


Research article

Climate crisis, the Anthropocene and the future: historical thinking in the German climate movement

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Abstract

This article examines how historical thinking in the German climate movement incorporates the concepts of the future and the Anthropocene by paying a particular emphasis on Dipesh Chakrabarty's reflections. Through a qualitative content analysis of journalistic interviews with activists from different political groups, the study explores how these actors conceptualise historical time, predict future scenarios and think historically. The findings highlight that activists often perceive the future as dystopian, grounded in their critique of capitalism and ecological threats. The urgency of climate action is emphasised, particularly in the context of perceived tipping points in planetary and human time. The study suggests that historical thinking in the climate movement is not only about temporal orientation, but also about fostering collective agency aimed at systemic change. This approach challenges the theory of the didactics of history by introducing new ways of integrating future perspectives into historical thinking processes, which are crucial in the Anthropocene.

Keywords climate movement; Anthropocene; historical thinking; future; climate crisis; temporal dimensions; social movements; historical agency; natality

Introduction

The accelerated pace of climate change and the concomitant risk of a climate catastrophe, which we are facing in the present era, might be seen as a component of the prevailing polycrisis. The term *polycrisis* has attracted increased attention in recent years, even though it is not new (see [Morin and Kern, 1999](#)). [Lawrence et al. \(2024: 2\)](#) define a polycrisis as ‘the causal entanglement of crises in multiple global systems in ways that significantly degrade humanity’s prospects’, and they demonstrate the analytical value of the term by reference to contemporary examples.

In this context, the climate crisis poses new challenges to historical thinking, particularly regarding the temporal dimension of the future. Historically, educational frameworks have been predicated on the assumption that future generations will inhabit a superior reality to that of the past and present. However, the advent of the climate crisis and the current scientific and public debates on the Anthropocene have the potential to challenge this assumption.

The objective of this article is to elucidate the relevance of the future as a temporal dimension of historical thinking in times of the climate crisis in general, and among activists of the German climate movement in particular, as the topic of climate change is particularly important to them. Furthermore, we are interested in what conclusions can be drawn from the empirical study of climate activists’ historical thinking for theoretical discussions in the didactics of history.

Theoretically, we refer to the future as [Körber \(2019\)](#) recently proposed that it should be more explicitly integrated into historical consciousness. However, [McGregor et al. \(2021\)](#) contemplate the potential manifestations of historical education in the context of the Anthropocene’s acute environmental crisis and advocate for a relational, ecological and ethical approach to the future in historical thinking. Regarding the Anthropocene, we refer to [Dipesh Chakrabarty’s \(2018, 2021\)](#) reflections on the term. This concept has shaped debates across various disciplines.

Based on these requirements, we start by empirically examining how German climate movement activists conceptualise historical time, predict the future, and think and argue historically in their climate change discourse. Using an explorative approach, we analyse these questions through qualitative content analysis of journalistic podcasts and radio interviews. We then theoretically discuss what conclusions can be drawn from the empirical findings for the theoretical development of historical thinking in the Anthropocene, with a focus on the future. We are particularly interested in how climate activists’ historical thinking relates to their political action, and how we can use the concept of historical agency (for example, [den Heyer, 2018](#)) to analyse this relationship. To introduce the empirical investigation and the theoretical discussion, we first present the state of research on historical thinking towards the future and in the Anthropocene.

Theory: historical thinking towards the future and in the Anthropocene

To better understand the historical thinking of climate change activists, it is crucial to address two interrelated elements: the future and the Anthropocene. Their interplay poses new challenges, especially to contemporary temporal thinking.

The future: discussions in theory and didactics of history

As recently elaborated in another study ([Reusch and Sieberkrob, in press](#)), conceptions of the future are typically situated in relation to the past and the present, and they are entwined with discourses on time ([Esposito, 2017](#)). Building on [Koselleck’s \(2004\)](#) assertion that there is a growing divergence between the ‘space of experience’ and the ‘horizon of expectation’ in modern historical thinking, the concept of the future can be understood as a temporal projection. Structurally equivalent to the past ([Hölscher, 2016](#)),

the future is regarded as a projection surface for the present and an open period with a multitude of potential outcomes (Landwehr, 2020).

Current research explores the concept of historical futures (Graf and Herzog, 2016; Seefried, 2023; Simon and Tamm, 2021) and examines the contingency of the future, particularly in relation to potential climate catastrophe (Landwehr, 2020). With what understanding of historical thinking can conceptualisations of the future be comprehended in the context of this study? Prominent Anglo-Saxon conceptions of historical thinking (for example, Seixas and Morton, 2013; Wineburg, 2001) emphasise the development of second-order concepts. They are particularly suitable for the empirical study of the process of historical thinking, with a strong relation to the practice of history teaching. But since our concern is about the role of historical thinking in practical life, to be precise, among climate activists, we refer primarily to the philosophical tradition essentially developed by Jörn Rüsen. (For an overview and comparison of the Anglo-Saxon tradition and Rüsen's work, see Seixas [2017] and Lévesque and Clark [2018].) Rüsen locates historical thinking in practical life and assigns it the function of providing orientation in time. His conceptualisation of historical consciousness is characterised by the central formulation 'making sense of the past' (Rüsen, 2004: 69), with the future playing at least an indirect role.

Rüsen's approach to the future centres on contingency, as human experience is characterised by a constant exposure to contingent circumstances. A yet uninterpreted 'natural time' inevitably shapes the course of human existence. These experiences of time are narrated and imbued with meaning. This deciphered and meaningful temporality is collectively termed *human time* by Rüsen (2017). Köster (2023) recently noted that this conception is informed by the premise that time is a natural and linear entity, subject to discussion in the context of recent temporal theoretical approaches.

In recent years, the discipline has increasingly addressed the topic of time in theoretical (for example, den Heyer, 2024; Hübner and Barsch, 2024; Körber, 2019) and empirical (for example, Anguera and Santisteban, 2016; Schmitz-Zerres, 2019) studies. Furthermore, the significance of integrating future-thinking approaches with climate crisis-related content in the history classroom has been highlighted (Power and Kitson, 2024). Historical studies have also addressed the question of time in the Anthropocene, following Chakrabarty's (2018) argument that the concepts of time associated with the planet and humanity are in conflict. This debate will be examined in greater detail in the following section.

The Anthropocene: discussions in theory and didactics of history

The Anthropocene has been a subject of historical research since the 2010s (for overviews, see Tanner, 2024; Westermann and Höhler, 2020; Wicke, 2022). Chakrabarty (2018) prominently introduced the term into the historical debate, proposing that different concepts of time converge in the Anthropocene. While planetary time is measured in periods of millions of years, human time is compressed and focused on the actions of humankind. The debate brings together these timescales, but it reveals that planetary time is not a significant aspect of historical thinking (Chakrabarty, 2018, 2021). Therefore, thinking about the future in the Anthropocene presents a significant challenge. First, as Chakrabarty (2018) posits, it is inherently difficult to conceptualise a future that extends beyond the human experience, particularly considering the profound impact of the Anthropocene. Second, the future in the Anthropocene differs from what was previously anticipated. It will diverge from both the past and the present, largely because of climate change.

In recent years, the discourse within the didactics of history has gradually shifted towards the concept of the Anthropocene. McGregor et al. (2021) advocate integrating environmental history, climate change education and Indigenous studies to address the challenges of the Anthropocene, fostering new ways of finding meaning and using history to confront the climate crisis. Furthermore, theoretical questions about the significance of the Anthropocene for human perception of time and historical thinking are addressed (Hübner and Barsch, 2024; Hübner and Sommer, 2024). In this context, the previous disciplinary concept of time is regarded as being outdated and needing to be diffused (Hübner et al., 2023). Another question is how history lessons and curricula can enable historical learning in the Anthropocene. Hawkey (2023) underlines the considerable importance of historical learning for the understanding of the present environmental crisis and puts forward the view that the environment should be given more weight in the history curriculum. Bernhard and Popp (2023, 2024) emphasise that the debates on the Anthropocene challenge Eurocentric master narratives, demonstrate the plurality of temporal structures and provide impulses for the further development of world and global history

approaches in teaching history. [Ní Cassaithe and Chapman \(2020: n.p.\)](#) propose that history education should 'equip the next generation with the capacity to read the world as global citizens and to think constructively about the future of the planet'. Nordgren (2019) addresses the design of history curricula in the Anthropocene, inquiring into the selection of narratives and the means of their conveyance, while Retz (2022) deals with ethical aspects arising from teaching history in the Anthropocene, emphasising questions of temporality, human power and loss of control, and political agency.

This succinct overview of research illustrates that although the examination of the Anthropocene in the didactics of history is still in its infancy regarding both theoretical and empirical considerations, it has the potential to prompt a re-evaluation of fundamental assumptions about historical thinking.

Historical thinking in the contemporary German climate movement

In this section, we outline the research design and present the results of our analysis. We discuss them subsequently, adhering to the steps described in the introduction.

Empirical data: journalistic interviews with climate activists

The present study analyses five journalistic interviews with members of four political groups of the climate movement that have become central actors in the debate on how to deal with the climate crisis in recent years in Germany. The groups are Fridays for Future (FFF), the Last Generation (LG), Extinction Rebellion (XR) and Ende Gelände (EG). These groups are largely supported by young people who neglect their compulsory schooling to perform their activities, resign from their jobs, change their place of residence and expose their bodies to violence, among other things. The data presented by [Sommer et al. \(2020\)](#) demonstrate that at least the majority of participants in the political group Fridays for Future have predominantly well-educated, middle-class, white backgrounds. We did not find similar data for the other groups.

The four groups were selected because of their high media presence between 2019 and 2024. The investigation comprises two interviews with members of Fridays for Future, as this group has been the subject of the greatest attention within the German discourse. At the same time, we wanted to capture the political spectrum of the German climate movement.

We selected interviews in which the participants were given ample time to present their respective approaches. Such interviews should always be seen as part of political activism. The activists want to share their ideas with the public to start debates, put pressure on politicians and win people over to their movement and their goals. As press spokespersons for their movement, most of the interviewed activists are likely well-trained and experienced in dealing with the media. The following journalistic interviews were selected for analysis:

- Jung, T. (Host) (2020, 12 November) Extinction Rebellion. Annemarie Botzki (No. 486) [Audio podcast episode]. *Jung & Naiv*. Lupus & Caster GmbH (139 minutes).
- Jung, T. (Host) (2021, 19 December) Carla Reemtsma (Fridays for Future) (No. 546) [Audio podcast episode]. *Jung & Naiv*. Lupus & Caster GmbH (108 minutes).
- Jung, T. (Host) (2022, 19 April) Klimaaktivistin Luisa Neubauer (Fridays for Future) (No. 568) [Audio podcast episode]. *Jung & Naiv*. Lupus & Caster GmbH (170 minutes).
- Jessen, H. (Host) (2022, 10 November) Letzte Generation: Hans Jessen Show mit Aimée van Baalen, #Letzte Generation (No. 27) [Audio podcast episode]. *Hans Jessen Show*. Lupus & Caster GmbH (141 minutes).
- Clio (Host) (2023, 14 January) Ende Gelände: 'Räumung ist leider schon richtig weit, trotzdem: die Klimagerechtigkeitsbewegung erhält gerade unglaublichen Zuspruch' Interview with Luca Scott [Audio radio report]. *RadioZ Nürnberg*. Bundesverband Freier Radios e. V. (22 minutes).

Fridays for Future

The Fridays for Future (FFF) movement originated in 2018 as a consequence of the 'school strike for the climate', initiated by the then 15-year-old Swede Greta Thunberg. FFF expanded its scope to encompass a multitude of demonstrations, climate strikes and camps held around the world ([Haunss](#)

and Sommer, 2020). The central demand is compliance with the Paris Climate Agreement. In Germany, FFF is also calling for the phase-out of coal by 2030, and the achievement of 'net zero' by 2035 (Fridays for Future, 2024).

The Last Generation

Since 2021, the Last Generation (LG) has garnered considerable attention in Germany through a series of civil resistance actions, including traffic blockades and the defacement of art objects, which led to controversial discussions in the media. The primary demand is the phase-out of fossil fuels by 2030 (Last Generation, 2024).

Extinction Rebellion

Extinction Rebellion (XR) was established in England in 2018. The group is structured in a hierarchical manner (Melchior and Rivera, 2021) and advocates for the cessation of all fossil fuel-related greenhouse gas emissions and for the formation of citizens' councils for political consultation (Extinction Rebellion Deutschland, 2024). XR employs civil disobedience by obstructing streets, squares and infrastructure, for example. XR has been the subject of criticism due to the anti-Semitic statements made by its British founder, Roger Hallam. This also applies to the Last Generation, which is associated with him. In response, both organisations have distanced themselves from Hallam.

Ende Gelände

The Ende Gelände (EG) alliance unites a diverse array of political groups with a shared interest in the coal phase-out. Since 2015, EG has mobilised thousands of activists to blockade the infrastructure of opencast lignite mining. The alliance advocates for an immediate coal phase-out in Germany, and a 'grassroots democratic and decentralised energy transition' (Ende Gelände, 2022: n.p.).

Research questions and method

Despite the recent focus on the future and the Anthropocene in the disciplinary debate, there remains a paucity of empirical studies on historical thinking that focus on these concepts. This is also the case regarding analyses of historical thinking in the climate movement. The research questions are therefore exploratory in nature and aim to identify the key aspects of historical thinking in the climate movement, allowing for a more focused approach in subsequent studies.

As outlined in the introduction, the research questions are: How do actors in the German climate movement conceptualise historical time? How do they predict the future? And how do they think and argue historically in their discourse on climate change? We aim to both identify the specific historical thinking patterns that are evident within the movement and examine the similarities and differences between the various representatives of the four political groups.

To examine the historical thinking processes, and the associated sociopolitical thinking and actions in the climate movement, a qualitative content analysis was conducted using a content structuring method. Following an initial review of the transcribed interviews, deductive main categories and subcategories were formed based on theoretical debates on the future, the Anthropocene and historical thinking, as described above (Kuckartz and Rädiker, 2022; Mayring, 2014) (see Table 1).

In our category (C) system, partially adopted from a previous study (Reusch and Sieberkrob, in press), we made different forms of imagining the future empirically distinguishable. This was achieved by coding how activists generate the future (C1), which concepts and images they create (C2), how they connect the past and the future (C3), which concepts of time they use (C4), and how they form meaning historically (C5). For C1, we deductively generated subcategories referring to Graf and Herzog (2016), who examine historical futures and distinguish four modes of generating future scenarios in the twentieth century: the expected future (for example, political-social ideologies, intellectual grand designs, technological visions and the identification and projection of individual hopes); the designed future (for example, institutionalised decisions and stipulations in administration, politics and the economy); future of risk (for example, predicted dangers and corresponding precautions, military planning, insurance calculations,

technical expertise); and the preservation of the future (for example, normative projects that seek to define and secure valuable substance).

Graf and Herzog (2016) also offer an alternative classification system based on the differentiation of various future concepts and images, particularly utopias, dystopias, prognoses, prophecies and plans. According to Hölscher (2017), these literary genres, which also encompass political statements, offer insights into the motives of the actors involved. While prognoses are based on the present and the past, plans are informed by an anticipated future, and those who devise plans are more directly involved in their realisation. Plans also include more detailed time schedules than utopias and prophecies. This classification system forms the subcategories of C2, but we have excluded plans and prophecies from the category system after not coding them.

To theoretically grasp the presence of futures in the present, Landwehr (2020) introduced the term *chronofereces*. This term elucidates the capacity of humans and collectives to refer to past and future times that are not presently experienced, with the objective of making them present in absent times. This leads to the question of how past futures and future pasts manifest themselves. The term *past future* was introduced by Koselleck (2004) and refers to ideas, hopes, expectations or fears that individuals have held in the past regarding their future. The antonymous term *future past* denotes the prospective view of past events and the manner in which present occurrences and decisions are made in anticipation of future historical assessments (Hölscher, 2017; Körber, 2019). This pair of terms constitutes the subcategories of C3.

Since thinking about the future does not exist in isolation from thinking about time, we examine which perceptions of time emerge in connection with thinking about the future. In doing so, we engage with the debates on the meaning of time within the discourse in the didactics of history. The subcategories generated in this regard (acceleration, stagnation and urgency, progress and critique of progress, generational thinking of time, and thinking about time in the life span) were inductively formed based on the analysed material (C4).

While C5 is based on Rüsen's (2017) theory about how humans make sense of the past, the remaining categories – society and the individual (C6), spatial concepts (C7) and emotions (C8) – were developed through an inductive process from the material.

Kuckartz and Rädiker (2022) criticise the technique of summarisation because paraphrasing and generalisation often distort or eliminate contradictions and complex relationships, leading to a loss of meaning. This is also time-consuming and does not take sufficient account of relational structures between subcategories and main categories, especially when compared with hermeneutic approaches. Following these criticisms, the inductive subcategories were formulated directly as thematic categories based on the material in question.

In the sense of consensual coding (Guest et al., 2012), the material was initially coded independently in several rounds. Divergent codings were then discussed, the coding agenda and category system were further refined, and segment boundaries and category boundaries were more precisely defined, until consensus codings were achieved for the entire material. Frequently, text passages were assigned to multiple categories and subcodes. In instances of direct quotations of the empirical data, such as in the category system or in the presentation of the results, it should be noted that all the translations in this article are ours.

Table 1. Category system of the qualitative content analysis

Category	Anchor example (translated)
C1 generation mode of the future	
C1.1 expected future	van Baalen: '... that we all have something to gain from having this €9 ticket or the speed limit, namely more safety on the roads, namely more social justice ...' (Jessen, 2022: 00:08:05)
C1.2 designed future	Botzki: '... my moment in Paris was when ... it was decided that all countries in the world had signed up to become climate neutral by 2050 ... So, this is an announcement that all industries must be decarbonised ... and the path has been set, the governments themselves have signed up to this.' (Jung, 2020: 00:48:01)

C1.3 future of risk	Botzki: '... ecosystems are collapsing ... on a large scale, ... and we want the government to declare a climate emergency ...' (Jung, 2020: 01:45:30)
C1.4 preservation of the future	van Baalen: '... we should actually be starting now to create prospects for the future that fetches them. Which can guarantee them a ... standard of living. And which can guarantee security ...' (Jessen, 2022: 01:43:01)
C2 visions and images of the future	
C2.1 utopia	Reemtsma: 'Of course, this does not negate the fact that our lives will change if we come to live in a climate-friendly society. We will have fewer cars on the roads, we will fly less, we will eat less meat.' (Jung, 2021: 01:30:03)
C2.2 dystopia	van Baalen: '... until the end means ... until thousands of people die, millions of people die. In the next seven years alone, 700 million people will lose their homes. Three billion people, even 3.5 billion people, according to the World Climate Report, are in the zones that will no longer be habitable ...' (Jessen, 2022: 01:38:30)
C2.3 prognosis	Reemtsma: 'And it also took this mass and controversial protest for people to recognise that yes, this is right and important, and we need this political change. And it will be similar in the climate field, there will always be people who think certain measures are daft.' (Jung, 2021: 01:22:54)
C3 past futures/future pasts	
C3.1 past futures	Reemtsma: 'So, for thirty years, people have been saying that nuclear fusion is coming, and it still hasn't.' (Jung, 2021: 01:34:36)
C3.2 future pasts	van Baalen: 'Of course, we can continue to ignore it for five years and not talk about it as a society. But then it will be too late. Then the climate crisis will decide which areas we can develop and which we cannot. And for every year we wait, it will get worse. At some point, the catastrophe will limit us, and we will no longer have it under control.' (Jessen, 2022: 00:35:51)
C4 time perception and horizons	
C4.1 acceleration	van Baalen: 'And then I stand there in five years' time and say we are not going to get to 1.5 degrees anyway ... And if we break through these tipping points, we will end up at 3 degrees. And that means that we then stand before a catastrophic prospect.' (Jessen, 2022: 00:49:07)
C4.2 stagnation	van Baalen: '... on the same day that a million people held up 1.5-degree placards demanding that this change finally come, ... this was not taken into account. Absolutely not. Instead, this package was pushed through anyway.' (Jessen, 2022: 00:23:00)
C4.3 urgency	Reemtsma: 'I believe that it is such political manoeuvring, such power games and dynamics that we can no longer afford in the face of the climate crisis ..., especially in view of the short time we have left ...' (Jung, 2021: 00:12:45)
C4.4 progress and critique of progress	Reemtsma: '... and at the same time, away from the belief in a permanent technological openness ... I [don't] want to rely on the fact that maybe in ten years there will be an innovation that solves everything, or maybe not ...' (Jung, 2021: 1:01:08)
C4.5 generational thinking about time	Reemtsma: 'I believe that this is perceived as such a generational conflict, and in part as a reproach to the older generations, which of course stems precisely from this logic. However, it is not the individuals who are the target of our criticism and demands, but a systematic problem'. (Jung, 2021: 01:19:41)

C4.6 thinking about time in the life span	van Baalen: 'I would wish for myself that I ... would not jeopardise my ... own future.' (Jessen, 2022: 00:12:43)
C5 formations of historical meaning	
C5.1 traditional	Reemtsma: 'Many social advances ... have only come about as a result of mass protests and protests with civil disobedience, ... that was a mass conscious breach of the rules, which was always important for these historical achievements, and it is the same with the climate crisis.' (Jung, 2021: 00:24:00)
C5.2 exemplary	Botzki: '... this is a kind of democratic means that can be used ... Like the examples I mentioned earlier, like women's suffrage, that was used, or Gandhi or Martin Luther King, they made certain breaks in the rules of society, because they said that society was not fair ... And that is what we are using now ...' (Jung, 2020: 01:29:58)
C5.3 critical	Reemtsma: '... on what is our entire way of life and economy based? On the burning of fossil fuels and on continued growth. And it is clear that if we want to contain the climate crisis, if we want to stay within the 1.5-degree limit, then we have to get away from that, we have to decarbonise as quickly as possible.' (Jung, 2021: 00:08:45)
C5.4 genetic	not coded
C6 society and the individual	Scott: 'We ... are also calling for a fundamental change in the system, which may initially frighten many people because it sounds somehow radical, which in the end it is not, if you look at how radical the crises we are currently experiencing are, and that we may have to rethink our way of doing business.' (Clio, 2023: 00:14:19)
C7 spatial concepts	van Baalen: 'If we let the Global South, which we also influence significantly with our policies, have a say, then the outcome would be quite different. Because they are already suffering massively.' (Jessen, 2022: 00:30:00)
C8 emotions	Scott: '... because this is also something that gives us a lot of hope and courage in a time that is so full of crises, and that can really inspire us and give us a lot of hope ...' (Clio, 2023: 00:13:32)

Results: historical thinking in search of strategies for addressing the climate crisis

A total of 305 codings were assigned. However, these are distributed very unevenly across the interviews. The most codings were given in the interview with Aimée van Baalen (120), followed by Annemarie Botzki (87) and Carla Reemtsma (54). Comparatively few codings were assigned to the interviews with Luca Scott (23) and Luisa Neubauer (21).

C1 generation mode of the future

The statements about the future in the interviews are related to the perceptions of the present, and they are primarily formulated as expected future (C1.1) and future of risk (C1.3) (see Table 2).

In their formulation of expected futures (C1.1), Aimée van Baalen (LG), Carla Reemtsma (FFF) and Annemarie Botzki (XR) highlight that civil resistance can impede change, and that ecological, political and economic changes are possible to contain the climate catastrophe (for example, Jessen, 2022: 00:23:23, 00:45:36, 00:59:48, 01:00:46, 01:08:10; Jung, 2020: 01:29:20; 2021: 00:24:02). These ideas go hand in hand with a critique of the capitalist economy in general, and current energy policy in particular. Luisa Neubauer (FFF), for example, attests that German society has an 'emission problem, a time problem and a problem of justice and distribution' (Jung, 2022: 02:13:46). Reemtsma outlines a more climate-friendly society in which energy supply is decentralised and organised by citizens (Jung, 2021: 01:32:11). She

criticises the belief in permanent growth without limits (Jung, 2021: 00:08:27), as well as the belief in technological solutions to the climate crisis (Jung, 2021: 01:01:04). Botzki repeatedly emphasises that more direct democracy in the form of citizens' councils and forms of participation will lead to climate-friendly changes (for example, Jung, 2020: 00:44:19, 01:48:12).

Table 2. Distribution of the codings in Category 1

C1	C1.1 expected	C1.2 designed	C1.3 risk	C1.4 preservation	Σ
Neubauer (FFF)	2	0	2	0	4
Reemtsma (FFF)	4	2	1	1	8
van Baalen (LG)	9	1	16	1	27
Botzki (XR)	15	5	13	1	34
Scott (EG)	5	0	0	0	5
Σ	35	8	32	3	78

Regarding private individuals, Reemtsma outlines more concrete scenarios: 'We will have fewer cars on the roads, we will fly less, we will eat less meat' (Jung, 2021: 01:30:50). However, she emphasises that the scope of action of individuals is limited, and that the individualisation of dealing with the climate catastrophe is also a tactic of large fossil fuel companies to shift responsibility. In comparison, Luca Scott (EG) makes a more general call to 'take another look at how we can shape our lives so that we don't live in a permanent hamster wheel', to 'live in solidarity with each other and in harmony with the planetary boundaries' (Clio, 2023: 00:15:01). Such considerations on the future design of the economy and society were, where they were concretised, also coded as designed future (C1.2).

The optimistic expected futures are juxtaposed with futures of risk (C1.3). Van Baalen attests to a 'destructive course' (Jessen, 2022: 00:03:38) and Reemtsma deems it highly improbable that the Paris climate targets will be met (Jung, 2021: 00:11:15) and issues a stark warning. According to van Baalen, such an outcome would entail a climate collapse (Jessen, 2022: 00:26:06, 00:27:18), along with social division and wars (Jessen, 2022: 00:34:39). Furthermore, Botzki warns of ecological disasters (Jung, 2020: 00:01:57, 01:43:28). These futures of risk frequently align with the dystopian narratives coded in C2.2, which are elucidated in greater detail therein.

The few codings in C1.4 (preservation of the future) demonstrate that the primary objective is to preserve the ecological foundations of life. This is accompanied by an appeal for individuals to take action and a critique of the prevailing economic system, as previously outlined.

C2 visions and images of the future

The dominant forms of reference to the future in this category are prognoses (C2.3) and dystopias (C2.2) (see Table 3).

Table 3. Distribution of the codings in Category 2

C2	C2.1 utopia	C2.2 dystopia	C2.3 prognosis	Σ
Neubauer (FFF)	0	0	0	0
Reemtsma (FFF)	1	0	6	7
van Baalen (LG)	0	8	9	17
Botzki (XR)	0	7	7	14
Scott (EG)	0	0	0	0
Σ	1	15	22	38

The formulated prognoses (C2.3) primarily concern the developments to be expected if the Paris climate targets are not met, as stated by Reemtsma (Jung, 2021: 00:11:37), and the so-called tipping points of global warming are reached, as repeatedly prognosed by Botzki (Jung, 2020: 00:51:44, 00:01:57, 01:43:28). The prognoses are thus often congruent with dystopian visions of the future (C2.2) and futures of risk (C1.3), although not every prognosis of non-compliance with the Paris climate targets is equally dystopian. But the overlaps of prognosis, risk and dystopia clearly show the activists' assumption that their pessimistic expectations for the future will certainly materialise. More particularly, Botzki's and van Baalen's dystopias (C2.2) are characterised by a catastrophic scenario of ecological collapse, leading to wars and destruction (Jessen, 2022: 00:34:39; Jung, 2020: 01:43:28, 01:45:05). Both activists adhere to a fixed set of beliefs regarding the future trajectory of time. They posit that reaching critical thresholds will inevitably result in a dystopian outcome, without considering any other possibilities.

Botzki emphasises: 'We are on the way to four degrees of global warming and that is – Europe will then be a desert, so you won't be able to live here anymore' (Jung, 2020: 00:45:43). Resources such as water and space, van Baalen explains, are becoming increasingly scarce, which is why there will be 'battles in the streets or, in the worst case, wars' (Jessen, 2022: 00:34:39), as well as 'fires followed by storms followed by floods' (Jessen, 2022: 01:42:49). Botzki poses the question, 'what if the ice sheet melts or the coral reefs or the rainforest collapses, in other words, entire ecosystems that characterise our world – collapse is also a kind of trivialisation – break down, die off, irrevocably?' (Jung, 2020: 01:43:34). Van Baalen puts it even more drastically: '... thousands of people are dying, millions of people are dying. So, in the next seven years, in particular, 700 million people will lose their homes. According to the World Climate Report, 3 billion people, 3.5 billion people in fact, are in zones that will no longer be habitable ...' (Jessen, 2022: 01:38:34). It is emphasised that these scenarios of inevitable development are based on scientific research findings on the climate crisis. As Botzki states, they are 'not horror scenarios that we have somehow thought up, these are conservative institutions that have already made these predictions' (Jung, 2020: 00:45:51).

C3 past future/future past

The categories past future (C3.1) and future past (C3.2) were identified on 35 occasions (see Table 4).

Table 4. Distribution of the codings in Category 3

C3	C3.1 past future	C3.2 future past	Σ
Neubauer (FFF)	1	3	4
Reemtsma (FFF)	3	4	7
van Baalen (LG)	4	11	15
Botzki (XR)	2	2	4
Scott (EG)	2	3	5
Σ	12	23	35

Past futures (C3.1) appear in the interviews in two ways: first, as failed future policies of the past. According to Reemtsma, we have known for 40 years 'that the climate crisis is real, and emissions must be reduced' (Jung, 2021: 00:13:30). Despite this, as Botzki points out, politics and business have not, or far too late, drawn any conclusions from this, but have even 'launched rejection manoeuvres to sow doubt [about climate change]' (Jung, 2020: 00:16:22). Second, the activists express past futures when they talk about their earlier political convictions that everything could change for the better. Neubauer points out: 'People thought the world was getting better and better, and that would actually mean that phenomena like Brexit and Trump wouldn't exist, that wasn't foreseen, they weren't foreseen in this world narrative' (Jung, 2022: 01:35:26).

Future pasts (C3.2) appear first and foremost as a course that is set for the future in the present. Scott criticises the German government's energy policy by stating that they 'are currently cementing fossil infrastructure for the coming decades' (Clio, 2023: 00:12:32). Reemtsma calls for a political 'change of course' in agricultural, transport and energy policy to comply with the Paris Climate Agreement. In

consideration of the fossil fuel-based energy sector, she asserts that it is imperative to transition away from this model: 'In a climate-neutral society, the combustion of fossil gas is untenable' (Jung, 2021: 01:01:08). In comparison to the other interviews, the category future past was frequently coded in the interview with van Baalen. She demands: 'We should actually start now to create future perspectives that pick [the people] up ... I don't understand why we're still waiting' (Jessen, 2022: 01:43:02). As she states, 'We are all the last generation, because we are all the generation that can still do something about climate collapse' (Jessen, 2022: 01:55:20).

C4 time perception and horizons

A total of 63 codings were identified within this category, yet there was significant variation in the number of times each interview was coded. Most of these codings belong to the interviews with Botzki and van Baalen. It is notable that the interviewees' time perception is primarily characterised by a narrative of urgency (C4.3) (see Table 5).

Table 5. Distribution of the codings in Category 4

C4	C4.1 acceleration	C4.2 stagnation	C4.3 urgency	C4.4 progress	C4.5 generational thinking	C4.6 life span	Σ
Neubauer (FFF)	0	0	3	0	1	1	5
Reemtsma (FFF)	0	2	2	3	2	0	9
van Baalen (LG)	1	5	4	2	3	3	18
Botzki (XR)	1	5	16	2	1	3	28
Scott (EG)	0	0	3	0	0	0	3
Σ	2	12	28	7	7	7	63

In terms of urgency, Botzki describes the climate as 'a ticking existential clock' (Jung, 2020: 02:02:39), in which a launch of a catastrophic image becomes recognisable. She repeatedly refers to the tipping points (Jung, 2020: 00:06:50, 00:28:06, 00:45:36, 01:02:59, 01:43:28) and the small window of opportunity that is still available (Jung, 2020: 01:45:26, 01:47:42, 01:51:12). This urgency is framed as a question of survival (Jung, 2020: 00:07:05, 00:51:49, 01:03:03), since the supply of basic goods (Jung, 2020: 01:40:00, 01:44:23) and central ecosystems (Jung, 2020: 01:45:05, 01:46:42) are at risk.

Van Baalen does not believe 'that our political system can react appropriately to the crisis' (Jessen, 2022: 01:27:09). She dramatically points out the urgency: '[The people in the Global South] are already drowning in the floods and their houses are already being washed away' (Jessen, 2022: 00:30:10). Neubauer states: 'huge things have to happen in climate policy in the next three years, and in the next eight years too' (Jung, 2022: 00:24:20). Differences can be identified in the vehemence with which the time pressure and the crisis are emphasised. While the two FFF climate activists formulate the urgent need for action primarily as a call for political action, Botzki (XR) and van Baalen (LG) present a catastrophic image. Although this aspect is also reflected in the other interviews, Scott (EG), in particular, describes the present as a 'capitalist distribution crisis' in which those people who 'probably already get the least suffer the most' (Clio, 2023: 00:15:50).

Alongside the time pressure narrative, there is unsurprisingly a narrative of stagnation, which is characterised by the fact that climate policy decisions are being made too slowly, to an insufficient extent or not at all (C4.2). As Reemtsma states, '... we must derive political measures in the context of the climate crisis from what is physically necessary. And that is ... what is not being done ...' (Jung, 2021: 00:12:57). Shortly after, she points out that 'almost nothing has happened in climate policy for forty years, although we have known for decades that the climate crisis is real and that emissions must be reduced' (Jung, 2021: 00:13:31). Botzki censures a retrograde political orientation (Jung, 2020: 00:26:53, 00:40:54), while van Baalen asserts that the protest actions are ineffective in improving climate policy (Jessen, 2022: 00:23:05, 00:24:39) and that the most modest steps have not been taken (Jessen, 2022: 00:38:14).

In the remaining categories, the exponential acceleration (C4.1) of climate change due to tipping points is highlighted by Botzki (Jung, 2020: 01:43:16). Regarding the category progress and critique

of progress (C4.4), Reemtsma argues that civil disobedience has frequently been a catalyst for social progress (Jung, 2021: 00:24:02). At the same time, the assumption that technological advancement is the key to solving the issue of climate change is subjected to criticism by Reemtsma and van Baalen (Jung, 2021: 01:01:04; Jessen, 2022: 01:09:22). However, Botzki also identifies an opportunity in this regard (Jung, 2020: 00:26:55). In the category generational thinking about time (C4.5), Reemtsma highlights that the climate crisis is not a matter of generational responsibility (Jung, 2021: 01:18:08, 01:19:49), as the older generations are not the primary culprits. Instead, it is a systemic issue (Jung, 2021: 01:19:58) that requires collective action to safeguard the future of subsequent generations, as van Baalen also states (Jessen, 2022: 01:05:07). With regard to C4.6 (thinking about time in the life span), she points out that activism also puts one's own future at risk. 'I would wish for myself that I would not risk my own physical integrity there, that I would not risk my own future' (Jessen, 2022: 00:12:43). She also expects that the dystopian futures described above will still be experienced by the activists themselves (Jessen, 2022: 00:34:38, 00:49:14).

C5 Formations of historical meaning

The interviewees usually form meaning about the past in an exemplary (C5.2) and critical (C5.3) way (see Table 6).

Table 6. Distribution of the codings in Category 5

C5	C5.1 traditional	C5.2 exemplary	C5.3 critical	C5.4 genetic	Σ
Neubauer (FFF)	0	2	3	0	5
Reemtsma (FFF)	2	4	5	0	11
van Baalen (LG)	0	7	1	0	8
Botzki (XR)	0	1	0	0	1
Scott (EG)	0	0	2	0	2
Σ	2	14	11	0	27

Typical for exemplary formations of historical meaning (C5.2) is the reference to social movements that have brought about change – whereby the differences to the historical role models are also considered. Reemtsma, van Baalen and Botzki refer to the Civil Rights Movement or Martin Luther King Jr (Jung, 2021: 01:22:44; Jessen, 2022: 00:04:07; Jung, 2020: 01:30:07), whereby social positioning in societies is also negotiated, as well as to Gandhi and the women's movement (Jung, 2020: 01:30:07; Jessen, 2022: 00:04:07, 00:55:10). At the core of these formations of historical meaning is the narrative that social movements and civil disobedience often provided the impetus for change. Reemtsma states: 'Many, many historical achievements that were based on protest movements were totally controversial ... at the beginning ... And it also took this mass and controversial protest until people recognised that ... we need this political change. And it will be similar in the climate field' (Jung, 2021: 01:22:36).

Critical formations of meaning refer in particular to inadequate climate protection in recent decades, which is usually expressed as a blanket criticism by Neubauer: 'You've been forgetting to tackle the climate crisis for twenty years, now ... young people ... are doing it and explaining to you what's going wrong' (Jung, 2022: 00:53:10). Partly independently of this, partly in addition, the activists express critical formations of historical meaning about the capitalist economic system of recent decades and the associated belief in technological solutions. Reemtsma points out:

... this belief that innovation will simply solve everything, so no ... To hope now that ... we can carry on as before because we are sucking CO₂ out of the air, that is absurd ... and also to say that we are leaving the foundations of our social coexistence ... to the market ... when we know that the market has somehow produced and reproduced the exploitation of people and resources in the past decades, centuries, is simply absurd. (Jung, 2021: 01:34:24)

C6 Society and the individual

The codings in this category (48) are assigned to the individual interviews as follows: Neubauer: 3; Reemtsma: 10; van Baalen: 28; Botzki: 3; Scott: 4. In this category, four major aspects can be identified in the interviews. These first include criticism of current (party) policy, which Reemtsma experienced as 'a green-painted business as usual' but is not a break with 'this paradigm of always wanting to grow ... and solve this through technological innovation' (Jung, 2021: 00:09:08). Van Baalen is particularly clear on this aspect: if politics fail to implement the 'very small demands' that 'could be implemented overnight', 'then we really wonder whether the government still has the situation under control' (Jessen, 2022: 00:38:38). However, 'holistic rules are needed. And, again, these can only come from politics' (Jessen, 2022: 00:53:38). Civil disobedience, therefore, 'often acts as a regulator for democracy' (Jessen, 2022: 01:36:20). Scott emphasises, particularly with regard to the Green Party, that 'Ende Gelände ... has never relied on party politics' (Clio, 2023: 00:10:37).

Second, the interviewees express a general criticism of capitalism. Neubauer states: '... the majority in Germany does understand that ... capitalism ... is really not the ultimate ... the way we are currently doing business in Germany, macroeconomically, has an emissions problem, a time problem, and a problem of justice and distribution' (Jung, 2022: 02:13:22). Reemtsma is more specific about this aspect. 'Certain things will ... no longer be able to be organised on the market in a climate-friendly society. For example, the energy supply' (Jung, 2021: 01:35:25). Botzki and van Baalen do not comment on this aspect. However, van Baalen criticises the disproportionate CO₂ emissions of rich people (Jessen, 2022: 00:52:09, 00:53:14). Scott calls for:

a fundamental change in the system ... and that we perhaps also need to rethink our way of doing business. Green capitalism will not enable us to achieve global climate justice ..., nor will it lead us to live in solidarity with each other and in harmony with planetary boundaries ... there cannot be infinite growth on a finite planet. (Clio, 2023: 00:14:22)

Third, the goals formulated by the interviewees fall into this category. For example, the introduction of citizens' assemblies is proposed by Botzki (Jung, 2020: 00:44:19), in which climate policy is to be discussed and democratic decisions are to be made. Van Baalen, who would like to see direct democracy and more citizens' councils established, expresses the aim to 'mobilise a critical mass' (Jessen, 2022: 01:06:55) to 'render all these lobbies ineffective' (Jessen, 2022: 01:01:03).

Fourth, the agency (Bethmann et al., 2012; Emirbayer and Mische, 1998) of individuals and collectives is being negotiated in view of the climate crisis. According to Neubauer, this requires 'people who say: I am putting something at risk. I ... stop imagining that there is a sideline in this climate crisis' (Jung, 2022: 00:48:53). There is a notable small difference here in the call to other people compared to van Baalen, who emphasises the agency of the activists in line with the actions of the Last Generation: 'we are prepared ... to put our well-being and ourselves with name and face ... on the line' (Jessen, 2022: 00:23:35). However, Reemtsma not only calls for an individual confrontation with the topic but also emphasises structural aspects. The addressees of the criticism are 'not the individuals, but it is a systematic problem' (Jung, 2021: 01:19:41). Scott makes a more hopeful appeal: 'Organise yourselves, join something, because that's also something that also totally gives a lot of hope and courage, in a time that is brimming with crises. And that can be totally inspiring ... in the midst of absolutely bad news all the time' (Clio, 2023: 00:13:29).

C7 spatial concepts

In this category, the codings (11) are assigned to the individual interviews as follows: Neubauer, 0; Reemtsma, 2; van Baalen, 4; Botzki, 3; Scott, 2. Typical references within this category concern the Global South. Reemtsma points out that 'catastrophic climate consequences ... can already be observed today in the parts of the world that have contributed the least to the climate crisis, in countries of the Global South' (Jung, 2021: 01:18:16). She highlights that the Global North benefits from 'colonial structures and dependencies' (Jung, 2021: 01:20:06), which, as van Baalen argues, have led to 'a kind of overconsumption' (Jessen, 2022: 00:31:26). Climate policy would be different if 'we allowed the Global South to have a say in decision making, which we also significantly influence with our policies' (Jessen, 2022: 00:30:00). Spatial concepts also become clear in the scenarios described for the future after the tipping points: with the melting of large areas of ice, Botzki prognoses, Europe would become 'a desert'

and agriculture would 'only be possible towards the poles' (Jung, 2020: 00:45:45). Another consequence of the climate catastrophe highlighted by van Baalen is that 'resources such as space ... in which there is an acceptable living space that can somehow still be worked with' are becoming 'increasingly limited' (Jessen, 2022: 00:35:11).

C8 emotions

The few codings (5) in this category are assigned to the individual interviews as follows: Neubauer, 0; Reemtsma, 0; van Baalen, 3; Botzki, 0; Scott, 2. The emotions expressed by the activists ranged between fear, anger and hope. On the one hand, Scott states that the failure to meet the Paris climate targets 'makes people very angry and very upset', but that this also gives social movements encouragement, as organising 'gives a lot of hope' (Clio, 2023: 00:13:34). Van Baalen, on the other hand, shows more negative emotions and believes 'that we simply let this fear get to us far too rarely'. These emotions would then 'simply spill over and ... find a certain outlet' (Jessen, 2022: 01:17:19). The action on the Monet painting (in October 2022, LG members threw mashed potatoes against a Monet painting in a Potsdam museum – the painting was protected by a glass pane) reported in the media also addressed 'existential fears'. This shows 'a very, very deeply rooted fear of destruction ... And this comes to the fore at this very moment when something could be affected in some way' (Jessen, 2022: 01:23:01).

Discussion: historical thinking in the German climate movement – theoretical inspirations for the didactics of history

The empirical results can be summarised as follows. The future expectations of the activists surveyed move in two directions: on the one hand, the activists forecast the future as dystopian or risky, referring to the climate catastrophe and its global effects; on the other, they form more optimistic narrations of the future. These positive, or even utopian, expectations not only focus on limiting the consequences of climate change but also encompass a vision of collective living in solidarity and an equal ecological organisation of society in general. In both forms of future forecasting, the present becomes a future past, as a time in which the course is set for the future.

In the interviews, temporal perceptions are frequently characterised by a narrative of crisis and urgency. The activists reduce the temporal scope to a few years, during which it is still feasible to avert the most severe consequences of the climate catastrophe. This period is characterised by a negative framing of the so-called tipping points that are perceived to be imminent.

If historical references are made, they are typically exemplary formations of meaning that align with the traditions of social movements and political forms of action. Moreover, critical formations of meaning refer to the history of climate change, environmental destruction and colonialism. It is an interesting finding that none of the interviews encoded a genetic formation of meaning, even though, according to Rüsen (2017), this corresponds especially to modern historical thinking. One explanation for this could be that the genetic conception of the future based on past and present experiences no longer works in view of the current polycrises. At the same time, Rüsen (2017) has always emphasised that the different types of meaning formation are not mutually exclusive but can be combined. Thus, the other coded types of meaning formation might also contain set pieces of genetic thinking. It would be the task of a further study to work out the connections and demarcations more intensively.

The interviewees situate their perceptions of the crisis within distinct social contexts. Some respondents demonstrate a stronger affinity for political considerations, while others exhibit a greater inclination towards economic and capitalist issues. This also encompasses an understanding of the spatial dimension of the crisis and the North–South divide resulting from colonial history. They discuss potential avenues for action considering these social dimensions, and they express emotions of fear, anger and hope.

In what ways can these empirical results be situated within the broader context of the discussion in the field of the didactics of history? Furthermore, what insights can be derived from them for the theoretical development of historical thinking towards the future in the Anthropocene? In this section, we present our thoughts on these questions in two theses.

Our first thesis is that the sociopolitical actions of the climate movement are largely informed by their conceptualisation of the future as an integral aspect of historical thinking. Although, as shown

above, this is not alien to the theory of historical thinking, it challenges it to incorporate both a greater temporal emphasis on the future and a greater consideration of sociopolitical factors.

Chakrabarty's (2018, 2021) thesis of the collision of planetary and human time in the Anthropocene can be partially confirmed empirically through the analysis of the interviews. The convergence of these two temporal concepts is evident in the narrative of tipping points, wherein the extended periods of planetary time converge with the singular point in human time at which the developments of the Anthropocene become irreversible.

However, it is evident that it is challenging, if not impossible, to narrate planetary time. Consequently, narratives of the climate crisis are predominantly based on the concept of human time. Some individuals may find it challenging to perceive climate change as a significant issue due to their inability to grasp its temporal dimensions (in addition to factors such as ignorance, annoyance and the prioritisation of other interests). These difficulties of imagining and narrating the future in the Anthropocene are a central challenge for exploring and theorising temporal perceptions of our present. Regarding processes of historical learning aiming to make sense of current processes of change, it is particularly relevant to consider the future as a time dimension of historical thinking. Integrating the terms past future/future past into historical learning processes can be helpful to deal with the challenges of the Anthropocene (see also Körber, 2019).

In alignment with Koselleck's (2004) perspective, these crisis discourses within the climate movement can be regarded as a paradigmatic instance of modernity. However, the crisis discussed here has a new dimension precisely because of its extension into planetary time, which individuals and collectives address in different ways. Unlike other crises of modernity, the climate crisis is characterised by an irreversibility that complicates or prevents a hopeful expectation of the future. This stands in contrast to the openness of the future in modern historical thinking, which is emphasised by Koselleck (2004). Rather, a dystopian expectation of the future serves as the primary narrative for many activists, even when they propose more hopeful narratives with the intention of reorganising community structures, energy supply and consumption patterns. These visions of the future, which act as motivating forces behind current actions, and which have a direct impact on the present, can be interpreted through the lens of Landwehr's term *chronoferences* (Landwehr, 2020) and, as plural futures, are dependent on the sociocultural, political and spatial position of the speakers. This fits in with the post-colonial and capitalism-criticising voices in the Anthropocene debate (Agarwal and Narain, 2019; Chakrabarty, 2018, 2021; Moore, 2015) that point out that climate change is directly linked to colonial and capitalist exploitation in the modern era and affects people in the Global South in an existential way. Thus, even if climate change affects the entire planet and humanity, expectations for the future are profoundly shaped by our own social positioning in a post-colonial and capitalist world.

The crisis discourses highlight an area of historical thinking that has hitherto been insufficiently explored within the didactics of history. Rüsen's (2017) matrix of historical thinking demonstrates the applicability of this approach to the theorisation of crisis narratives and perceptions of time in the context of climate change. Indeed, the interviews evince a perception of the present as beset with crises, which in turn gives rise to a need for orientation. This is why climate activists look to history and seek to make historical sense. However, the current situation evidently requires that the didactics of history address the crisis as a foundational element and integral aspect of historical learning. For example, McGregor et al. (2021) concentrate on the crisis-laden present in terms of its impact on historical learning, whereas von Borries (2022) inquires whether and how historical learning can genuinely facilitate orientation in times of crisis.

The interviews demonstrate that the formation of historical meaning provides a means of analysing the causes of the climate crisis, and of situating one's own collective actions within the context of social movements throughout history. When formulating prospective courses of action, however, it becomes evident that there are no historical solutions to the crisis. The formulation of utopian visions of the future, or at least of potential courses of action beyond a resigned acceptance of dystopia, is not based on the formation of historical meaning, but on sociopolitical and scientific considerations.

This corroborates Simon's (2017) assertion that the prospective outlook inherent to the Anthropocene concept, characterised by discontinuity and unpredictability, is incompatible with the notion of historical and social transformation. This notion not only defines modern historical thinking but also drives social movements.

Our second thesis posits that historical thinking in the present case cannot be reduced to the orientation of individuals in time. Instead, historical thinking gives rise to individual and collective historical agency.

Whereas Rüsen's formations of historical meaning serve to orient the individual in time, the activists perceive the climate catastrophe as a global social problem that necessitates political solutions. Rüsen's conception of historical thinking certainly includes a dimension of action, although it is not explained in detail. Resulting from historical thinking, action is primarily related to the individual and mostly has no collective dimension (see [Rüsen, 2017](#)). By contrast, in the narratives of the climate activists, crisis management is not an individual process but a collective one. Their aim of social change, as well as their collective approach, replaces them in the tradition of modern social movements. The historical thinking process gives rise to an imperative to act, whereby the actors simultaneously position themselves as central figures within their historical narrative.

The imperative of action resulting from historical thinking is characterised by the establishment of connections between disparate historical experiences and timelines. It is imperative that these perspectives be brought into dialogue with one another to avert the climate catastrophe and, at the very least, to contain its consequences. The historical thinking processes encompass three key areas: (1) the interconnection of shared and disparate past, present and future experiences and expectations; (2) the examination of diverse spatial contexts, including the Global South and North, as well as the ways in which agricultural practices and human habitation are changing; and (3) the analysis of social positioning, including the intersections of race, class and gender.

As previously indicated, it is not feasible for the climate movement to strive for a utopian vision of the future. Instead, its efforts can be conceptualised as a race against the impending dystopian scenario ([Huber, 2023](#)) – in contrast to the sociopolitical engagement of most social movements during the twentieth century, whose historical agency was shaped by a critical examination of the present and, at the very least, the possibility of utopia as a future expectation.

Following the agency term developed by [Emirbayer and Mische \(1998\)](#), [den Heyer \(2018\)](#) posits that historical agency is constituted by three interrelated elements: iterative, projective and practical-evaluative. They are primarily connected to the past, the future and the present (see also [Sieberkrob, 2023](#)). In the interviews examined, all three elements are clearly discernible in their interconnections, for instance, in the exemplary formations of meaning (iterative), in the visions of the future oscillating between dystopia and utopia (projective), and in the crisis narratives about the present being inextricably linked to the negotiation of spaces for action (practical-evaluative). While the practical-evaluative element is dominant in other social movements, it is primarily the projective element that is foregrounded in the interviews with the climate activists and expressed in a dystopian vision of the future. These temporal elements of agency are not only shaped by historical reflection but also by emotional statements about hope, anger or fear. This illustrates how emotions differ in temporal thinking depending on whether one is contemplating the past, present or future, and depending on whether one perceives the future as more or less contingent. This result, which can be more accurately described in terms of Juliane Brauer's concept of time feelings, requires further attention in the future. She defines time feelings as emotional states that emerge from engagement with the past and/or future, providing a framework for understanding the present. They cause actions that are specific to the past and oriented towards a potential future ([Brauer, 2020](#)).

The agency of climate activists at all levels represents a consistent divergence from established climate policy and the capitalist economic system. This is not a matter of isolated or group-specific changes in living circumstances; rather, it is a call for a general new start. This can be understood through the lens of Hannah [Arendt's \(1998\)](#) concept of natality, which suggests the potential for a new beginning in historical thinking, one that is oriented towards shaping the future. As she wrote:

It is in the nature of beginning that something new is started which cannot be expected from whatever may have happened before ... The new always happens against the overwhelming odds of statistical laws and their probability, which for all practical, everyday purposes amounts to certainty; the new therefore always appears in the guise of a miracle ... If action as beginning corresponds to the fact of birth, if it is the actualization of the human condition of natality, then speech corresponds to the fact of distinctness and is the actualization of the human condition of plurality, that is, of living as a distinct and unique being among equals. ([Arendt, 1998](#): 177–8)

The concept of natality is particularly noteworthy for its integration of the practical-evaluative and projective elements of historical agency. It represents an indispensable aspect of climate activists' historical thinking, namely the potential for constructing something fundamentally new. This aspect of historical thinking, oriented towards a (radically) different future, represents a primary analytical result of this study. Nevertheless, we believe that it is worthy of significant reflection within the context of historical thinking in the Anthropocene and amid the polycrisis of our present. This is particularly relevant in the context of institutionalised historical learning, not only to younger generations but also to the broader public. Historical thinking not only enables us to confront the experiences of crisis in the present; it also fosters an active approach to addressing them. Furthermore, it encourages a multidimensional understanding of human history in relation to one another and to the planet, and thus potentially also to planetary time.

Limitations and further directions

The present study offers preliminary insights into the historical thinking within the German climate movement. It has been demonstrated that the data material which was not specifically collected for the purpose of answering the research questions is nevertheless capable of providing insights into the subject matter.

However, the reliability of the results is constrained by the limited number of journalistic interviews conducted and the associated selection of interview partners. Nevertheless, the results yield valuable insights into the historical thinking of the German climate movement, while also providing suggestions for further research. Subsequent studies may wish to consider comparisons with the historical thinking in other social movements, particularly in relation to the negotiation of the future. Furthermore, it would be beneficial to conduct additional interviews with individuals who do not serve as speakers of the movements.

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Data and materials availability statement

The datasets generated and/or analysed during the current study are available from the corresponding author on reasonable request.

Declarations and conflicts of interest

Research ethics statement

Not applicable to this article.

Consent for publication statement

Not applicable to this article.

Conflicts of interest statement

The authors declare no conflicts of interest with this work. All efforts to sufficiently anonymise the authors during peer review of this article have been made. The authors declare no further conflicts with this article.

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