

Lifetimes: A Natural History of the Present

How can a history of the Anthropocene be written, if not as a history of entanglements? The *Lifetimes* project sets out to discover these entanglements. To be able to write histories which can help us understand the present, and make choices about the future, we need to “collapse the age-old humanist distinction between natural history and human history”, to use a recent phrase by the historian Dipesh Chakrabarty (2009). The *Lifetimes* project heeds this challenge by replacing the distinction by the continuity of scales. Humans as political actors and humans as geological agents exist within different scales of time as well as different scales of life. But in the everyday these scales become entangled and give rise to singular temporal arrangements, or regimes, which govern decisions and actions.

In the project these temporal arrangements are identified and described according to their emergence, transformations and effects in the fields of health and medicine (WP2), engineering and resource management (WP3), and politics and government (WP4). Furthermore, we investigate the history of organizing and classifying scales of time and scales of life, turning them into representations and narratives, in the genres and discourses of natural history (WP1), heritage (WP5), and future histories (WP6), in which temporal arrangements are represented as belonging to the present, the past, and the future, respectively. Finally, we look at the new concepts of time and time scales in the field indicated by the short-hand “the quantum” (WP7) emerging from advances in quantum theory. On the one hand, the scales of time span from the 15-minute life cycles of microbes via the 4-year cycles of elections and political power to the millions and billions of years in the geological timescale; on the other hand, the scales of life span from the non-life of minerals to the non-human life of microbes and bacteria to human life in societies. To write the natural history of the present means to engage with all these different scales and explore how they become entangled with each other as well as with political and historical events and experiences to form temporal arrangements and regimes which affect the lives of the people who live and act within them. This is what the *Lifetimes* research group sets out to do.

Part A:

I Challenge, Background and Relevance

Among the most recent and well-known examples of the entanglement of time scales and life scales is the introduction of “the Anthropocene” as a new geological epoch (Anthropocene Working Group Report, Oslo, August 2016), based on the claim that humans have become “geological agents”, transforming the planet beyond the point of no return and thus demanding a revision of the geological time scale (Zalasiewicz et al. 2011). Another example, which equally disrupts present temporal arrangements are the rapidly changing biological times of human life. On a global scale the average life expectancy at birth has more than doubled during the last two centuries and in Europe the proportion of people older than 65 is approaching 25% (Oeppen and Vaupel, 2002). These two radical transformations in the history of mankind belong to different time scales, but are linked by the fact that they cannot be contained within our existing temporal frameworks, regimes or arrangements. Neither historical time, organized around periodizations like “modernity” or “post-war” and temporal concepts like “growth”, “recession”, or “crisis”, nor clock-time, which serves to synchronize our daily lives and practices across the globe, can really account for what it means to be a “geological agent” or what it means that mankind is growing incessantly older, on a collective scale (Bastian 2012).

Another way to describe the same situation would be to point out that increasingly mankind appears to be “out of sync” with itself, inscribed as an agent into a geological time scale, encompassing millions of years, and at the same time “outliving” the cultural and social structures that have been put in place to care for a much younger population, in many Western countries as well as in Japan, where the average life expectancy of women is now 86,5 years, the highest in the world (Christensen et al. 2009). Again on a different scale, another example is the emergent radically transdisciplinary genre of *big history*, in which both geological and biological chronologies are dwarfed by cosmological chronology (Christian 2005; Christian et al. 2014), manifest in time maps like Chronozoom (University of California, Berkeley 2016). Although geological chronology is now inscribed with human agency through the concept of Anthropocene, exerting human agency upon processes taking place on a cosmological scale remains primarily a feature of science fiction. Furthermore, time at the quantum level is becoming relevant for a number of technical innovations we use in our everyday lives, but has yet to be given social meaning outside natural science disciplines and brought into temporal arrangements of political and social significance (Palmer 2017).

This project is set up to understand these entanglements in a historical perspective (Werner and Zimmermann 2006). Entanglements of different times occur when humans in their social and political

practices engage different time scales and temporal experiences and arrange them in new ways in order to navigate the world by means of decisions, plans and actions. Often these temporal arrangements emerge in response to individual and collective experiences of being “out of sync” with the self as well as with the surroundings (Koselleck 1972; Fabian 1983, Landwehr 2012), which again means that the synchronizing measures, which hold society together, like for Western modernity, the clock, the newspaper, the nation-state, and the idea of progress (Anderson 1983; Jordheim 2017a), have lost some of their power. In this project we want to understand these regime changes in the temporal arrangement of the world, how they change our experiences, our practices and our self-understandings.

As a systematizing move, we divide time scales into three main orders: biological (*bio-*), geological (*geo-*) and cosmological (*cosmo-*). In addition, we engage with the emerging time scale of the *quantum*. These are the time scales which we will trace through recent global history. In this way we pick up an Early Modern matrix for ordering the universe, scaling up from the life *on* the planet, to the life *of* the planet, and to the life of the universe (Jardine et al. 1996). In this matrix time is still something which exists in the plural, depending on forms of knowledge and experience. Returning to the matrix of natural history, this project sets out to develop an alternative view of the temporal order of global society, in which the linear, homogenous times of modernization is challenged by a multiplicity of rhythms, speeds, and durations, in various historical and geographical contexts, emerging from lives unfolding on and in the planet, as well as in the universe. To assume the existence of multiple time scales enables us to move beyond the ubiquitous claims about the “crisis of time” or “the end of the modern temporal regime” (Hartog 2003; Assmann 2013). In order to do this we need to work both diachronically and synchronically, and address entanglements both across fields of knowledge and across cultural and linguistic borders: on the one hand, we investigate the changing roles of biological, geological, and cosmological time scales, simply “lifetimes”, in the processes of modernization and globalization unfolding in the last three centuries; on the other hand, we study the transfers, translations and entanglements of temporal arrangements, historical times, clock-times and lifetimes, between different cultures and languages across the globe.

Finally, the *Lifetimes* project is taking its cues from the experience that the order of knowledge, the structure of disciplines, which was established at the end of 18th and the beginning of the 19th century in framework of the modern research university, is proving increasingly incapable of responding to the challenges of the present. In the work of the project the history of disciplines as well as the possible shift into another order of knowledge is both a topic of research and built into our research design.

II Research Questions and Objectives

As any great project, *Lifetimes* proceeds from a simple research question:

How are scales of time and scales of life entangled in human societies? How and under what circumstances do they come together to form new temporal arrangements and how do these arrangements change?

To answer this question, which in itself holds the possibility of ground-breaking results, the project will proceed according to a set of objectives, developed to ensure scientific innovation:

The primary objective of this project is to show how “lifetimes” form through the entanglement and synchronization of different time scales and life scales, and how they change our experiences, our practices and our orders of knowledge. More specifically, we want to investigate how biological, geological, and cosmological time scales combine with social and political concepts to form temporal arrangements governing human life, how these arrangements converge and come in conflict with each other.

From this primary objectives follows a set of *secondary objectives*, which are more specifically designed to help us achieve the primary objective:

Historical: Until now, the study of the temporal order of global history in the last three centuries has focused rather one-sidedly on the idea of “modernity”, delimiting the new and progressive era from the static world of the Middle Ages, imposing a linear, homogenous and singular concept of time, in terms of clock-time or historical time (cf. Koselleck 1979; Rosa 2005; important criticism of this position can be found in criticized by Kathleen Davis 2008, Bhabha 1994, Chakrabarty 2000). In this project we intend to refute this claim by showing that the temporal order of this period was always one of competing and conflicting temporal arrangements, which we call “lifetimes”, based on a set of nature-based chronologies, which impose themselves across fields of knowledge and practice as well as cultural and geographical borders.

Furthermore, we intend to explore how “old” or “pre-modern” ways of conceptualizing time, inherent in genres like natural history or in ruling practices based on the life-span of the king or the dynasty, are still with us, and exist alongside chronologies labelled as “modern”.

Theoretical: The project intends to produce new and ground-breaking theory on ‘times in the plural’. During the last years and as part of projects performed by many of the same scholars involved here, Jordheim has published a series of widely read articles, in which he has developed concepts and theoretical tools for mapping and understanding the multiplicity of times and temporalities, in terms of a field of diverse and conflicting temporal arrangements as well as processes of synchronization (Jordheim 2012, 2014, 2017a). In these studies, discussing historical and theoretical work by Koselleck, Hartog, Hunt and others, it has become clear that the ubiquitous dichotomy between social, historical, and phenomenological time, on the one hand, and natural, scientific, and universal time, on the other – “the time of our lives” and “the time of the universe”, as the philosopher David C. Hoy recently called them (Hoy 2012) – is really untenable. The envisaged theoretical break-through of the project consists in expanding the theory of multiple temporalities to also include non-phenomenological times. The project will study conflicting temporal arrangements at the intersection between natural sciences, humanities scholarship and social practice. Heuristically, we distinguish between chronologies and temporal arrangements. Whereas chronologies are linked to scientific disciplines, mainly to natural sciences like biology, geology, and cosmology, temporal arrangements emerge when objects and concepts are brought together – arranged – across disciplinary institutional borders. In combining different forms of knowledge, these arrangements have definitive social and political effects.

Strategically: All participants in the project have long experience from working across disciplines, going back to the founding of the group in the framework of the interdisciplinary research program KULTRANS (2010-2014). However, we are also aware that break-through collaborations with researchers in the natural sciences take more time to establish and develop. This work is already on-going, and has amounted to the recruitment of both national and international partner from the natural sciences and medicine; nevertheless, one important objective of the *Lifetimes* project is to build a both solid and innovative scholarly platform, from which connections can be made and convergences brought about between humanities and social sciences, on the one hand, and natural sciences and medicine on the other, at the University of Oslo, but also in the broader international network of the project. Not least, it will enable scholars in the humanities and social sciences to address central questions in the life sciences (antibiotic resistance, ageing) as well as in climate and sustainability research.

III. Theoretical and Historical Framework

To write a natural history of the present means to enter into a critical dialogue with forms of historiography, which have been termed both “modernist” (Assmann 2013) and “Eurocentric” (Bhabha 1994; Chakrabarty 2000; Landwehr 2012). In this sense the theoretical and historical framework for the project is developed in response to works by Koselleck (1979), Hartog (2003), Assmann (2013) and others, in which “the modern temporal regime” have emerged as a stable, homogenous, and unified whole, originating in 18th century Europe, then spreading across the globe. The project will move beyond this paradigm in three ways: by going back to the “pre-modern” genre of natural history, by rediscovering the role of nature-based chronologies and time scales, and by investigating the cultural and linguistic refractions of temporal arrangements outside and inside Europe. In this way we will be able to replace the temporal framework of “modernity” with a multiplicity of competing and conflicting temporal arrangements, which differ both in their structures and in their social and political effects.

The last time scales, rhythms, and durations of time found themselves at the center of attention for Western scholars trying to understand the human was in the 17th and 18th centuries, when the Christian time-reckoning, *computus*, collapsed and the modern forms of clock-time and historical time were not yet in place (Colliot-Thélène 2003; Jordheim 2017a). By returning to the late 18th century, the project seeks to create a historic counterpoint to the theory of the homogenous modern time, as a starting point for writing a natural history of the present. In his *Metakritik* of the new “critical philosophy”, published in 1799, the German theologian and philosopher Johann Gottfried Herder offers a paradigmatic formulation of the multiplicity of natural and historical times:

In reality every mutable thing has its own inherent standard of time; this exists even if nothing else is there; no two things in the world have the same standard of time. My pulse, my step or the flight of my thoughts is not a temporal standard for others; the flow of a river, the growth of a tree is not a temporal standard for all rivers, trees and plants. Life times of elephants and of the most ephemeral are very different from each other, and how different are not the temporal standards on all planets? In

other words, there are (one can say it earnestly and courageously) in the universe at any time innumerable different times (Herder [1799] 1998, 360).

For Herder, the existence of a plurality of times is linked to the existence of a plurality of life forms, multiple times seems to imply multiple realities, or, in a more current idiom, “multiple ontologies” (Mol 2002). Similarly, in this project, the scales of time are linked to the scales of life, centering on the human, even though other life forms equally well could have been put at the center of the investigation. Different from Herder in this quote, however, we are not only interested in how these different times exist alongside each other, in parallel, but also how they become entangled in the life of human societies, and how they combine to form temporal arrangements, which have social and political effects, for instance in the fields of medicine, engineering, and government. As our engagement with Herder in WP1 will show, this was also his intention in writing natural history, for example in his *Ideen*, published 1784-1791.

How we understand human actions and events, human behavior in general, is entirely based on the temporal horizons or frameworks that we apply to them (Zerubavel 1981). On an individual level, the meaning of a decision or an action depends on the time-span in which the action is performed or the decision is made. An action might have one meaning in the short term, and a very different one in the long term. The same can be said on a collective or social level, in the fields of politics, science, or technology (Abbott 2001). Every human, every society is located at a crossroads between different temporal frameworks, times or temporalities, which have durations, speeds, and rhythms of their own, and which evoke pasts and futures that vary greatly both in extension and content (Fabian 1983). An illustrative example is offered by the much discussed notion of “environmental impact”, which depends almost entirely on the choice of time-frame or periodization: a product which might be fine in the short term, like nuclear energy, might be disastrous in the long term.

From 1800 onwards the nexus of clock-time and historical time called “modern”, spreading across the globe on the back of capitalism and imperialism, has made up the temporal framework within which human actions and events have been understood (Ogle 2015). At present, this seems to about to change: on the one hand, “the modern temporal regime”, or in short, “progress”, is losing much of its explanatory value, because it is no longer able to synchronize all the different aspects of human life into a progressive narrative (Hartog 2003; Assmann 2013; Jordheim 2017); on the other hand, other chronologies are returning to the scene, bio-, geo-, and cosmo-chronologies, which have in common that they subject humans to the scales, rhythms, and durations of nature – not original nature, but nature as it has been produced by scholars and scientists during the last three hundred years. Not only is chronology, the question of time-reckoning and time-organization returning to the study of the human, but “nature”, in the form of the biological body of man, the geological body of the earth, or the cosmological body of the universe, is imposing itself onto the temporal configuration of global society (Tanaka 2016).

To understand the modern world, Koselleck has claimed, “historical time” needs to be distinguished from “natural” time (Koselleck 2000, 304). Modern time is a product of what he calls a “denaturalization” (303) and a “destruction of natural chronology” (306), which in Western history took place at the end of the eighteenth century. Prior to this, Koselleck argues, the process of history had been organized according to “natural” categories: the rise and setting of the sun and the moon, the change of seasons as well as the birth and death of the members of the ruling dynasties. But from the late eighteenth century onwards other concepts take over, obtained directly from history itself: “progress, decline, acceleration or delay, the not-yet and the not-anymore, the before and the after, the too-early and the too-late, the situation and the duration” (1979, 133). To describe the change Koselleck paraphrases Kant: “So far history has conformed to chronology. Now it is about making chronology conform to history” (2000, 323).

The *Lifetimes* project aims at proving Koselleck wrong in this statement, which since the 1970s have guided so much of historiographical research into the last three centuries. Instead of clear-cut distinctions between natural and historical times we find a field of multiple times and time scales, in which concepts, experiences and technologies keep crossing the disciplinary borders between the natural and the historical. At the end of the 18th century Herder’s conceptualization of the multiplicity of times was displaced from the academic world by the new order of knowledge, in which the lifetimes of human actors were separated from the lifetimes of species, minerals, and planets. The all-encompassing genres of natural history and natural philosophy broke down, giving way to the modern order of disciplines, in which geology, biology, and cosmology broke loose from the study of man. At the center of this process of reordering knowledge were the convergence of time scales and life scales. Each of these new disciplinary lifetimes, with their own finitude, redefined the older relation between macrocosm and microcosm in order to craft a naturalistic chain of being, and did so by invoking new epistemologies as well as new objects of knowledge. However, that the

lifetimes were disentangled into separate homogenous chronologies on a disciplinary and institutional level, did not mean that the same happened in the societies at large. In this project we will follow the rise and fall, the emergence and transformation of these complex and multifarious temporal arrangements, in which different scales of time and different scales of life are coordinated.

IV. State of the Art

The project places itself at the forefront of an on-going reorientation of humanities and social sciences, moving beyond the long-standing emphasis on language and representation as well as the protracted “spatial turn” to a re-examination of time and temporality – “a new metaphysics of time”, as the editor, Ethan Kleinberg, called it, in his introduction to the first virtual issue of *History and Theory*, republishing essays by Jordheim and Zammito (Kleinberg 2012, 1-2; also Zammito 2004, Jordheim 2012). Rather than embracing this metaphysics, however, this project sets out to explore the various empirical and historical manifestations, as well as the materialities, of temporal experience, assembled to chronologies or temporal arrangements. Other versions of the same re-engagement with time across the humanities and social sciences can be found in the works by Lorenz and Bevernage (2013), Hölscher (2017), Rosa (2003) and others.

A common feature of all these works, however, is that they continue to treat historical time, which includes the time of social processes, political events, individual decisions etc., as something singular and self-contained, separate from other temporal forms, which do not emerge from history, in this specific modern sense, but from life. However, in order to understand the temporal configuration, the network of times that emerged at the end of the 18th century and that we are still part of, but which in the present seem to find itself in a kind of “crisis” (Hartog 2003), historical times can no longer be seen as separate from the times of nature. Both times of human events and actions and transformations taking place on the level of microbes, rock layers, or planets must be reconnected and explored as parallel, converging and diverging temporal arrangements. From inside the modern historical paradigm there is especially one historian who has attempted to achieve a similar reconfiguration of temporal arrangements: the French historian of the *Annales* school, Fernand Braudel, who in 1958 argued that history should not concern itself just with high-speed time of events, but also with the slower rhythm of social and economic structures and cycles, and not least, the *longue durée* of landscapes, geography, and climate (Braudel 1958). But whereas Braudel wanted to analyze these deeper, more hidden levels, in order to change history from an ideographic to a nomothetic science, this project will latch on to his attempt to reconnect history with nature, and with natural rhythms and durations. In recent years two interventions into the field of historiography have been successful, or at least highly visible, in trying to change this, to re-connect history with other forms time, more specifically natural times: Chakrabarty’s already mentioned “The Climate of History” from 2009, and later Jo Guldi and David Armitage’s *The History Manifesto* from 2014, in which our present condition of global warming and climate change is taken as point of departure for reintergrating various time-scales. Both of them do this, however, rather in order to renegotiate the role of the historian in the present situation than to understand the multiple times of historical processes, which is the task we are taking on here.

In this project the multiple times of global history is not primarily an encouragement to historians to work differently, but a fact of history itself, which we intend to explore empirically across periods and spaces. In the richness of the material we are investigating and the global scope of the project, not just theoretically, but empirically, we will move well beyond the present state of the art in the field.

Part B: Achieving breakthrough collaboration

The project places itself at the forefront of three major recent engagements in the humanities: Environmental Humanities, Medical Humanities and Global Cultural History. In combining them, it ventures to move well beyond the current state of research. To achieve this breakthrough the project is set up to find the perfect balance between drawing on prior achievements and results in the research group, as well as on-going projects, and setting a high-risk goal, both theoretically and methodologically, which can be obtained by the specific funding scheme offered by Toppforsk.

The key researchers in the project have been working together, in somewhat differing constellations, depending on projects, for 7-8 years: first in the framework of the interdisciplinary research program *Cultural Transformations in the Age of Globalization (KULTRANS)*, UiO, 2010-2014, then in the SAMKUL-funded *Synchronizing the World: the Making of Global Progress*, 2014-2017 (prolonged until spring 2018), and in the UiO-funded *Geological Times: Geology and New Regimes of History* (2015-), all headed by the PI, Jordheim, and involving international collaborations with the Max Planck Institute for Human Development in Berlin, New York University, Zentrum für Literatur- und Kulturforschung in Berlin, University of Berkeley etc. At present the group consists of ten scholars, including PhDs and PDs, working at the

University of Oslo, in addition to a set of international scholars working at MPIB, American University in Beirut, New York University, UC Irvine and Universität Bochum. The senior members of the group are all at the forefront of their fields and the collaboration have so far yielded results that have had a major impact on the field of research, such as the path-breaking collaborative volume in global conceptual history, *Civilizing Emotions* (2015), edited by Jordheim and Pernau, and the much-cited special issue in *History and Theory* (2014) on multiple temporalities, edited by Jordheim and with contributions from Geoffrey Bowker and Lucian Hölscher, among others, who are both part of the *Lifetimes* team. The collaboration have produced dissertations and books which are currently being published by world-leading presses. Another sign of the group's impact is that it was recently awarded a one-year stay at the Centre for Advanced Study in Oslo, with a project called "In Sync: How Synchronization and Mediation Produce Collective Times", headed by Jordheim and Ytreberg, which will give this project the perfect kick-off. For the first year of the *Lifetimes* project, the group, included the newly hired researchers and PhDs, will take part in activities and work taking place at CAS.

In other words, this is exactly the right moment for a Toppforsk grant, which would help us to move from incremental steps to taking a major leap forward, which would establish the group as a world-leading research hub. In combining our leading position in thinking about time and temporality across humanities and social science disciplines, our innovative collaborative platform, in which all scholars bring their singular linguistic, cultural, and disciplinary excellence to the table, with a new engagement with the natural sciences, we would be in a unique position to achieve a breakthrough in scholarship. To be able to take this step, the group have already been able to recruit Associate Professor Anne Kveim Lie from the Medical Faculty as a core member, who will head the WP on health and medicine.

Furthermore, as can be seen from a project plan below, the Toppforsk grant would enable us to achieve two things: firstly, to consolidate the group and on-going projects, especially on a PhD- and PD-level, and put them into a both broader and more ambitious academic context, and secondly and most importantly, to take us to the next level, both intellectually and strategically, from where we will be in a perfect position to apply for bigger international grants, from the ERC or the EU framework program. In this way we would also be able to make the most of our institutional setting at the Department for Culture Studies and Oriental Languages (IKOS), The Faculty of Humanities (HF), and the University of Oslo (UiO). IKOS is the only department in the Nordic countries, where language-based area studies on Asia and the Middle East are combined with European Cultural History, which grants the project its global, or at least transnational reach, combined with deep knowledge of languages and cultures. At the moment, IKOS is also set to become the home for a large-scale, faculty-wide program in Environmental Humanities, in which this project will become a corner stone. At the university level, *Lifetimes* are already in conversations with the two non-HF interdisciplinary research initiatives, UiO: Life Sciences and UiO: Energy, which will offer us an arena for expanding and exploring collaborations with the natural sciences, including medicine. In other words, also institutionally, this is a moment when possibilities are opening up for addressing the grand challenges, such as climate change and ageing, in an interdisciplinary mode, and this project will offer a hub for these kinds of collaboration.

Obviously, the Toppforsk grant would also offer a platform for catapulting the *Lifetimes*-project into the future. Both senior and junior researchers will be applying for ERC-grants, and at the end of the funding period the research group plans for to write an SFF application based on the most viable *Lifetimes*-ideas and -projects.

Part C: Project plan

I Project design and method

The project *Lifetimes* is organized in seven WPs, which each have their own personnel and deliverables. WP2-4 are designed according to fields of knowledge and practice (health and medicine, engineering and resource management, politics and government), whereas 1, 5, and 6, are investigating genres of classification and narration (natural history, heritage, and future histories). WP7 explores the quantum as an emergent set of lifetimes. All WPs have one senior researcher in charge, coordinating the different parts of the work, with each other and with the project as a whole. Several researchers are also involved in more than one WP, to ensure communication and mutual exchange of results and ideas across all WPs in the project. For the same reason the PI will perform tasks in all WPs, either by doing research or by supervising PhDs. By having participants work in different projects we are also able to ensure that none of the WPs are confined to one cultural and linguistic context and that all WPs move to include both Western and Non-Western material. Each WP will also include an international scholar, who will perform different kinds of

work, like reading, commenting, advising, co-writing etc. These scholars will make up the reference group of the project, who will also come as guest researchers and be present at the yearly project events.

TIMELINE		WP1 Natural History after Natural History	WP2 Health & Medicine	WP3 Engineering & Resource Management	WP4 Politics & Government	WP5 Heritage	WP6 Future History	WP7 Quantum	MILESTONES
2018	Q3			Hiring PhD1	Hiring Res. Y		Hiring Res. X Hiring PhD2		Kick-off Workshop
	Q4								Methodology Seminar
2019	Q1	CAS ACTIVITIES							
	Q2	CAS ACTIVITIES							
	Q3		Article 1		Article 1		Article 1	Article 1	Int. Work. 1
	Q4	MOOC Recordings	MOOC Recordings			Article 1			Journal Issue
2020	Q1	Article 1			Res. Y. Research Visit	PhD Research Visit	PhD Research Visit		Stakeholder Event 1 Nat.Work. 1
	Q2						Res. X. Research Visit		Nat. Work. 2
	Q3			Article 1	MOOC Recordings		Res X. Res. Visit continues		Int. Work. 2
	Q4		Article 2	MOOC Recordings	Article 2		MOOC Recordings	MOOC Recordings	PI Monograph
2021	Q1	PI Research Visit				MOOC Recordings	Article 2	Article 2	Nat. Work. 3
	Q2	PI Res. Visit. continues				Article 2 Article 3	SF Writers' Event	SF Writers' Event	Nat. Work. 4
	Q3	Article 2		PhD Diss.1	Article 3		PhD Diss. 2		Int. Work. 3
	Q4		Article 3				Article 3		Nat.Work. 5
2022	Q1							Article 3	Stakeholder Event 2
	Q2								MOOC Lifetimes
	Q3	Article 3							Int. Work. 4
	Q4								Nat. Work. 6
2023	Q1								CONFERENCE
	Q2								Nat. Work. 7 Stakeholder Event 3

In terms of methodology, all WPs share a common set of terms and methods. Included in the key concept “lifetimes” are, on the one hand, chronologies and time scales, which are linked to particular forms of life or non-life, biological, geological, and cosmological, on the other hand what we call “temporal arrangements”, which designates historically specific entanglements between different time scales as well as between time scales and historical events and experiences, practices and affects. We here draw upon Nicholas Onuf’s concept of “arrangements” (1989), as a way of highlighting the fleeting nature and contingency of these temporal forms, which may however stabilize and consolidate to the extent that they become “regimes” (Hartog 2003; Assmann 2013). As opposed to Hartog’s and Assman’s “regimes”, however, the arrangements we are looking at always exist in the plural, and they are always the results of specific historical processes, which we, in reference to earlier work in the research group, define as processes of “synchronization” (Jordheim 2014, 2017). Moreover it is important to stress that although these are arrangements, there is no ‘great arranger’, no ‘great synchronizer’. Instead, these arrangements mostly come about through processes of what John Shotter calls “joint action” (1993). Joint action “gives rise to *unintended consequences*, that is, outcomes which are not intended either by *you* or by *me*, but which are in fact *our* outcomes”. Because they cannot be traced back to the intentions of any particular individuals, “it seems *as if* they have a ‘given’, ‘natural’, or ‘externally caused’ nature, that is to say, they are *real* in the sense of being independent of the desires or opinions of any of the particular individuals involved” (Shotter 1993, 47). The key is to focus on how joint actions between fields of knowledge and practice, between languages and linguistic communities, and between cultures and geographical spaces have given rise to transfers and entanglements.

Temporal arrangements can form at different levels of discourse: local, national, transnational, or even global. To identify these arrangements we will focus on three empirical elements: concepts, genres, and practices. And we will follow these concepts, genres, and practices in their movements across discursive, linguistic, and geographic borders, carried by texts, people, translations, objects, exhibitions etc. We here take over the methodological design which was developed by the research group partly in the SAMKUL-funded project *Synchronizing the World*, partly in the collected volume *Civilizing Emotions* (Pernau and Jordheim et al. 2015), partly in the article “Texts on the move” (Asdal and Jordheim 2018), accepted for

publication in *History and Theory* in fall 2018. For this project this framework will be developed in an even more generalized form, focusing on transfers and entanglements, between fields of knowledge and practice, between languages and linguistic communities, and between cultural spaces. Margrit Pernau will be the international partner with special responsibility for developing the methodology of the project.

II Work packages

The work in the project is organized in seven tightly connected work packages, each of which is headed by one of the key researchers in the project and which have their own deliverables. In two of the WPs there are already on-going projects financed by other grants, but which fill precisely defined functions in *Lifetimes*.

WP1: Natural History After Natural History

This first WP deals primarily with the historical and theoretical framework, in other words, with preconditions for writing a natural history of the present, or with a different turn of phrase, natural history after natural history. In this WP we will deal with how different chronologies – bio-, geo-, and cosmo- – have come to be contained within different scholarly disciplines and genres and thus how the rise of the modern order of knowledge created a set of almost unbreakable nexuses between forms of time and forms of knowledge, institutionalized in the modern disciplines of geology, biology, and cosmology, on the one hand, history, philology, and anthropology, on the other.

In order to understand these close connections between disciplinarity and time scales the WP will do three things. 1) First, it will investigate how lifetimes and historical times became contained and entangled in the set of discourses, genres, concepts and practices that in Early Modern Europe went under the name of natural history, and which together with natural philosophy and moral philosophy organized every kind of knowledge about the outer world. In reading works by Comte de Buffon (*Histoire Naturelle, générale et particulière, avec la description du Cabinet du Roi*, published mainly between 1749 and 1788, in 36 volumes), Erik Pontoppidan (*Det første Forsøg på Norges Naturlige Historie*, 1752), and others, we will map out how different time scales are adjusted, adapted and mapped onto each other and how they come in and out of sync. 2) Second, the WP will trace the “afterlives” (Cave 2011) of natural history, both as a concept, as a genre, and as a set of scholarly practices, to explore how it continues to challenge the increasingly institutionalized nexus of time scale and discipline, from the late 18th century onwards, in works by Johann Gottfried Herder (*Ideen zur Philosophie der Geschichte zur Bildung der Menschheit*, 1784-1791), Henrich Steffens (*Beyträge zur innern Naturgeschichte der Erde*, 1801), and later Fernand Braudel (*La Méditerranée*, 1949), W.G. Sebald (*On the Natural History of Destruction*, 1999) and Manuel Delanda (*Thousand Years of Non-Linear History*, 2000). 3) Third, the WP will study which forms of natural history were exported to other languages and orders of knowledge, such as the Ottoman, and how it was used to entangle and disentangle various time scales, for instance in the works of Ibn Khaldun.

Personnel and deliverables: The WP will be headed by the PI, who will work on part 1 and part 2 together with Brita Brenna, whereas part 3 will be executed by Researcher Y. International partner for the WP will be Lynn Hynt, UCLA. WP1.1-3 will produce three articles in international peer-reviewed journals as well as a chapter in the monograph written by the PI.

WP2: Health and medicine

WP2 studies the emergence and deployment of temporal arrangements in the field of health and medicine, more precisely, how bio-, geo-, and cosmo-chronologies enter into human life and behavior from the point of view of microbes. Microbes have their own time scales and life cycles. They have the power to mutate and recombine relentlessly and are constantly reinventing themselves in response to the antimicrobial treatments that have been developed over the last decades.

1) The first part of WP2 will explore the transformations of bacteria and bacterial ecologies during the 20th century as temporal and spatial events, that is, as biological, historical and cultural processes. Since the 1950s, bacterial populations everywhere, not only in the human body, have been exposed to antibiotics in increasing amounts, changing both the tempo (acceleration) and the mode (horizontal gene transfer) of microbes. In order to target these new microbes, new scientific theories and technologies, diagnostic techniques, surveillance and antibiotics, have been produced: Antibiotic resistance has changed the very science from which it sprung (Landecker 2016), and we will explore these changing transformations during the last 60 years. 2) The second part of WP2 continues the exploration of the time scales of microbes, but now exploring the old and ageing body, in which microbes are assigned the role as both indicators and factors of on-going processes of decay. We will study how microbes have emerged as keys to understanding

the temporal arrangement, the durations, speeds, and rhythms of human life, ageing, for short, from the beginning of the 20th century until the current globally disseminated discussions on microbiome diets. Recently, the time scales of microbes have thus become entangled with one of the most significant global challenges of the 21st century: that the population of the world, and especially the Western world, is incessantly ageing. The second part of WP2 will follow the emergence of gerontology as a practice designed to synchronize lifetimes and historical times, or more precisely, microbiotic times with the modern dream of progress (Jordheim, 2017b). 3) The third part of WP2 takes its cue from two observations: firstly, that microbe pandemics can be viewed as global events that have been pervasively mediated throughout the modern period and even before. Second, that these events involve an interrelation of politics, mediations and the biologies of microbes. The medial context will be this subproject's special emphasis. Its empirical material is culled from coverage in the periodical media of selected international influenza pandemics such as the 1918 "Spanish flu", the 1958 Asian influenza and the 2009 flu pandemic. These will be analysed with a view to the events' historically changing forms and temporal structures. In terms of theory, this subproject builds on a developing strain of media-historical research on events (e.g. Bösch and Schmidt 2010, Ytreberg 2017). It will also draw upon and contribute to an emerging interdisciplinary discourse on interrelationships between the history of media/mediation and various forms of natural science and history (for biology, e.g. Parikka 2010; ecology, e.g. Fuller 2007; the natural environment, e.g. Peters 2015).

Personnel and deliverables: The first part of WP3 will be executed by Anne Kveim Lie, the second part by the PI, the third by Espen Ytreberg. International partner for WP2 will be the historian and theorist Lucian Hölscher. Each part will produce one article in an international peer-reviewed journal.

WP3: Engineering and resource management

This WP overlaps in part with the on-going UiO-funded project *Geological Times and New Regimes of Historicity*. One PhD-project, in which ethnographic and textual methods are used to study mining on Greenland, more specifically an abandoned cryolite mine, is already underway, supervised by the PI together with a geologist at UiO. Another project, performed by a PD, will start up in August, studying the resource extraction industry, and how Norwegian extraction sites become places of conflict with environmental activists and indigenous critics. In both these projects the entanglement of different time scales and the deployment of various temporal arrangements is at the centre of the investigation. WP3 is designed to strengthen and sharpen these on-going projects, by offering a historical framework and at the same time a counterpoint.

1) The first part of WP3 explores how the mining industry since the 18th century has been a field of knowledge and practice, where different time scales have become entangled and synchronized. Billions of years of geological time have been implemented in the search and extraction of metals and minerals (Rudwick 2005). The location for the study will be the Mining Seminar at Kongsberg, Norway, one of the first Mining Seminars in Europe and part of a network of other Mining Seminars in Germany and Eastern Europe. Based on the book collection and lecture plans, the WP will explore how a new temporal arrangement came into being to support and inform the mining industry (Berg, 2011). 2) However, mining is not the only engineering practice which deals with the *longue duree* of landscape and geological formations. For the second part, WP3 asks how the entanglement of time scales and the emergence of new temporal arrangements changes if the engineering practices in question are not involved in removing land masses to discover metals and minerals, but, on the contrary, in amassing them in order to produce new land. Land reclamation takes place on all four major continents, and has a long history (Van de Ven, 1994). In this process the *long durée* of the landscape is subjected to the decision- and action-driven time of politics.

Personnel and deliverables: WP3.1 will be performed by the PI and produce both an international article and a chapter in his monograph. For WP3.2 we will employ a researcher in a PhD-position, for which several qualified international candidates are known to the research group. Possible sites of study can be China, Singapore, or the Netherlands, depending on the competence of the selected candidate. The PhD will be supervised by the PI, together with a geologist. The international partner for the WP3 will be Michelle Bastian.

WP4: Politics and Government

As Kari Palonen and others have pointed out, politics is to a large extent a struggle with time (Palonen 2006). But whereas studies of politics have concentrated on parliamentary rhythms and election cycles, this project will study how other time scales come to bear on the field of politics. The *Lifetimes* project builds on the idea

that all temporal arrangements have political effects and become the object of political decision and action. In WP5, we study how entanglements between different time scales give rise to temporal arrangements specific to the field of politics and government. Whereas the focus of WP2 were microbes, the focus of WP5 is the body, scaling up from the individual body of the ruler to the collective body of the dynasty to the body politic.

1) The first part of WP1 focuses on how the fate of the bodies of state leaders, both their biological frailty and their assumed connectedness with cosmological time scales, in terms of signs from the heavens, has severe consequences for the perceived health of the state. More precisely, this part of WP1 will investigate how the theory of “the king’s two bodies”, discovered by Ernst Kantorowicz in the Medieval and Early Modern Europe (Kantorowicz 2016), continue to be in operation both inside and outside Europe, hence introducing the biological time scale of birth, ageing and death into the practices of government (Neocleous 2001), challenging other rhythms like elections cycles and parliamentary schedules. 2) In the second part we scale up to the level of *dynasties*, which have little or no role in the political thinking of modernity, but nevertheless continue to impose a, less-future-oriented, more circular temporal arrangement, onto the dream of modernization and progress. Emphasis will be on the Ottoman dynasty, but also how dynastic times live on in present-day Turkey. The cycle is not only historical and political, but also tied to cosmology in the form of astrology, with the firmament exerting agency upon the dynast and the polity alike, thus tying the three time scales together in the body of the Sultan. 3) For the investigation of the body politic we will turn to a piece of historiography, the Austrian Orientalist Joseph von Hammer-Purgstall’s *Geschichte des Osmanischen Reiches* (1833), in which biological, geological and cosmological time scales are inscribed in a temporal arrangement, which also includes Western historicist and modernist chronologies as well as the particular dynastic times of the Ottoman empire.

Personnel and deliverables: WP5 will be headed by Researcher Y, who will bring in a specialization in Ottoman and Turkish history and will publish two articles in international peer-reviewed journals based on WP5.1 and WP5.2. The PI will collaborate with Researcher Y on WP5.3 and co-write an article. The international partner contributing to WP5 will be Patrick T. Jackson at American University, Washington.

WP5: Lifetimes of Heritage

In both WPs 5 and 6, dealing with heritage and future histories respectively, the temporal arrangements, in which lifetimes become entangled and synchronized, are classified and organized according to their own temporal indexes. Traditionally, heritage classifies the past as something that is sealed off from possible futures, whereas the future histories of science fiction are seen to be disconnected from any past. However, these specific temporal regimes are neither absolute nor stable, but historically contingent arrangements of lifetimes as well as historical events.

This WP takes another starting point: Heritage is no longer understood or practiced as a freezing of memory (Agamben 2007). Today an understanding of nature and culture as entangled and continuously remade (Haraway 2016; Tsing 2015; Barad 2007) has shattered the heritage time-regime and its biological, geological and historical underpinnings. The hesitant establishment of World Heritage mixed sites (nature and culture), the new significance put on indigenous museologies (with their site-specific preservation and valuation techniques, Kreps 2016), as well as repatriation projects where valued heritage objects are left to natural decay (totem-poles brought from museums to natural sites to decay, Björklund 2016), are enabling new conceptions, practices and materializations of heritage. Concurrently climate change is putting heritage protection under enormous pressure, from the melting tundra causing literally frozen heritage to melt to the rapid deterioration of buildings and sites due to changing weather conditions. In this WP, we explore heritage as it materializes bio-geo-cosmo-lifetimes, as well as how its conceptual content oscillates between the frozen and the fluid, the monumental and the vulnerable.

Like WP3, this WP also overlaps with the on-going *Geological Times*-project. One PhD and one PD are in the process of completing projects, in which they explore how natural materials such as oil, rocks and turf contain different time scales in museums and at heritage sites. Further, these natural materials permit theoretical explorations of passages between life and non-life as flexible processes. Turf, for instance, is seen as a materialized process of slow-death where human interference may speed up or slow down the velocity of dying. They investigate to what extent natural materials are brought to life or silenced to death, and which temporal arrangements they exhibit when they are molded as heritage and displayed.

Again, as in the case of WP3, the WP is set up to take the on-going research to another level, both in quality and impact. 1) In the *Lifetimes* Project, the first part of WP5 explores how heritage governance and practices negotiate time as climate change forces a radical temporal shift. On the one hand, reactions are

determined by an international heritage regime, most notably UNESCO. On the other hand, the negotiations of time and time scales can be studied in their many different enactments in heritage practices within local communities. In particular we are interested in how industrial heritage contributes to negotiations about geological time and resources (cf. WP3), as well as how natural heritage sites are produced as wilderness and “nature”. In these projects biological and geological times seem to be renegotiated as fluid and uncertain, even as vulnerable times. 2) The second part studies cultural and natural heritage in Syria, especially the inscriptions of heritage as discourse in the “aftermath” of crisis evinced by the ongoing destruction. Remnants of partially destroyed physical structures become the battleground for inscribing memory as the true value of human progress, a means to transcend the ephemerality of the biological aggregate first through the semi-permanence of geological substance and second through the permanence of advancing human knowledge. We trace the history and the work of media events at the hands of filmmakers and archivists in moving between different timescales, from the life of the individual, to the life of the body politic, to the life of the ruler, alongside the event of disappearing heritage and permanent cultural loss. This WP thus intersects with the focus on mediality in WP2 and the fissures between ruler and ruled in the timescales of the body politic in WP4.

Personnel and deliverables: WP5.1 will be executed by the PI and Brita Brenna, who will also head the WP. They will produce one article for an international peer-reviewed journal. WP5.2 will be executed by Rana Issa, visiting researcher from the American University of Beirut and a key collaborator in former projects. The international partner in WP5 is Fiona Cameron, Western Sydney University.

WP6: Lifetimes in Future Histories

Future histories are a prime fictional container of lifetimes, channeling the three time scales, the bio, the geo, and the cosmo, selectively based on historical exigencies of prognostication (Ghosh 2016). As a subset of science fiction, future history stitches together narrative temporalities of fiction with the possible future temporalities unfolded by means of scientific data and associated thought style (cf. Jameson 2005; Freedman 2000; Csicsery-Ronay Jr., 2008). In *Lifetimes*, we will explore the branchings of three aspects of future history as they are related to the three time scales. The WP will be structured in two intersecting parts.

1) The first part of WP6 will investigate the genre that is now being termed “cli-fi” (short for climate fiction) but which has had a fertile future historical presence since the 19th century, surviving through conceptual iterations such as disaster fiction, eco-fiction (Dwyer 2010), and recently, “anthropocene fictions” (Trexler 2015). Cli-fi is a prominent genre especially in recent fiction by women (for instance Margaret Atwood’s *MaddAddam* trilogy, 2003, 2009, 2013). The project will investigate how climate change as a discourse with its inherent futuristic bent constructs the link between human/bio futures and planetary/geo futures, and how these are given shape in cultural representations of possible futures. This WP will focus on both Anglo-American and non-European material (such as afrofuturism and Indian kalpavigyan). The focus on non-European material is owing to the fact that some of the most prominent writers of cli-fi as a genre have been by authors who use a non-Western idiom in their science fiction works. 2) The second part of this WP will follow two lines of enquiry. The first is how human bodies/body parts and their lifetimes are subsumed in different kinds of extrapolations in the rhythms of social lifetimes such as the nation state or biological management, from early narratives that play with eugenics and social Darwinist themes (for instance Ignatius Donnelly’s *Caesar’s Column*, 1890, and Gabriel Tarde’s *The Underground Man*, 1896) to more contemporary works by women authors (such as Manjula Padmanabhan’s *Harvest*, 1997 and Rimi B. Chatterjee’s *Signal Red*, 2005). The second line of enquiry is how the human non-human/alien contact and interaction reframes different kinds of time-scales but also itself moves within time, from being a metaphor for European colonial contact with other cultures in the past (cf. Rieder 2008) to the other of technology (represented most directly in androids and robots, but also in the lifetimes of technology itself; cf. Stiegler 1998; Warrick 1980; Haney 2006) and the more sophisticated understandings of cohabitation with other lifeforms in the present day (Vint 2010; Haraway 2015; Bastian 2017). All three aspects in this WP are linked to the three temporalities: the first emphasizes the geological, the second the biological, and the third, through the Janus figure of the alien, the interlink between the biological and the cosmological.

Personnel and deliverables: This WP will primarily be conducted by Researcher X, who will bring in a specialization in a tradition in global science fiction and future history and will publish two articles in international peer reviewed journals for the WP. The PI will collaborate with Researcher X on WP6.1 and

will co-write an article. A PhD fellow will be recruited for writing a thesis on climate change future histories. The international partner for WP6 will be Geoffrey Bowker, UC Irvine.

WP7: Quantum: Emergent time scale and temporal arrangements.

In terms of a real-time engagement with the present, WP7 deals with the emergent paradigm that we have identified as “quantum”, including quantum mechanics and quantum information theory, “the most seminal change in viewpoint since the early Greeks gave up mythology.” (Lederman 2011: 33). The product of different fields originating in particle physics in the early 20th century, the quantum is now entering into a phase that is being designated the “second quantum revolution” (Jason Palmer in *The Economist*, 11 March 2017), where the effects of quantum as a theoretical model are entering into new technological ways of processing nature and dealing with data, such as different kinds of measuring in everyday gps tracking, time tracking, climate science research, cryptography, and the radical epistemological propositions of the multiverse emerging from practical advances in quantum computing (Barad 2007; Deutsch 2011; O’Brien 2016). While natural history after natural history has introduced the idea of scale for inscribing information flow between the human and the non-human worlds, the emergent paradigm of quantum both subsumes and supercedes the question of scale, by reframing historical questions from reality as something that exists to reality as everything that exists and could possibly exist, but which is in permanent state of possibility and flux (Deutsch 2011). Studying this emergent structure is crucial to a project on time in the present, because “time” is itself the first quantum concept: it divides an apparent continuity (the flow of time) into discrete moments. This WP will be in two parts.

1) The first part will deal with the possibilities offered by quantum theory within the discipline of history, both for the practice of history and the writing of it. The WP will explore the larger history of multiple possible worlds (a discussion in which humanities, social sciences, natural sciences and philosophy are already closely interlinked) and their implications for a new model of time, working through its Enlightenment models in Gottfried Leibniz’s theory of time to its present constitutions through the different “Arrow of time” models, the work of Gilles Deleuze, up to the unified model of “constructor theory” proposed by David Deutsch and Chiara Marletto (Deutsch and Marletto 2014). This WP will focus on the entanglement between new technologies in the humanities for analysing historical data at an unprecedented scale (referred to as big data), technologies of measuring and sensing in complex systems (in climate science research; cf. O’Brien 2016), and technologies for creating and processing meaning information out of data (in the field of quantum computing). 2) The second part of the WP deals with another field where quantum has found a home: the field of allohistories and “quantum-fiction” within science fiction. While future histories posit the existence of different possible futures based on the directionality of the present, allohistories, which are also often time travel narratives, posit the whole temporal order and any history or reality dependent on it as permanently in flux, a set of infinite possibles (cf. Nahin 1999; Nahin 2016). Within this construct, time is neither linear nor does it flow in one direction: it is possible to move within time to produce different versions of reality, and it is even possible for these realities to intersect, and conflict with each other. In science fiction, times are held together in “jonbar point”, the point at which small actions split the universe, reality, and future into divergent paths (Westfahl et al, 2002). While a lot of these narratives deal with the effects of quantum by presenting the “multiverse” as an entry point into the “what-ifs,” changing elements of past history to explore alternate possible presents (alternate histories), their real contribution is to offer an expansion in the range of possibles that circumscribe reality.

Personnel and deliverables: The WP will be headed by the PI, who will also co-write an article on WP7.1, together with Clifford Siskin, New York University, who will be the main international partner for this WP. Two articles will be published from WP7.2, by international partner Jackson and Researcher X, respectively.

Part D: Project Personnel

Project Group

Helge Jordheim (PI) is Professor in Cultural History and Museology at the Department of Culture Studies and Oriental Languages (IKOS), University of Oslo.

Brita Brenna is Professor at the Department of Culture Studies and Oriental Languages (IKOS), University of Oslo.

Anne Helene Kveim Lie is Associate Professor at the Department of Community Medicine and Global Health (HELSAM), Faculty of Medicine, University of Oslo.

Espen Ytreberg is Professor at the Department of Media and Communication (IMK), Faculty of Humanities, University of Oslo.

International Partners

Michelle Bastian, Chancellor's Fellow, Department of Architecture, Edinburgh College of Art.

Geoffrey Bowker, Professor, Department of Informatics, Director of Values in Design Laboratory, UC Irvine

Fiona Cameron, Senior Research Fellow, Institute for Culture and Society, Western Sydney University

Lucian Hölscher, Professor Emeritus at Ruhr-University Bochum. Prior to his retirement in 2014, he held the Chair for Modern History and Theory of History.

Lynn Hunt, Eugen Weber Professor of Modern European History at the University of California-Los Angeles.

Rana Issa, Assistant Professor in Translation Studies, Department of English, American University of Beirut.

Patrick Thaddeus Jackson, Associate Dean for Undergraduate Education and Professor of International Relations in the School of International Science at the American University, Washington, D.C.

Margrit Pernau, Senior Researcher, Max Planck Institute for Human Development, Berlin.

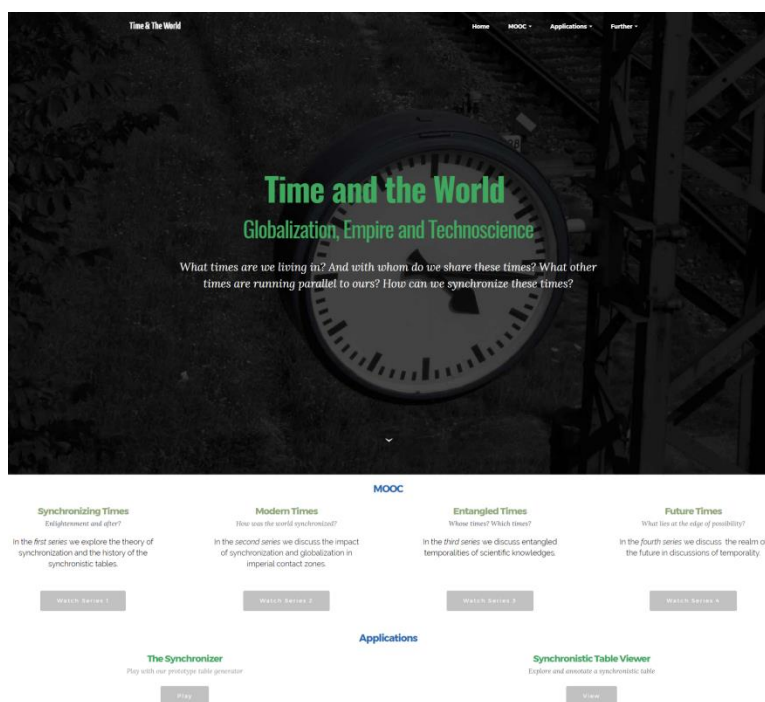
Clifford Siskin, Henry W. and Albert A. Berg Professor of English and American Literature and Director of The Re:Enlightenment Project at New York University

Part E: Impact, events, dissemination

The project will respond to several of the global challenges defined by UNESCO, by asking what kind of lifetimes are involved in them, such as the futures of climate change or the heritage of oil, or the non-synchronicity between the time scales of politics and the time scales of natural sciences. It also responds to the insight, gaining currency all across the world of research, that solutions to challenges like climate change and ageing can only be found through collaborations across the disciplines. *Lifetimes* sets up a platform for such collaborations, which will be able to offer consolidated technico-cultural solutions for some of the returning challenges on a local as well as on a global level. Furthermore, the project has an ambitious plan for scientific communication: Leading up to this application, we have tested out different models, for example organizing workshops with scholars, politicians, journalists and NGOs and asking what kind of temporal arrangements, rhythms, speeds, and durations they adhere to, and where these come in and out of sync with each other. In this way, the project will offer a accessible and effective framework for understanding the ongoing transformations at the crossroads between politics, science and technology, by conceptualizing competing interests and engagements as competing time-frames, like the long-term and the short-term.

The project collaboration unfold in continual workshops. Seven National workshops (fall quarter) will coordinate the work of the project group based in Oslo, while four International workshops (spring quarter) will bring in the international partners and advisory members in conversation with the project group. Both of these will also have an instruction component in transdisciplinary methods that will engage PhD and PD researchers employed in Norwegian institutions.

Two large conferences will be organized as part of *Lifetimes*: an author's event and workshop (WP6-7) in 2021 (Q2) modelled on two successful previous transdisciplinary conferences and workshops involving science fiction authors (Worldbuilding, UiO, 2011; Pathways to Possible Worlds: Science Fiction and Sustainability, UC Irvine, 2015). The project will also have a capstone *Lifetimes Conference* in 2023 (Q1).



An ambitious part of the dissemination plan for *Lifetimes* is developing a Massive Open Online Course (MOOC), which will be a follow up to the MOOC “Time and the World” currently being developed in the Synchro project, with a launch date of fall 2017. The MOOC consists of lectures from the project group and the international partners, as well as innovative digital web apps and tools developed exclusively for a complete educational experience for the project. The app prototypes “Synchronizer” and “Synchronistic Table Viewer” for the current MOOC were launched at the Re:Enlightenment Exchange 6 in Glasgow (Oct 2016), and their full release versions will be launched with the MOOC. For *Lifetimes*, we will develop enhanced digital tools to demonstrate

“Entanglements” and “New Knowledge Forms”. We will record ten MOOC video lectures for the various WPs, disseminating core concepts and research in these fields. The MOOC will serve as a platform for interdisciplinary exchange, and will be a key output for public benefit.

In addition, Lifetimes will organize 3 Stakeholder Events at various stages in the research in order to engage with policy issues through discussions with the public, including journalists, politicians, and members of non-academic organizations. The purpose of these meetings is to disseminate *Lifetimes* research to raise awareness of new problems, methods and means of analysis, as well as to acquaint the project group with possible directions for producing further topical research.

General considerations

Environmental impact: NA

Ethical perspectives: The project’s aim and method are not in conflict with commonly recognized values. For politically sensitive enquiries, we will maintain scholarly neutrality in the investigation.

Gender balance and recruitment of women: The gender balance among the central members of the core research group is two women (Brita, Anne) and two men (Helge, Espen), while the international partners consist of five women and four men. We will strive for gender balance also when recruiting personnel for researcher positions.

Gender perspectives in the research: NA

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