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Navigating the Complex Terrain of Photography and Temporality

Liv Hausken

Department of Media and Communication, University of Oslo, NO-0316 Oslo, Norway; liv.hausken@media.uio.no

Abstract: In recent years, discourses on photography have undergone a transformative shift from a focus on the individual photograph's connection to memory, pastness, loss, and death towards exploring photographic imagery as shared, networked, and continuously circulating in a ubiquitous present. The general claim for the temporal dimension in this shift is that photography is no longer seen as a mere witness or reservoir of the past but instead points to or participates in an active present. Against this claim, the article argues for broadening the perspective, drawing on resources across C.P. Snow's "two cultures"—the arts and humanities vs. the natural sciences—to develop a better conception of time and a more varied and useful selection of photographic practices. In this connection, the article provides a reading of Paul Ricoeur's compound concept of "the third time", cutting across the two cultures. Drawing on insights from Patrick Maynard and Kelley Wilder, basic premises for photographic practices in the natural sciences are brought into the discussions of the discursive shift from a preoccupation with photography and the past to an interest in photography and the present. The purpose of this paper is to develop a better ground for navigating intricate questions about the relationship between photography and time.

Keywords: photography; time; Paul Ricoeur; networked image; ubiquitous photography; photo-sharing; historical time; digital photography; temporality; Patrick Maynard; Kelley Wilder

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1. Introduction

Over the last 15 years, there has been a transformative shift in photography discourses from considering the individual photograph's connection to pastness, memory, loss, and death [1–3] towards exploring photographic imagery as shared [4,5], networked [6–8], and circulating [9,10] in a ubiquitous [11,12] present.

The general claim for the temporal dimension in this shift is that the photograph no longer points towards the past but the present. "If there is an overarching and persuasive narrative in scholarship around contemporary popular photographic practices or personal photography it is that photography once recorded the past but now communicates the immediate", states Martin Hand [13] (p. 310). Let me give some examples. According to Susan Murray, the way people make and share photographs today signals "a definitive shift in our temporal relationship with the everyday image" [4] (p. 151). In the somewhat programmatically titled article "It Has Not Been—It Is", Mette Sandbye states that photography is no longer a freezing of the past. New photographic practices online "show 'what-is-going on', i.e., *presence*." [14] (p. 96) [presence is italicized in original]). Such a definitive shift is also emphasized by Philippe Dubois who claims that the contemporary photographic image is "no longer something that was (there) in the real world but something that is (here), in front of us, something one can accept (or refuse to accept)" [15] (p. 161).

I am puzzled by this idea of a temporal shift in photography from the past to the present. It seems too general, too sudden, and too clean. There is no hiding the fact that during the last 25 years, significant technical, social, and cultural changes have greatly affected photography's production, processing, and distribution, be it Web 2.0, the smartphone's integrated camera, social network services, or significant innovations in computational

photography. It is reasonable to assume that all these factors will influence how we perceive time. This article's ambition is more modest. It will examine what notions of time and photography are expressed in the alleged shift from the past to the present. It may seem that only a restricted view of time is being considered. The article will propose a broadening of the perspectives. The purpose will be to contribute to a better understanding of photography, time, and the cultural changes in which we are now immersed.

The article calls for a more complex concept of time that does not merge different dimensions but displays its complexity and provides that complexity as a tool for analyzing phenomena that may be worth investigating. The philosopher Paul Ricoeur has a complex concept of time. It is, of course, not beyond criticism, but his take has the potential to be developed into an apparatus for thinking about time in relation to social, cultural, and technical challenges. However, Ricoeur does not discuss photography, nor does he have a sufficiently well-developed concept of technology. To address these conceptual deficits, the article will integrate Patrick Maynard's historically nuanced and technically flexible concept of photography as a family of technologies into the analysis in order to better grasp photography as a technology.

Interdisciplinarity is crucial in discussing the relationship between time and photography. The article argues that both time and photography should be thought of across what CP Snow once referred to as the "two cultures"—the arts and humanities vs. the natural sciences. For me, these discussions about photography and time are part of a larger project of breaking down the notion of the two monoliths of art and science (e.g., [16]). In this context, I will address an interdisciplinary field of photography and activate a heterogeneous landscape of disciplinary and multidisciplinary subfields [16] (p. 12). A crucial aspect of Maynard's philosophy of photography is that he does not reduce photography to representation but also takes photography into account as both a registration and a measuring instrument. To discuss photographic practices across art and science, the article will also use essential insights from Kelley Wilder, a photographic historian and specialist in scientific photography.

First, I will briefly present the photo-theoretical discourses that form the context for the claim of a photographic shift from past to present. Then, the article will broaden the perspective and give a reading of Ricoeur's concept of "the third time", a compound concept of time that cuts across the two cultures. Due to its complexity, this will require some space. I will then briefly draw out what I consider necessary insights about photography in the natural sciences and medicine before returning to the photographic discourse about a shift from a preoccupation with photography and the past to an interest in photography and the present. I believe this will represent better ground for navigating intricate questions about the relationship between photography and time.

2. A Shift to the Present

"The nature of photography now is it's in motion. It doesn't stop time anymore", claimed Caterina Fake, co-founder of the image and video hosting service Flickr, in the New York Times in 2005.[1] This proclamation was put forth into the photo-theoretical discourse by Daniel Rubinstein and Katrina Sluis [8] (p. 22) and Susan Murray [4] (p. 155) and is still being conveyed (see, for instance, [17] (p. 61).

This statement is often included as a reference in the shift mentioned above from the photographic past to the present, which is the occasion for discussing time and photography that I will develop here. Rubinstein and Sluis' article "A life more photographic: Mapping the networked image" [8] sets the tone for this shift. The photograph no longer has the role of "memento and keepsake", claim Rubinstein and Sluis [8] (p. 13). They argue that images from "camera phones and digital cameras" are not "frozen moments in time" as photographs were perceived before [8] (p. 22). The authors refer to, among other things, technical innovations in the production of cameras, which mean that one can, for example, capture sixty high-resolution frames per second, which we understand was considered

quite comprehensive (in 2008) and ask rhetorically, “one can only wonder what is the meaning of the ‘decisive moment’ in these circumstances” [8] (p. 22).

Rubinstein and Sluis make clear that it is not just technical camera innovations that change the relationship between time and photography. Access to large numbers of photos via image-sharing platforms and online networks also contributes to this change. They argue that this inexhaustible stream makes it difficult to develop an intimate relationship with a single image. It is a continual search in which the present image, exciting as it may be, is only a cover for the next, potentially more promising and thrilling [8] (p. 22). This flow of images seems to influence the temporal dimension of photography. The nature of photography now lies in its state of being “in motion”, they say, referring to Fake. The photograph no longer stops time [8] (p. 22).

In the same year, 2008, “Digital images, photo-sharing, and our shifting notions of everyday aesthetics” was published, where Susan Murray believes the social use of digital photography, as represented on Flickr, signals a shift in the engagement with everyday image, as it has become less about the special or rarefied moments of domestic living and more about an immediate, rather fleeting, display and collection of one’s discovery and framing of the small and mundane. In this way, “photography is no longer just the embalmer of time that André Bazin once spoke of, but rather a more alive, immediate, and often transitory practice/form” [4] (p. 147). As mentioned above, these new photographic practices “signal a definitive shift in our temporal relationship with the everyday image”, Murray states [4] (p. 151). In Flickr, we find “an altered temporal relationship to the everyday image” [4] (p. 161). While these sites build a collection, they also privilege “the immediacy of the image and acknowledge the inability of photography to hold onto time [. . .]” [4] (p. 161).

In a somewhat similar style, Mette Sandbye states that photography is no longer “a melancholic freezing of the past, preserving it for eternity”. Photography is no longer confirming “what-has-been” or fulfilling “mummification desire” to “embalm time” but rather practices showing “what-is-going on”, that is, presence [14] (p. 96).

Philippe Dubois also contributes to these discussions about photography’s allegedly new relationship to time and claims that “The photograph is no longer a trace of something that was but of what it is, or, more exactly, of what it shows itself to be [. . .], present and presented, without being necessarily the trace of an attested, contingent, and anterior world” [15] (p. 161–162). He suggests that the photograph can no longer be considered as “a block of space and time, made once and for all, at the moment of the shot (an instantaneity) [. . .]” [15] (p. 164).

These statements about photography and time form part of some more extensive and miscellaneous discourses about the conditions of photography in our time. Photography is discussed as networked, circulated, shared, the results of collaborative work, and much more. There are critical voices, but no one seems to critically address the part of this discursive shift that concerns photography and temporality.

In the collected volume *Ubiquity: Photography’s Multitudes* [18], editors Jacob W. Lewis and Kyle Parry bring together a group of authors to engage in a thorough and multifaceted examination of the notion of photography’s ubiquity. From its invention to today, photography has been considered universal, pervasive, and omnipresent. Lewis and Parry emphasize that far from being a unique feature of the digital era, photographic ubiquity is a historical construct that stretches back to the medium’s earliest days [18] (p. 9). Most instances of the ubiquity thesis have tended to suffer from obvious flaws, the authors point out, including a false universalism and a flat overwriting of geographic and cultural differences. Instead of simply rejecting this historically widespread notion, they emphasize the importance of researching and criticizing the myth and the conditions surrounding photographic abundance and hyperdistribution [18] (p. 9). The point seems to be that while photography’s distribution across cultures today is undeniable, the insidious logic and pervasive myths that have governed its spread demand our critical attention now more than ever.

A similar critical thoroughness unfolds in the book *Images on the Move: Materiality-Networks-Formats* [9], edited by Olga Moskatova. Here, the notion of photography's new mobility is historically, culturally, and societally subject to critical scrutiny. Digital images have become increasingly mobile today, networked, shared on social media, and circulated across small and portable screens. Nevertheless, the mobility of images is neither technologically nor conceptually limited to the digital realm. The edited volume re-examines the historical, aesthetic, and theoretical relevance of image mobility and thoroughly analyzes "images on the move," ranging from wired photography to postcards to streaming media.

A third collection of critical academic studies should be mentioned, a Special Issue of the journal *History of Photography* devoted to the theme "Circulating Photographs", also from 2021 and edited by Maria Antonella Pelizzari and Steffen Siegel, who state that circulation and mobility are modalities as old as photography. They open the issue with a few anecdotes from the early days of photography. In a short letter from 1834, Laura Mundy thanks her cousin William Henry Fox Talbot for sending her "such beautiful shadows", photographic images so sensitive to light that they gradually disappeared. Mundy thanks Talbot for sending her new images to replace the ones she previously received. This letter represents not only an early testimony of Talbot's experiments with photographic technologies but, as the editors point out, the letter also indicates that Talbot shared the results of his research via the communicative infrastructure of the time, the postal system [10] (p. 1). Such anecdotes from photography's early days are intended to illustrate that photographic images were always conceived as mobile media. The editors do not ignore that far more photographs are circulated today than in the past and that many conditions for photographic circulation are changing. On the other hand, they call for historical awareness and a critical framework for discussing the significance of this early photographic circulation in creating photographic meaning [10] (p. 1).

All of these are valuable contributions to the photographic discourse, both those that announce the need for photography to be examined in new ways in a new era and those that historicize or otherwise modify or contextualize these notions. As far as I know, however, no one has critically reviewed the temporal dimension of the discursive shift in question. Like the critics of the notions of ubiquitous photography, photography's mobility, and the circulation of photography, this article will broaden the perspective. Unlike these critics, this article will not proceed historically or anthropologically. In contrast, it will examine the conception of time implied in the alleged shift from past to present by expanding the perspective concerning both time and photography to cut across the arts and the sciences.

I want to start with the notion of time before broadening the scope of photographic practices. The purpose throughout will be to create a more open and better framework for discussing the complex relationship between photography and time. Towards the end of the article, I will return to the claims of a transformative shift in the relationship between photography and time, from past to present. I suggest that both the past and the present in this context are poorly thought through and that the change is superficial.

In the following, I will briefly explain the most critical components of Paul Ricoeur's complex concept of a "third time" and discuss how this concept can contribute to understanding the temporal aspects of today's photographic practices and photo-sharing approaches, as well as the relationship between photography and pastness.

Time is one of the main themes of philosophy, so choosing just one philosopher may seem narrow. However, Paul Ricoeur's hermeneutic philosophy of time is far-reaching and comprehensive, and his work will serve us well here. Ricoeur discusses many philosophical perspectives on time and provides, through these discussions, an overview of many other philosophies of time. Moreover, here is the genius; he arranges them in dialogue with each other, lets them have their say, and uses their thoughts step by step as building blocks in a more extensive construction. It is this complex construction that makes his project worth examining in this context. The article aims to show how such a complex construction can help us consider the various and changing relationships between time and photography.

3. Time across Arts and Sciences

I will start this brief reading of Ricoeur's conception of time with an anchoring in media studies. The German literary scholar and media theorist Friedrich Kittler famously insisted that if media studies (Medienwissenschaft) is to deserve its name, it should concern itself with mediality as such, instead of conducting sociology, history, literary theory, or cultural studies [19] (p. xiv). It may sound strange to indicate any similarities between Friedrich Kittler and Paul Ricoeur (although they have more in common than might be obvious at first glance). "Mediation" is nevertheless among the most critical keywords in the philosophical anthropology of Paul Ricoeur.

Throughout his work, Ricoeur underscores the importance of studying the fundamental role of mediation in the history of human beings. An early and noteworthy example of this appears in his 1950 doctoral dissertation, the first volume of his *Philosophy of the Will*, constructing a dialogue and a bridge between what has been considered a radical difference between freedom and nature, consciousness and materiality, or as Ricoeur puts it, between the voluntary and the involuntary. His basic argument is that human existence's voluntary and involuntary dimensions are complementary.

Mediation concerns more than just a fundamental figure of thought and way of understanding in Ricoeur's philosophy; it also indicates a certain method: the dialogue. The idea is not to make two partners agree. Instead, this is an approach through which Ricoeur seeks to find the middle term that can mediate between two polar terms and allow us to move back and forth between them. In Ricoeur's work, there is no seamless harmony between these two perspectives. It does not remove the conflict of interpretation; instead, it is a method that mediates and negotiates.

If I should pick one single icon for the philosophy of Paul Ricoeur, it would be a bridge. With his philosophy, he creates large constructions, like the manifold network of mediators across the split between freedom and nature or art and science. Ricoeur regards this split as the fundamental ontological tension inherent in human existence, which he identifies as the ambiguity of belonging to both "the natural world" and "the world of action". He also constructs small bridges and creates possibilities for dialogues between academic family members or close relatives. This combination of both big and small bridges is crucial for understanding the complex concept of time that Ricoeur constructs, which we will look at in more detail below.

The bridge between freedom and nature is the most crucial construction throughout the work of Paul Ricoeur, starting with his doctoral dissertation in 1950 and continuing throughout all his major works. Accordingly, Ricoeur seems to insist that philosophy must find a way to contain and express these tensions. His work ranges across a great variety of topics, drawing on radically different traditions, bringing them together, not to harmonize them but to contain and express basic tensions that may suggest insights we might otherwise miss.

In his three-volume work, *Time and Narrative* (published in French between 1983 and 1985), these "basic, ontological tensions inherent in the human existence", this "ambiguity of belonging to both the natural world and the world of action", are matters of temporality.[2] In the third volume of this significant work, Ricoeur develops a conception of time that has received surprisingly little attention.[3] Under the heading "The Aporetics of Temporality", Ricoeur discusses his way through a series of philosophical conceptions of time, from Aristotle and Augustine via Husserl and Kant to Heidegger.[4]

He sorts these concepts into two major categories of time and then builds multiple bridges between them. It is this construction that we will now more closely examine, investigating its relevance to photography and developing it further into an apparatus to discuss temporality in general and the relationships between time and photography in particular.

Ricoeur presents two heterogeneous perspectives on time: on the one hand, lived time, also indicated by notions like phenomenological time, mortal time, psychic time, psychological time, and existential time; on the other hand, universal time, cosmic time,

objective time, and physical time. He also uses expressions such as mythical time, the time of the world, and ordinary time, which are not so quickly sorted into two categories and can be claimed to carry with them the hybridity Ricoeur finds in his readings of philosophical studies and historical practices. For the sake of simplicity, let me describe the two analytical categories as a span between or tension between experienced time and physical time.

Across these two heterogeneous categories of time concepts, Ricoeur builds a network of bridges that he calls the "third time" or "historical time", named after what he considers intellectual tools for historians. According to Ricoeur, these are tools that historians make use of without inquiring as to their conditions of significance [21] (p. 104). These conditions are revealed, Ricoeur says, only if we relate the functioning of the tools to the aporias of time, that is, to the philosophical puzzle called temporality. And, he adds, perhaps somewhat provocatively, this is "something historians as historians need not consider" [21] (p. 104).

Two things become crucial to my argument when closely examining the bridge construction. Firstly, this is a complex interdisciplinary work where each of the two bridgeheads (if I may use such a metaphor) constitutes a heterogeneous bundle of different dimensions that can be linked to various academic disciplines and other knowledge regimes. Ricoeur is not constructing one giant bridge between what we, with CP Snow, might call the two cultures but rather a series of smaller bridges across what could be considered subcultures or more specific disciplines. With this, we see that the concepts of time involved are less general and that Ricoeur contributes to breaking down the idea of two distinct cultures by constructing a network of bridges, which helps break down the notion of two monoliths. I use the plural forms for arts and sciences to highlight this heterogeneity.

Secondly, I emphasize that the concept of time Ricoeur develops or uncovers through this bridge-building work is a societal concept of time. This is particularly evident in the first two of the three bridges he constructs. The third time that Ricoeur also refers to as historical time (based on the practices of historians) is societal time. This societal time is also historical, whether one works with history as such or recognizes society's historicity. This is generally important. When I emphasize it here, it is because it is essential to remember when we later discuss the temporality of photography.

The third time is not just a bridge connecting the other two categories of time. The bridge is also a stage displaying a heterogeneous collection of tools, the intellectual and practical tools of the historian. Ricoeur discusses these tools as an assemblage of useful connectors between physical time and experienced time and characterizes them as a set of "reflective instruments" [21] (p. 104). Through his examination of these "reflective instruments", he develops his concept of the third time and emphasizes two important points: firstly, that this third time cannot be reduced to any of the others, and secondly, that the analysis of the third time demonstrates (and intends to demonstrate) that the other two categories of time concepts are not self-sufficient but help to constitute each other. I will not go into detail here on these two points, but I will briefly explain the "reflective instruments" of the third time.

In Ricoeur's thinking, everything comes in threes, including bridges, tools, and instruments.

3.1. The First Bridge: Calendar Time

The first bridge constructed by historical practice between physical time and experienced time is the time of the calendar. Guided by an essay on the calendar by Emile Benveniste, Ricoeur sets up three features that are common to every calendar: First, a founding event, like the birth of Jesus Christ, or the Hegira, the journey of Muhammad from Mecca to Yathrib (later renamed Medina by him), is set as the year 1, or 0, based on a social event. The second feature is the establishment of an axis that can be traversed in two directions, and the third is the labeling of the axis at fixed intervals [21] (p. 106). This is why every event can be dated.[5]

"This socialized time is that of the calendar," says Benveniste. "This is a necessary condition of the life of societies as well as of the life of individuals in a society." (Benveniste, quoted in [21] p. 106). In establishing a calendar, the founding event clearly anchors the

calendar in something social and societal. In Ricoeur's brief account, the calendar, thus, acquires a mythical dimension. I would also stress that establishing year 1 or 0 is an expression of the power to define what is valuable in a society: This event is so significant that everything else of value must be sorted based on this first and fundamental importance. The battle for which calendar to use is also a power struggle. Historically, one could easily imagine battles over calendars in culturally diverse cities like Jerusalem. Should one use the Jewish Calendar? The Islamic Hijri Calendar? The Gregorian Calendar?[6] The calendar is also, as Ricoeur emphasizes, an institution [21] (p. 105). All important events in society are placed not only in relation to an axis but also in relation to each other.

The direction of the axis and its regular intervals are products of astronomy and physics. With this, one can sort events according to before and after. According to Benveniste, all days in the calendar are identical, "[. . .] it is impossible to take any one day in the calendar by itself and determine whether it is past, present or future. Only he who *lives* the time can place it in one of these three categories." [22] (pp. 6–7), [lives is italicized in the original]). Ricoeur emphasizes that from the perspective of physics, the calendar may include the idea of direction in relation to before and after but pays no attention to the opposition between past and future. Notions of presence, today, tomorrow, and yesterday belong to the perspectives of lived experience, feeding into the time of the calendar. As Ricoeur puts it: "If we did not have an actual experience of retention [i.e., still] and protention [i.e., not yet], we would not have the idea of traversing a series of events that have already occurred" [21] (p. 107). In other words, the two dimensions of calendar time most readily associated with physical time (directing and measuring, if we may use Benveniste's notions) also seem influenced by a concept of perceived time when integrated into calendar time. In other words, calendar time is societal in all its dimensions and cannot be reduced to either physical or experienced time but is constituted by both.

3.2. The Second Bridge: Succession of Generations

The second mediation suggested by historians' practices is that of the succession of generations, Ricoeur states [21] (p. 109). This second bridge reminds me of the second verse of the Christmas carol, "Wonderful is the Earth". It goes like this: "Ages shall come/ages shall pass/kin shall follow the path of kin/never ceases the heavenly tones/in the soul's joyful pilgrim-song/.[7]

Kin shall follow the path of kin. Where the calendar time indicates astronomical rhythms, sun and moon, day and night, and changing seasons, the second bridge tells a biological rhythm where living people come to take the place of the dead. "It is this replacement of the dead by the living that constitutes the third-time characteristic of the notion of a succession of generations" [21] (p. 109), says Ricoeur.

The second bridge is perhaps the most compound of all three bridges, as it includes several layers and dimensions, among them, the individual experience of mortality, as well as all possible intermediaries between the private and the public, including the personal and the anonymous in what we may think of as contemporary society.

Inspired by Wilhelm Dilthey and Karl Mannheim, Ricoeur is especially attentive to "the qualitative aspects of social time" [21] (p. 110). If the simple replacement of generations can be measured in quantitative terms as the term of years, roughly 30 among human beings, accepted as the average period between the birth of parents and the birth of their offspring, Dilthey develops a qualitative conception of generation as a question of belonging. People belong to the same generation when exposed to the same events and seem to have acquired a common orientation [21] (p. 111). Mannheim develops this further from a sociological perspective with a concept of stratification: Not all contemporaries are influenced similarly by the same events [21] (pp. 111–112). As if this were not complicated enough, Ricoeur then adds "a sociological projection" and what he characterizes, with reference to Alfred Schutz, as a network of anonymous relationships between contemporaries, predecessors, and successors [21] (pp. 112–114).

In all of this, we will take three things in particular with us: First, the idea of overlapping generations, which includes tensions between belonging to the generation of siblings and peers and, at the same time, belonging to the time of one's grandmother, who is, or was, belonging to the very same life world as oneself, exposed to the same historical events, the same prime ministers, the same national and world news, even if she at the same time belonged to a generation two steps before oneself.

Second, the notion of anonymous relationships. Where the realm of present, past, and future seems to indicate a principle of experienced time and interpersonal relationships, the triad of contemporaries, predecessors, and successors seems somewhat anonymous [21] (p. 113) as, for example, the notion of "anonymous contemporaneity" [21] (p. 111), the idea of belonging to an age class rather than to a social group. But there are some meaningful connections between the two temporal triads, best illustrated with personal examples of overlapping societal affiliations between generations. If I may: My mother was born the same year as Jacques Derrida and around the same time as the Great Depression and the introduction of sound film. My grandmother was born the same year as Jean-Paul Sartre, which was also the year Norway, after having been subject to Danish rule from 1536 to 1814 and having been in union with Sweden from 1814 to 1905, became an independent kingdom with Haakon the 7th rising to the throne. His son, King Olav the 5th, died the same day as France joined the Gulf War, and French citizens from all social classes took to the streets in protest. A partial overlapping exists between memory and the historical past that, if we follow Ricoeur, contributes to the constitution of an anonymous time halfway between private and public time (see [21] (p. 114).

Ricoeur emphasizes the importance of anonymous relationships for understanding time: We share a community of time, Ricoeur states [21] (p. 113). It is not just about the anonymous time of contemporaries: "The progressive enlargement of the sphere of direct interpersonal relationships to include anonymous relationships affects every temporal relation between past, present, and future" [21] (p. 112).

Thirdly, we have the significance of death in the succession of generations. In history, death bears "an eminently ambiguous signification" that combines the intimacy of each person's death and a reference to the public character of the replacement of the dead by the living [21] (p. 115). As Ricoeur puts it, "Anonymous death is, as it were, the central point of the whole conceptual network that includes the notions of contemporaries, predecessors, successors, and, as a background to them, a succession of generations." [21] (p. 115).

As we can see, a succession of generations for Ricoeur does not just form a bridge between biology on the one hand and the experience of one's mortality on the other. It is the most obviously social and societal of all the three bridges between the two temporal cultures. At the same time, it is potentially also ethical and political. In Ricoeur's conception of time, the succession of generations expresses how the ethical–political task is anchored in nature. It connects the notion of human history to that of the human species (see [21] (p. 110).

3.3. The Third Bridge: Archives, Documents, and Traces

This bridge is perhaps the hardest to grasp in temporal terms. It includes three much-discussed concepts: a constellation of archives, documents, and traces. Ricoeur starts by putting aside several discussions about archives and documents before setting up a hierarchy: "If archives can be said to be instituted, and their documents are collected and conserved, this is so on the basis of the presupposition that the past has left a trace" [21] (p. 119). Consequently, the temporality of the trace is in focus when Ricoeur develops his conception of time based on the historian's practical work with documents in archives.

He distinguishes between different meanings of leaving a trace: It can be "a vestige" that a human or animal has left behind on the place where it has passed (p. 119). More generally, one can also talk about "a mark" left by a thing (p. 119). Ricoeur suggests that "the passage" is a better way of speaking about the dynamics of the trace, while "the mark" is a better way of indicating its static aspect (p. 120).

What time concepts are we talking about, then? The trace combines "a relation of significance, best discerned in the idea of a vestige, and a relation of causality, included in the thing-likeness of the mark" (p. 120), says Ricoeur. "This double allegiance of the trace [. . .] constitutes the trace as the connection between two areas of thought and, by implication, between two perspectives on time" (p. 120).

It is not so easy to grasp which time concepts we are dealing with here. But we can think that the mark, which is an effect of a cause, primarily sorts within a concept of time found in the field of physics. On the other hand, the vestige is characterized as a relation of significance; something has been here, and it is significant that this something, which is not here at the moment, has nevertheless been right here at another time. The trace is such an overlapping of something existential and something empirical, says Ricoeur. The trace is this "disarrangement expressing itself" (p. 125), as he puts in a rather enigmatic phrase.

This third bridge across the temporal cultures of freedom and nature is also linked in various ways with the two others, as the mark can be dated, and dating belongs to calendar time, which depends not only on astronomy and physics but also on mythology, social institutions, and social experience. The vestige is a sign that something or someone has passed. Documents about the passage are collected, preserved, sorted, and archived by people and institutions who consider it valuable or potentially useful for the future. In this way, the trace is considered part of the same socio-temporal complex as the other two bridges Ricoeur constructs over the river between the two temporal categories. Perhaps it is best characterized as a temporal disturbance or an enigma.

In his philosophy of time, Ricoeur is, as always, constructing bridges. But, instead of treating freedom and nature as two distinct and homogeneous fields and creating one large bridge between them, Ricoeur picks up diverse discourses related to the practice of studying history. By constructing several bridges of different sizes, crisscrossing each other, he is also tearing down the very idea of two monolithic cultures. According to Ricoeur, the two categories of time associated with freedom and nature, with human experience and natural laws, have been a fundamental dimension of two perspectives on the world that apparently exclude each other. According to Ricoeur, the conflict is that we forget that our lives are historical and that life must be observed from the outside and perceived from within to make sense; one has neglected a third time as the intermediary between the other two, an historical time which I have shown is also social and societal time. I will use this insight to investigate some of today's photographic practices and show that we need a more complex time concept to study current and older photographic practices. Before we do that, we need to broaden our perspective on photography, just as Ricoeur broadens the perspective on time, and examine what we see if we look at photographic practices across different cultures of arts and sciences.

It is with photography as it is with time: an endless amount is written about the subject, and much of it is good. However, there is a tendency to generalize based on a single practice, to make general statements about time or photography based on a limited practice. In photo theory, many have advocated for avoiding generalizing and homogenizing photography to prevent it from being seen as a single phenomenon or technology everywhere and at all times. Nevertheless, in the discourse regarding the shift from a focus on singular photographs and their reference to the past to an approach to photographs as serial, shared, and oriented towards the present or future, we also see a limited selection of photographic practices that are representing both current and past photographic practices. My point is not only that we should include more various photographic practices in our reflections on photography. It is also essential to be aware that certain types of photographic practices can act as significant contributions and corrections to general theories of photography and to such practices that dominate current and past photographic thinking. An important step is considering whether time and photography should be viewed across the arts and the sciences.

4. Photography across the Arts and Sciences

We shall broaden the scope of photographic practices before we look more specifically at the relationships between photography and time. Once again, we will cross the so-called two cultures, not to map out different types of photographic thinking but to access more perspectives and, importantly, more types of photographic practices. We will direct our attention towards photographic practices relevant to thinking about photography and time.

We can find many examples of studies of visual cultures across the arts and sciences. Some of these are lavishly illustrated "coffee table" books with titles like *Beauty of Another Order: Photography in Science* [23], *Visualizations: The Nature Book of Art and Science* [24], and *The Technical Image: The History of Styles in Scientific Imagery* [25]. Most of these studies cover multiple imaging modalities, focusing on visual culture and usually referring to art and science in the singular form. They often show how the sciences historically used artists to craft scientific images and how scientific images later inspired art. Attention is often directed towards how the images appear and their relation to scientific knowledge. However, studies like these rarely discuss photographic practices as such, that is, how photography is used in the service of science and, thus, what photography in science is.

The history, philosophy, and sociology of science also function as a kind of bridge-builder between the arts and sciences. Various scientific research environments are studied both from humanities and social science perspectives (for example, [26]). Here, social interaction, visual culture, knowledge, and power are explored. Beyond the 1980s and 1990s, feminist philosophers of science and more mainstream social studies of science turned to technology (and developed Science and Technology Studies, STS) so that the research field was expanded from studies of natural sciences to technologies in everyday life [16] (p. 12). Various imaging modalities are studied within scientific disciplines and exported into society, be they to medical, bureaucratic, or security policy institutions. To the extent that photographic practices are part of such studies, they can contribute to an interdisciplinary exchange of thinking about photography. For now, their focus is primarily on the social and societal implications of technology and less on theoretical conceptions of photography.

Some have researched photographic practices with a focus on photo-theoretical conceptions in the natural sciences or the practical use of photographic technology in society. In this regard, Kelley Wilder and Patrick Maynard stand out. Wilder researched photographic practices within the natural sciences with an eye for the conceptual aspects of photography. Maynard developed a way of thinking about photography informed by photographic practices from the natural sciences and various photographic techniques of everyday life, such as the photo finish of athletics and horse racing. I will bring these two with me into the next part of this article.

There are also studies of phenomena and concepts of high relevance to photographic practices within science and society, such as the ideal of mechanical objectivity [27,28] or the importance of the archive [29,30]. We might also find relevant investigations of photographic motion studies (see, for example, [31–33]), which probably deserves a separate study devoted to it in this context.

Without going into detail on this, I will briefly highlight four lessons from photographic practices within the natural sciences that we will take with us when we discuss the relationship between photography and time below.

First of all, in science, photography is a tool. It is not a goal in itself. The photographic tool exists as part of an operation (cf [34]). In science, photography has always been operative (see, e.g., [35]). As a tool, photography can be included in various photographic practices, be they preoperative, postoperative, or intraoperative practices (see, for example, [36]). Photographic practices are often also included in multimodal, operative setups, such as with camera-based navigational imagery in endoscopic examinations or camera navigation in robot-assisted surgery (see [37,38]). If photography is a family of technologies [39], many family members are active in today's natural sciences.

Second, in science, photography is considered a "registration instrument" [40] (p. 11); that is, it is a tool that registers or records something (e.g., [41] (p. 645), [42] (p. 617). As Adrian Davies and Jonathan M. Crowther point out in an overview of dermatological imaging techniques, photography, both analog and digital, has been used "for the recording of medical conditions since the late nineteenth century" [43] (p. 481). The premise that the photographic device is considered a recording instrument has not changed with the introduction of digital cameras. Jordi Cat emphasizes, "Digital image capture, using electronic recording of light at an array of photosensors, is typically classified with film photography as a kind of photography, only the 'writing with light' is now a digital affair" [41] (p. 660). If photography could no longer be used as a registration or recording instrument in science, it would hardly have any value.

Third, the photographic record is selective. Throughout the technical history of photography, controlling photosensitivity has been a significant issue. Against the usual comparison of a camera with an eye, Wilder compares the photographic emulsion with skin: "The emulsion does act more like skin than any other organ" [44] (p. 167). To gain control over the registration of light, what was called designer emulsion was eventually developed: "Although the majority of discussions in the history of photography center on the making of films 'faster' and 'more sensitive' to more light, the true nature of photographic emulsions is better defined in designer emulsions that were made to order for various sciences", stresses Wilder. "These were not about 'speed' but about specificity", she asserts [44] (p. 167). Specific emulsions were calibrated to a particular range of solar light, excluding some wavelengths while emphasizing others. They could be used to observe discrete moments or compile and combine radiation over a long time. The purpose was not only to register information but also "to filter out extraneous data" [40] (p. 69). Wilder emphasizes that the photograph, "far from being only a registration device, can also act as a filter" [44] (p. 167). With digital cameras, the techniques are different, and there are more possibilities. We are talking about camera sensor technologies and algorithms operating on the captured signals (e.g., [45]). The point is the same: the photograph is not a passive recording device. It is technically manipulable already in the registration process or the point of capture.

Fourthly, it is crucial to keep in mind the distinction between collecting data and displaying it, as Maynard sometimes puts it [39] (p. 45). A recording can be presented as it was at the time of capture. Alternatively, particular dimensions or qualities can be highlighted, and these may be weighted differently in different presentations. In all cases, keeping recording and display conceptually separate is essential. This analytical distinction is perhaps best explained in the essay "Representational Genera" by the American philosopher John Haugeland [46]. We must distinguish between recording and representation, emphasizes Haugeland [46] (p. 179). "Fundamentally, I think, recording is a process of a certain sort; and to be a record is to be the result of such a process. By contrast, representing is a functional status or role of a certain sort, and to be a representation is to have that status or role. These are not the same because, in general, being the result of a recording process is neither necessary nor sufficient for having a representational status or role" [46] (p. 180). Haugeland immediately goes on to explain how this distinction, this formal relational parallel, as he calls it, is mixed up in photography: "On the other hand, the recording process does produce an output which is a record of its input; and representational status does involve one entity standing in for another. This formal relational parallel, plus the fact that, in certain cases (such as photography), the product of the recording process can also have the status of representing the input, therefore being simultaneously a record and a representation of it, is the basis of the confusion" [46] (p. 180). The confusion between recording and display, or representation as Haugeland calls it, is, therefore, understandable for photography but still a confusion. We shall bring this analytical distinction with us into the discussions below.

In short, photographic registration or recording is the basic starting point for using photography in the natural sciences. It is always part of a larger context. Scientific photography is often processed and combined with information generated using other imaging

modalities and does not always result in an image or even a visual display of information. When the photographically developed information is presented visually, it is often to provide information for practitioners, doctors, border inspectors, or policymakers. Even in these cases, the images will be considered as requiring specific knowledge or technical assistance to be used. This information may very well be regarded as a representation of the qualities one wants to know something about. These images are still part of a scientific operation, and there is no necessary contradiction between representation and operation. The analytical distinction between registration and recording on the one hand and display, representation, or operational use on the other hand is decisive. These fundamental insights from photographic practices in the natural sciences are under-communicated or overlooked in what is often regarded as general theories about photography. We will take this with us into the discussions about photography and time.

5. Photographies and Temporalities

Considering time and photography across the arts and sciences provides a richer and more multifaceted approach to photography, time, and the relationship between these two complex concepts or phenomena. I offer this as a framework for better understanding the social, cultural, and technical changes in the domain that photographic thinking, practice, and experience inhabit. The remainder of this article will briefly explain how such a framework can help elucidate the temporalities of different types of photographic practices.

In an article on prenatal imaging, Lucy van de Wiel [47] discusses the temporality of "time-lapse embryo imaging", an IVF embryo screening technology which makes it possible to assess the viability of the embryo without removing it from the incubator. Previously, embryologists removed the embryos from the incubator daily to check their development under the microscope and decide which embryos to transfer to the woman's body. In time-lapse embryo imaging systems, on the other hand, the embryos remain in the incubator for the entire incubation period and are instead photographed every five to twenty minutes. These images are collated and accelerated in time-lapse videos that show fertilized eggs splitting into two cells, which continue to divide into a compact embryonic cell mass [47] (p. 14). Briefly, time-lapse embryo imaging videos can be characterized by the speeding up of photographed time to produce moving images that show an accelerated version of the recorded reproductive process to make a visual argument for embryo selection [47] (p. 22).

The temporality of this photographic practice becomes meaningful and valuable, as van de Wiel points out, at the conjunction of the time of recording and the time of display [47] (p. 21). The recording time may not freeze a series of experienced moments, but it freezes, i.e., registers, and stores images at regular intervals. Whether it may be experienced as a sequence of successive, frozen moments when presented as an accelerated version of the recorded time will depend on, among other things, how smoothly the photographed object movement is animated.

To understand the temporal complexity of this photographic practice, we must distinguish between recording and display (as we learned from, among others, Maynard) which we can herein and with the help of Ricoeur consider as a distinction between the time that is measured as points of time along a line (a before and an after, concerning a specific cell) and the time as it is experienced (e.g., as past and future), be it by the embryologist who gives a prognosis or those undergoing the treatment because they want to have a child. If the forecast is good, the latter may also want a printout of a picture that they can hang on the fridge door or paste into a photo album. The photographic image may be shared with friends or with anonymous contemporaries on social media. It may be considered aesthetically, be an inspiration for desktop images or wallpaper patterns or become the subject of political campaigns and comparative analyses of social and economic conditions globally or historically. Should the embryo die, one may imagine this image becoming an object of grief. In other words, understanding this, or perhaps we should rather say these, photographic practice(s) requires more than one simple temporal dimension, such as past

or present, measured time, or circular time. One needs various concepts and perspectives on photography's temporality to understand such a set of practices.

The recording time is not only important in such medical or scientific measurement practices. It is also crucial in some everyday photographic practices. This applies to a sharing practice that first became widely available on Snapchat. In this function, you take photographic images that are immediately shared and are then available to the recipient for only a few seconds (see, e.g., [48] (p. 4). Other functions on Snapchat allow you to bypass this function, but that is not the point here. The research literature discusses how the ephemeral nature of these "snaps" makes room for everyday life's unimportant and mundane experiences (e.g., [48] (p. 9). Photos shared on Snapchat are considered to have primarily situational relevance [48] (p. 7). These images are not regarded as meaningful; they should not be dwelled on; they should only be shared (only to be immediately and automatically discarded). They are the photographic equivalent of a nod, smile, or wave. This is perceived as an inconsistency between the unimportance of the photographic image of snaps and the high importance of Snapchat use in young people's social lives. The mismatch is thematized with the concept of phatic communication [48] (p. 2). What is represented in the photo on Snapchat can feel trivial compared to how the photograph functions as a sign of contact and presence [49] (p. 1044). This phatic photo sharing [50] (p. 481) or what Niemelä-Nyrhinen and Seppänen, with reference to Bronisław Malinowski, call "phatic communion" [49] (p. 1046), is a photographic practice in which the mere exchange of images creates ties of union, a cumulative consensus about a relationship reached through repeated encounters [49] (p. 1046).

The photographic representation is thus less important—what is being depicted in the photograph does not really matter, only that the photograph was taken and shared. In contrast, photographic registration is crucial (cf also [49] (p. 1049). The recording should preferably be taken and shared in the same operation. It cannot be recorded the day before and should not have been taken several hours before sharing it. Time may not be stopped, but the recording appears as a notch in time. It is not there to be measured. It is existential, although not about life, death, and grief but about friendship, belonging, and temporal presence, a "right now" and, at the same time, something about to pass. It seems likely to relate this to the "threefold presence" in St. Augustine and later in Edmund Husserl, which Ricoeur exemplifies with a sound that begins to resonate, continues to resonate, and ceases to resonate [20] (p. 16). Photographic communion here implies an experience of contact, closeness, and fleetingness.

However, the prerequisite for all this is the clock, an instrument for measuring time. The making of clocks completes the construction of the calendar, says Ricoeur: "These govern all our meetings, which come about owing to our common concerns, on the basis of measures of time that show no care for us" [21] (p. 123). This unconcerned measuring instrument is cyclical and calculated in relation to day and night, biological and astronomical rhythms. Together with the dating made possible by the calendar, the clock is written into the human and the societal by regulating social interaction. According to Kofoed and Larsen [48] (p. 13), the intimacy of Snapchat builds social worlds. If we use Ricoeur's complex model to understand societal time, this intimacy and the social world are also conditioned temporally.

The recording time and the clock as a measuring instrument are less critical in many other photo-sharing practices. Rubinstein and Sluis's characterization from 2008 refers to an inexhaustible stream of photographic images, which allegedly makes it difficult to develop an intimate relationship with a single image. "It is a continual search in which the present image, exciting as it may be, is only a cover for the next, potentially more promising and thrilling" [8] (p. 22). In searching for an exciting image, one will nevertheless sometimes stop and, for example, double-tap a photo to like it. On Instagram, you can also go back and look at the pictures you have liked. You do not always just let them pass by. Research indicates that photo sharing on Instagram is more about the aesthetic qualities of the image than what the photograph depicts. In a study from 2021, for example, Masdari and Hosseini

claim, "Reactions to Instagram images are generally more concerned with the aesthetics of the image itself and its currency as part of a social media network than with its content. Users often pay attention to the techniques, colours, and combination of the filters used that create a 'momentary emotion' [. . .]" [51] (p. 68). Studies of family photos on Instagram may indicate that this is a truth with modifications [52]. Here, representing a successful family is at least as important as the image composition, not to mention other aesthetic dimensions of the image. Masdari and Hosseini [51] highlight Instagram filters as an example of "a type of instant and accessible aesthetics as well as an aesthetic form which is now ubiquitous in the contemporary world" [51] (p. 77). Others attempt to map what aesthetic appeal Instagram offers (see, e.g., [53]). The important thing for my argument is that even on photo-sharing platforms like Instagram, you sometimes stop; you like pictures, and there is a currency in being liked, not only by friends and acquaintances but by anonymous contemporaries, perhaps also by anonymous descendants. There is a social economy here which, with the help of Ricoeur, we can discuss as a socio-temporal economy, a hierarchy of "likes" that extends beyond the close family and friendship relationships to a network of anonymous relationships between contemporaries, predecessors, and successors.

Aesthetic appeal is also vital to understanding the photographic ideal often referred to as "the decisive moment", a catchphrase for photographers inspired by, among others, Henri Cartier-Bresson, who first characterizes his photographic style in *The Decisive Moment* (from 1952, originally called *Images à la Sauvette*), one of the most famous books in the history of photography. The example par excellence of "the decisive moment" is undoubtedly "Behind the Gare Saint-Lazare", a photograph taken with a portable Leica camera in 1932. It is an image of a man caught by the camera in midair, leaping over a puddle in the street while his shadow is reflected beneath him near a fallen ladder. Behind him, posters on a wall advertise dancers that seem to echo the man's movement. The hands of the clock on the clock tower in the background also seem to mimic the body's pose. The viewer of the picture knows that in the next moment, the man's heel will land in the pool of water and the mirror surface will fracture. This photograph is an iconic image of what Cartier-Bresson called the decisive moment.

Earlier, I quoted Rubinstein and Sluis [8], who imply that this is an expired aesthetic ideal. The background for this position seems to be that one can now take a high number of images per second; hence (as they phrase it with some rhetorical vagueness), "one can only wonder what is the meaning of the 'decisive moment' in these circumstances" [8] (p. 22). It seems fair to say here that one confuses Chronos with Kairos. "Chronos" is measured and counted, while "Kairos" is lived and experienced. Ricoeur does not use these terms, but they can be related to each of the two categories of time concepts that he investigates as he constructs his complex model for what we here call societal time. Kairos, more specifically, means the "right time" or "perfect moment" to do or say something and is often discussed in the context of photography, precisely about Cartier-Bresson and "the decisive moment" (see, for instance, [54]). I will not go into the extensive research literature on this but briefly point out that "the decisive moment" in photography is about the relationship between composition and timing.

Unlike Rubinstein and Sluis, I contend that decreasing recording intervals does not undermine this particular type of photographic image. Admittedly, the experience of the perfect moment will probably be weakened if the viewer knew that a camera today may be selecting a particular composition out of all the photographic registrations that the photographer made and that the choice of composition then is taken just as much by the camera as by the photographer. However, what could undermine the experience of the photographic decisive moment was if the photographic display was not the result of good timing at all: Suppose a photographic image is made with the help of computational photography techniques where the best composition is not just chosen but created by the camera from a series of recordings with a range of exposures while touching the shutter [55] (p. 325). In that case, one may present an illusion of the decisive moment. Still, this illusion will be sabotaged as soon as the viewer knows how the image was made. Thus,

a relationship exists between recording and display and between composition and timing. When these relations are damaged, it becomes difficult to believe that photographic images can still achieve such an aesthetic ideal. An analytical distinction between recording and representation (to use Haugeland's notions) and a better grasp of different perspectives on time (for example, using Ricoeur) will contribute to a better discussion of the current changes in the relationships between time and photography.

The photographic display of "the decisive moment" presupposes a timing that can, in principle, be measured. Here, the date may not be as important as the hour, and the hour is less important than the second. It is not the measurement of time as such that is important but that the recording can, in principle, be timed and that the registration time is short. In other cases, the date may be vital regardless of whether the exposure is short or long and the number of records is many or few, as in the case of surveillance images and journalistic photographs that must be verified as to whether they were taken at the place and time that someone claims. Claims relating to the photographic representation must then be checked against assessments of where and when the photographic registration occurred. The registration date can then help to assess whether the photographic image is from the wrong war, for example.

Roland Barthes also showed a distinct interest in dates and years in *Camera Lucida: Reflections on Photography* [1]. He gives an example that is particularly evocative in our context, an "anonymous photograph" that represents a wedding: twenty-five persons of all ages, two little girls, and a baby. "I read the date and I compute", says Barthes, "1910, so they must all be dead, except perhaps the little girls, the baby (old ladies, an old gentleman now)" [1] (p. 84). The picture is anonymous not only because the photographer is unknown but because we do not know who is portrayed, apart from the fact that the image was taken somewhere in England. The year places the photograph in calendar time, and the reflection on the image's subject activates a human and perhaps modern experience of the successions of generations and of overlapping belonging between generations as well as towards anonymous contemporaries, the girls and the baby who he imagines are still alive, his anonymous predecessors. "The date belongs to the photograph: not because it denotes a style (this does not concern me), but because it makes me lift my head, allows me to compute life, death, the inexorable extinction of the generations [. . .]" [1] (p. 84). This is one of several examples of how Barthes writes his conception of photographic time into a social and societal concept of time. He emphasizes the existential dimension as a tension between the past tense of the photographic registration and the presence of the photographic representation (if we may use Haugeland's analytical distinction). He characterizes this as a temporal disruption that makes him think about his future and his mortality. With the help of Ricoeur, I will suggest that Barthes here connects to the concept of "anonymous death", which Ricoeur considers to be the central point of the whole conceptual network that includes the notions of contemporaries, predecessors, successors, and, as a background to them, a succession of generations [21] (p. 115). With this, I propose considering the emphasis on the pastness of the photographic registration in *Camera Lucida* as a premise for understanding photography as an object of experience with a particular focus on its socio-temporal complexity.

A conceptual distinction between photographic registration and representation is helpful to see the difference between an interest in the pastness of photographic registration and a historical interest in the photograph as representation. It is, thus, important to emphasize that neither digital image technology nor social media undermine interest in the representation of past events, whether on a societal or personal level. As Elisa Serafinelli points out, "Findings show that digital photography does not walk away from its traditional function of maintaining memories of the past". On the contrary, new and creative practices have been developed. In allowing users to share visual narratives, Instagram has led to the creation of networked archives of both personal and collective memories [5] (p. 1). There is no contradiction between the social sharing of photographs and an interest in photographic memory and mourning (e.g., [56]). These practices can be combined and constitute just

one set of photographic practices among many where the temporality of photography has more dimensions than what current diagnoses of a shift from past to present seem to take into account.

Before I conclude, let me emphasize that the current photography discourse that declared a transformative shift from considering the individual photograph's connection to pastness, memory, loss, and death towards exploring photographic imagery as shared, networked, and circulating in a ubiquitous present takes the everyday photographic practices on photo-sharing platforms or networks as its starting point. However, the contributors to the discussions do not limit themselves to a particular set of photographic practices but rather generalize their statements. They present broad announcements about current practices. According to Susan Murray [4], for example, there is a sadness and a longing in the relationship to memory and history "that is not altogether present in the social construction of popular digital photography and its communities" [4] (p. 157), as if people today were not concerned with history and memory, which I have shown examples of above. The contributors to this photo discourse also generalize opinions about past practices. Murray can again be used as an example as she claims that photography has "traditionally been discussed in relation to history, memory, absence, and loss" [4] (p. 153). If you look at photography's nearly 200-year history and consider its many technologies and areas of use, as well as across the arts and sciences, there is little indication that history and memory have "traditionally" been photography's exclusive or even dominant practices. Moreover, one generalizes based on technical conditions for photographic practices: Images, not just from camera phones (which could perhaps indicate a limited number of practices) but also from something as all-encompassing as "digital cameras", are no longer "frozen moments in time" in the way photographs used to be understood, in say, for example, Rubinstein and Sluis [8] (p. 22). It is difficult to see the basis for such generalizations.

6. Conclusions

The ambition of this article has been to broaden the perspective on the claim of a photographic shift from past to present, allowing for a more comprehensive and multifaceted concept of time than what this renowned photographic discourse seems to assume. Paul Ricoeur has a complex idea of time that received surprisingly little attention and would be suitable as a framework for discussing the relationships between different perspectives on time that may be relevant in various photographic practices. To take account of a greater diversity of photographic practices than what the current discourse seems to assume, it was also vital to expand the field of photographic practices so that this, too, went across what is often referred to as the "two cultures", the sciences and the arts. In this way, the photographic reservoir could match the philosophical project of time to show how different perspectives on time stand in relation to each other and contribute to constituting each other.

Having a societal perspective on both photography and time has also been significant. Ricoeur was such an apt choice for this discussion. Since Ricoeur does not discuss photography, nor does he give us a sufficiently developed account of technology, I supplemented the conceptual framework with insights from Patrick Maynard and Kelley Wilder. The purpose has been to create a framework for discussing the many exciting questions about both emerging, current, and historical relationships between photography and time.

Working across the bridge between the arts and sciences and breaking down the idea of these two monoliths is becoming increasingly important, not least for understanding the photography of the future. Now, when computational photography, machine learning, and artificial intelligence are seriously entering the field of photography, we, as photo researchers, must be familiar with relevant concepts and practices from disciplines that previously had limited contact. With interdisciplinary work, one must sharpen one's skills and be even more aware of significant differences between different research cultures. We must ground our perspectives better and learn how to juggle several viewpoints. I hope

that the framework I propose here can contribute to such an interdisciplinary collaboration regarding the future of photography.

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Notes

1. Available: https://www.nytimes.com/2005/05/05/fashion/stop-them-before-they-shoot-again.html [accessed 4 December 2023].
2. Ricoeur’s basic idea in this work is to develop a philosophy for the complex interweaving of time and narrative, famously expressed in the phrase: “Time becomes human time to the extent that it is organized after the manner of a narrative; narrative, in turn, is meaningful to the extent that it portrays the features of temporal experience” [20] (p. 3). I will, nevertheless, put my focus elsewhere, and thus I beg leave to put in brackets his narrative philosophy as closely related to time. His philosophy of time, or “hermeneutics of temporality” [20] (p. 109), is much richer than this, and his concept of “a third time” can also be developed in other directions.
3. Firstly, the relationship between time and narrative is controversial; there are supporters and opponents of such a view, and there are strong emotions involved, making it difficult to focus on a different topic and develop another type of argument. The work’s title also guides the reader to focus on the relationship between time and narrative. Moreover, Ricoeur has placed the development of his complex concept of time in the third volume of a work of 1000 pages, a volume that perhaps few have thoroughly read. Ricoeur’s concept of a third time across art and science thus seems to have ended up in the shadow of his philosophy of time and narrative.
4. Many other great philosophers of time are also discussed along the way, both in this volume and the first two. An entire chapter is devoted to the question “Should we renounce Hegel?” [21] (ch. 9). The selection of philosophers has apparent shortcomings; most striking perhaps is the absence of the French philosopher Henri Bergson and his concept of *la durée*. Bergson, in return, has been given much space in a later comprehensive work, which in English was entitled *Memory, History, Forgetting* (2004, first published in French in 2000). I will not go into these discussions here.
5. Already after the second characteristic of calendar time, that the axis can be traversed in two directions, Ricoeur claims that this is why every event can be dated. However, I would argue that one needs intervals to establish dates. Nothing in Benveniste’s essay suggests that this error has its source there.
6. The Jewish and Islamic calendars allegedly have specific overlapping points but do not coincide, and neither of them is the one that dominates the world today, namely the Gregorian. Hamas’ massacre in Israel on 7 October 2023, occurred, as far as I can understand, in the year 5784 according to the Jewish calendar and in the year 1445 according to the Hijri calendar. The horrific events are not only understood differently depending on the different perspectives on the conflict in question. They are also included in various societal contexts indicated by the calendar as institution.
7. “Deilig er jorden” is a Christmas hymn, originally a folk melody recorded in Münster in 1677 under the title “Schönster Herr Jesu, Herrscher alle Herren” (=Most beautiful Lord Jesus, ruler of all lords). Danish poet Bernhardt Severin Ingemann created a Danish text in 1850. Ingemann’s title was “Pilgrimssang”, while “Deilig er jorden” is the first line. “Deilig er jorden” is often sung at funerals and was performed at Ingemann’s funeral. The English title is “Fairest Lord Jesus”, “Beautiful Savior”, or “Wonderful is the Earth”. There are several English translations. I refer to the one that best matches the Danish lyrics from 1850: “Tider skal komme/Tider skal henrulle/Slægt skal følge Slægters Gang/Aldrig forstummer/Tonen fra Himlen/Sjælenes glade Pilgrimssang!”.

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