationship between time and law. The first is more instrumental, because it is mainly considered as a solution of the admissibility problem. In order to be admissible, the *tutela* – an equivalent of the *amparo* in other Spanish speaking jurisdictions – shall be filed to protect a fundamental right, and not a collective right or interest (art. 86 and 88 Col. Const.)[133]. While acknowledging the environment's noteworthy collective profile, the judges assert that it is also the content of a fundamental right. It is also associated with other fundamental rights, such as life and health. Conceiving nature (or a part of it) as the holder of a fundamental right, through abstract objectification of its value, facilitates the admissibility of the *tutela*, compensating for the deficiencies incurred by the concept of future generations, as it is not possible to determine with exactitude the subject and the interest to be safeguarded[134]. Nonetheless, the overlap between rights of nature and rights of future generations causes some inconsistencies on the substantive level, because of the lack of clarity in defining both categories, which creates confusion in the dogmatic terrain and hinders its ordering function[135]. Furthermore, an ambiguity regarding the meaning of nature may emerge: on the one hand, rights of nature are predicated upon nature's intrinsic and objective value, embracing all temporal segments (past, present, and future). On the other hand, the judgment contains passages that may justify a shift in approach, transitioning from considering nature as an inherent value to prioritizing human interests, according to a more traditional anthropocentric perspective. And those interests include not only the preservation of nature but also its utilization and exploitation, without rejecting the development model of extractivism. Those economic interests may end up prevailing in the balancing process[136]. From the latter vantage point, nature is mainly perceived through the lens of the presentist short-term.

The second reading of *Lozano Barragán* is more aligned with the integrative heuristics of sympoiesis[137]. It considers the overlap between rights of nature and rights of future generations inevitable and in the end positive[138]. The lack of a clear

454. Others outline a "biocentric" view: D.F. Olaya López, "La Amazonía colombiana como sujeto de derechos. Un caso de justicia ambiental", in *Revista IUS*, 16 (2022), para. 4.

[133] That is the scope of *actio popularis*: see *ivi*, para. 1-3; for an overview M. Nicolini, S. Bagni, *Comparative Constitutional Justice*, Eleven, The Hague, 2021, pp. 48 ff., 69 ff., 87 ff.

[134] L.A. López Zamora, "The Recognition of the Rights of Nature in Latin America – The Lost Linkage with the Rights of Future Generations", in H. Ruiz Fabri, V. Rosoux, A. Donati (eds.), *Representing the Absent*, Nomos, Baden-Baden, 2023, pp. 482 ff.

[135] *Ivi*, pp. 484-485, 488 ff.

[136] *Ivi*, p. 478 ff. For similar critical remarks see P. Brunet, "L'écologie des juges – la personnalité juridique des entités naturelles (Nouvelle-Zélande, Inde et Colombie)", in M.A. Cohendet (dir.), *Droit constitutionnel de l'environnement*, LGDJ, Paris, 2021, pp. 303 ff.

[137] Above, nt. 57-58.

[138] S. Bagni, M. Carducci, "How to See the Invisible? The Recognition of the 'Rights of Nature' to Represent Future Generations", in H. Ruiz Fabri, V. Rosoux, A. Donati (eds.), *Representing the Absent*, cit., pp. 439 ff.

dogmatic distinction between rights of future generations and rights of nature is not of particular concern, as it is a specific implication of this theory: sympoiesis of the earth system does not presuppose the existence of different social systems functioning at different speeds and interacting with difficulty. Rather, it posits a single, overarching system that encompasses the diverse human activities, all enabled by their composition of matter and energy[139]. This assumption should not only elucidate the significance of the laws of thermodynamics and biophysics for climate litigation, since these laws demonstrate the correlation between human activity, the consumption of fossil fuels, the irreversible effects of climate change and the imperative to conserve and restore ecosystems. In the perspective of sympoiesis, this assumption should also shed light on the normative character of the laws of thermodynamics and biophysics – that are indeed "natural laws" or "laws of nature" – beyond the realm of science. In other words, this position accords priority importance to the normativity of the aforementioned laws of nature, to which the legal system is called upon to conform[140]. Thus, the recognition of rights of nature would imply an awareness of the indefectible character of physical laws, as well as the assumption of a tendentially ecocentric perspective. From this point of view, the rights of nature are regarded less ambiguously as having a trans-temporal dimension, in which the boundary between past, present and future is transcended. This is, in effect, in keeping with the cosmovision of the chthonic legal tradition, which is particularly emphasized in the Global South[141]. Temporal synchronization occurs – or, more precisely, should occur – through an interiorization of the laws of nature by the legal order, politics and even economics. The normativity of the laws regulating the reproduction and restoration of nature should thus be bolstered by the enforceability of the rights of nature.

4. Challenges of Resynchronization for Democratic Politics

In the previous section, the three landmark rulings have been analysed with respect to doctrinal innovations that could possibly favour – via the legal system – a resynchronization between the hyper-accelerated social system and the ecosystem. These judgments also contain another part which is relevant for resynchronization: it is the final part that deals with the remedies, and especially with the activity of the political organs in order to comply with the judges' instructions. This issue has

[139] See above, nt. 57-58.
[140] S. Bagni, M. Carducci, "How to See the Invisible?", cit., p. 449. See also M. Carducci, entry "Natura (diritti della)", in *Digesto delle discipline pubblicistiche*, VII Agg., Wolters Kluwer, Milano, 2017, pp. 517 ff.; S. Bagni, "*Diritti della natura nei nuovi costituzionalismi del* Global South*: riflessi sulla teoria dei formanti*", in *DPCE online*, Sp-2 (2023), pp. 153 ff.
[141] P.H. Glenn, *Legal Traditions of the World*, 5. ed., Oxford University Press, Oxford, 2014, pp. 60 ff. On the presence of arguments of the chthonic legal tradition in climate litigation see also L.A. Tolosa Villabona, "Vanguardism and Environmental Justice", cit., pp. 428 ff.; M. Wewerinke-Singh, A. So'o alo Fleur Ramsay, "Echoes Through Time", cit., pp. 547 ff.

often been addressed from the perspective of separation of powers or countermajoritarian difficulty[142]. Here, I will try to maintain a view through the temporal lens.

The temporality of political bodies and democratic politics in the face of climate change is not obvious. On the one hand, it tends to be qualified as an emergency in the scientific and public debate. On the other, it differs from other events or processes that the legal system qualifies as emergencies and that justify immediate responses and a deviation from the constitutional balance of power. Climate change is not due to sudden and unexpected events, but is the result of a long known and uninterrupted process. It is not caused by exogenous factors, but is the result of human activities. It is not temporary or provisional, nor does it allow a return to the previous supposedly normal situation, but is durable and has potentially irreversible effects[143]. This helps to explain why the institutional response to climate change represents a departure from the classic mode of dealing with emergencies. If, traditionally, the swift response to emergencies falls, more or less ostensibly, within the domain of the executive, whose temporal scope of action is mainly the present[144], in the case of climate emergencies the picture is somewhat more complicated. An adequate response requires some design and planning based on a forward-looking projection. In other words, it requires what Daniel Innerarity, following Paul Virilio, has called "chronopolitics": the politics that is needed in an age, ours, in which time has become a cleavage of inequality. Politics must therefore seek to manage and control time without losing its democratic character or "achieve as much balance as possible between the velocities of diverse social systems, and configure democratic rhythms"[145]. Hence, it must anticipate future events and processes in order to perform some planning. This could compensate in terms of stability for political processes which – being slower than hyper-accelerated systems[146] – are at risk of anachronism[147]. Among the constitutional powers, the legislature is the most oriented towards the future[148], so that dealing with the climate emergency paradoxically implies a renewed protagonism of this organ. The jurisprudence of the apex courts on climate change, on the whole, has been aware

[142] Since the *Urgenda* case: H. Schoukens, "Climate Change Litigation and the Separation of Powers. Effective Legal Protection as the Ultimate Yardstick?", in F. Sindico *et al*. (eds.), *Research Handbook on Climate Change Litigation*, cit., pp. 184 ff.
[143] M. Carducci, "Climate Change and Legal Theory", cit., pp. 320-321.
[144] W.E. Scheuerman, *Liberal Democracy and the Social Acceleration of Time*, John Hopkins University Press, Baltimore London, 2004, p. 29. Scheuerman's scheme (also below, nt. 148) was widely received: H. Straßheim, T. Ulbricht, "Die Zeit der Politik – Ansätze einer neuen Orientierung", in H. Straßheim, T. Ulbricht (hrsg.), *Zeit der Politik*, cit., p. 13; A. Schäfer, W. Merkel, "The Temporal Constitution of Democracies", cit., p. 25.
[145] D. Innerarity, *The Future and its Enemies. In Defense of Political Hope*, Stanford University Press, Stanford, 2012, pp. 77 ff. (77).
[146] Above, para 2.
[147] D. Innerarity, *The Future and its Enemies*, cit., pp. 85 ff.
[148] W. Scheuerman, *Liberal Democracy*, cit., pp. 29 ff.

of these roles and, with some exceptions, has placed the legislator in the foreground. These same courts have occupied an interesting place in the map of time: while courts generally have a retrospective view, looking to the past, in climate litigation constitutional and supreme courts have not only ascertained past faults and responsibilities, but have also given an impulse for future development in this legal and political field[149]. But before delving into the reasonings of the three landmark judgments, other theoretical and practical profiles can be uncovered.

The first is still about the idea of time and especially the future. It is suggested by the words of Innerarity but can be developed further. If chronopolitics has to control time, the author argues, it shouldn't break or interrupt the democratic "rhythm". A significant risk inherent in chronopolitics arises here: it may be perceived solely as an instrument to control and manage time in order to achieve specific targets. These can be determined (in the climate as well as in other fields) by specialized bodies operating in a technocratic manner, mostly through setting *policies* instead of discussing *politics*[150]. Such a risk can also affect re-synchronization, if it is understood to mean aligning with a fixed time structure that is objectively provided from the outside, namely by technology and economy as dominant social systems, a time structure that is easily internalized[151]. Hence, a key challenge for chronopolitics is to avoid being overwhelmed by certain ideas about time, either fatalistic or deterministic. These include the feeling of not being able to escape a presentist order of time (in Hartog's sense) and the feeling of having to control all of time[152]. This would make it possible to still have an idea of the future that is consistent with political freedom and collective political action[153]. Instead of conceiving time as an instrument for measuring and carrying out prognosis, production, dominion and control, such an idea of the future stresses the features of uncertainty, unpredictability, openness, discontinuity and recursivity. These qualities are synthesized by the word "futurity"[154].

The second profile that should be noticed is representation. It is also related to the previous one. As mentioned before, a recurring theme in climate change literature is the so called short-termism of political bodies and assemblies, whose

[149] On such a role for constitutional courts see *ivi*, p. 64.
[150] J. White, "The Future as a Democratic Resource", cit., pp. 1 ff., with regard to climate change. But the problem is indeed common to other policy fields, starting from economy and finance: A. Schäfer, W. Merkel, "The Temporal Constitution of Democracies", cit., pp. 31-32; W. Merkel, A. Schäfer, "Zeit und Demokratie", cit., p. 232.
[151] J. Schwarte, *Qualitäten der Freiheit. Demokratie für Übermorgen*, Meiner, Hamburg, 2024, pp. 376, 379 ff.
[152] *Ivi*, pp. 7, 10, 57, 294 ff., 364, 372.
[153] *Ivi*, pp. 75 ff., 371 ff. It is significant that the German word for project is not only *Projekt* but also *Entwurf*, which implies an alternative and thus the elements of freedom and responsibility: *ivi*, pp. 262, 363-364, 485 n. 160, also with reference to H. Marcuse. See also J. White, "The Future as a Democratic Resource", cit., p. 4 ff.; Id., "In the Long Run. The Future as a Political Idea", Profile Books, kindle ed, 2023.
[154] J. Schwarte, *Qualitäten der Freiheit*, cit., pp. 56, 267 ff., 296 ff., 323 ff., 345 ff.

members would be mostly focused on re-election. Also, there would be few incentives for long-term policies[155]. This led to a reflection on the representation of the interests of future generations, which resulted in proposals to create new institutions or deliberative spaces, such as ombudsmen, special commissioners, minipublics, councils of experts, ad hoc parliamentary commissions, endowed with proposing, advisory, implementing and/or or veto power[156]. From a theoretical point of view, these positions acknowledge the difficulties inherent in representing future generations, difficulties that mirror those previously encountered concerning the entitlement to rights. Since future generations do not exist, they may neither elect representatives (authorization problem) nor hold them accountable (accountability problem). It is also impossible to ascertain their preferences and interests (epistemic problem). Nevertheless, it should be possible to figure out some objective basic needs, which, however, may be subject to varied perceptions within the group and may conflict with those of the current generation (plurality problem)[157]. A way to conceive such a representation would be through a hypothetical later validation imagining a common trans-temporal horizon and the application of the principle of equal respect both in substantive and procedural issues[158]. In any event, the risks of manipulating future interests by current decision-makers for their own benefit and of imposing their preferences on future generations in a paternalistic manner should be avoided[159]. These considerations appear to be applicable not only to specialized organs or offices but also to more consolidated representative and deliberative institutions.

Some writers, indeed, have considered the short-termism thesis a bit overstated, since according to them both representative democracy and deliberative democracy should be able to elaborate and discuss future common goals: representative democracy through the cross-temporal activity of political parties and the cross-temporal existence of the represented nation, deliberative democracy through the public articulation and persuasiveness of arguments that include future moral subjects[160]. Without fully ruling out the possibility of specific institutions for future generations, the latter views seem more realistic to me: reinforcing the concepts and processes in democratic institutions that enable to develop projects to

[155] Above, nt. 22. See also M. Carducci, "Climate Change and Legal Theory", cit., pp. 324-325.
[156] I. Gonzáles-Ricoy, A. Gosseries (eds.), *Institutions for Future Generations*, Oxford University Press, Oxford, 2016.
[157] A. Karnein, "Can We Represent Future Generations?", pp. 83 ff.
[158] *Ivi*, pp. 91 ff.
[159] *Ivi*, pp. 87-88, 95 and F.G. Menga, "Dare voci alle generazioni future. Riflessioni filosofico-giuridiche su rappresentanza e riconoscimento a margine della recente modifica dell'articolo 9 della Costituzione italiana", in *BioLaw Journal*, (2022), pp. 83 ff.
[160] See respectively J. White, "In the Long Run", cit., pp. 196-197; A. Schäfer, W. Merkel, "The Temporal Constitution of Democracies", p. 24; C. De Fiores, "La memoria dell'avvenire", cit., pp. 428, 436 ff.; M.K. MacKenzie, "Deliberation and Long Term Decisions. Representing Future Generations", in A. Bächtiger *et al.* (eds.), *The Oxford Handbook of Deliberative Democracy*, Oxford University Press, Oxford, 2018, pp. 251 ff.

respond to climate change according to an open idea of the future. These are also the places where disagreements between more abstract interests of future generations and more concrete interests of present ones can be better handled. In this context, the concept of "responsive representation" can be appreciated, as a method and practice of being accountable to a political subjectivity that incorporates an element of alterity, which is derived from exposure to the future[161].

We can now go back to the three landmark rulings and see how they dealt with the question of resynchronization and democratic politics. All of them gave some credit to the short-termism argument, albeit with different nuances, but at the same time tried to reinforce the forward-looking potential of democratic institutions.

The role of the legislature is central in *Neubauer*, since the German Federal Constitutional Court ended up conflating the proportionality principle in the so called "essentiality-theory" (*Wesentlichkeitstheorie*), according to which all the main features of a certain discipline must be stipulated by an act of Parliament, i.e. the representative organ of the people where democratic debate should be conducted with the utmost plurality and openness[162]. Therefore, the generic delegation from Parliament to the government to adopt regulation for the years following 2030 was declared unconstitutional. According to the Court, an act of Parliament was required to provide for measures to mitigate climate change, an act capable to define a gradual yet continuous progression over time with regard of specified measures. This progression is intended to ensure that the objective of achieving climate neutrality by 2050 is met. In the event of delegation, this must be specific[163]. In this way, the Court endeavoured to compensate the shortcomings associated with short-termism by establishing a requirement for a forward-looking legislative framework and plan. At the same time, the Court seemed aware of the potential risks of controlling and regulating time which could flow from its approach. Therefore, it recognized the possibility of reversing the measures taken. Consistent with its inclination toward parliamentary democracy, any shift in direction should be determined by Parliament following a period of adequate debate. This is because Parliament is the body that offers the most robust guarantees of transparency and publicity, as well as participation opportunities for the opposition[164].

Also the EuCtHR in *Klimaseniorinnen* displays a certain degree of institutional concern for the national legislator, albeit to a somewhat lesser extent. The reasoning simultaneously mentions the deficiencies of short-termism and highlights the underrepresentation of certain subjects within actual legislative bodies. These subjects are the persons "at a distinct representational

[161] F.G. Menga, "Dare voci alle generazioni future", cit., pp. 86 ff.
[162] Ph. Lassahn, *Rechtsprechung und Parlamentsgesetz*, Mohr, Tübingen, 2017, pp. 77 ff.
[163] GFCC, 1 BvR 2656/18, para 247 ff.
[164] *Ivi*, para. 213.

disadvantage"[165]. The European Court's reference to vulnerable groups, who are also potential applicants, enables it to conduct a deeper scrutiny of decisions made by national political bodies and to decisively assert this move[166]. Of course, any evaluation of the EuCtHR's approach needs to take into account its role as international Court and its duty to respect the subsidiarity principle[167].

As for the remedies, the European Court demonstrate a comparable awareness of the necessity of prompt action. Its reasoning appears to be informed by a gradual and meticulous time schedule, whose main actors are national legislators and administrators. In particular, the judges establish a duty for states to adopt measures at both the legislative and administrative levels, which are intended to effectively prevent the irreversible adverse consequences of climate change and to reach climate neutrality within the next three decades. It is incumbent upon states not only to engage in meticulous temporal planning, but also to adopt further checks, corrections and adjustments as long as they are deemed necessary[168]. With the latter specifications, the European Court not only outlines an institutional structure to manage time, but also seemingly engages with the uncertainties and imponderability of the future.

Contrary to the two preceding cases, *Lozano Barragán* did not rely on the centrality of the legislature. Contingent on the requests put forth by the plaintiffs, the judgment of the Colombian Supreme Court of Justice addressed the omissions of other actors – the Presidency of the Republic, Ministries of the Environment and of Agriculture, environmental authorities in the Amazon region, territorial entities – and determined them to be unconstitutional. With respect to remedies, the judges mandated the adoption of several action plans within a span of months, as required by the urgent procedure of *tutela*: a short-, medium- and long-term action plan to halt deforestation, an "intergenerational pact for the life of the Colombian Amazon", the update of Land Management plans in the Amazon and other similar interventions[169].

Compared with prior legal obligations in the Colombian legal order, the novel aspect[170] was the involvement of a plurality of additional subjects. With regard to the intergenerational pact, the subjects in question were scientific organizations, environmental associations but also the applicants themselves and the affected communities. This is consistent with the spread of forms of deliberative democracy in Latin American countries, as a popular participatory response to the presence of hyper-presidentialisms and overly selective and weak parliamentary institutions.

[165] Above, nt. 95.
[166] Above, nt. 115.
[167] EuCtHR, *Verein Klimaseniorinnen Schweiz*, para. 411, 430, 459, 457, 539 (a), 541.
[168] *Ivi*, para. 545 ff.
[169] ColSCtJ, *Lozano Barragán*, para. 14.
[170] C. Bustos, V. Rozo-Ángel, G. Eslava-Bejarano, "Protecting the Rights of Future Generations through Climate Litigation: Lessons from the Struggle against Deforestation in the Colombian Amazon", in C. Henry *et al*. (eds.), *Standing Up For a Sustainable World*, Elgar, Cheltenham, 2020, pp. 165-166; L.A. Tolosa Villabona, "Vanguardism and Environmental Justice", cit., p. 455.

Such forms of popular participation should be able to better include, articulate and mediate a high degree of diversity[171]. Deliberative democracy is also consistent with the chthonic legal tradition, according to which land is trans-generationally owned by the communities that occupy and care for it. These communities are best positioned to deliberate on how to preserve and transmit their land. The legal concept of the rights of nature draws from this tradition and is often linked to forms of deliberative democracy. Its ideal is a more balanced and inclusive participation, leading to more horizontal and comprehensive discussions of single issues and to a mitigation of partisan confrontations. Furthermore, deliberative democracy is characterized by decision-making process that implies fewer procedural stages compared to representative democracy. This design should facilitate the consideration of the basic needs of the inhabitants of certain territorial or natural areas, where these needs are perceived and expressed[172]. Finally, the Court involved the mayors of municipalities in the Amazon region as additional subjects. Nonetheless, it appeared that these municipalities were to primarily serve an executive function, which could compromise their broader territorial autonomy faced with state's authority[173].

5. A Provisional Conclusion

As illustrated in the preceding paragraphs, two distinct discourses on time intersect in the domain of climate law and particularly in climate litigation. In addition to the older and more traditional discourse on generationalism, which encompasses the rights and representation of future generations as well as intergenerational justice, a more recent discourse on temporal de- and re-synchronization has emerged. These discourses, or timeframes, are not mutually exclusive but may overlap. The generation frame has the rhetorical and emotional advantage of referring to groups of people, as well as to their children and later descendants. This approach engenders a sense of ethical sensitivity, fostering a more profound connection with young living subjects and future ones[174]. However, it also presents certain ambiguities, particularly regarding the shift of focus away from historical responsibilities and from contemporary redistributive challenges at both national and global scales[175]. The synchronization discourse does not prioritize subjective elements; rather, it concentrates on the objective processes of system differentiation, system relations and the respective compatibilities. Such processes are framed using the criterium of speed. This perspective suggests that the legal and

[171] R. Gargarella, *Law as a Conversation among Equals*, Cambridge University Press, Cambridge, 2022.
[172] M. Carducci, "Cambiamento climatico", cit., p. 512.
[173] P. Andrea Acosta Alvarado, D. Rovas-Ramírez, "A Milestone", cit., p. 525.
[174] See also Ch. Hilson, "Framing Time", cit., p. 375.
[175] Above, nt. 12.

political systems be considered as possible intermediate systems between the hyper-accelerated spheres of the economy, technology and media, which bear greater responsibility for global warming and climate change, and nature and the ecosystems.

In this investigation, the heuristic potential of the synchronization discourse was explored, as well as its potential overlap with the generation discourse in the domain of climate litigation. In particular, I have examined the reasoning of three landmark rulings, *Neubauer* of the German Federal Constitutional Court, *Klimaseniorinnen* of the European Court of Human Rights, and *Lozano Barragán* of the Colombian Supreme Court of Justice. I have highlighted the diverse paths of resynchronization taken by these courts in their argumentation. Two aspects were given particular consideration: doctrinal innovations related to the understanding of rights and remedies to be taken by public power, especially with regard to democratic institutions. The doctrinal innovations that prompted a resynchronization through the legal system were intertemporal rights and intertemporal proportionality for the German Court, extended standing for associations and intergenerational burden-sharing for the European Court, and rights of nature for the Colombian Court. The remedies which were identified in order to achieve a resynchronization at the level of democratic institutions were a gradual and steady planning by the federal legislator for the German Court, an equally gradual but incisive regulation by national legislators coupled with consistent implementation by administrations for the European Court, and the adoption of action plans by several subjects (President of the Republic, ministries, environmental authorities, scientific organizations, young applicants and communities) for the Colombian Court. The two levels of solutions offered by the courts, in terms of both doctrine and institutions, generated different concerns and responses regarding the relationship between apex courts and democratic bodies in each context.

None of the three courts explicitly addressed Rosa's temporal paradox: the more complex the issue, the more time you need to deliberate, the less time you have to do it. But each court adopted a kind of simplified version of it, referring explicitly or implicitly to short-termism and the need to act with urgency, on the one hand, and reaffirming the role of the forward-looking legislator or outlining a more relaxed expansion of deliberative spaces, on the other. Such temporal projections towards the future, even in the face of a particular emergency, are consistent with the medium and long-term ranges of theories of "political steering" (*indirizzo politico*) and attempt to escape the narrowness of presentism[176].

The main purpose of this article has been to rationalize the three landmark cases in the light of theoretical temporal discourses. Given their explicit and articulate thematicization of features present in other climate cases, there is a high

[176] For all M. Dogliani, *Indirizzo politico: riflessioni su regole e regolarità nel diritto costituzionale*, Jovene, Napoli, 1985.

degree of generalizability. Some readers may contend that the analysis proposed herein is incomplete and perhaps overly idealistic, as it is centered on the reasoning of courts – in a slightly different sense, scholars have talked about "hollow judgments"[177] – whereas the climate challenge necessitates the interaction of numerous different actors at various political levels. This objection was indeed contemplated by the aforementioned rulings, and a response was provided in the section addressing remedies, wherein the imperative for intervention by political and democratic institutions was formulated. Nevertheless, it is important to associate this rationalizing perspective with a realistic one, and to be aware of the degree of effective implementation of these rulings. This awareness may also allow for adjustment of the trajectory while pursuing further goals in the future.

The effectiveness of climate change litigation encompasses direct and indirect regulatory effect: the former are changes in laws and institutions, the latter are changes in the perceptions and behaviours of social groups, which in turn may influence institutional actors. Moreover, these effects may be evaluated at different points in time[178]. While all three cases considered[179] have had cultural and symbolic effects, strengthening the sense of commitment within the affected communities and at least partially shifting the public debate, and while all have had an impact on litigation, even reaching other jurisdictions, a more varied assessment can be made as to the direct regulatory and administrative effects.

The judgment *Neubauer* received initially a very favorable reception from the German political bodies and parties. Subsequent to the Constitutional Court's indications, amendments to the climate law were swiftly enacted[180]. However, the geopolitical and geoeconomic landscape underwent a notable shift in the subsequent period, precipitated by the war in Ukraine. The conflict led to growing difficulties in energy supply and to an escalation in consumption costs. The newly established government constituted a commission and then pushed for the approval of additional amendments to the climate legislation. Among the new provisions was the elimination of the requirement to observe climate targets for specific economic sectors[181].

In contrast, the Swiss legislature's reaction to *Klimaseniorinnen* was notably harder. The Chambers of the Federal Assembly passed two declarations requesting,

[177] A. Pisanò, "L'impatto dei contenziosi sulla crisi climatica. Il paradosso delle sentenze vuote", in *Materiali per una storia della cultura giuridica*, 54 (2024), pp. 111 ff.
[178] J. Setzer, N. Silbert, L. Vanhala, "The Effectineness of Climate Change Litigation", in F. Sindico *et al*. (eds.), *Research Handbook on Climate Change Litigation*, cit., pp. 245 ff.
[179] The following considerations will not address the "collective and cumulative effect of climate litigation" (as suggested *ivi*, p. 249), but rather the three decisions analyzed in the article.
[180] *Gesetz zur Änderung des Bundes-Klimaschutzgesetzes*, 18/08/2021.
[181] *Zweites Gesetz zur Änderung des Bundes-Klimaschutzgesetzes*, 16/07/2024. See J.L. Wiedmann, "Vorwärts in die Klimapolitische Vergangenheit", in *verfassungsblog.de* (30/03/2023); Ch. Flachsland, J. Edenhofer, C. Zwar, "Eine vertane Chance, aber keine Katastrophe. Die Novelle des Bundes-Klimaschutzgesetzes", *ivi* (06/05/2024). An individual complaint against the new law was lodged.

among others, that the government convey to the Council of Europe its intention not to comply with the European judgment. Before the Committee of Ministers of the Council of Europe, the government defended the Swiss state, albeit in a less contentious tone. The reaction in question was further solidified by the results of several referenda that took place in the period preceding and following the ruling, both at federal and at the cantonal level. These referenda rejected more stringent measures of climate regulation[182]. With respect to the Swiss case, it is appropriate to recall that the judgment was rendered by an international court, which was perceived to impose an undue restriction on national democratic politics[183]. As judge Eicke noted in his (partly) dissenting opinion in *Klimaseniorinnen*, the European Court's ruling could potentially generate unintended consequences, namely distracting legislative and executive authorities from more concrete efforts of negotiation or approval of mitigation and adaptation measures while being caught in the trap of litigation[184].

A more tempered perspective on the Colombian ruling can also be assumed, when its implementation and consequences are taken into account. Of the action plans requested by the plaintiffs and ordered by the Court, some were not adopted and others were delayed or deemed insufficient. Moreover, the involvement of young applicants, scientific organizations, environmental associations and communities, which constituted a novel element of the decision, has not been observed, at least during the first years following the ruling. Indigenous communities have also complained of exclusion, for their part even from the orders of the judgment, in contrast to greater involvement in other cases[185]. Therefore, the potential of deliberative democracy has not been fully realized, although there are indications suggesting a possible augmentation of its role[186]. In general, it is important to notice that the endeavour to preserve and restore natural ecosystems necessitates a comprehensive transformation of "an entire economy depending on illegal mining [and other unlawful or highly intensive activities for the soil] in a context of ongoing conflict, poverty, weak institutions and corruption". This task is quite challenging. In countries with weak governance structures the need for robust public policies bolstered by democratic processes is paramount, at least equivalent to the judicial acknowledgment of rights of nature[187]. Apex courts seem aware of

[182] On these developments see G. Grasso, "Cambiamento climatico, separazione dei poteri, processo decisionale democratico", in *DPCE online*, *Oca* (2024); Id., "'Oltre' *Klimaseniorinnen*: la Svizzera tra esecuzione della decisione della Corte EDU e processo decisionale democratico", in *Diritto pubblico comparato ed europeo*, 26 (2024), pp. 1004 ff.
[183] G. Grasso, A. Stevanato, "Diritto di accesso al giudice", cit., pp. 15 ff.
[184] EuCtHR, *Verein Klimaseniorinnen Schweiz*, *Partly concurring and partly dissenting opinion of Judge Eicke*, para. 69.
[185] D.F. Olaya López, "La Amazonía colombiana", cit., para. 5.
[186] See, with regard to the implementation of the Atrato river ruling Ph. Welsche, "Rights of Nature in Practice: A Case Study on the Impacts of the Colombian Atrato River Decision", in *Journal Environmental Law*, 33 (2021), pp. 547 ff.
[187] *Ivi*, pp. 544 ff., 551 ff. (551).

this necessity, and as a result they have adopted an approach that couples safeguarding rights of nature with the establishment of complex architectures of public policies, also involving the inhabitants of the affected regions.

We may ask whether these reactions detract from the synchronization argument. I think they lack the capacity to refute it; rather, they serve to render it more faceted and dialectical. The efforts of courts to induce synchronization have been met with consensus, adjustment or opposition by parliaments or other political authorities. These bodies have to some extent affirmed the relative autonomy of the political system in relation to the legal system, in some cases also absorbing some imperatives of the economic system. This finding aligns with the hypothesis that the temporal parameters for synchronization are not fully determined, thereby permitting a degree of indeterminacy[188]. The interpretation of this margin for indeterminacy varies depending on the perspective of the relevant subjects involved. These subjects include industries dependent on fossil fuels and industries who may see an opportunity in the transition, but also, and very importantly for the approach that has been developed here, affected communities, workers and consumers who bear the greatest costs of the transition, younger people and activists. As for the latter, some of their protests may be regarded as acts of deceleration in and of themselves (for example, sit-ins in streets and public spaces). Other protests may be interpreted as requests for deceleration of other social systems through symbolic actions (for example, throwing paints on works of art). In general – in addition to qualifying as an exercise of freedom of assembly or civil disobedience, which is at least plausible[189] – these performative acts contribute to the introduction of a breach in time and to the creation of a different imagination of it, according to the concept of futurity. In other words, they point to a different kind of chronopolitics, namely a liberation from dominant temporal structures through a "temporal counter-strategy"[190]. Further unavoidable points of view emerge if we adopt a global perspective, since we have to consider the interests of countries that have been colonized and exploited, and which now demand additional time to achieve carbon neutrality[191].

These perspectives need to find places and institutions to express and mediate their messages and interests. National parliaments, despite their ongoing crisis, continue to serve as the most adequate site. However, as both the examined cases and the experience demonstrate, there are other circuits as well: from the streets

[188] Above, nt. 151 ff.

[189] For all S. Akbarian, *Gesetz ist Gesetz?*, in *verfassungsblog.de* (02/06/2023). On the criteria for legitimate civil disobedience see J. Habermas, "Ziviler Ungehorsam – Testfall für den demokratischen Rechtsstaat. Wider den autoritärer Legalismus in der Bundesrepublik", in P. Glotz (hrsg.), *Ziviler Ungehorsam im Rechtsstaat*, Suhrkamp, Frankfurt a.M., 1983, pp. 29 ff.; J. Rawls, *A Theory of Justice*, cit., pp. 319 ff.

[190] J. Schwarte, *Qualitäten der Freiheit*, cit., pp. 382 ff. (385).

[191] In this respect, it is significant that a recent Indian ruling, which also articulated a right to be protected from the adverse effects of climate change, set a deadline of 2070, not 2050, for achieving carbon neutrality: Indian Supreme Court, *Ranjitsinh et al. v. Union of India et al*., 21/03/2024.

where activist manifest to the councils and assemblies of deliberative democracy to the rooms of international organizations. These are plural places where rhythms of desynchronization and resynchronization are contested and discussed, according to measures that are not pre-determined in advance, but provisionally defined according to conflictual democratic processes. The rulings of apex courts in climate litigation are characterized by a relative autonomy in their legal logic, determining specific forms of resynchronization, namely through doctrinal constructions of intertemporality and cross-temporality. Conversely, these rulings are part of a more extensive public sphere. In this capacity, they engage in discourse with political subjects and democratic institutions[192], thereby exerting influence on the latter's processes of resynchronization. Their view is not only retrospective but also prospective. Moreover, although not overtly expressed, they might suggest an understanding of temporal unpredictability and the possibility of free political action. It is certainly not the solution to a complicated, complex and contingent issue, but a relevant piece of the puzzle.

[192] For two different views on the role of the courts in the public sphere see P. Häberle, *Verfassung als öffentlicher Prozess*, 2. ed., Duncker & Humblot, Berlin, 1996, pp. 121 ff., 155 ff.; P. Rosanvallon, *La contre-démocratie. La politique à l'âge de la défiance*, Seuil, Paris, 2006, pp. 193 ff.