




# The right-time web: Theorizing the kairologic of algorithmic media

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## Abstract

Facebook’s goal for their “News Feed is to show everyone the right content at the right time so they don’t miss the stories that are important to them.” In a mediated environment obsessed with real-time—of near instantaneous content production and delivery—the question of what constitutes right-time has curiously been overlooked. In this article, I argue that the notion of right-time presented in the above mission statement is reflective not just of Facebook’s algorithmic workings but also of a new temporal regime produced by an increasingly algorithmic media landscape. The article draws on social theory, media studies, and rhetoric, as well as a variety of empirical materials such as patent documents, media industry documents and public discourse to argue for the existence of an “Eigenzeit” of algorithmic media that hinges on the classic Greek notion of “kairos,” understood as an opportune time, timeliness, or indeed, “right-time.”

## Keywords

Algorithm, Facebook, kairos, media, real-time, right-time, time

## Introduction

It used to be that most social media feeds were organized in a reverse-chronological order and that the web was generally thought of as a real-time medium. Today, however, most social media platforms are more concerned with delivering information at the right-time, not necessarily as soon as something has been posted. Just consider Facebook’s

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goal for their News Feed, which is “to show everyone the right content at the right time so they don’t miss the stories that are important to them” (Kacholia and Ji, 2013). Or, Twitter, the once instantaneous feed, which now features a “While you were away” section at the beginning of the timeline, an algorithmically generated “recap of some of the top Tweets you might have missed from accounts you follow” (Twitter blog, 2015). Like many other social media platforms that try to make particularly important content more visible amid the stream of ever-changing updates, Twitter also has a feature called “Moments,” curated stories showcasing the most popular and relevant topics. How can we understand this apparent shift in emphasis, from the real-time web discourse that used to dominate how the temporality of the Internet was largely framed, to a greater technical and rhetorical emphasis to what I am going to call the “right-time web”?

In this article, I argue that the notion of right-time presented in the abovementioned Facebook mission statement and Twitter’s different temporal features is reflective of a new temporal regime produced by an increasingly algorithmic media landscape. More specifically, this article contributes to a long-lasting debate on various “media times” (Kaun et al., 2016), suggesting that what has long been characterized as the temporal regime of new media and the web—real-time—has been replaced by the logic of “right-time” characteristic of algorithmic media. The contribution this article makes is mainly theoretical and conceptual, but it will draw on a variety of empirical materials such as patent documents, media industry documents and public discourse to support its argument. This article draws on conceptualizations of time from social theory, media studies, and rhetoric, to argue for the existence of an “Eigenzeit,” understood as the specific temporality (trans: own or specific time, Ernst, 2013; Nowotny, 1994 [1989]) of algorithmic media that hinges on the classic Greek notion of “kairos”—an opportune time, timeliness, or indeed, “right-time.”<sup>1</sup> In what follows, I discuss different notions of media time that have been important for an understanding of various media forms from Raymond Williams’ (2004) famous notion of television as flow, the notion of liveness in research on broadcasting (Scannell, 1996; Van Es, 2017) through to the notion of “real-time” and related terms to describe the characteristics of the web. The article then proceeds to propose that real-time might no longer be the most adept descriptor of the temporality of the web in a time in which most platforms explicitly seek to deliver content, not so much as it happens but at the right-time. Drawing on different data sources and the concept of kairos, the article ultimately argues for a renewed understanding of right-time in an age of algorithmic media.

## Media times

The category of time has been a major concern in a wide range of disciplines including physics, psychology, philosophy, theology, sociology, cultural theory, rhetoric, and media studies. Existing perspectives on time have either theorized time as an objective phenomenon external to human activity or as a subjective phenomenon bound to social norms and individual experience. If the former sees time as quantitative, linear, and abstract, the latter is mainly concerned with time as qualitative, relative, and specific to human experience and action (Orlikowski and Yates, 2002: 685). This objective-subjective dichotomy loosely corresponds to the classic Greek conception of “chronos,” or the

chronological sequence of time, and “kairos,” understood as the qualitative dimension of appropriate time.<sup>2</sup> Chronos constitutes what we usually think of as time, expressed in a chronological sequence and marked by a clock. Kairos, however, suggests a much more personal or qualitative “appropriateness” of time, a temporality marked by crucial moments (Marramao, 2007).

Despite the emphasis on subjective time in much philosophical thinking and social theory on time (Heidegger, 1972; Husserl, 2013), the notion of kairos has rarely been explicitly addressed in media and communication studies. As we will see, many existing notions of media time hinge on the measurable type of linear clock time.<sup>3</sup> Time is typically theorized in terms of speed, sequences, measurement, frequency, chronology, and so on. By proposing the notion of “right-time,” however, I want us to pay attention to another, hugely overlooked notion of media time. In an algorithmic media landscape that hinges on producing and acting on relevance, timing, and personalized time regimes, the classic concept of kairos is well worth revisiting. Here, I want to suggest that kairos provides a useful framework for understanding algorithmic time regimes, understood as a form of media time or medium-specific temporality. Before explicating the notion of kairos and “right-time” further, I will engage more explicitly with some of the key ways in which media studies have previously theorized time in order to make the connection between media’s “Eigenzeit,” personalized time, and “right-time.”

### *Broadcast time: flow and liveness*

One of the most canonical notions of media time was first developed by Raymond Williams in the 1970s around the idea of television as flow. Williams coined the notion of “flow” to depict the way that television scheduling and audience consumption patterns created a stream or continuous flow of programming (Williams, 2004). For Williams, flow was a key term for understanding the distinctive nature of television, a term that could capture what was specific about television both as a technology and a cultural form. As he wrote, “In all developed broadcasting systems the characteristic organisation, and therefore the characteristic experience, is one of sequence or flow” (Williams, 2004: 86). Understood as a specific time regime particular to broadcasting, flow is not just “objective” in the sense of being an intrinsic feature of the medium of television or “subjective” as in designating a particular viewing and reception experience but also a temporality that is linked to specific institutional practices and norms or what Williams described as “planned flow.” For Williams, flow signifies an unbroken stream of pre-planned programs and commercials designed to keep the audience fixed to the screen.

In addition to the concept of flow, the notion of “liveness” has been another defining feature of how the temporality of television and radio has commonly been theorized. In his book *Liveness*, Philip Auslander (2008) points out how the ontology of television from the very beginning was grounded in the medium’s ability “to transmit events as they occur, not in a filmic capacity to record events for later viewing” (p. 12). The idea of “liveness” features strongly in another, more phenomenological sense as well. As Paddy Scannell (2014) argues, liveness is a feeling, an experience of a shared now instigated by the temporal regime of television. For Scannell, liveness is not some inherent property of technology. Liveness, according to Scannell, cannot be located in the

technology as such but in what it reveals and makes us sense about the world at the same time others do. For Scannell (2014), broadcast time is thus characterized by what he terms a “common public time” (p. 356)—the experience of shared timeframe. On most accounts, then, television owes its character to the temporality of “live,” to a sense of simultaneity, presence, and immediacy (Auslander, 2008; Scannell, 2014; Van Es, 2017). According to Jane Feuer (1983), television’s origin story as a live medium may also explain why television remained a “live medium,” even long after it actually ceased to be live, at least, in the ideological sense. In the following section on the digital register, we will see how the time of the digital in many ways follows from the temporal logic of television.

### *Networked media time and the real-time web*

Various social theorists and media scholars have noted how social changes brought about by increased connectivity and globalization have significantly changed the ways in which we perceive time. During the 1990s and early 2000s, the notion of real-time emerged as a particularly prolific term to talk about the acceleration of everyday life and the breaking down of traditional time-space boundaries. The notion of temporal acceleration is, perhaps, most famously captured in Paul Virilio’s (1999) assertion that the diminishing of geographical distance has given way to the “tyranny of real time” (p. 87). For Virilio, the possibility of instantaneous information offered by new networked media is not necessarily a good thing. Instantaneity requires decision-makers increasingly to act in real-time without little or no time to reflect. Others have similarly coined terms such as “network time” (Hassan, 2003) and “timeless time” (Castells, 1996) to grapple with the observed acceleration and erosion of traditional space-time boundaries introduced by networked media. However, there is also a more technological understanding of the term in which “real-time” is invoked as a medium-specific storage and processing capacity. German media theory, after Kittler, talks about “time-axis manipulation,” theorizing how the technological management and manipulation of time lies at the very heart of the computer’s processing power (Kittler, 2017; Krämer, 2006). Yet, Esther Weltevrede et al. (2014) convincingly argue that there are limits to the explanatory power of “real-time.” Real-time should not be treated as a universal category of time. Instead, they argue, there is a multiplicity of real-times and distinct forms of “realtimeness” that hinge not just on the technological infrastructure but also on practices of use. Seen as “immanent to and co-constituted” by specific “device cultures,” real-time is essentially fabricated through the distinct ways in which different platforms “offer different paces, rhythms, and durations” (Weltevrede et al., 2014: 145).

If the temporality of the web has mostly been theorized in terms of being real-time, others have tried to propose more distinctive terms to grapple with media-related changes to the time-space configuration of social media. Anne Kaun and Fredrik Stiernstedt (2014), for example, propose the term “social media time” as “a framework for analyzing the specific way in which the Facebook platform structures temporal experiences” (p. 1155). In their analysis of the affordances of a Facebook page and the experience of using the page as reported through interviews and a survey, Kaun and Stiernstedt identify a distinct temporal structuring based on a combination of archived content, personalized

flows and narrative. Flow is still an important aspect of the temporality of social media, the authors argue, as the logic of constant updates generates a presence that fundamentally relies on the newness principle. Yet, social media flow differs from the flow of television and radio in one important way. According to Kaun and Stiernstedt (2014: 1165), the personalized flow of Facebook “annihilates the collective and simultaneous experience and meaning production” in its attempt to cater to individuals interests. While the body of work on networked media time holds great merit, in the following I want to argue for the gradual move away from the real-time web to what I call the right-time web.

### *Algorithmic media time: towards an understanding of right-time*

Media technologies that fundamentally rely on algorithms to sort, filter, rank, and curate content are not merely operating in or producing distinct forms of realtimeness but hinge on a set of temporal relations that work to produce a particular temporal landscape characterized by a time that is right. As Facebook’s description of the news feed as delivering the right content to the right people at the right-time suggests, what matters in an algorithmic media landscape is not necessarily to deliver content in real-time but at a particular point in time. In order to substantiate this claim, I draw on different data sources, including public reactions to platform changes on Twitter and Instagram, patent documents detailing the operational logics of Facebook features and functionalities, publicly available industry speech describing the goals and intentions of platforms, as well as users’ understanding of algorithmic systems based on previous interview studies (see Bucher, 2018). In what follows, I examine how platforms such as Facebook, Twitter, and Instagram perform “right-time” to transform the information flow and presentation of content in an attempt to deliver relevance. In the way Williams sought to theorize flow as the distinctive way in which television scheduling and audience consumption patterns create the experience of flow as television time, my endeavor is to understand the distinctive temporal nature of algorithmic media as right-time. The argument is that algorithmic media such as Facebook, Twitter, and Instagram organize and create a sense of time that is not about liveness but timing, not freshness but relevance, not real-time but right-time. In order to develop the idea of “right-time” as a key temporal logic of algorithmic media, I examine three places in which the structuring and experience of “right-time” become available for analysis: in the controversies around platform changes, in technical and industry descriptions of digital infrastructure, and in users’ understanding of algorithms.

*The demise of the reverse-chronological “real-time Internet.”* When we think of the real-time web, one particular platform immediately comes to mind. More than any other platform, Twitter is premised on delivering the latest news, right now. Indeed, Twitter (2018) describes itself as showing “what’s happening in the world and what people are talking about right now.” It, therefore, came as something of a surprise to many when Twitter announced in February 2016 that it would replace its iconic reverse-chronological real-time feed with an “algorithmic timeline.” Suddenly, tweets would appear *out of order*—at least, the very first messages appearing in the stream. People would no longer

be seeing everything happening in sequential real-time but, rather, in a curated stream organized by Twitter's "secret" algorithm in order to boost engagement. Instead of always showing the most recent tweets, Twitter was revamping to elevate the most popular or "relevant" tweets.

Similarly, the "insta" in Instagram is increasingly a misnomer. Shortly after the Twitter algorithm change, the Facebook-owned photo-sharing service Instagram followed suit in March 2016 with a major change in the ways that it shows and curates its images to users. Back then, Instagram announced that feeds would be "ordered to show the moments we believe you will care about the most" (Instagram, 2016). Even the epitome of real-time media, Snapchat, seems to be working to find the right balance between chronological feeds and algorithmic rankings. In November 2017, the company finally made its move toward aligning with the algorithmic-driven Internet when it announced a change that would make "it easier to find the friends you want to talk to, when you want to talk to them," based on introducing a "sophisticated Best Friends algorithm" (Snapchat, 2017). With the introduction of an algorithmically sorted friends feed, Snapchat now puts the people with whom a user engages most at the top of their feed, ranking people by closeness. The more you chat with someone and view their stories, the higher they will rise in your feed. Now that even the Snapchat feed is based on a calculation and curation of usage patterns and interests in an attempt to show users more of what they want, the instantaneity of nowness—at least, understood in terms of "happening right now"—seems to have become less important.

*The socio-technical construction of right-time.* Facebook—arguably, the world's most powerful social media platform—plays no small role in the gradual demise of the chronological real-time web described earlier. Indeed, one of the earliest examples of an algorithmically organized social media stream is Facebook's news feed. Launched in 2006, the news feed is one of Facebook's primary and most successful features. The news feed, placed right in the middle of a user's home page, is a continuous stream of updates, serving stories of what their friends have been up to. In its 12 years of existence, the news feed has gone from being a single feed of reverse chronologically ordered updates to becoming fully edited and governed by machine-learning algorithms. As stated, the goal of the news feed is "to show everyone the right content at the right time so they don't miss the stories that are important to them." But how exactly is what is right being determined by Facebook? More specifically for our purposes, what does it mean for content to be shown at the right-time, and how does right-time materialize in the ways in which the algorithmic system organizes and structures information flows?

In order to examine Facebook's organization and structuring of right-time, I draw on evidence from Facebook patent documents detailing various systemic workings as well as descriptions from the News Feed FYI blog series (total of 65 blog posts since August 2013). Since algorithmic systems based on machine-learning techniques are constantly changing, no generalizable claims will be made as to how the system works. What is described in a patent document published 2 years ago should not be read as an empirical claim of how the system actually works today. Rather, discursive evidence from company statements such as the official blog posts and accounts of technical inventions provide a sense of how right-time is envisioned and possibly implemented.



First of all, there is no *one* way in which Facebook determines right-time. Not only has what is right and when the time is right developed over time, right-time also differs from product to product, feature to feature. Right-time for ads on news feeds may differ from the right-time for updates from pages or stories from friends. Marketers have a great interest in catching a potential consumer at the right-time. For example, when a person is browsing information for an upcoming trip, the timing for a travel-specific ad is of most importance. Facebook, thus, offers what it calls “dynamic ads” that allow businesses to match a potential customer’s travel intent by offering ads based on their recent browsing habits elsewhere on the web (Facebook, 2018). If a potential customer was browsing for a hotel or flight tickets to Prague, for example, but did not make the actual purchase, dynamic ads let a business show them relevant ads based on their travel dates once the person is back on Facebook. Yet, as many readers are likely to have experienced for themselves, this does not necessarily always work in practice since ads have a tendency to stick around for a while—even long after the said trip to Prague is over.

Because of the staggering amount of newsworthy items, “providing a continuous and chronological stream of content to users may effectively obscure more interesting and relevant content items among less interesting content items that have been more recently published” (Schacht et al., 2015). Ranking is the primary means by which Facebook organizes and assembles the feed to make it *feel right*.

If news stories on Facebook’s news feed are broadly “selected based on a ranking algorithm that incorporates an analysis of affinities for interests, users, and entities in the social networking system based on user interactions” (Schacht et al., 2015), how these affinities and interactions are weighted varies on a number of accounts. More specifically, determining when the time is right to show a particular post may depend on, among other things, attributes of the actual user (Rubinstein et al., 2016), the subset of users (Gubin et al., 2014), infrastructural issues such as bandwidth and packet size (Tal et al., 2017), the status of the post (i.e. new, read, popular, or missed; Sorg, 2018), and the system’s optimization goals at a given point in time (Novikov et al., 2011).

Attributes of a user may include how frequently she is logged on, the time she spends interacting with posts, how often she shares, comments, or otherwise explicitly engages with certain content, how close she is to the person or page posting the story, the device she is using, and so forth. As a rule of thumb, everything that can be collected about a user and her usage patterns will be collected. For instance, the system may know whether someone is more likely to respond to certain posts between 12 p.m. and 1 p.m. and from the hours 7 p.m. to 10 p.m. and, therefore, make sure to fine-tune its algorithms to provide targeted notifications during these particular time periods (Tseng and Braginsky, 2014: 8).

Optimization goals (i.e. monetization, user engagement, user communication) may also differ for different user groups or subsets. While Facebook prides itself on using pattern-finding machine-learning algorithms that learn from user behavior in a bottom-up way, ranking content clearly also follows traditional demographic categories such as gender, age, and location. For example, male users are deemed less likely to participate in sharing practices than female users; thus, “the goal for male users might be to provide more user sharing content to get the male users involved in interacting” (Novikov et al., 2011: 10–11). Similar assumptions guide the ranking of content in different geographical

locations. Because “users in Sweden are known not to form many connections,” the optimization goal for this subset of users is to “increase user communication” (e.g. provide more suggestions for people they may know; Novikov et al., 2011).

Ultimately, ranking—as a relevance-inducing mechanism—is a product of probabilistic modeling. From the platform’s point of view, right-time is about probabilistic projection or likelihoods of getting the timing right. Whether that prediction is “wrong” does not really matter to the system, which can just update probabilities. Often this is justified by suggestions that slightly improved probabilities are better than some baseline (e.g. chronological order), and that improvement of those probabilities can be continuously achieved, in the sense that every time the platform is wrong, it can learn to get a little better.

*User modulation of right-time.* In the attempt to develop the notion of right-time as the time of algorithmic media, it is crucial to note how users play a key role. As already alluded to above, machine-learning systems are built on analyzing user data and usage patterns and adapting to the data. What users do online is fed back into the system and integrated into the internal logics of the algorithm, in order to modulate the ranking mechanisms. Therefore, the shaping of right-time is not a one-dimensional organization of time but quite explicitly dependent upon user interactions. While previous conceptions of media time have variously theorized and pointed to the crucial role of users, users are generally thought of as external to the medium’s capacity to structure time. Put differently, in the existing literature on media time, a user is said to *experience* time but not directly influence the medium’s organization of time. For example, Williams’ notion of flow rightly points to the specific institutional practices and norms associated with the sequencing of television programs and the particular viewing experience, but the television audience is not theorized as having an influence over the planned flow in any direct manner. Similarly, the newness of the real-time stream remains somewhat external to a user’s potential influence; users wait for new, incoming content but are seldom theorized as contributing to the making of immediacy (with the exception of Weltevrede et al., 2014). As we saw earlier, algorithms fabricate right-time by reacting to a set of user attributes and, most importantly, change and adapt those fabrications as new data points become available.

What may seem right to the system may not always *feel right* to users. As evidenced by an interview study conducted for another project (Bucher, 2018), people often notice the workings of algorithms in situations of uncanny or bad timing. While there are certainly times when the algorithm gets it right (expressed by interviewees as “how did the algorithm know” kinds of sensations), there are plenty of examples of the opposite as well. Bad timing is experienced, for example, when a deceased relative resurfaces as a Facebook friend suggestion, when a hotel ad stalks you for 3 weeks after your trip has ended, or when you are absolutely not in the mood for a romantic comedy but the Netflix algorithm seems to insist that you are. Often, however, there is a fine line between right and wrong times. The time might actually be right for the algorithm to remind you of an anniversary or a life event from 5 years ago, but it might feel utterly wrong if life has happened in the meantime and you are no longer married or you were fired from that job that you once loved.



A pattern that emerged in the 35 online interviews conducted over e-mail, chat, and Skype with social media users primarily in their 20s and residing in the Nordic hemisphere was the idea of “clicking consciously,” the practice of trying to bring whatever algorithm at play on the right track again. For example, as one interviewee who found himself caught in the temporary feedback loops created by YouTube’s recommendation engines suggested, he would either stop watching videos for a while or just start clicking on as many other, more relevant videos as he could in order to “correct” the algorithm. Clicking consciously, however, is not just a defense strategy that users employ when they feel mistreated by an algorithm. Being oriented toward the temporal and operational logic of the algorithmic system emerged as a common theme in a much more proactive sense as well. For many of the interview participants, it is vital that their posts are seen and circulated as widely as possible. In order to secure “maximum reach,” as another interviewee put it, she would always take great care to post “consciously,” which, in her case, meant strategically creating posts, for example, by using multiple pictures instead of one, always trying to choose the right words and post at what she perceives to be the right-time of the day.

While it might be easy to dismiss these individual experiences as playful anecdotes, they point at something much more general in terms of understanding the fabrication of algorithmic right-time. Users are neither external to media nor to time. As is the case with machine-learning algorithms, users should be considered part of what we take an algorithm to be in the first place, given their essential role in generating and feeding the learning process and feedback loops of the machine. The user’s experience of time is also not just outside the medium’s workings but feeds right back and into the system by way of interactions. In other words, when users experience situations of good or bad timing when they interact with algorithmic media, these experiences might directly affect the ways in which they use the system, which, in turn, affects how algorithmic right-time is fabricated and predicted in the future.

## Theorizing “right-time”: revisiting *kairos* as the *Eigenzeit* of algorithmic media

To better understand the notion of right-time, I turn to the concept of *kairos* to argue for a new temporal regime produced by an increasingly algorithmic media landscape. As was mentioned in the beginning of the article, the concept of *kairos* reminds us to attend to the importance of timing, or due time, which constitutes a core function of algorithmic curation. Though the technical and rhetorical shift from real-time to right-time in terms of a distinctive media temporality is rather recent and should be understood as coinciding with increasing use of algorithmic personalization and the feedback loops of machine-learning techniques, the more fundamental conceptions of time upon which these terms hinge are far from new.

*Kairos* is often theorized as an unpredictable moment that, when it occurs, marks an opportunity that must be seized (Smith, 1969). In rhetoric, *kairos* goes back to the works of Plato (*Phaedrus* and *Timeus*) and Aristotle (*The art of rhetoric*), and has more recently been revisited in the work of the rhetorician James Kinneavy (1986), who defines *kairos*

as the “right time and due measure” (Thompson, 2000: 75). If *chronos* is the classic Greek notion of linear and objective time, the kind of time that has given rise to clocks and schedules and the idea of time as a continuous flow, *kairos* designates the right or opportune moment to say or do something, the kind of time that punctures or ruptures *chronos* in sometimes quite unexpected ways. This last sense of *kairos*, as something that breaks into and interrupts the usual temporal flow, also figures prominently within a biblical understanding of the term. For the theologian Paul Tillich (1972), *kairos* designates the special time of divine becoming, which stands in opposition to the ordinary time of the clock. *Kairos*, Tillich (1972) suggests, “is the time which indicates that something has happened which makes an action possible or impossible” (p. 1). Such notions of eschatological time have particularly given rise to and been further developed in Marxist theories of revolutionary time, for example in the works of Benjamin, Negri and Agamben (Boer, 2013). In contrast to Tillich, Giorgio Agamben is not so much interested in the opposition between ordinary and extraordinary time but in the relation between them. For Agamben (2005), “*kairos* . . . does not have another time at its disposal; in other words, what we take hold of when we seize *kairos* is not another time, but a contracted and abridged *chronos*” (pp. 68–69). *Kairos*, then, takes on a range of meanings: due measure, occasion, extraordinary, opening, opportunity, timeliness, and indeed, proper or right-time.

Here, I want to argue that the kind of *kairos* indicative of algorithmic media systems like the ones represented by popular platforms like Facebook and Twitter do not necessarily map neatly onto existing notions of *kairos* but can be understood as a form of temporality specific to algorithmic systems, or what Ernst calls the “*Eigenzeit*” of machinic apparatuses (Ernst, 2013).<sup>4</sup> In order to differentiate the specific rhetorical and biblical understanding of *kairos* from the “right-time” inscribed into the current media landscape, I will refer to it as the “*kairologic*” of algorithms. This is to say that algorithmic media systems carry with them the logic of *kairos*, where instantaneous mediation is no longer the end goal, but rather the personalized timing of mediation. There are several interesting directions that this emphasis on timing leads to.

First, as more and more web services and social media platforms implement algorithmically sorted and curated feeds, users may increasingly encounter time on a continuum of relevance. Although it might still feel fresh, the more important goal for these media is to deliver content that *feels* right, or at more precisely, attempts at delivering guesses or approximations of something that may feel right. When to show a status update, a particular ad, or a friend suggestion is arguably as important as (if not more than) delivering it as it happens. That said, chronological time is not made obsolete by the *kairologics* of algorithmic media time. To receive fresh and recent updates still matters but, arguably, not more than receiving relevant news and updates at the right-time. If as Agamben (2005) writes, “*Chronos* is that in which there is *kairos*, and *kairos* that in which there is little *chronos*” (p. 68), we might adjust this to say that algorithmic media works by turning *chronos* into a signal for *kairos*. As we saw in the discussion of Facebook’s patent documents, clock time is frequently used as a signal to determine when the time is right, for example, in targeting notifications for individual Facebook users, or deciding when the time is right to show travel-related ads. In the age of algorithmic media, then, there is always a lot of *chronos* in *kairos* but not necessarily the other way around.

Second, the kairologic of algorithmic media complicates clock time in new and interesting ways. Unlike *chronos* where things may happen once, algorithmic systems slices and dices time to fit its purpose of delivering the right content at the right-time (see Note 3). Unlike Agamben's abridged *chronos*, algorithms expand *chronos* in rather creative ways. Sometimes, a user may have already read or seen a post, but that does not mean, therefore, that it loses its relevance. More important than when it was posted for the first time is the extent to which a post remains important. It is one thing to read an interesting post by a friend, it is another to follow the post as it evolves and changes over time as others are reacting to it. As explained in a Facebook patent, "items may have multiple times and locations associated with it" (McDonald et al., 2018: 5). For example, a photograph may be associated with the time that it was taken, uploaded, shared, commented upon, and tagged. For close friends of the user, the right-time to show that photograph may not necessarily be the time it was uploaded but the time that other close friends started commenting on it, or were tagged.

More important than the successive display of posts on a feed, is the temporal organization of the posts into a meaningful narrative or story. As such, the slicing and dicing of time that works to arrange posts into an appropriate order, resembles Paul Ricoeur's (1980) conception of "narrative time." In writing about the time of the narrative plot, Ricoeur suggests that every story consists of an episodic dimension, or the successive passing of moments, and a configurational dimension, which is the work of eliciting patterns out of successive episodes. We might similarly think of algorithmically curated social media feeds as configured spaces that hinges on time woven together by the interaction of human and non-human actors (e.g. between users and the ways in which the protocols and assumptions underlying the sorting algorithm privileges engagement over recency).

Third, and following from the previous example, algorithmic right-time is variable and context-dependent. What is right for individual users may not be right for the platform and vice versa. It seems that for platforms, *kairos* is essentially about optimizing the opportunities for participation. As explicated in a Facebook patent document, right-time is about resurfacing "old" stories on the news feed as friends are commenting in order to encourage more conversation on the platform (Kacholia and Ji, 2013). What matters, then, is not necessarily to create a flow of new content but of engaging content since Facebook's goal as an advertising business is, ultimately, to stay relevant both for its end-users and advertisers.

Contrary to the classic Greek conception, *kairos* is not necessarily a rare moment that must be seized because the opportunity may not present itself again. It no longer necessarily matters whether the content is served in linear real-time because, if important enough, the content will reach the user anyway. With algorithmic right-time, users are reassured that the moment need not necessarily be seized now, but that they can rely on the system to deliver the most relevant updates that have been taken place "while you were away." By curating and ranking relevance feeds as opposed to delivering updates in a chronological order, the kairologic of algorithms makes sure nothing seemingly important is missed. The right or opportune moment does not just happen out of the blue. It is materialized in and through algorithmic feedback loops and specific business intentions and goals. While existing notions of *kairos* emphasize its unique and unpredictable

nature (Shapiro, 2013), the algorithmic construction of kairos seeks to reduce uncertainty by capitalizing on the idea that relevancy is served all the time. Far from the kind of messianic event that many previous conceptions of kairos rely on, algorithmic right-time is not necessarily something scarce or unique, but something that algorithmic media are perpetually working to produce through the use of predictive analytics.

One might say that the ubiquitous nature of algorithmic right-time renders the notion of kairos, if understood as a rare moment, somewhat redundant. Yet, if we conceive of chronos and kairos as questions, we might see how the algorithmic production of timing remains fully within the realm of kairos. If chronos corresponds to the question “What time it *is*”?, kairos asks instead “What is (it) time *for*”? This, I want to suggest, constitutes an important dimension for the analysis of algorithmic media—not time as measured in seconds or minutes but time mobilized, practiced, and fitting for specific purposes.

Fourth, algorithmic media relieve people from the uncertainties of choosing how to respond. While much of rhetorical theory has been concerned with kairos as an opportunity to say the right thing at the right-time (Kinneavy, 1986), algorithmic media already come with a predetermined set of options for a fitting rhetorical response. Click, like, share, and comment, the system suggests—where speaking is no longer just an act performed for a human interlocutor but also a matter of “speaking into the system” (Jensen and Helles, 2017). As Mike Ananny (2016) has suggested with regard to networked news time, “no single person can control time because time is only meaningful when it is collaboratively made and interpreted” (p. 416). This is the case with algorithmic media times, too, in which the individual user plays less of a role than do the actions of an aggregated set of users. In other words, kairos, understood as the time of participation—the ways in which it reveals certain moments to be more fitting for a response than others—is very much part of the operational logic of algorithmic social media systems. In a sense, users have become complicit actors in the unfolding story or “narrative time” (Ricoeur, 1980) of the social media feed, a story configured in part by the “scripts” (Akrich, 1992) and affordances of algorithmic media.

Finally, and related to the previous point about the importance of users in determining the kairologic of algorithms, chronos and kairos should not be understood as dichotomies but rather as complementary terms. According to several cultural theorists and philosophers of time, the distinction of chronos and kairos as opposites is a common misconception (Agamben, 2005; Boer, 2013; Marramao, 2007). If kairos is the well-timed, then its opposite is not linear time, but the ill-timed and displaced (Boer, 2013). Platforms may try to predict right-time all they want, but there is no guarantee that it feels right to users. As the many cases of ill-timed content and advertisement that algorithmic media surface on a daily basis attest to, kairos is indeed a “very complex figure of temporality” (Marramao, 2007: 71). This complexity, Marramao suggests, recalls the “*proper mixture* of elements—exactly like the notion of weather” (Marramao, 2007). Take rain for example. Rain is a product of the right mixture of moisture in air, temperature, winds, condensation points, and more besides. For it to rain, different elements must come together in the right way.

This is an important point with regard to the kairologic of algorithms. For algorithmic right-time, too, depends on a mix of elements for its realization. Thus we might

theorize algorithmic right-time as an appropriate mixture of (at least) three interrelated domains: (1) technical infrastructure and the operational logics of the algorithmic system, (2) business models and organizational interests, as well as (3) user activities and connections. Because algorithmic media itself, especially with regard to the feedback loops of machine-learning, needs to be understood as a mixture of elements, its “Eigenzeit” (specific inner temporality) is already a function of much more than its technical mechanisms.

## Concluding remarks

In a mediated environment in which the critics are still concerned with real-time, the question of what constitutes right-time has curiously been sidestepped. In this article, I have argued that the notion of right-time is constitutive of a new temporal regime produced by an increasingly algorithmic media landscape. Unlike Scannell’s (2014) notion of liveness, right-time is not an experience of a shared “now” instigated by the temporal regime of the medium but a personalized moment instigated by aggregated individuals, and fueled by the business models of platforms. In other words, it is not so much a common public time but a common personalized time regime, as Kaun and Stierstedt (2014) would also argue. Just as Feuer (1983) argued that Williams’ notion of flow should be more accurately understood as creating the illusion of liveness, the algorithmic fabrication of right-time can be understood as delivering the promise of relevance rather than relevance itself. As it was argued, right-time can neither be neatly categorized as an objective phenomenon external to human activity nor as a subjective phenomenon bound to social norms and individual experience. It is not quite the kind of “Eigenzeit” Ernst (2013) envisioned, nor is it quite the classical rhetorical sense of *kairos* as the time of turning moments into rhetorical opportunities (Orlikowski and Yates, 2002).

Right-time can be understood as the specific inner temporality of algorithmic media if we take inner temporality to include the networked and relational nature of algorithms. Here, time is not merely a material matter of computational processing. It is also governed by socio-technical relationships (Ananny, 2016). Users, advertisers, business goals, and other economic and ideological motivations ultimately condition the fabrication of right-time.


Right-time does not eliminate real-time but incorporates it as a function of relevance. What is right might include *nowness*, but the *now* is never enough to make it right. Just as Weltevrede et al. (2014) point out how real-time should not be treated as a universal category, there is no one way of conceptualizing right-time. However, as I have argued, the concept of *kairos* provides a particularly useful framework for the conceptualization of right-time in an algorithmic age. While the kind of *kairos* that algorithmic right-time constitutes does not necessarily map easily onto *kairos* in the originally classical sense, the temporal dimension of *kairos*, understood as the puncturing of *chronos*, is arguably what algorithmic feeds are all about. If real-time is more easily captured by the notion of *chronos*—the chronological and serial time of succession, right-time belongs to the temporality of *kairos*. For the analyst, the framework of *kairos* allows for a critical inquiry into the temporal dynamics of algorithmic media that does not hinge on the tropes of real-time. By emphasizing the complexities of timing through the socio-technical

fabricating right-time, future studies of media time could address the empirical realities of this fabrication. To what extent do algorithmic media actually succeed in making the time right? What are the criteria for success? Is there sufficient overlap between the platforms' conception of right-time and the ways in which users feel that the time is right, and to what extent is this even an useful distinction? Who needs to seize the moment, who waits and who does not?

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## Notes

1. Verbatim, the German word *Eigenzeit* means "self-time". *Eigen* means "belonging to the self," and *Zeit* means "time." Although this article hinges on the ways in which German media theory, especially the work of Wolfgang Ernst, has utilized the notion of *Eigenzeit* as the specific inner temporality of media, the idea of *Eigenzeit* does not originate with Ernst. Here, it is also important to acknowledge the work of the Austrian sociologist Helga Nowotny (1994 [1989]), whose book *Eigenzeit. Entstehung und Strukturierung eines Zeitgefühls* was later translated into English simply as *Time: The Modern and Postmodern Experience*. For Nowotny *Eigenzeit* means "in ones" own time and the book is concerned with the acceleration of time, and the totality of a person's or group's ideas and experiences of time.
2. To be more precise, there are three modalities, or Gods, of time in Greek mythology: Chronos, Kairos, and Aion. *Chronos* represents linear time, a time of conventional measurement and counting. Kairos represents the right, critical, or opportune time. It is a time that is qualitative, heterogeneous, and seasonal. *Aion* is yet another Greek deity associated with time, best understood as an unbounded, sacred or eternal time.
3. I am not attempting an exhaustive overview of all the ways in which time and temporality has been theorized within media and communication studies (that would require an article or book of its own). There are, of course, notable exceptions to the hegemony of chronological time. For example, within cinema and visual culture studies, the legacy of Gilles Deleuze's (2004, 2013) philosophy on time has been very influential. In his Cinema books, Deleuze makes a distinction between the "movement-image," or time as succession of linear time, and the "time-image" as an experiential and non-chronological form of time that he later discusses as a distinction between *chronos* and *aion* in *The Logic of Sense* (Deleuze, 2004). One might say that Deleuze's *chronos/aion* distinction is reminiscent of the *chronos/kairos* distinction in the rhetorical literature.
4. The computer's capacity to manipulate time has been a prominent theme in German Media Theory. In 1990, Friedrich Kittler wrote about "real-time analysis and time-axis manipulation," claiming that technical media have the capacity to manipulate time in ways that defies human visual and acoustic perception (see Kittler, 2017).

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